ADDENDUM NO. 3

DATE: March 13, 2020

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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

22A. Division 274000 IP Video specification lists Crestron encoders as the basis for design but detail 2 on drawing E7.07 shows a Matrox encoder. Which system is preferred? Are the STB Decoders supposed to be the decoders for the above encoders, i.e. Crestron?

RESPONSE: Creston is the preferred manufacturer. Decoders and encoders shall be the same manufacturer.

22B. Are the STB Decoders in the Classrooms supposed to be the decoders for the above encoders, i.e. Crestron?

RESPONSE: Yes, Creston DM NVX 350 functions as an encoder and decoder.

22C. Division 274000 IP Video specification lists several different size flat screens, but I couldn't find notations for location and sizes on the drawings, or any type of schedule giving quantities of each size. Please clarify where these go and what size for each. Also does each one gets an STB Decoder with connection to the IP Video System.

RESPONSE: Locations will be finalized in Addendum #4.

22D. Detail 3 on drawing E7.06 says to connect these STB Decoders to the Epson projector via composite. This will be a very poor image quality and the Crestron NVX 350 decoder mentioned in the IP Video spec does not have a composite output. Please confirm the preferred connection type from the STB to the projector.

RESPONSE: Utilize HDMI for connections between the decoder and projector.

22E. Detail 1 on drawing E7.05 lists a Denon DVD player for the Classrooms but no brand or model is given in the Division 274100. Please confirm the brand and model DVD player.

RESPONSE: DVD players shall be Denon #DN-500BD MKII

22F. Detail 2 on drawing E7.05 for the Café Aux Gym doesn't match the Division 274200 specifications for these spaces. Which one takes precedence?

RESPONSE: Specifications takes precedence.

22G. Some of the audiovisual Divisions list a three-year warranty and others only a two-year warranty. Should they all be two years?

RESPONSE: Two years.

22H. Three are no drawings for the Division 274300 Athletic Field Audio system and the specifications don't give quantities for the devices. Can drawings be provided for this system?

RESPONSE: Enlarged View added in addendum #3 for additional information.

23. Drawing P 3.09, please clarify the following items:

A. Please provide detail for radon reduction pit and what type of material is to be used.
B. The detail on top of the page shows 4" perforated pipe in an "H" shape, is the intent for this to go inside radon reduction pit?

RESPONSE: Refer to RADON REDUCTION PIT DETAIL on Replacement Sheet P3.09. The intent is for the "H" shape perforated piping to be installed inside the radon reduction pit.

24. Please provide "Tagged Notes" for Drawing P3.09.

RESPONSE: Keynotes for Sheet P3.09 are in the top left of the drawing. P3.04 was missing keynotes in the bid set – refer to Replacement Sheet P3.04 for these keynotes.

25. Roofing work at outside of the normal work hours. 7A Contract Package #16 (Contract Packages 01 02 00-44) states that " Contractor shall not install roofing during hours that school is in session. Roofing work may be required to occur outside of the normal work hours at no additional cost to the owner";

Is this clause can be waived? Because TPO roofing system in this project does not require Hot Asphalt work, and it is very hard to keep Phasing requirement of this project with roofing work at outside of the normal work hours only.

RESPONSE: This clause is only applicable to hot asphalt work. PVC roofing work may be done during normal work hours provided the following conditions are met:

- Pre-installation meetings prior to each mobilization will be required to review potential transmission of adhesive odors and fumes into the building.
- 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 15A contractor for closing of outside air dampers or full unit shutdowns as directed by the Construction Manager.

26. On the index of the drawings it shows Theater-AV Drawings, but after searching through the sets I can't find them. Will there be Theater-AV Drawings?

RESPONSE: Please reference Addendum #1

27A. Technology Systems; Specification 27 40 00 IPTV Systems: The Crestron NVX 350 Encoder/Decoder is not controllable via IR. The IR ports and RS232 ports are used to control external devices and are not for control of the NVX. Please confirm how the NVX will be operated and controlled.

From the Crestron NVX350 Web page:

a. The DM-NVX-350 includes built-in RS-232 and IR ports for control of the connected display, camera, or other devices under the management of a control system. Additional control capability is provided by CEC (Consumer Electronics Control) over the HDMI connections. Under the management of a control system, the DM-NVX-350 can control the display and source devices, potentially eliminating the need for dedicated serial cables or IR emitters.
b. The DM-NVX-350 includes two HDMI inputs. Switching between the two inputs can be performed automatically using auto-switching mode, programmatically via a control system, manually using the onboard Input Select button, or through a computer using a web browser.

RESPONSE: Provide Creston HR-310 for control of decoder in classrooms and all locations with decoders.

27B. Page 27 4000 7 describes the Crestron NVX Director as a “media server.” It is not a media server (not a video source), it’s a control and configuration device. Additionally, it does NOT provide programming and control functionality of the RS-232/IR control ports on the transceivers. A separate Crestron control processor is necessary to utilize these features, as are touch panels. There does not appear to be one in the design, nor are any touch-panels indicated.

RESPONSE: Creston NVX Director shall control and monitor all Creston DM NVX 350. Provide Creston HR-310 for control of decoder in classrooms and all locations with decoders.

27C. Section 27 4000: There are no preview monitors at the head-end rack for confirmation of video source receipt and content. We recommend a sufficient number of dual 7” rack mount displays or a local switcher and display at the head-end that is independent of the NVX system.

RESPONSE: Provide Creston 7” touch pad TSW-760-W-S for local controls at IPTV headend.

27D. Section 27 4000 The Logitech HH remote control is not suited to this application in the classrooms

RESPONSE: Logitech remote for universal control of projector.

27E. Page 27 4000 11 of the IPTV specification states: “Installing contractor shall provide a minimum of 16 hours of factory training on system operation and management as part of their scope of work.” Does this mean the training must be provided by Crestron, or by the AV integrator? Factory training from Crestron is generally not available to the public and would normally require travel to a Crestron training facility if it were. Onsite Crestron factory training may not be possible. Please clarify.

RESPONSE: Training by AV integrator is acceptable.

27F. The information in Specifications 27 41 00 & 27 42 00 do not match the information shown on Electrical “E” Drawing; examples include, but not limited to:

1. Drawing E7.05 indicates that the projectors and the sound system for the Classrooms, Cafeteria and Aux Gym are to be Customer Furnished; Customer

Installed (C.F.C.I) while the specification indicated that these components are provided by the AV contractor. Please confirm who is to provide these components.

2. The AV symbols on the electrical drawings do not match the nomenclature in Spec. section 2.2D Audio Visual Harness, ref. PR1, L, AS, L1, & PR1 vs. TI, MI, & P
3 There is no clear design intent that can be determined between the specifications and the drawings. The drawings and specifications do not appear to be coordinated to provide bidders with correct and accurate information in which to submit a price.

RESPONSE:

1. C.F.C.I indicated contractor furnished, contractor installed. Refer to Electrical legend.
2. TI, MI, and P are the correct subscripts for 274100.2.2.D.
3. With subscripts corrected above information should be clear.

27G. Drawing E7.05 specifies a USB Transmitter plate similar to the C2G 58878 USB 2.0 Over Cat5 Superbooster Wall Plate Transmitter to Dongle Receiver Kit.

1. All C2G USB 2.0 Wall plate TX features a single USB and requires a dedicated 1G Decora opening.
2. The single gang wall plates shown with USB, HDMI and/or Audio are not a commercially available product from C2G. Please specify a commercially available product(s).

RESPONSE:

1. Provide two single gang junction boxes for dedicated USB connections at teacher's desk.
2. Remove one USB connection from both the instructor's location (TI) and projector (1).

27H. Drawing E7.05 Detail 2 indicates a Dual HDMI on a Decora wallplate. C2G does not have a commercially available product that meets this specification. Please specify a commercially available product(s).

RESPONSE: Provide two double gang junctions in lieu of single 4 gang junction box. Provide RapidRun single gang face plate with VGA + 3.5mm + HDMI and USB and RapidRun Dual HDMI double gang with one decora cutout.

27J. The Classroom input at the wardrobe shows an HDMI, a Composite Video and a 3.5mm Audio, however both the DVD player and IPTV STB have an HDMI output. Should the wardrobe inputs both be HDMI?

RESPONSE: Yes, provide additional HDMI in wardrobe cabinet and remove composite video.

27K. Cafeteria/Aux Gym:. Drawing E4.03 indicates that Classroom Sound Enhancement speakers are to be installed in this location per 27 41 00 and Drawing E7.05 indicates this is C.F.C.I. while Specification 27 42 00 specifies a complete AV package. Please confirm the design intent and what the AV contractor is to provide for these systems

RESPONSE: C.F.C.I indicates contractor furnished, contractor installed. Refer to Electrical legend

27L. Cafeteria/Aux Gym: Drawing E7.05 does not include provisions for the wired microphone wall plates located in these spaces

RESPONSE: Addendum #3 has additional details on sheet E7.06.

27M. The ceiling speaker coverage in the cafeteria shown using Sound Enhancement speakers may be insufficient in noisy environments. (Drawing E4.03)

RESPONSE: Addendum #3 has additional details on sheet E7.06.

27N. There are no speakers shown in the Aux Gym (Drawing E4.07)

RESPONSE: Provide six speakers clustered in middle of gym.

27P. Main Gymnasium: There is no AV system shown for the Main Gym in the Electrical drawings. Is a Gym system required as per the listing in specification 27 42 00?

RESPONSE: No new AV is required in the Main Gym. Design intent is for existing AV system to remain in place.

27Q. Stadium: Drawing UE2.0 shows the location of sound system speakers, but did not include elevations, aiming, system schematic or block diagram of the system Please provide the design criteria for the stadium sound system to include the above.

RESPONSE: Addendum #3 has additional details on sheet UE2.0.

28. The contract package 8A shows Door Hardware to be in the scope of the 8A contractor. However, paragraph 6 of that same document, states that the 1A contractor is responsible for the purchase of all hardware. How is this supposed to work? Is the 1A contractor responsible for the purchasing hardware and delivering it to the manufacturer (EFCO/Kawneer/TRACO/YKK) for preparation.? If so, how is the 8A contractor responsible for the hardware? This seems a little confusing.

RESPONSE: Please reference Specification Section 01 02 00. The 8A Prime Contract Package has "As Applicable" for Specification Section 08 71 11 Door Hardware. The 1A Prime Contractor provides all Door Hardware for the project. The 8A Prime Contractor shall accept the hardware from the 1A Prime Contractor and deliver hardware and/or templates to the 8A Prime Contractor's material manufacturer for door prep. The 8A Prime Contractor shall install all hardware on materials provided under the 8A Prime Contract Package.

29. In spec section 260519 “Low-Voltage Electrical Power, Conductors, Cables, Splicing Devices and Connectors,” on page 260519-3 it states that “MC cable and AC cable shall not be permitted.” Can you confirm that MC and AC cable are not permitted for this project?

RESPONSE: MC and AC cable are not allowed.

30A. On A2.52 at cafeteria commons on the RCP they show a 2x2 pattern with key note 13 on the plan. Keynote 13 calls for some type of large format ceiling system. There are other areas showing a 4x4 tile that is some type of large format ceiling system. What is a large format ceiling system? I can't find anything in the specs or drawings for this. Please get some clarification.

RESPONSE: Basis of design for the large format ceiling system is Optima by Armstrong. Specification information on large format ceiling system added to section 09 51 23 Acoustical Tile Ceiling via addendum.

30B. Can you find out what stud depth they want for wall types A, and F?

RESPONSE: Stud depth for these types of walls is indicated by the number listed on the wall tag on the floor plans. For example, room D113 contains the following wall types: A4 (4” stud), A8 (8” stud) & F8 (8” stud). Please note that 3-5/8” studs are an acceptable replacement for 4” studs.

30C. Why is wall types BO and BI on the partition schedule need to be 16 gage?

RESPONSE: These studs do NOT need to 16 gage. Will correct via addendum.

31A. Are there any restrictions on the use of diesel or gas equipment in the building? Our intention is to use a diesel mini excavator to dig the interior footers, a diesel skid steer loader to move spoils & gas power buggy to move spoils & concrete.

RESPONSE: Contractors shall comply with the indoor air quality plan and specification 01 50 10. At a maximum, NIOSH PEL shall not be exceeded and the contractor utilizing equipment shall provide means of ventilating all areas of work and/or providing special filtration of exhaust.

31B. On Attachment "A CERTIFIED MINORITY BUSINESS ENTERPRISE , UTILIZATION AND FAIR SOLICITATION AFFIDAVIT"
a. You exceed the required goal percentage
b. You exceed the African American -owned business goal percentage
c. You cannot find any Asian American – owned business involved in concrete work. There are testing people but that is being bone by others.
d. Do you check #1 or #2

RESPONSE: Box # 2 should be checked on the MBE Attachment "A" if you are asking for a partial waiver.

31C. When you are working in the interior of the building during the winter, will the heat still be on in that area?

RESPONSE: Temporary heat will be provided by the 15A Prime Contractor; however, all contractors are required to provide any additional heat and other measures inclusive of blankets and ad mixtures in order to perform their work. See scope item # 4 in the 3A Prime Contract Package.

31D. Are we required to have an independent Maryland Structural Engineer stamp the GLB underpinning drawings?

RESPONSE: Stamped drawings for underpinning are not required if the contractor follows the procedures outlined within the bid documents. Stamped drawings for underpinning would only be required if the contractor proposes alternative procedures.

31E Who does the slab demolition required for the 3A contractor to do the underpinning?

RESPONSE: Per 3A Prime Contract Package scope item # 11, "The Prime Contractor requiring demolition of concrete for under slab work shall locate any and all utilities within the concrete slab, provide all demolition, excavation, install their work and backfill entire excavation with stone, prep and place new concrete slab. " In this instance, the 3A Prime Contractor is requiring the demolition of the slab for his new work and will be required to provide slab demolition.

31F When an existing footer is removed & lowered for utilities who removes the existing footer & will the ends be squared off?

RESPONSE: The 3A Prime Contractor shall remove the existing footer.

31G Can masonry dowels in a slab be drilled & set with epoxy grout after the deck or slab is poured

RESPONSE: Dowels may be epoxied for non-bearing, non-shear interior walls on a thickened slab. See M/S3.02. Epoxy is not permitted for bearing walls or shear walls or walls on elevated deck.

31H When underpinning per J & K S3.05 is used for the installing a new utility pipe is the 3A contractor involved or is this done by Mechanical contractor?

RESPONSE: Demolition and installation of new work is to be provided by the 3A Prime Contractor

31J Infill of slab where flooring is removed is patched with Sika Level 225 is this done by the flooring contractor or the 3A contractor?

RESPONSE: Sika Level 225 is not in the specifications. Refer to the 3A Prime Contract Package scope item # 11

31K. Can you used excavation spoils for backfill in phases 1&2 or is this considered within the footprint of the building requiring a backfilling to be done with stone?

RESPONSE: This area may be backfilled with suitable soils as determined by geotechnical engineer. If no suitable soils are located on site, the Contractor shall provide stone at no cost to the owner

31L. TWF is labeled detail J/S302 in wall footing chart and F S400 on S2.05. What is TWF?

RESPONSE: TWF is “Thickened wall footing” The wall footing schedule should refer to M/S3.02

32. Please identify the following plumbing fixtures: Fixture along Column Line 14 plan east of CLASSROOM D114 on Sheet P4.04; Fixture in CTE TAM G128 on Sheet P4.07; Fixture plan north of Column Line J on Sheet P4.11.

RESPONSE: Fixture along Column Line 14 plan east of CLASSROOM D114 on Sheet P4.04: P-4A. Fixture in CTE TAM G128 on Sheet P4.07: P-4A. Fixture plan north of Column Line J on Sheet P4.11: P-4A.

33A. Section 084113 1.3.K specifies the storefront u-value as .65. In section 084413 the curtain wall u-value is specified as both .65 (1.3.K) and .38 (2.2.A.3.f). What is the required u-value for both storefront and curtain wall?

RESPONSE: Maximum U-factor for both Curtainwall and Storefront is to be 0.43 based on nominal size of 47.25” with two lites of glass.

33B. Section 084413 calls for a CRF of both 55 (1.3.J) and 66 frame/60 glass (2.2.A.3.g). Which is correct?

RESPONSE: Follow CRF requirement listed in 2.2.A.3.g, CRF 66 frame

33C. On sheets 3A.01-A3.04 there are a number of doors labeled with note 11 (aluminum door) but are noted as being hollow metal on the door schedule. Please confirm that the door schedule should be used.

RESPONSE: Utilize door schedule. Keynote 11 will be corrected via addendum.

33D. On 2/A3.02 there are a few elevations labeled as RE which do not show up on the window schedule. Should these be pre-glazed windows or storefront?

RESPONSE: Glazing labeled "RE" is existing assemblies that are to be removed and reinstalled. See legend on A3.01 thru A3.04. These windows are to be carefully removed during demolition and saved for reinstallation. This is required to permit the demolition and replacement of the existing masonry veneer.

33E. Are the sheet metal partitions shown on 4/A7.04 in the 8A scope?

RESPONSE: This scope shall be performed by the 8A Prime Contractor.

33F. Door T30 is a temporary door that on sheet A8.01 is labeled as being both fire rated and aluminum. Is this correct? If so, please provide a specification for this material and confirm which scope it belongs in.

RESPONSE: Door and frame at T30 should be hollow metal. Will correct via addendum. This scope shall be performed by the 1A Prime Contractor.

33G. Section 085113 2.4.A notes that insect screens should be located on the exterior without wickets for project-in windows. As shown on sheet A8.03 the operable windows will be hinged at the top. Is this correct that the windows are top-hinged project-in? Top hinged windows typically project-out which would require wickets on the screens.

RESPONSE: Windows that are top hinged should project out. Wickets on the screen are acceptable at project-out windows.

33H. On sheet A8.02 the highest numbered hollow metal frame is G30. On the door schedule however there are some frames labeled with 31, 32, and 33. Please provide elevations of these frames. There also appear to be some frames that are not used on the door schedule (21, 22, 24, 29, and 30).

RESPONSE: Frame types will be corrected via addendum

33J. Section 088000 2.2.E.1 notes that window, storefront, and curtain wall glass should be per 2.2.C which is not an insulated unit. Please confirm this is not correct and this glass should be per 2.2.D.

RESPONSE: Glazing for Aluminum windows, storefront and curtain walls should be per 2.2.D. Will correct via addendum.

33K. Section 088000 2.2.D notes that the typical vision glass on the project is to be laminated. Is this correct? Unless laminated glass is being used to achieve an STC rating that is not listed, laminated glass will be significantly more expensive than tempered glass. The same would go for the interior, 1/4" clear tempered would be much less expensive than 1/4" laminated and still achieve a safety rating.

RESPONSE: Proposed substitution for tempered glazing 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

33L. As currently written, are glass types 1C, 3, and 3A all the same?

RESPONSE: Correct.

33M Is the panel described on sheet A8.02 note 6A to be 1/4" thick? If so, should this be used at all interior frames, even where note 6 is used? A 1" panel would not be needed in a frame where 1/4" glass is being used above unless that is what is required.

RESPONSE: Note 6 and Note 6A are separate and should not be conflated. Note 6A is in reference to panels between exterior windows. See Detail 8 on A8.05 and Specification section 074213.13 Formed Metal Wall Panels Subparagraph 2.3, as amended by Addendum, attached. Note 6 does not require a 1" thick panel; 1/4" thick panels will be acceptable on interior frames with 1/4" glazing above.

34A Both the 1A General Trades and 16A Electrical packages are assigned Specification Section 116100 Theater and Stage Equipment. The 1A-65 and 16A -50 notes split this specification section between 1A and 16A. The qualified subcontractor will have to split his pricing to both the 1A and 16A, this could become a problem if we get two different qualified subcontractors who have low pricing to the 1A and 16A. Should this be assigned to the 16A entirely, the 1A's scope is the existing rigging and draperies and these are existing to remain.

RESPONSE: Scope Notes will be modified. See addenda.

34B. Section 116100 Theater And Stage Equipment paragraph 1.5.F requires naming the Subcontractor for this section in our bid, is this required on the HCPS bid form. The same paragraph reserves the right of the owner to reject the subcontractor, is there a list of owner pre-approved subcontractors available.

RESPONSE: List subcontractor on the bid form. There is no list of pre-approved subcontractors.

34C. The 1A General Trades is assigned all dumpsters for the project including the scope item 2A -55 sitework trash and debris. It is difficult to quantify the dumpsters for all of the project and even more difficult when the 2A is using the dumpsters. Could the CM establish an allowance for the 1A to carry in our bid with a final adjustment of the amount made at the end of the project for accounting.

RESPONSE: The intent is for the 2A Prime Contractor to utilize the dumpsters for specific trash/debris and not all demolition materials and/or soils. Please review the 2A Prime Contract Package. 1A bidders shall carefully review other bid packages to understand intent for dumpsters. The 1A Prime Contractor shall include in costs for all dumpsters as required per the 1A Contract Package.

34D Are the 1A General Trades provided dumpsters to be used for the Section 024119 Selective Structure Demolition debris.

RESPONSE: The 1A Package has all building demolition as part of their scope of work inclusive of removal of materials from site.

34E Clarify the specified requirement in the Section 096519 Resilient Tile Flooring paragraph 3.4.B that reads apply Section 035416 Hydraulic Cement Underlayment prior to the application of cement, in other words all resilient tile flooring in the project, new and existing slabs. Add Alternate No. 3 to the Base Bid – Self-Leveling Underlayment, reads the Base Bid scope for this is only in corridors within the area of renovation only and the Alternate No. 3 is only the existing to remain concrete slabs in rooms scheduled to receive resilient tile flooring.

RESPONSE: Intent is for hydraulic cement underlayment to be applied only to all renovation corridors in the base bid. Existing AND NEW Slabs under all other resilient flooring is to be flash patched with patching compound. Patching compound information will be added to specification section 035416 Hydraulic Cement Underlayment via addendum.

34F. Confirm that the 9A package has the labeled gypsum partition types for all of the rooms shown on drawings A0.54 and A0.55 Temporary Conditions.

RESPONSE: Confirmed. The 9A Prime Contractor shall provide all gypsum partitions associated with temporary conditions for occupiable areas. In general, the Prime Contractors responsible for new work are responsible for temporary measures regarding the same scope with the exception of temporary partitions acting as a barrier between construction and occupied areas which shall be provided by the 1A Prime Contractor in their entirety.

34G. Confirm that the 12A package has the finish carpentry and casework work for all of the rooms shown on drawings A0.54 and A0.55 Temporary Conditions.

RESPONSE: The 12A Prime Contractor shall provide this work. In general, the Prime Contractors responsible for new work are responsible for temporary measures regarding the same scope with the exception of temporary partitions acting as a barrier between construction and occupied areas which shall be provided by the 1A Prime Contractor in their entirety

35. Please concur that housekeeping pads in the Penthouses beneath the AHU's and OA Units are not required or otherwise direct us.

RESPONSE: Refer to keynotes M57 and M59 on sheets M4.06 through M4.10. Housekeeping pads under AHU's and OA Units in Penthouses are not required. Housekeeping pads are required in the Boiler Room, and are noted on Sheet M4.02.

36. Which package contractor is responsible to furnish and install Metal Panel at windows; Elevation Dwg Legend #7, and Door and Window Dwg Key Note #6 & 6A

RESPONSE: Please review Specification Section 01 02 00. The 7A Prime Contractor is responsible for Metal Wall Panels. Delineations of responsibility are defined in 01 02 00.

37. 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

RESPONSE: Proposed substitution for tempered glazing 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

A. CHANGES TO SPECIFICATIONS

- 01 02 00 ITE,S 3.a17 (1A - General Trades Contract Package), 3.B.45 (2A - Sitework Contract Package), 3.C.11 (3A - Concrete Contract Package), 3.D.14 (4A - Masonry Contract Package), 3.L.24 (15A - Mechanical/Plumbing Contract Package) and 3.M.18 (16A - Electrical Contract Package):
  - **REMOVE** the statement "All excavations within the footprint of the building shall be backfilled with stone." Replace with "All excavations within footprint of the EXISTING building shall be backfilled with stone."

- 01 02 00 3.A.65 (1A - General Trades Contract Package)
  - **REMOVE** item 3.A.65 (1A - General Trades Contract Package)

- 01 02 00 remove item 3.M.50 (16A - Electrical Contract Package)
  - **REPLACE** with "Contractor shall provide all Theater and Stage Equipment per contract drawings and specification section 11 61 00 – Theater and Stage. Equipment. Contractor shall provide specialty sub-contractors as required per Contract Documents.

- 01 02 00 item 3.B (2A - Sitework Contract Package)
  - **REMOVE** Specification Section 10 14 53 Traffic Signage.

- 01 02 00 Item 3.A (1A - General Trades Contract Package)
  - **REPLACE** "10 73 10.10 Prefabricated Aluminum Canopy" with "10 73 10.10 Aluminum Canopies"

- 01 02 00 Item 3.M.9 (16A - Electrical Contract Package)
  - **ADD** the following statement "Multiple panels each requiring their own power feed and connections shall be anticipated."

- 01 02 00 Item 3.L.21 (15A - Mechanical/Plumbing Contract Package)
  - **ADD** the following statement "The 15A Prime Contractor shall provide water meter required for the 12-Classroom Modular Building and all required connections. The 15A Prime Contractor shall anticipate multiple sanitary vertical drops to be tied in."

- Section 01 02 00 Item 3.B.20 (2A - Sitework Contract Package)
  - **REMOVE** "1500” Insert "750".

- Section 01 02 00
  - **REMOVE** Item 3.C.27 (3A - Concrete Contract Package) as follows: " 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.

- Section 01 02 00

- **ADD** Item 3.L.56 (15A - Mechanical/Plumbing Contract Package) as follows "Contractor shall remove existing, furnish and install new filters in HVAC units located within the 12-Classroom Modular Building every 3 months."

- Section 01 02 00 item 3.I (9E - Painting Contract Package)
  - **ADD** Specification Section 07 81 23 - Intumescent Fireproofing.

- Section 01 02 00 item 3.I.13 (9E - Painting Contract Package)
  - **ADD** the following statement: "Contractor shall provide all Intumescent Fireproofing."

- Section 01 02 00 Item 3.L.57 (15A - Mechanical/Plumbing Contract Package)
  - **ADD** the following statement: "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."

- Section 02 41 19 – Selective Demolition
  - **REPLACE** subparagraph 1.7.D.1 with the following:

    1. Lead paint is ~~not~~ listed within the report ~~but~~ **and** is anticipated to be encountered throughout the building. Contractor is to remove lead paint per EPA guidelines.

- Section 03 54 16 – Hydraulic Cement Underlayment
  - **REPLACE** section in its entirety with the attached

- Section 07 42 13.13 – Formed Metal Wall Panels
  - **REPLACE** section in its entirety with the attached

- Section 08 80 00 – Glazing
  - **REPLACE** Subparagraph 2.2.E.1 with the following:

    1. Aluminum Windows, Storefront, & Curtain wall:
       a. Exterior glazing to be IGUs per 088000.2.2.D.
       b. Interior glazing to be Laminated Safety Glazing per 088000.2.2.B & C
       c. See glazing schedules on A8.00 series drawings for locations of Vision Glass Type 1, Spandrel Glass, and Light Diffusing Glass.

- Section 09 51 23 – Acoustical Tile Ceilings
  - **ADD** Subparagraph 2.2.C as follows:

    C. Large Format Ceiling Panels
    1. Size: 48"x 48"
    2. Edge: Square,Trim Edge
    3. Material: Fiberglass with Acoustically transparent, factory painted membrane
    4. NRC: 0.95
    4. Surface Color: White
    5. Acceptable manufacturers and Products:
       a. Armstrong – Optima (Basis of design) or equivalent by;

b. CertainTeed
c. USG Interiors, Inc

- ❑ Section 20 13 10 – Pipe Treatment
  - **REVISE** PART 3 – CLOSED LOOP CHEMICAL TREATMENT, 3.1. Provide a 5-gallon pot feeder with 1" valved lines to pump suction/discharge piping in lieu of 3/4" valved and capped ports.
- ❑ Section 22 01 00 – Plumbing Specialties
  - **ADD** the following overflow scupper drains:
    OSD-2 – Mifab R1943 4" outlet downspout nozzle. All rough bronze body, threaded inlet and decorative face of wall flange and outlet nozzle, with removable stainless-steel screen.
    OSD-3 – Mifab R1943 6" outlet downspout nozzle. All rough bronze body, threaded inlet and decorative face of wall flange and outlet nozzle, with removable stainless-steel screen.
- ❑ Section 22 02 00 – Plumbing Fixtures, Fitting and Trim
  - **REVISE** the following fixtures:
    P-3 – URINAL – WALL-HUNG – STANDARD HEIGHT
    Zurn model Z5798.235.00 vitreous china, wall-hung, 0.125 GPF urinal with 3/4" top spud and concealed wall hanger brackets. Urinal flush valve shall be as follows:
    - Manual flush valve shall be Zurn model Z6003AV-ULF.

    P-3A – URINAL – WALL-HUNG – ADA HEIGHT
    Zurn model Z5798.235.00 vitreous china, wall-hung, 0.125 GPF urinal with 3/4" top spud and concealed wall hanger brackets. Mounting height shall be per ADA. Urinal flush valve shall be as follows:
    - Manual flush valve shall be Zurn model Z6003AV-ULF.
- ❑ Section 23 02 00 – HVAC Equipment
  - **REMOVE** CT-3 from PART 4 – COOLING TOWERS (CT-1, CT-2 & CT-3).
  - **ADD** PART 16 – AIR HANDLING UNITS 12A/B. See attached addendum specification 23 02 00 Part 16 – AIR HANDLING UNITS 12A/B.
- ❑ Section 26 32 13 – Emergency Engine Generator
  - **REVISE** paragraph 1.11 MAINTENANCE SERVICE. Provide 5 years in lieu of 2 years of maintenance.
- ❑ Section 28 10 00 – Access Controls and Intrusion Detection
  - **REPLACE** section. See addendum specification 28 10 00 – ACCESS CONTROLS AND INTRUSION DETECTION.
- ❑ Section 28 20 00 – Video Surveillance System
  - **REPLACE** section. See addendum specification 28 20 00 – VIDEO SURVEILLANCE SYSTEM.

C. CHANGES TO DRAWINGS

1. **CIVIL DRAWINGS**

- ❑ REPLACE SHEETS C-1 thru C-11 with the attached.

2. **ARCHITECTURAL DRAWINGS**

- ❑ Sheet A2.01 – FLOOR PLAN - FLOOR 1 - AREA A
  - **REVISE** Dimensioning as shown on sketch AD-A07
- ❑ Sheet A3.01 – BUILDING ELEVATION - SOUTH
  - **REVISE** keynote 11 to read “DOOR, REFER TO DOOR SCHEDULE”
- ❑ Sheet A3.02 – BUILDING ELEVATION - EAST
  - **REVISE** keynote 11 to read “DOOR, REFER TO DOOR SCHEDULE”
- ❑ Sheet A3.03 – BUILDING ELEVATION - NORTH
  - **REVISE** keynote 11 to read “DOOR, REFER TO DOOR SCHEDULE”
- ❑ Sheet A3.04 – BUILDING ELEVATION - WEST
  - **REVISE** keynote 11 to read “DOOR, REFER TO DOOR SCHEDULE”
- ❑ Sheet A7.00 – WALL TYPES
  - **REMOVE** reference to stud gauge from metal stud note on type B wall.
- ❑ Sheet A8.00 - DOOR SCHEDULE - FIRST FLOOR - AREA A – F
  - **REVISE** door schedule as shown on re-issued sheet, attached.
- ❑ Sheet A8.01 - DOOR SCHEDULE - FIRST & SECOND FLOOR, TEMPORARY AND ALTERNATES
  - **REVISE** door schedule entry for T30 to read as follows:

    T30, Stair 2, Corridor, 2, 3’-0” x 7’-0” x 1 3/4"; D; HM; M6; HM; H2; J2; 60 min; 20D

3. THEATER -AV DRAWINGS

- ❑ None

4. STRUCTURAL DRAWINGS

- ❑ Sheet S2.15 – PROPOSED LOW ROOF FRAMING PLAN – AREA G
  - **REVISE** locations and lintels of gym doors as shown on sketches AD-S04 & AD-S05

5. MECHANICAL DRAWINGS

- ❑ Sheet M1.01 – FIRST FLOOR PLAN – MECHANICAL DEMOLITION PHASING
  - **ADD** Callout Box 4-M2.10 to Existing Corridor adjacent to Existing Science Wing/Media Center. See addendum drawing AD-M19.
  - **ADD** Callout Box 3-M2.11 to Existing Main Entry Lobby. See addendum drawing AD-M18.
- ❑ Sheet M2.10 – TEMPORARY CONDITIONS – MECHANICAL

- **ADD** FIRST FLOOR PLAN – CORRIDOR TEMP CONDITIONING – MECHANICAL view to sheet. See addendum drawing AD-M19.

- ❑ Sheet M2.11 – TEMPORARY CONDITIONS – MECHANICAL
  - **ADD** FIRST FLOOR PLAN – LOBBY FAN COIL TEMPORARY PIPING – MECHANICAL view to sheet. See addendum drawing AD-M17.
- ❑ Sheet M3.02 – FIRST FLOOR PLAN – AREA B – MECHANICAL
  - **REVISE** diffuser type in TV STUDIO B129. Provide S-8 in lieu of S-7, typical of 4.
- ❑ Sheet M3.03 – FIRST FLOOR PLAN – AREA C – MECHANICAL
  - **ADD** Manual Volume Dampers to AHU-2 return duct. See addendum drawing AD-M15.
  - **REVISE** diffuser type in CU SHOP C118. Provide S-8 in lieu of S-7, typical of 2.
  - **ADD** Keynote A67 to ductwork in MDF C112.
- ❑ Sheet M3.08 – FIRST FLOOR PLAN – AREA H – MECHANICAL
  - **REPLACE SHEET** M3.08. **ADD** cooling-only VAV to serve ST H123 and ELEC H124. See replacement sheet M3.08. **REVISE** diffuser type in CORRIDOR H126. Provide S-7 in lieu of S-8, typical of 1. **REVISE** diffuser type in STAGE/WINGS H131. Provide S-12 in lieu of S-11, typical of 8.
- ❑ Sheet M4.06 – ENLARGED PLANS – MECHANICAL
  - **ADD** Manual Volume Dampers to AHU-8A return duct. See addendum drawing AD-M14.
  - **ADD** Manual Volume Dampers to AHU-8B return duct. See addendum drawing AD-M14.
- ❑ Sheet M5.01 – MECHANICAL PIPING SCHEMATICS
  - **ADD** Pot Feeder to CHILLED WATER PIPING SCHEMATIC. See addendum drawing AD-M20.
- ❑ Sheet M5.02 – MECHANICAL PIPING SCHEMATICS
  - **ADD** Pot Feeder to HOT WATER PIPING SCHEMATIC. See addendum drawing AD-M21.
- ❑ Sheet M5.03 – MECHANICAL PIPING SCHEMATICS
  - **ADD** Water Treatment Control Panel and sampling tubing to CONDENSER WATER PIPING SCHEMATIC. See addendum drawing AD-M22.
- ❑ Sheet M6.07 – TEMPERATURE CONTROLS SCHEMATICS
  - **REVISE** RADIANT PANEL/ELECTRIC HEATER Points List. Use ALARM in lieu of TREND.
- ❑ Sheet M6.08 – TEMPERATURE CONTROLS SCHEMATICS
  - **REVISE** the SINGLE ZONE VAV AIR HANDLING UNITS (AHU-1, 2, 3, 6A/B) Control Sequence, 7.:

    7. IN ECONOMIZER MODE: WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 65°F (ADJ.), THE OA ECONOMIZER DAMPER, RELIEF AIR DAMPER AND THE RETURN AIR DAMPER SHALL MODULATE AS REQUIRED TO MAINTAIN 55°F (ADJ.) DISCHARGE AIR TEMPERATURE. THE RELIEF FAN SHALL START AND OPERATION SHALL BE PROVEN VIA VFD **CURRENT SENSING RELAYS**. **WHEN THE UNIT IS OPERATING IN ECONOMIZER MODE, MODULATE RELIEF FAN SPEED TO MAINTAIN RELIEF AIR CFM EQUAL TO 90% (ADJ.) OF OUTSIDE AIR CFM. THE RELIEF FAN SHALL NOT START UNTIL OUTSIDE AIR DAMPER IS 30%**

OPEN (ADJ.). NORMALLY UNDER THIS CONDITION, THE CHILLED WATER 2-WAY CONTROL VALVE SHALL BE CLOSED, HOWEVER, IF FURTHER COOLING IS REQUIRED, IT SHALL MODULATE AS REQUIRED TO MAINTAIN A DISCHARGE AIR TEMPERATURE SETPOINT.

- **ADD** ECM Speed as an Analogue Output (AO) to the AHU-12A/B (SINGLE ZONE) Points List.

- Sheet M6.09 – TEMPERATURE CONTROLS SCHEMATICS
  - **REVISE** the MULTIZONE VAV AIR HANDLING UNITS Control Sequence, 7.:

    7. IN ECONOMIZER MODE: WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 65°F (ADJ.), THE OA ECONOMIZER DAMPER, RELIEF AIR DAMPER AND THE RETURN AIR DAMPER SHALL MODULATE AS REQUIRED TO MAINTAIN 55°F (ADJ.) DISCHARGE AIR TEMPERATURE. THE RELIEF FAN SHALL START AND OPERATION SHALL BE PROVEN VIA VFD **CURRENT SENSING RELAYS**. **WHEN THE UNIT IS OPERATING IN ECONOMIZER MODE, MODULATE RELIEF FAN SPEED TO MAINTAIN RELIEF AIR CFM EQUAL TO 90% (ADJ.) OF OUTSIDE AIR CFM. THE RELIEF FAN SHALL NOT START UNTIL OUTSIDE AIR DAMPER IS 30% OPEN (ADJ.).** NORMALLY UNDER THIS CONDITION, THE CHILLED WATER 2-WAY CONTROL VALVE SHALL BE CLOSED, HOWEVER, IF FURTHER COOLING IS REQUIRED, IT SHALL MODULATE AS REQUIRED TO MAINTAIN A DISCHARGE AIR TEMPERATURE SETPOINT.
  - **REVISE** FREEZER/COOLER HI-LIMIT ALARM Points List. Use ALARM in lieu of TREND.
- Sheet M6.10 – TEMPERATURE CONTROLS SCHEMATICS
  - **REVISE** FAN COIL UNIT Points List. Use ALARM in lieu of TREND.
- Sheet M6.12 – TEMPERATURE CONTROLS SCHEMATICS
  - **REMOVE** the EA PRESS SETPT graphic from the OUTSIDE AIR UNIT (OA-5A) controls schematic.
  - **REMOVE** the EA PRESS graphic from the OUTSIDE AIR UNIT (OA-5A) controls schematic.
  - **REMOVE** the SUM OF CONNECTED EXHAUST graphic from the OUTSIDE AIR UNIT (OA-5A) controls schematic.
  - **ADD** AFMS with EA CFM graphic to the Exhaust Air discharge on the OUTSIDE AIR UNIT (OA-5A) controls schematic. See addendum drawing AD-M16.
  - **ADD** AFMS with OA CFM graphic to the Outside Air inlet on the OUTSIDE AIR UNIT (OA-5A) controls schematic. See addendum drawing AD-M16.
  - **REMOVE** the EA PRESS SETPT graphic from the OUTSIDE AIR UNIT (OA-5B) controls schematic.
  - **REMOVE** the EA PRESS graphic from the OUTSIDE AIR UNIT (OA-5B) controls schematic.
  - **REMOVE** the SUM OF CONNECTED EXHAUST graphic from the OUTSIDE AIR UNIT (OA-5B) controls schematic.
  - **ADD** AFMS with EA CFM graphic to the Exhaust Air discharge on the OUTSIDE AIR UNIT (OA-5B) controls schematic. See addendum drawing AD-M16.
  - **ADD** AFMS with OA CFM graphic to the Outside Air inlet on the OUTSIDE AIR UNIT (OA-5B) controls schematic. See addendum drawing AD-M16.

- Sheet M7.03 – MECHANICAL SCHEDULES
  - **ADD** the following Remark to the DEDICATED OUTDOOR AIR SYSTEM SCHEDULE:

    13. PROVIDE OA-1, 2, 3, 4, AND 5A/B WITH COMBINATION AIRFLOW MEASURING STATION/MODULATING DAMPER AT UNIT EXHAUST AIR DISCHARGE AND OUTDOOR AIR INTAKE. REFER TO SPECIFICATIONS.
- Sheet M7.04 – MECHANICAL SCHEDULES
  - **REVISE** the SPLIT SYSTEM OUTDOOR UNIT SCHEDULE and SPLIT SYSTEM INDOOR UNIT SCHEDULE. See addendum drawing AD-M13.
- Sheet M7.05 – MECHANICAL SCHEDULES
  - **ADD** the following Remark to the REGISTERS, GRILLES, AND DIFFUSERS Schedule:

    12. PROVIDE WITH FACE-ADJUSTABLE AIR SCOOP DAMPER/EXTRACTOR.
  - **ADD** Remark #12 to S-8, S-9, S-12, and S-13 on the REGISTERS, GRILLES, AND DIFFUSERS Schedule.
  - **REMOVE** Remark #6 from S-8, S-9, S-12, and S-13 on the REGISTERS, GRILLES, AND DIFFUSERS Schedule.
  - **REMOVE** Remark #6 from R-9, R-11, R-13, R-16, R-17, and R-18 on the REGISTERS, GRILLES, AND DIFFUSERS Schedule.

6. <u>PLUMBING DRAWIGS</u>

- Sheet P1.00 – PLUMBING LEGEND AND DETAILS
  - **REVISE**: All floor drains, FD-1 thru FD-4 shall have trap primer connection.
- Sheet P1.01 – PLUMBING DETAILS
  - **REPLACE SHEET:** Added details, “Floor drain trap primer piping schematic”, and “Boiler room trap primer piping schematic”
- Sheet P1.02 – PLUMBING DETAILS
  - **REPLACE SHEET:** Added detail “Modular building water entry and meter detail”. Moved “Exterior gas pressure regulator detail” from sheet P1.01, to P1.02.
- Sheet P2.01 – FIRST FLOOR PLAN – AREA A – UNDERSLAB PLUMBING
  - **REVISE:** existing storm piping adjacent to column line 31, routes plan north, not plan south to outside building footprint per existing plans.
- Sheet P2.02 – FIRST FLOOR PLAN – AREA B – UNDERSLAB PLUMBING
  - **REVISE:** Provide phasing note, adjacent to column 16 at the existing toilet room groups “Restroom groups to be demolished in phase 3. Maintain in operation, the existing underground sanitary during phase 1.”
- Sheet P2.03 – FIRST FLOOR PLAN – AREA C – UNDERSLAB PLUMBING
  - **REPLACE SHEET:** Added drawings note, and added demolition of existing storm piping. Clarified demolition of existing cold water piping.
- Sheet P2.05 – FIRST FLOOR PLAN – AREA E – UNDERSLAB PLUMBING
  - **REVISE:** Provide phasing note, adjacent to column NN “Maintain operation of sanitary piping during demolition work of phase 3 to remain in operation for phase 6.”
- Sheet P3.01 – FIRST FLOOR PLAN – AREA A – PLUMBING

- **REVISE**: Storm piping existing the building, plan east, is 15'' in lieu of 12''.

- ❑ Sheet P3.03 – FIRST FLOOR PLAN – AREA C – UNDERSLAB PLUMBING
  - **REPLACE SHEET:** incoming water service size from 4" to 6". Refer to domestic water service entrance detail p1.01 for continuation. Revised storm piping.
- ❑ Sheet P3.04 – FIRST FLOOR PLAN – AREA D – UNDERSLAB PLUMBING
  - **REPLACE SHEET:** Added tag notes and phasing notes.
- ❑ Sheet P3.06 – FIRST FLOOR PLAN – AREA F – PLUMBING
  - **REVISE**: Modify sanitary piping to match new location of commercial washers and dryers.
- ❑ Sheet P3.07 – FIRST FLOOR PLAN – AREA G – UNDERSLAB PLUMBING
  - **REPLACE SHEET:** Modified 15'' SS routing.
- ❑ Sheet P3.09 – FIRST FLOOR PLAN – AREA G – UNDERSLAB PLUMBING
  - **REPLACE SHEET:** Modified a pipe sleeve. Added clarification to Radon Reduction Pit Detail.
- ❑ Sheet P4.01 – FIRST FLOOR PLAN – AREA A – PLUMBING
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.
- ❑ Sheet P4.02 – FIRST FLOOR PLAN – AREA B – PLUMBING
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.
- ❑ Sheet P4.03 – FIRST FLOOR PLAN – AREA C – PLUMBING
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.
- ❑ Sheet P4.04 – FIRST FLOOR PLAN – AREA D – PLUMBING
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.
- ❑ Sheet P4.05 – FIRST FLOOR PLAN – AREA E – PLUMBING
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.
- ❑ Sheet P4.06 – FIRST FLOOR PLAN – AREA F – PLUMBING
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system. Modified location of commercial washers and dryers. Added 2'' cw for Concession building alternate.
- ❑ Sheet P4.07 – FIRST FLOOR PLAN – AREA G – PLUMBING
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.
- ❑ Sheet P4.08 – FIRST FLOOR PLAN – AREA H – PLUMBING
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.
- ❑ Sheet P4.09 – SECOND FLOOR PLAN – AREA A – PLUMBING
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.
- ❑ Sheet P4.10 – SECOND FLOOR PLAN – AREA B & C – PLUMBING
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.
- ❑ Sheet P5.01 – ENLARGED KITCHEN PLUMBING NEW WORK
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.

- Sheet P5.02 – ENLARGED BOILER ROOM PLAN
  - **REPLACE SHEET**: Modified overflow siphonic roof drain system.

7. FIRE PROTECTION DRAWINGS

- None

8. ELECTRICAL DRAWINGS

- Sheet E1.01 – First Floor Demolition Plan – Area A – Lighting/Power
  - **ADD** – Existing IR Repeater for site signage located on plan south exterior wall of cafeteria shall be relocated. Remove, protect and reinstall in new location on new work plans.
- Sheet E1.02 – First Floor Demolition Plan – Area B – Lighting/Power
  - **ADD** – Existing site signage control rough-in and devices located in the assistant Principals Office shall be relocated. Remove, protect and reinstall in new location on new work plans.
- Sheet E1.03 – First Floor Demolition Plan – Area C – Lighting/Power
  - **ADD** – Existing studio light fixtures located on steel piping support system and support system in the TV Studio shall be relocated to new TV Studio B129. Remove, protect and reinstall in new location indicated on new work plans. Coordinate exact requirements and conditions prior to construction to relocate all studio light fixtures and support system to new location and provide a complete system. Existing studio lighting controls shall be relocated to new TV Studio B129. Remove, protect and reinstall in new location indicated on new work plans. Coordinate all requirements prior to construction.
- Sheet E1.06 – First Floor Demolition Plan – Area G – Lighting/Power
  - **ADD** – Existing main gym has six goals with motors for controls. Electrical contractor shall remove power and all associated devices from each goal complete. Coordinate exact requirements with existing conditions prior to construction.
- Sheet E2.01 – First Floor Plan – Area A – Lighting
  - **REVISE** – Fixture “W2” outside Vestibule A100 illuminating entrance canopy for egress shall be a 44’ continuous run along the structural support of canopy.
- Sheet E2.02 – First Floor Plan – Area B - Lighting
  - **REPLACE SHEET**
    - **REVISE** – All light fixtures in Innovation Lab B128 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
    - **REVISE** – All light fixtures in Speech B24 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
    - **REVISE** – All light fixtures in G&T B125 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.

- **REVISE** – All light fixtures in ALS Resource B121 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – Light fixtures and controls added to TV Studio B129. Refer to revision clouds for additional information.

- Sheet E2.03 – First Floor Plan – Area C - Lighting
  - **REVISE** – All light fixtures in Classroom C137 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Classroom C135 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Classroom C134 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Classroom C133 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Classroom C132 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Classroom C130 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Classroom C129 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Classroom C128 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Classroom C126 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- Sheet E2.04 – First Floor Plan – Area D - Lighting
  - **REVISE** – All light fixtures in Science Lab 1 D115 on normal lighting branch power circuit shall be circuited to panelboard “NH1B” in lieu of “NH1D”. Route three (3) #12 conductors in 3/4" conduit to new 20A/1P breaker as required. All light fixtures including exit signs in Science Lab 1 D115 on Life-Safety lighting branch power circuit shall be circuited to panelboard “LSH1B” in lieu of “LSH1D”. Route three (3) #12 conductors in 3/4" conduit to new 20A/1P breaker as required.
  - **REVISE** – All light fixtures in Classroom D114 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Classroom D113 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.

- **REVISE** – All light fixtures in Classroom D112 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Science Lab 1 D115 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Science Lab 2 D116 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Science Lab 3 D120 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Science Lab 4 D121 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Science Lab 5 D124 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Science Lab 6 D125 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Science Lab 7 D126 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Science Lab 8 D127 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Science Lab 9 D133 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Science Lab 10 D134 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **ADD** – Emergency relay to Vestibule D123. Make connection to normal and emergency power serving space.
- **ADD** – Emergency relay to Art Studio 1 D103. Make connection to normal and emergency power serving space.
- **ADD** – Emergency relay to Girls D110. Make connection to normal and emergency power serving space.
- **ADD** – Vacancy sensor in ceiling of T 12 E102.
- **REVISE** – Switch in T 12 E102 to be changed to low-voltage switch (LV1).
- **REVISE** – Location of vacancy sensor switch in ALS ST E102A to wall on other side of door.
- **ADD** – Emergency relay to ALS Resource E104. Make connection to normal and emergency power serving space.

- Sheet E2.05 – First Floor Plan – Area E & F - Lighting
  - **REVISE** – All light fixtures in CTE Career Academy F101 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in CTE Career Academy F105 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Classroom E101 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in ALS Resource E104 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in CTE Engineering/Technology E105 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Fabrication Lab E108 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in CTE Engineering/Technology E113 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in CTE Engineering/Technology E110 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in Health Education E117 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in CTE Career Academy C124 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures in CTE Career Academy C127 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **ADD** – Addition occupancy sensor in ceiling over toilets in Boys E121.
  - **REVISE** – Location of occupancy sensor over sinks in Boys E121 to move out further into open space.
  - **ADD** – Additional occupancy sensor in ceiling over sinks in Girls E118.
  - **REVISE** – Location of occupancy sensor over toilets in Girls E118 to be centered over toilets.
  - **ADD** – Exit sign over 2nd door in Science Lab 1 D115. Connect to emergency circuit serving space.
  - **ADD** – Emergency relay to Science Lab 1 D115. Make connection to normal and emergency power serving space.

- **ADD** – Two zone low-voltage dimming switch (LV2) adjacent to second door in Science Lab 1 D115.
- **ADD** – Emergency relay to Classroom E101. Make connection to normal and emergency power serving space.
- **REVISED** – Tagged noted L3. To state “Provide tunable white lighting controls for light fixtures in this area.”

- Sheet E2.06 – First Floor Plan – Area G - Lighting
  - **REVISE** – Twelve light fixtures located near the windows in CTE FACS G127 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – Six light fixtures located near the windows in CTE TAM G128 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – Eight light fixtures located near the windows in Classroom G131 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – All light fixtures located in Admin Office G134 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – Ten light fixtures located near the windows in Classroom G135 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
  - **REVISE** – Fixture “W2” outside Vestibule G135 illuminating entrance canopy for egress shall be a 44’ continuous run along the structural support of canopy.
- Sheet E2.07 – First Floor Plan – Area H – Lighting
  - **REPLACE SHEET** - Revision made to lighting in Auditorium and Classrooms. Refer to revision clouds for changes.
    - **REVISE** – All light fixtures in Choral H109 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
    - **REVISE** – All light fixtures in Electronics Lab H100 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
    - **REVISE** – All light fixtures in Instrumental H102 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
    - **REVISE** – All light fixtures in Ensemble H104 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
    - **REVISE** – All light fixtures in Drama H112 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- Sheet E2.11 – Second Floor Plan – Area A, B, and C - Lighting

- **REVISE** – Six light fixtures near windows in Teacher Planning 3 C204 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – Six light fixtures near windows in Classroom C205 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom C205 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom C206 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom C206 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom C207 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom C207 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom B215 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B215 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom B216 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B216 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom B217 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B217 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in ED Resource Room B201 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B216 shall have two zones for lighting; “Zone a” shall be the two fixtures closest to teaching wall and the remaining five fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom B220 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B220 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom B221 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B221 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.

- **REVISE** – Six light fixtures near windows in Classroom A220 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A220 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom A219 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A219 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom A218 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A218 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom A217 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A217 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – All light fixtures in Classroom A216 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A216 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Teacher Planning 4 A214 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – All light fixtures in Classroom A212 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A212 shall have two zones for lighting; “Zone a” shall be the four fixtures closest to teaching wall and the remaining eight fixtures shall be “Zone b”.
- **REVISE** – All light fixtures in Classroom A211 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A211 shall have two zones for lighting; “Zone a” shall be the four fixtures closest to teaching wall and the remaining eight fixtures shall be “Zone b”.
- **REVISE** – All light fixtures in Classroom A208 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A208 shall have two zones for lighting; “Zone a” shall be the four fixtures closest to teaching wall and the remaining eight fixtures shall be “Zone b”.
- **REVISE** – All light fixtures in Classroom A207 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A207 shall have two zones for lighting; “Zone a” shall be the four fixtures closest to teaching wall and the remaining eight fixtures shall be “Zone b”.

- **REVISE** – All light fixtures in Classroom A204 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A204 shall have two zones for lighting; “Zone a” shall be the four fixtures closest to teaching wall and the remaining eight fixtures shall be “Zone b”.
- **REVISE** – All light fixtures in Classroom A203 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom A203 shall have two zones for lighting; “Zone a” shall be the four fixtures closest to teaching wall and the remaining eight fixtures shall be “Zone b”.
- **REVISE** – All light fixtures in Classroom B208 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B208 shall have two zones for lighting; “Zone a” shall be the four fixtures closest to teaching wall and the remaining seven fixtures shall be “Zone b”.
- **REVISE** – All light fixtures in Classroom B209 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B209 shall have two zones for lighting; “Zone a” shall be the four fixtures closest to teaching wall and the remaining eight fixtures shall be “Zone b”.
- **REVISE** – All light fixtures in Classroom B212 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B212 shall have two zones for lighting; “Zone a” shall be the four fixtures closest to teaching wall and the remaining eight fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom B213 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B213 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom B214 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom B214 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Six light fixtures near windows in Classroom C201 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction. Classroom C201 shall have two zones for lighting; “Zone a” shall be the three fixtures closest to teaching wall and the remaining six fixtures shall be “Zone b”.
- **REVISE** – Four light fixtures near windows in Classroom C201 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.
- **REVISE** – Eight light fixtures near windows in Classroom C201 shall have integral daylight sensors. Refer to Elec – Luminaire Schedule for additional information. Coordinate exact requirements with manufacturer prior to construction.

- Sheet E3.01 – First Floor Plan – Area A – Power
  - **ADD** – Existing site signage control rough-in and devices shall be located in the assistant Principals Office A117 near desk at 18” CL AFF. Final location shall be determined by

School prior to installation. Electrical contractor shall provide rough-in as required for connections to IR system for signage controls. Relocate all existing devices and match existing conduit and conductors as required to provide a fully operational system.

- Sheet E3.04 – First Floor Plan – Area D - Power
  - **REVISE** – All receptacles circuits (9 total) in Science Lab 1 D115 shall be served from panelboard “NL1B” in lieu of “NL1D2”. Route three (3) #10 conductors in 3/4" conduit to new 20A/1P breaker as required. AV circuit feeding projector, teachers’ desk, and AV cabinet shall be served from panelboard “NL1B” in lieu of “NL1D2”. Route three (3) #10 conductors in 3/4" conduit to new 20A/1P breaker as required. HVAC equipment FC-16 shall be fed from panelboard “NL1B” in lieu of “ML1D”. Route three (3) #10 conductors in 3/4" conduit to new 20A/1P breaker as required.
  - **REVISE** – UH-1 Located in Mower C121 shall be circuited to panelboard “ML1C” in lieu of “NL1D”.
- Sheet E3.06 – First Floor Plan – Area G – Power
  - **ADD** – Electrical contractor shall provide rough-in and stub-out for touch pad for gym controls. Route three (3) #12 conductors in 3/4" conduit to 20A/1P breaker in panelboard “NL1G”. Provide one data drop for touch pad. Coordinate requirements with specifications 116623 prior to construction.
  - **ADD** – Each basketball goal, goal motor and height adjuster, in the Main Gym G100 shall be controlled through touch pad located on wall adjacent to Shower G122.
  - **ADD** – Provide power and controls to curtain divider in Main Gym G100. Electrical contractor shall mount 4” square junction box with 3’-0” of winch location. Provide 120V/20A motor rated snap switch for local disconnecting means. Route three (3) #10 conductors in 3/4" conduit to 20A/1P breaker in panelboard “NL1G”. Coordinate location of winch with divider curtain manufacturer prior to construction. Electrical contractor shall utilize touch pad controller for divider curtain controls. Coordinate all requirements with manufacturer prior to construction.
- Sheet E7.00 – Details – Electrical
  - **REPLACE SHEET** – Revisions to Luminaire schedule.
- Sheet E7.06 – Details – Electrical
  - **REPLACE SHEET** – AV details added.
- Sheet E9.02 – Power Distribution Riser Diagram – New Work
  - **REPLACE SHEET** – Additional information added and coordination for phasing.
- Sheet UE1.1 – Alternate Site Plan – Electrical
  - **ADD** – Existing site signage and associated devices shall be relocated. Remove, protect, and reinstall in new location indicated on new work plans. Coordinate exact requirements prior to construction to prior a fully operational system after relocation.
- Sheet UE1.1 – Alternate Site Plan – Electrical
  - **REPLACE SHEET**
    - **REVISE** – Additional information added for modular classrooms, clouded.
    - **REVISE** – Location of existing site signage IR repeater shown, clouded.
- Sheet UE2.0 – Alternate Site Plan – Electrical
  - **REPLACE SHEET**

- **REVISE** – Refer to enlarged view for Press box requirements, clouded.

D. ATTACHMENTS

1. ADDENDUM DRAWINGS

- ❑ AD-A07
- ❑ AD-S04 thru AD-S05
- ❑ AD-M13 thru AD-M22
- ❑ C-1
- ❑ C-2
- ❑ C-3
- ❑ C-4
- ❑ C-5
- ❑ C-6
- ❑ C-7
- ❑ C-8
- ❑ C-9
- ❑ C-10
- ❑ C-11
- ❑ A8.00
- ❑ M3.08
- ❑ P1.01
- ❑ P1.02
- ❑ P2.03
- ❑ P3.03
- ❑ P3.04
- ❑ P3.07
- ❑ P3.09
- ❑ P4.01
- ❑ P4.02
- ❑ P4.03
- ❑ P4.04
- ❑ P4.05
- ❑ P4.06
- ❑ P4.07
- ❑ P4.08

- ❑ P4.09
- ❑ P4.10
- ❑ P5.01
- ❑ P5.02
- ❑ E2.02
- ❑ E2.07
- ❑ E7.00
- ❑ E7.06
- ❑ E9.02
- ❑ UE1.1
- ❑ UE2.0

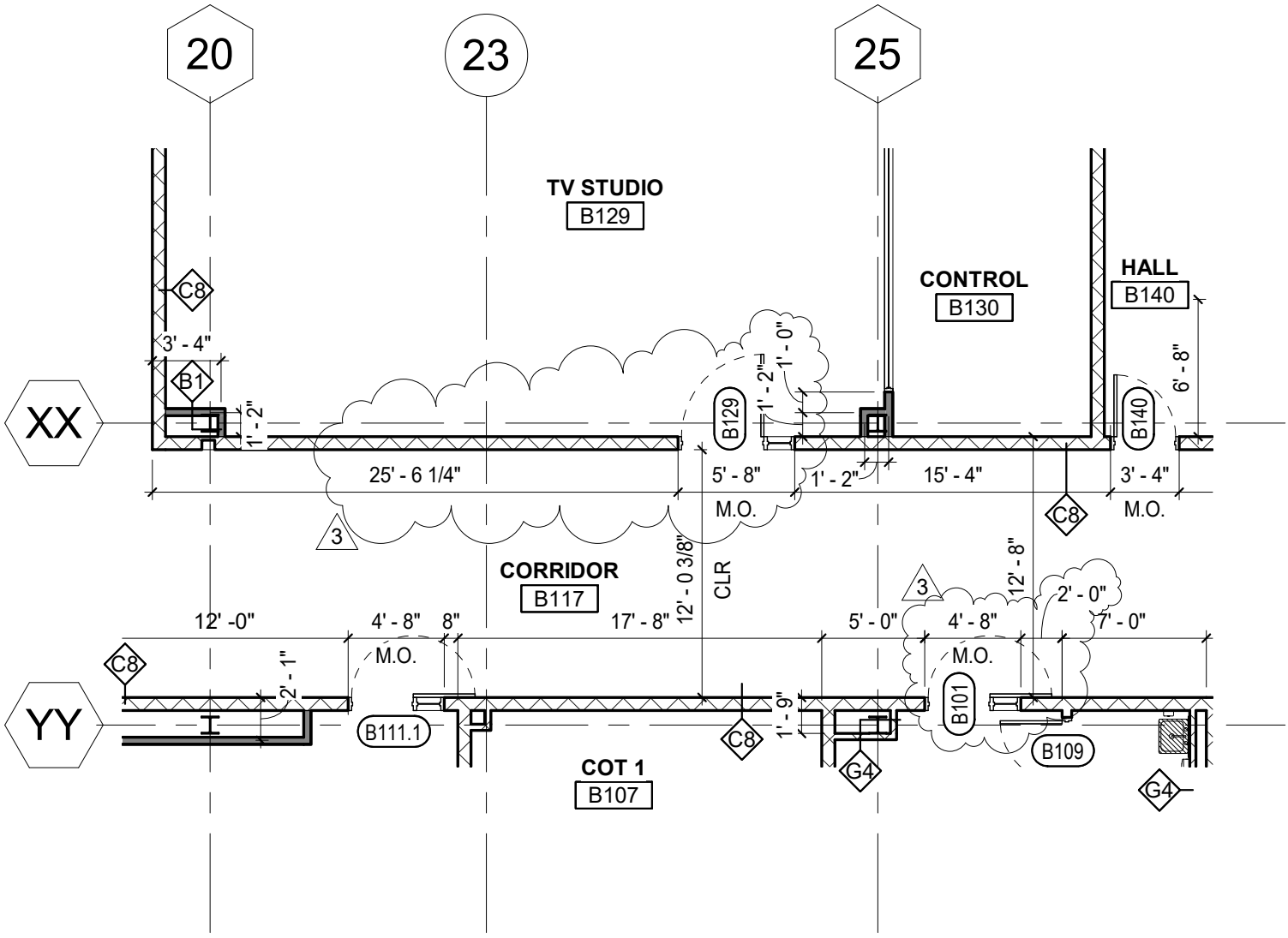
2. ADDENDUM SPECIFICATIONS

- ❑ 03 54 16 – HYDRAULIC CEMENT UNDERLAYMENT
- ❑ 07 42 13.13 – FORMED METAL WALL PANELS
- ❑ 23 02 00 – Part 16 AIR HANDLING UNITS 12A/B
- ❑ 28 10 00 – ACCES CONTROLS AND INTRUSION DETECTION
- ❑ 28 20 00 – VIDEO SURVEILLANCE SYSTEM

3. OTHER

- ❑ None

END OF ADDENDUM NO. 3



1 / A2.02 AREA B - FIRST FLOOR

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

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REF SHT NO.: A2.02

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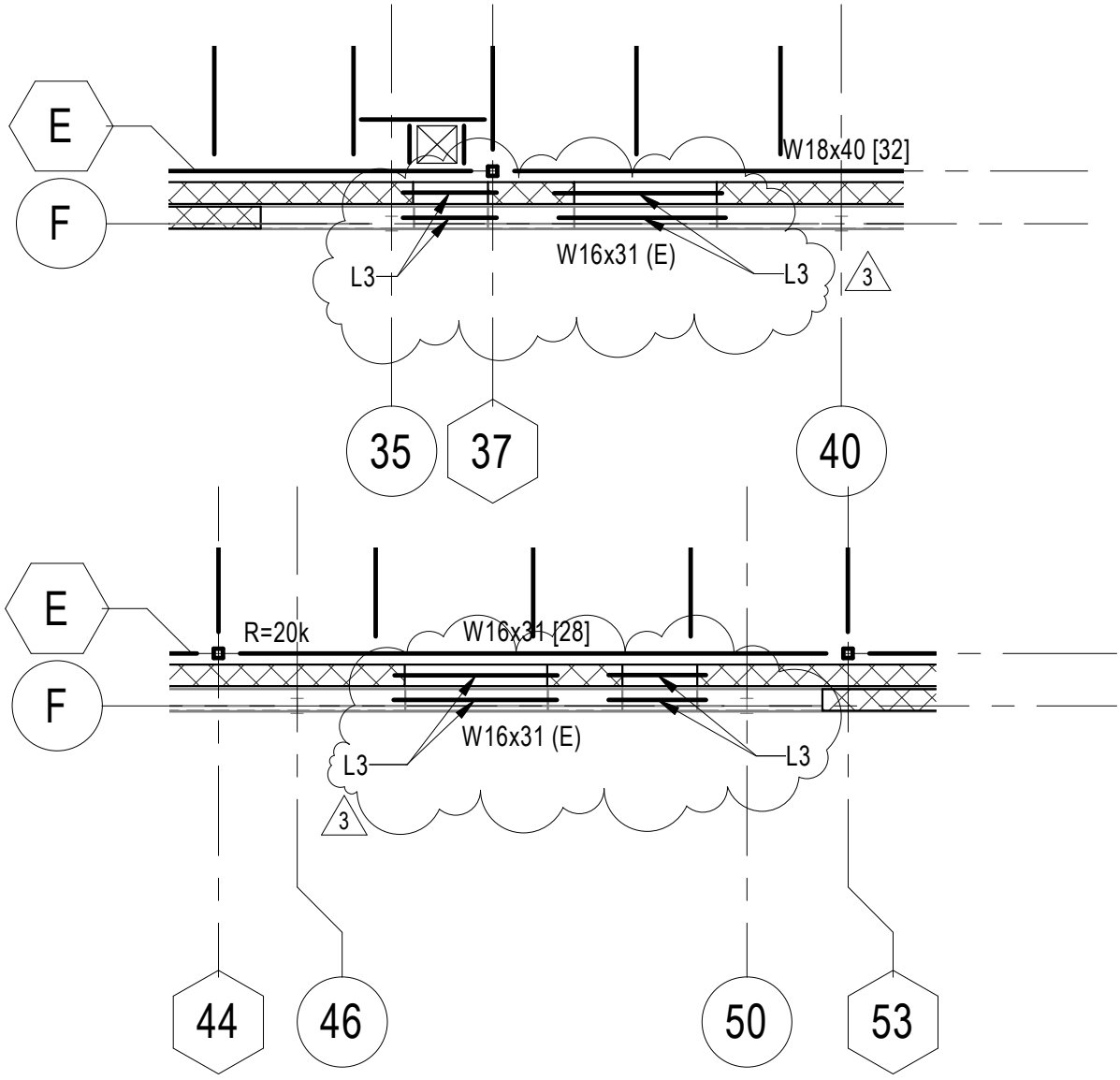
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE:	**1/8" = 1'-0"**
ADDENDUM:	**3**
DATE:	**3/12/2020**

ITEM:

AREA B DIMENSIONING REVISIONS

AD-A07



PARTIAL LOW ROOF FRAMING PLAN - AREA G

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

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REF SHT NO.: S2.15

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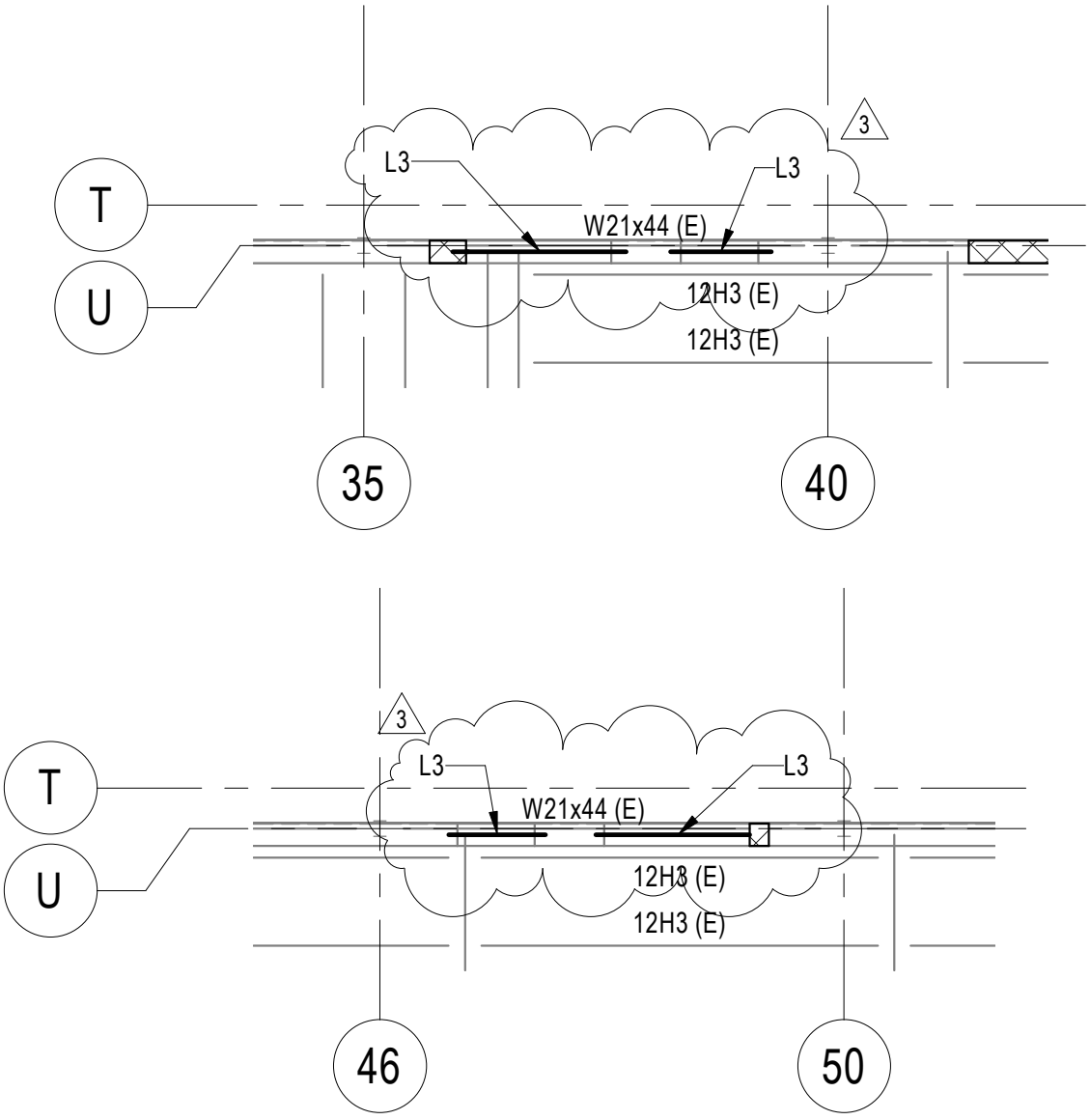
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE:	**1/8" = 1'-0"**
Approver	03
DATE:	**03/12/20**

ITEM:

PARTIAL LOW ROOF FRAMING PLAN - AREA G

AD-S04



PARTIAL LOW ROOF FRAMING PLAN - AREA G

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

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RENOVATION AND ADDITION

SCALE:	**1/8" = 1'-0"**
Approver	03
DATE:	**03/12/20**

ITEM:

PARTIAL LOW ROOF FRAMING PLAN - AREA G

AD-S05

SPLIT SYSTEM OUTDOOR UNIT SCHEDULE

TAG	MANUF.	MODEL #	SERVICE	DIMENSIONS (IN.)			WEIGHT (LBS)	TOTAL COOLING (MBH)	SENSIBLE COOLING (MBH)	HEATING CAPACITY (MBH)	MINIMUM SEER	ELECTRICAL				REMARKS
				LENGTH	WIDTH	HEIGHT						MCA	MOCP	VOLTAGE	PHASE	
CU-1	DAIKIN	RX18NMVJU	IDF	12.625	34.25	28.313	97	18.0	14.5	21.6	18	18.3 A	20	208 V	1	ALL
CU-2	GOODMAN	GSX14060	MDF	35.5	35.5	38.25	260	60.0	39.9	0.0	14	32.6 A	50	208 V	1	ALL
CU-3	DAIKIN	RX18NMVJU	MAIN ELEC	12.625	34.25	28.313	97	18.0	14.5	21.6	18	18.3 A	20	208 V	1	ALL
CU-4	DAIKIN	RX18NMVJU	DRY STORAGE	12.625	34.25	28.313	97	18.0	14.5	21.6	18	18.3 A	20	208 V	1	ALL

SPLIT SYSTEM INDOOR UNIT SCHEDULE

TAG	MANUF.	MODEL #	SERVICE	DIMENSIONS (IN.)			WEIGHT (LBS)	AIRFLOW (CFM)	ELECTRICAL				REMARKS
				LENGTH	WIDTH	HEIGHT			MCA	MOCP	VOLTAGE	PHASE	
AC-1	DAIKIN	FTX18NMVJU	IDF	10.38	39.000	11.625	27	713	0.3 A	15	208 V	1	ALL
AC-2	GOODMAN	AWUF61	MDF	21.00	24.500	58.000	155	2000	6 A	15	208 V	1	ALL
AC-3	DAIKIN	FTX18NMVJU	MAIN ELEC	10.38	39.000	11.625	27	713	0.3 A	15	208 V	1	ALL
AC-4	DAIKIN	FTX18NMVJU	DRY STORAGE	10.38	39.000	11.625	27	713	0.3 A	15	208 V	1	ALL

REMARKS:
1. PROVIDE SINGLE POINT ELECTRICAL CONNECTION FOR INDOOR UNIT.
2. PROVIDE WITH (4) SETS OF FILTERS.
3. PROVIDE LOW AMBIENT CONTROL. INCLUDE A CRANKCASE HEATER TO ALLOW FOR OPERATION TO 0 DEG F. (FACTORY MOUNTED OR INSTALLED BY A FACTORY CERTIFIED TECHNICIAN).
4. PROVIDE WITH SIGHT GLASS, EXPANSION DEVICE, LINE DRIER. SIZE LINES AND PROVIDE INTERMEDIATE TRAPS PER MANUFACTURER'S INSTRUCTIONS. SUBMIT DETAILED PIPING SCHEMATIC WITH SHOP DRAWINGS.
5. PROVIDE WITH HARD-WIRED, WALL-MOUNTED CONTROLLER.
6. PROVIDE WITH UL LISTING.
7. ACCEPTABLE MANUFACTURERS: DAIKIN, GOODMAN, MITSUBISHI, SANYO.

△3

REF SHT NO.: M7.04

SCALE:

ADDENDUM: 03

DATE: 03/12/20

AD-M13

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ITEM:
SPLIT SYSTEM SCHEDULE

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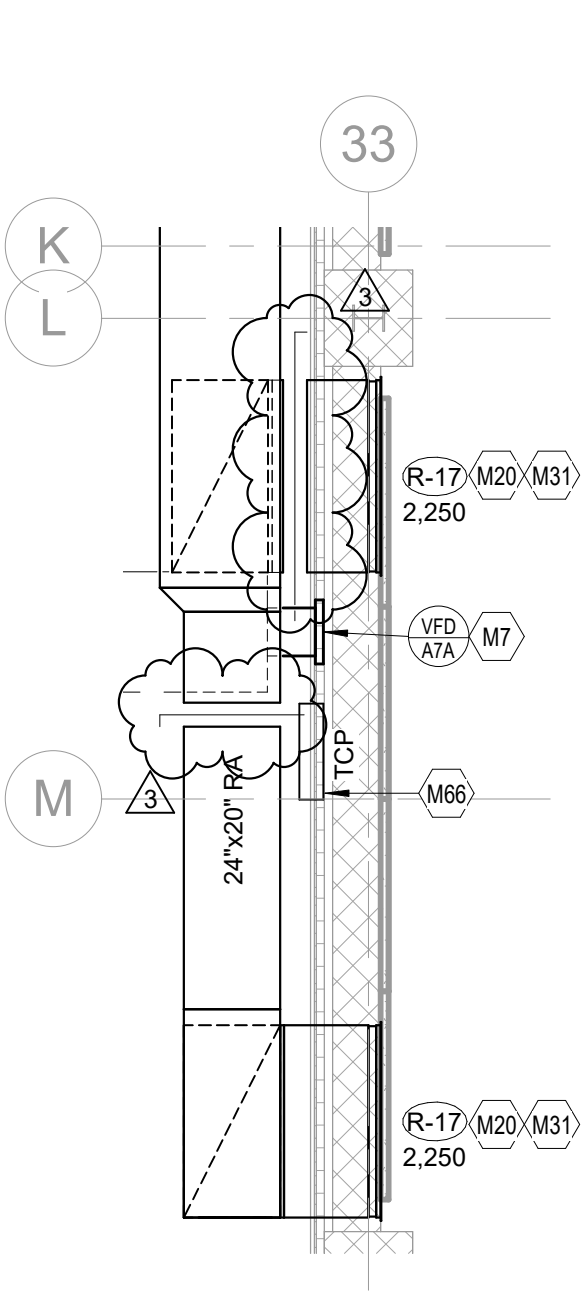

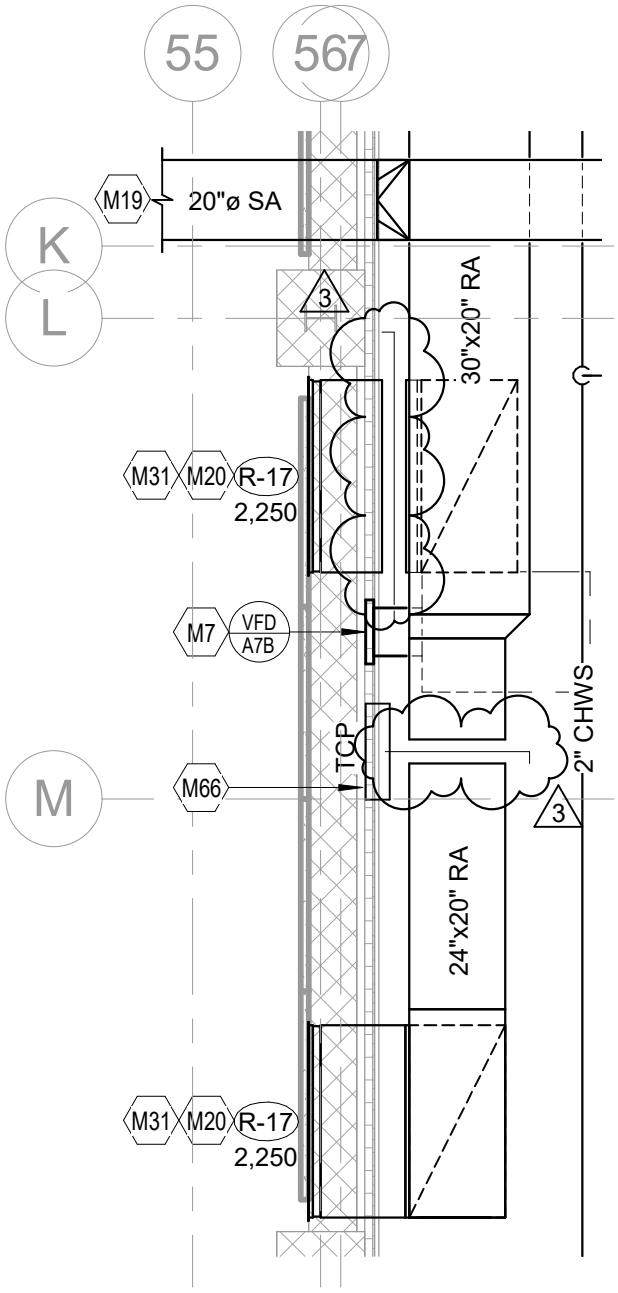

2 M4.06 ENLARGED PENTHOUSE #1 - MECHANICAL

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

1 M4.06 ENLARGED PENTHOUSE #2 - MECHANICAL

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

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REF SHT NO.: M4.06

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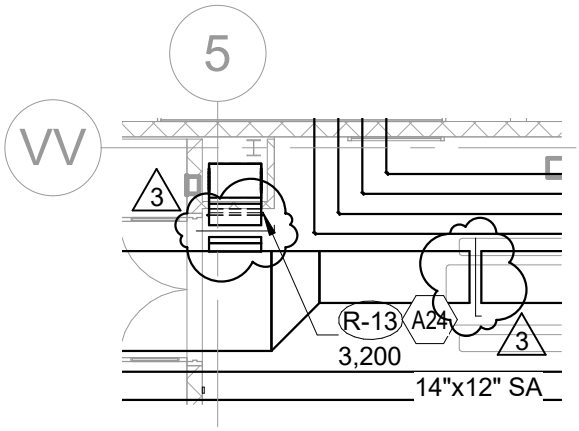
RENOVATION AND ADDITION

SCALE: 1/4" = 1'-0"
ADDENDUM: 03
DATE: 03/12/20

ITEM:

MANUAL VOLUME DAMPERS - AHU-8A, 8B

AD-M14



1 / M3.03 FIRST FLOOR PLAN - AREA C - MECHANICAL

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

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REF SHT NO.: M3.03

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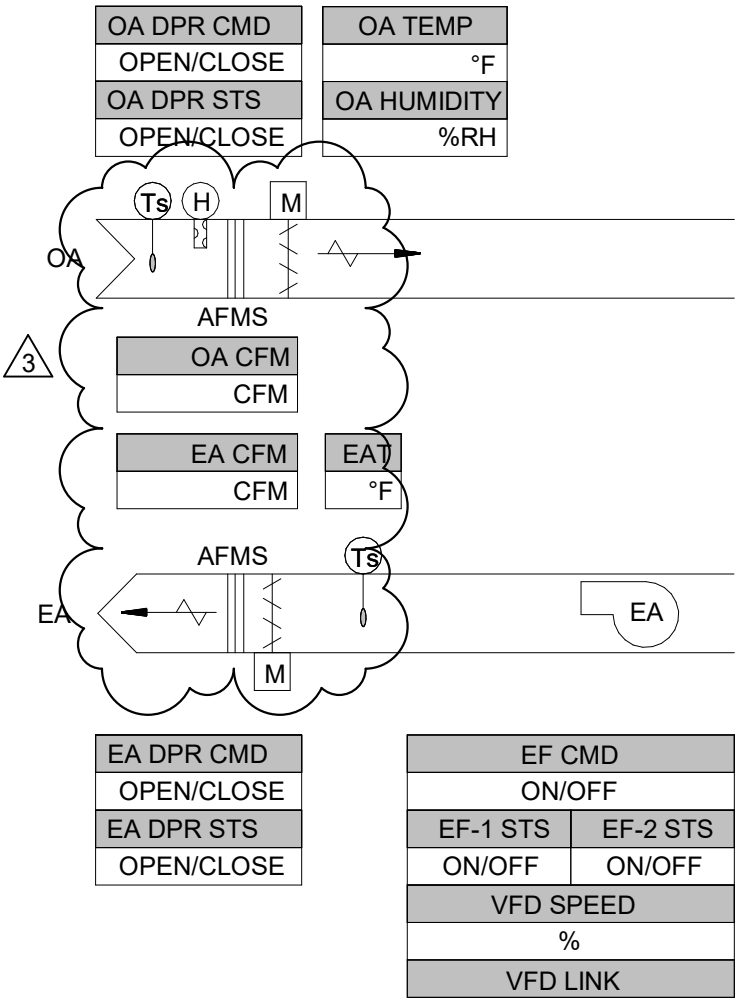
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE: 1/8" = 1'-0"
ADDENDUM: 03
DATE: 03/12/20

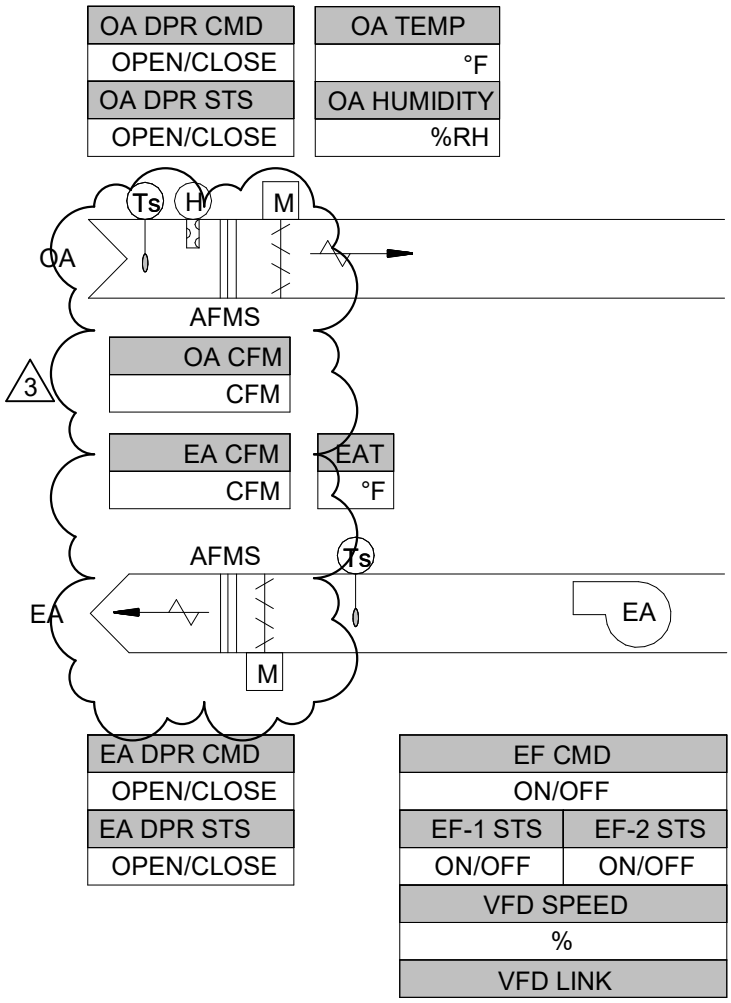
ITEM:

MANUAL VOLUME DAMPERS - AHU-2

AD-M15



OUTSIDE AIR UNIT (OA-5A)



OUTSIDE AIR UNIT (OA-5B)

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REF SHT NO.: M6.12

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301-770-0177(P) 301-330-3224(F)

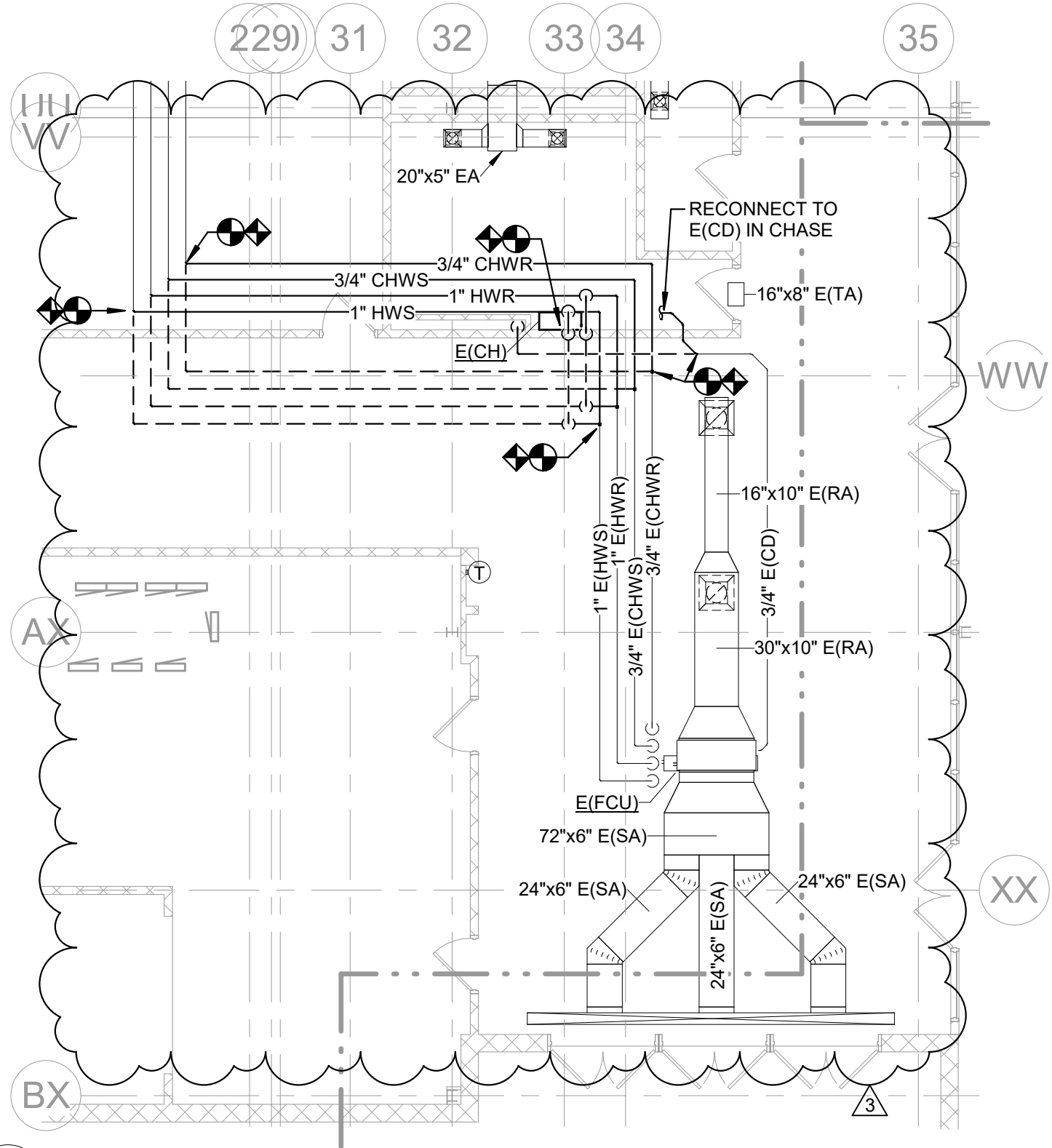
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

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

ITEM:

AIR FLOW MEASURING STATIONS - OA-5A, 5B

AD-M16



3 M2.11 FIRST FLOOR PLAN - LOBBY FAN COIL TEMPORARY PIPING - MECHANICAL

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

SMOLEN • EMR • ILKOVITCH ARCHITECTS

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

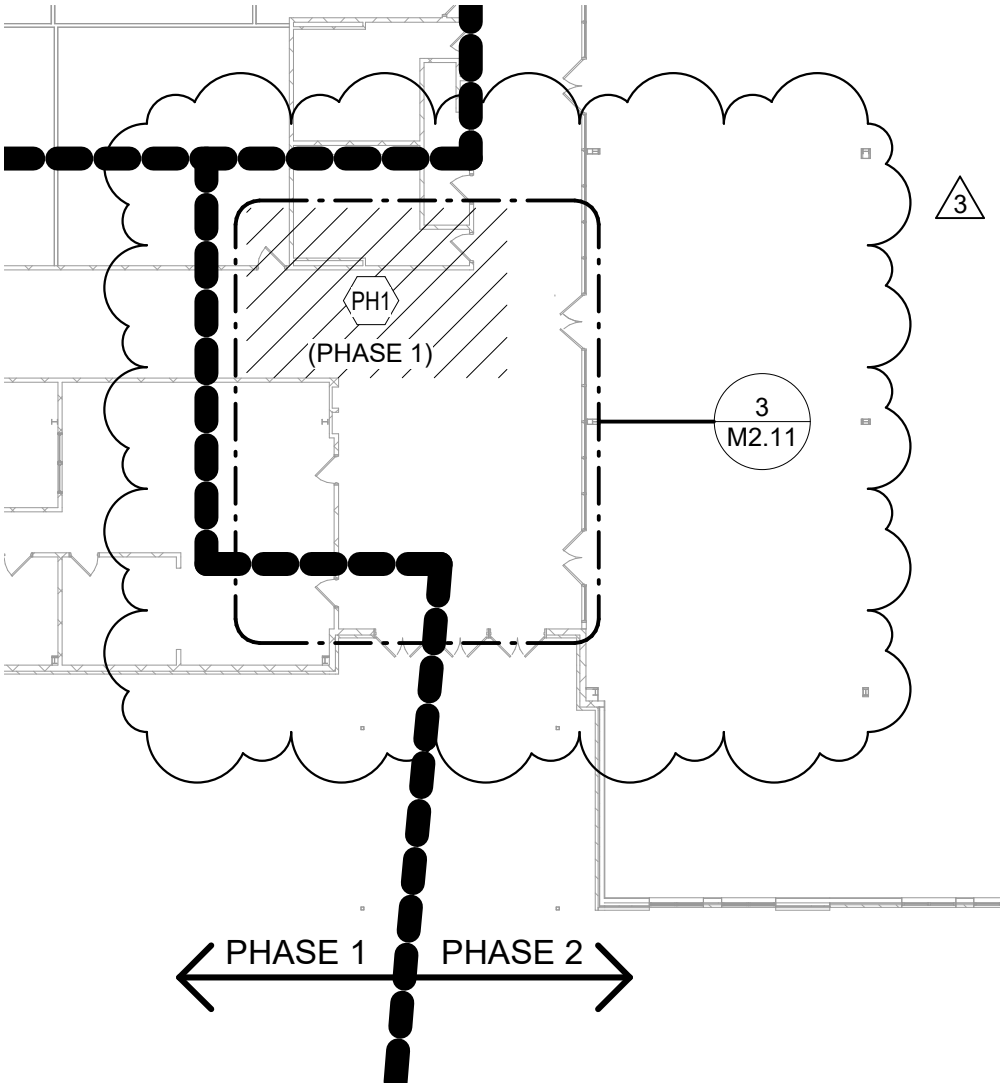
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE:	**1/8" = 1'-0"**
ADDENDUM:	**03**
DATE:	**03/12/20**

ITEM:

FAN COIL TEMPORARY PIPING - EXISTING LOBBY

AD-M17



1 / M1.01 FIRST FLOOR EXISTING - MECHANICAL PHASING

SCALE: 3/64" = 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.: M1.01

SEI SMOLEN • EMR • ILKOVITCH ARCHITECTS

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

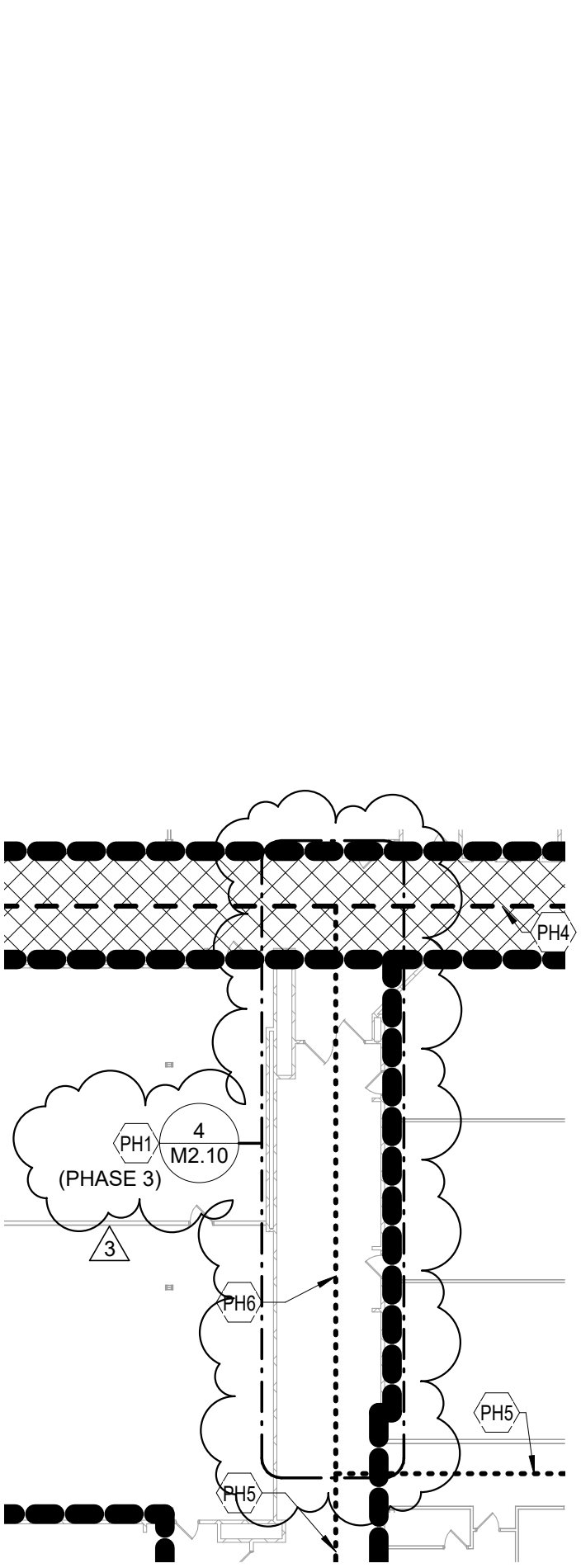
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE: 3/64" = 1'-0"
ADDENDUM: 03
DATE: 03/12/20

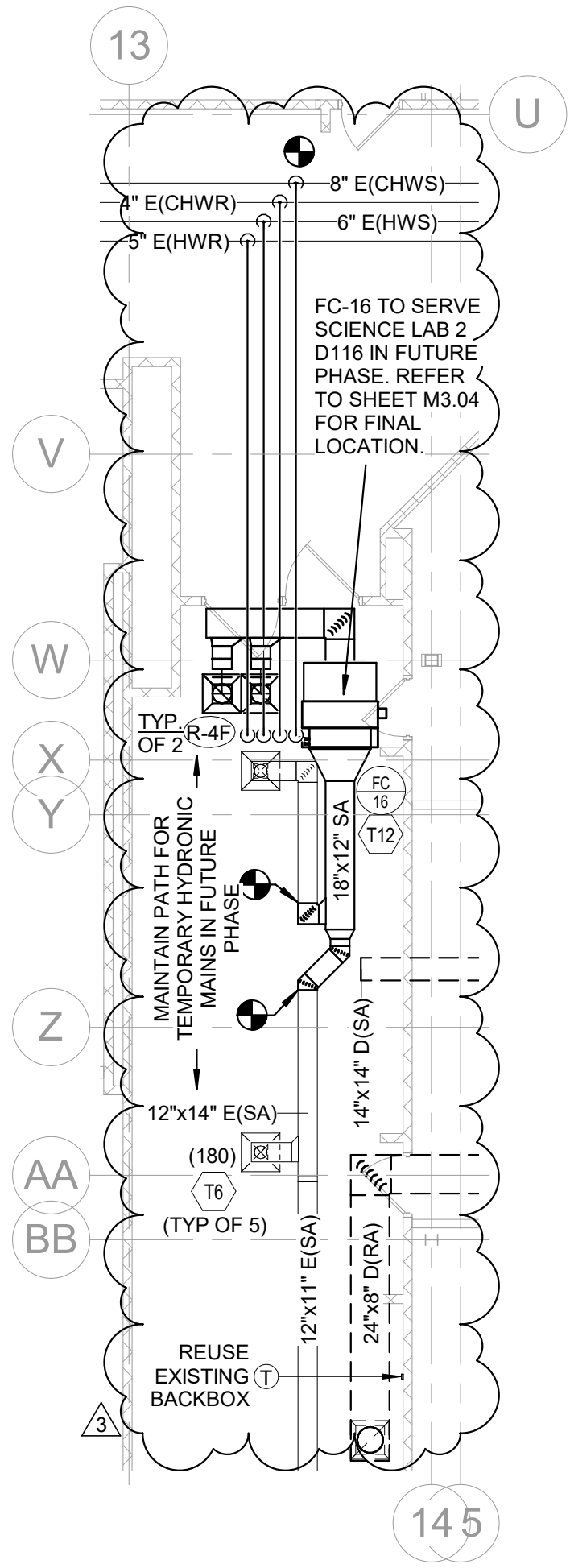
ITEM:

FAN COIL TEMPORARY PIPING - EXISTING LOBBY - PHASING NOTES

AD-M18



1 M1.01 FIRST FLOOR EXISTING - MECHANICAL PHASING
SCALE: 3/64" = 1'-0"



4 M2.10 FIRST FLOOR PLAN - CORRIDOR TEMP CONDITIONING - MECHANICAL
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.

M1.01
REF SHT NO.: M2.10

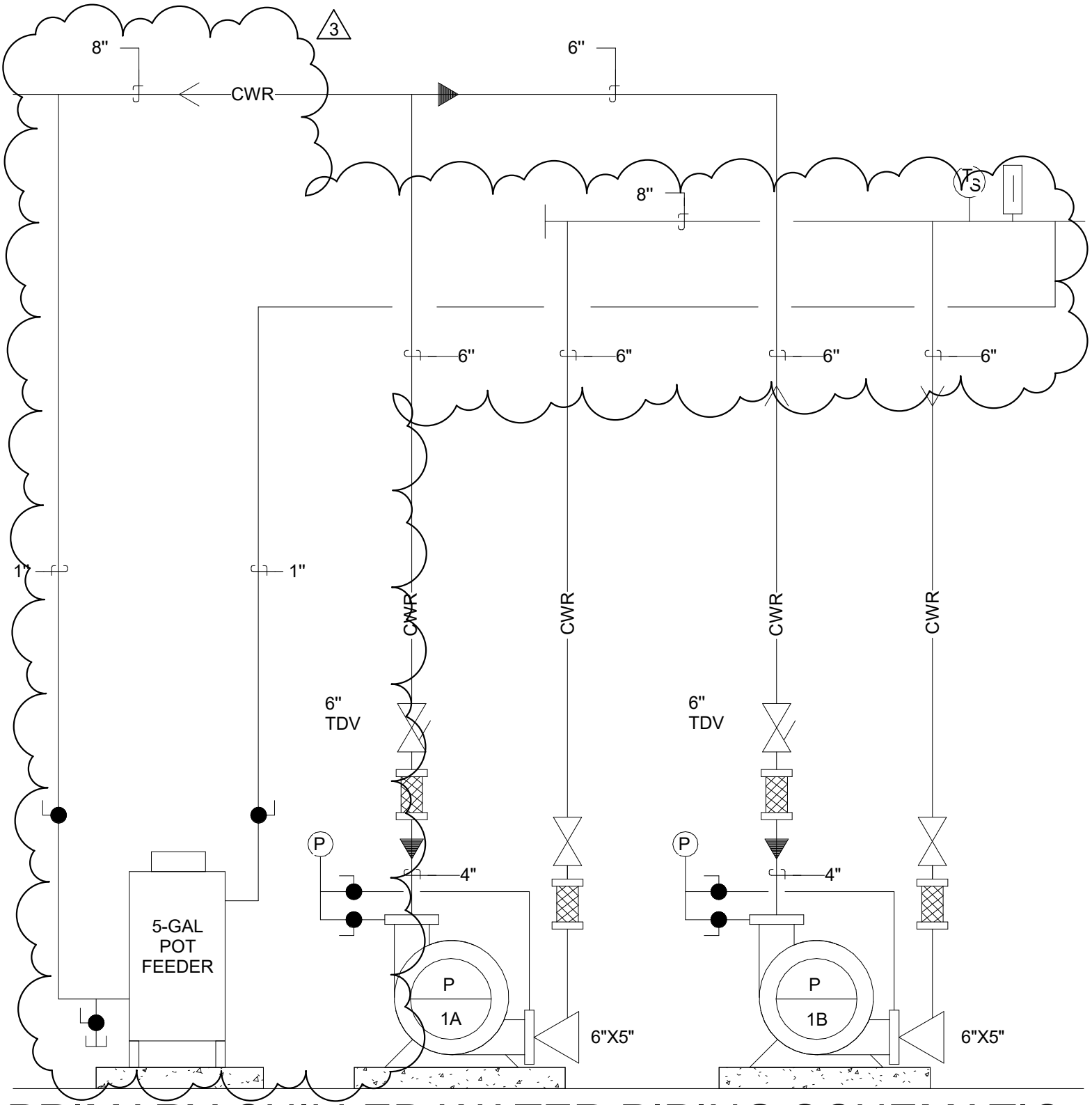
SMOLEN • EMR • ILKOVITCH ARCHITECTS
9211 CORPORATE BLVD.
SUITE 340
ROCKVILLE, MD 20850
301-770-0177(P) 301-330-3224(F)

HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

SCALE: As indicated
ADDENDUM: 03
DATE: 03/12/20

ITEM:
TEMPORARY CONDITIONING - EXISTING CORRIDOR

AD-M19



PRIMARY CHILLED 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.: M5.01

SMOLEN • EMR • ILKOVITCH ARCHITECTS

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

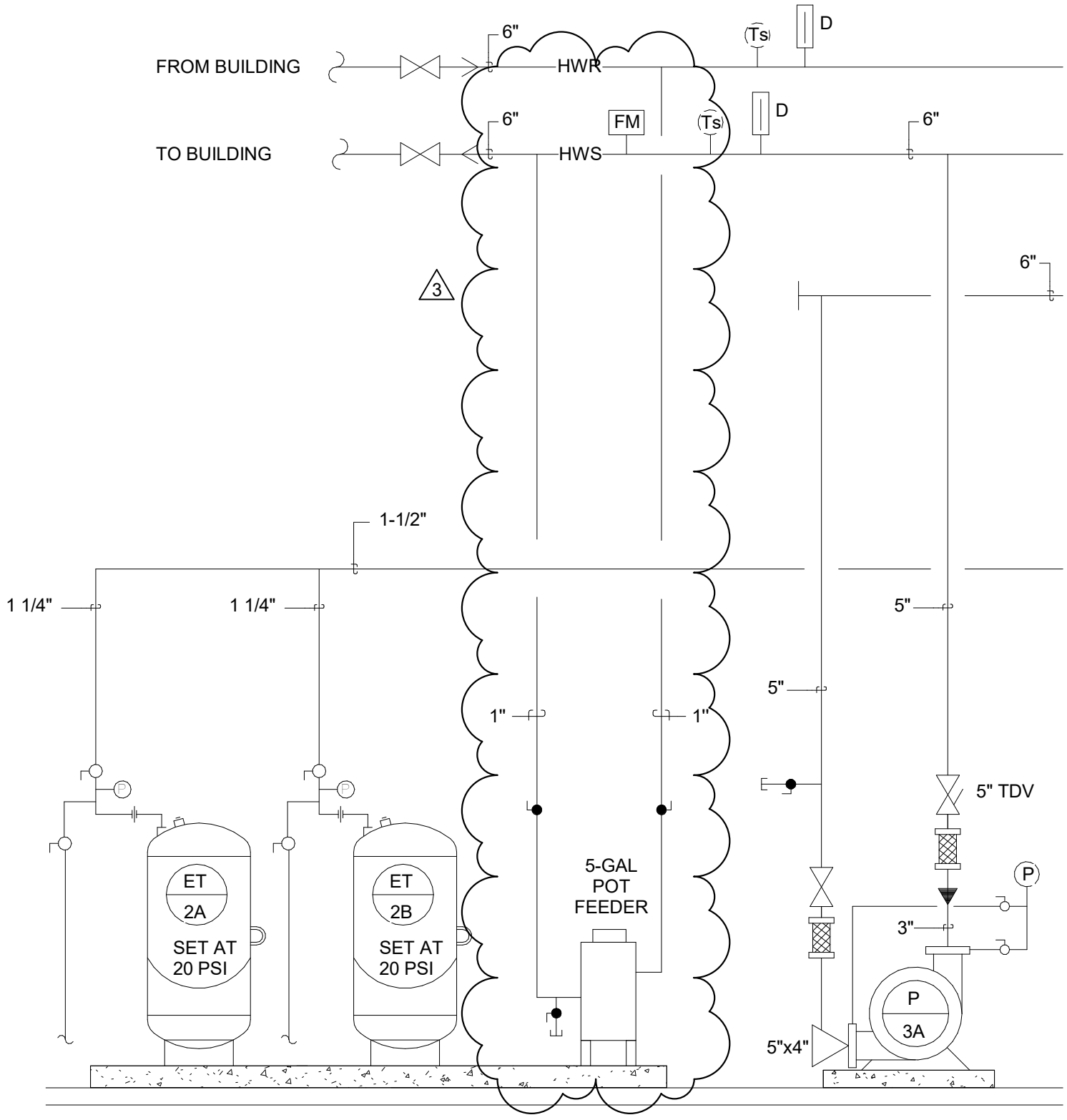
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

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

ITEM:

CHILLED WATER PIPING SCHEMATIC - WATER TREATMENT

AD-M20



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

SMOLEN • EMR • ILKOVITCH ARCHITECTS

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

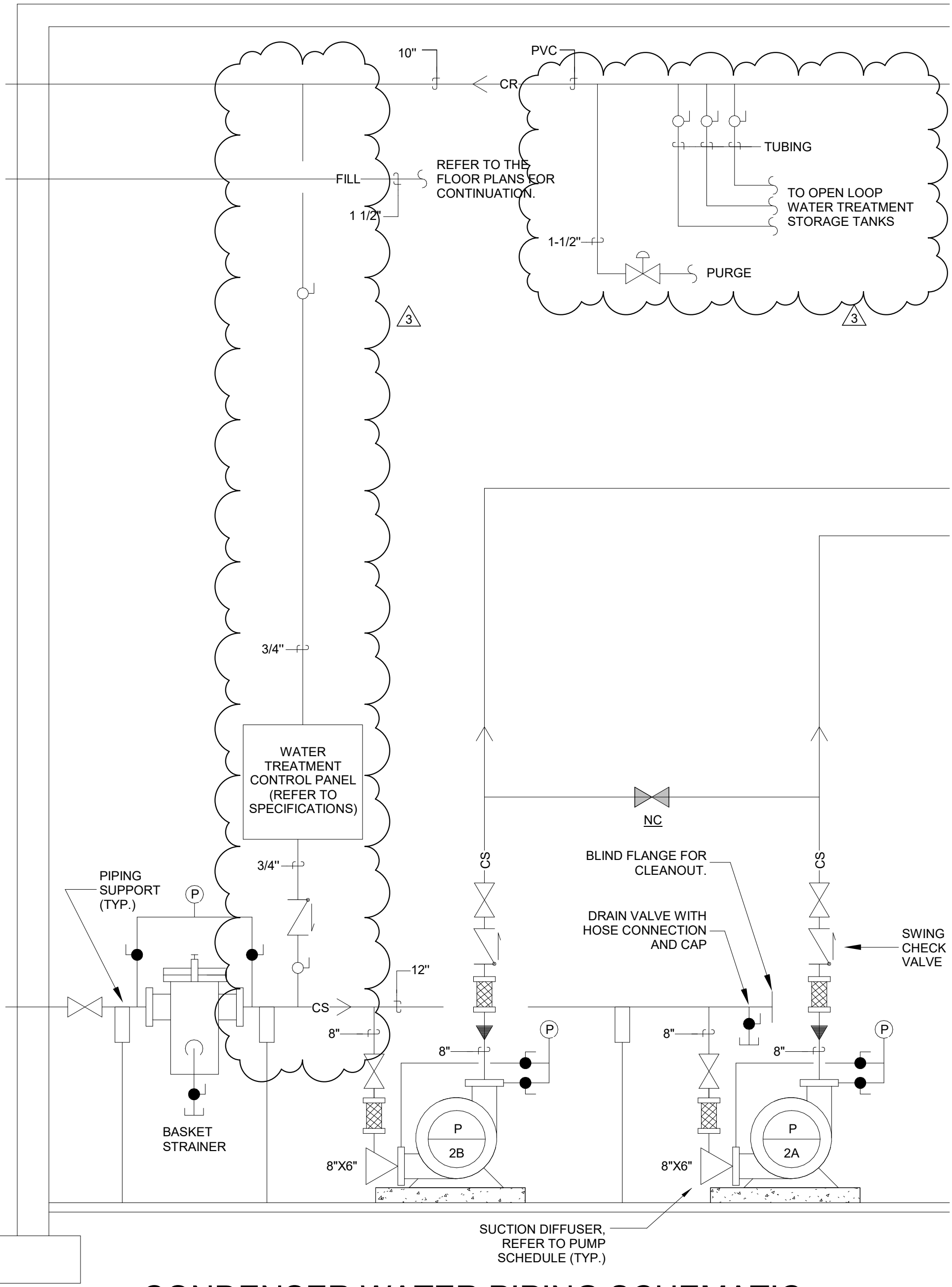
HAMMOND HIGH SCHOOL
RENOVATION AND ADDITION

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

ITEM:

HOT WATER PIPING SCHEMATIC - WATER TREATMENT

AD-M21



CONDENSER 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.: M5.03

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

ITEM:

CONDENSER WATER PIPING SCHEMATIC - WATER TREATMENT

AD-M22

SITE DEVELOPMENT PLAN
HAMMOND HIGH SCHOOL
TAX MAP No.: 42, GRID No.: 14
PARCEL No.: 405
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SHEET INDEX

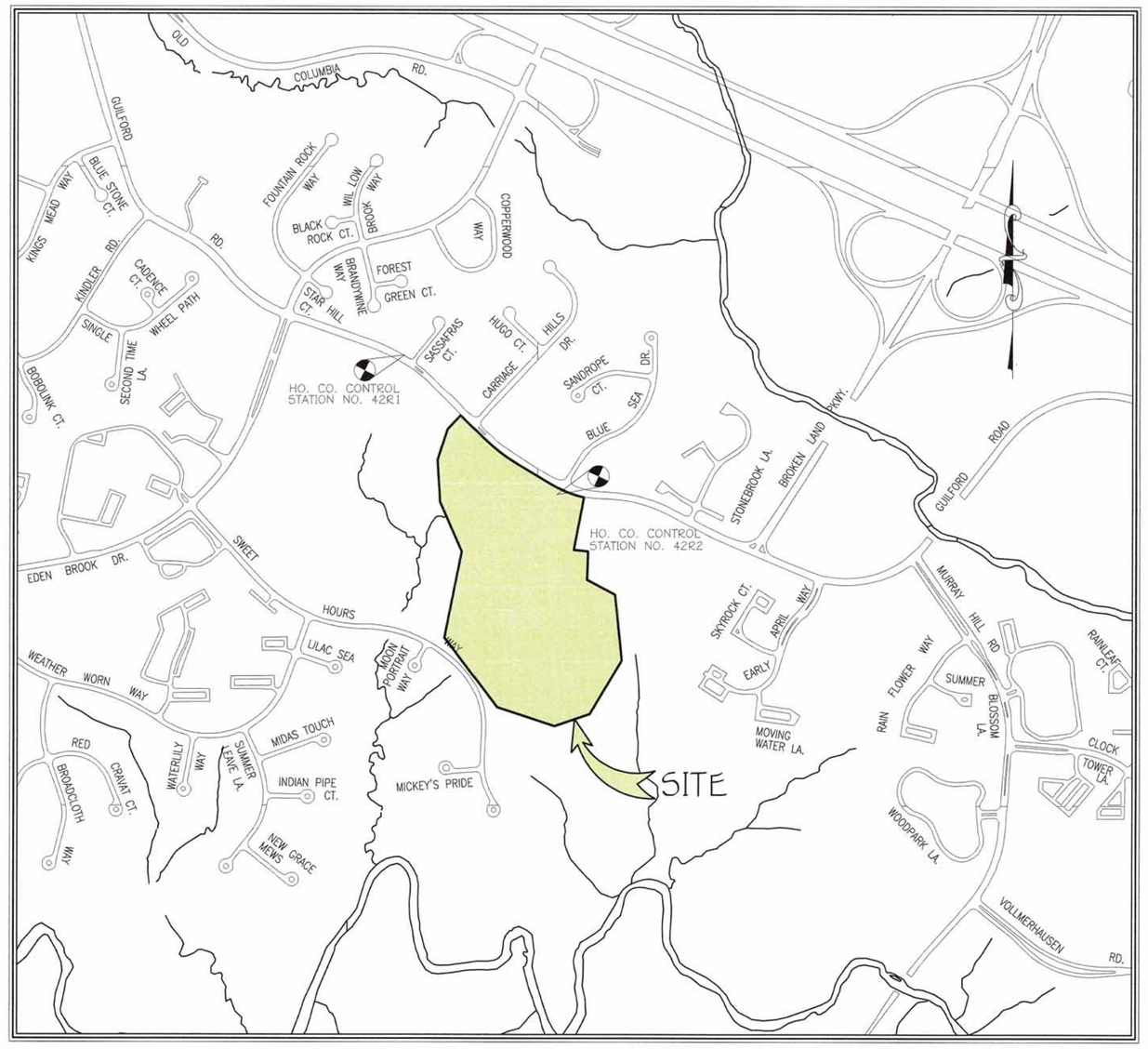
SHEET NUMBER	DESCRIPTION
C-1	TITLE SHEET AND SEQUENCE OF CONSTRUCTION
C-2	DEMOLITION PLAN
C-3	DEMOLITION PLAN
C-4	SITE DEVELOPMENT PLAN
C-5	SITE DEVELOPMENT PLAN
C-6	GEOMETRY PLAN AND STRIPING PLAN
C-7	GEOMETRY PLAN
C-8	SEDIMENT AND EROSION CONTROL PLAN
C-9	SEDIMENT AND EROSION CONTROL PLAN
C-10	SOILS 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
C-20	STEP 7, 8 AND 9
C-21	ALTERNATES: SMOKE 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
C-32	TEMPORARY CONDITIONS - DEMO PLAN AND SITE PLAN

LEGEND

SYMBOL	DESCRIPTION
332	EXISTING CONTOUR 2' INTERVAL
330	EXISTING CONTOUR 10' INTERVAL
S	EXISTING SAN. SEWER LINE
D	EXISTING STORM DRAIN LINE
W	EXISTING WATER LINE
UE	EXISTING UNDERGROUD ELECTRIC LINE
CATV	EXISTING CABLE/TV LINE
FOC	EXISTING FIBER OPTIC/CABLE LINE
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" RCP	PROPOSED STORMDRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER
	PROPOSED GRASS PAVERS
	SOILS DELINEATION
SSF	SUPER SILT FENCE

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING, CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. TRAFFIC CONTROL DEVICES:
   A. THE R1-1 (STOP) SIGN AND THE STREET SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
   B. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
   C. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MdMUTCD).
   D. 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 LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
5. COORDINATES ARE BASED ON NAD 83 MARYLAND COORDINATES SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS.
   4281 N 547,820.225 E 1,351,171.619 ELEV. 375.811
   4282 N 546,946.791 E 1,352,118.600 ELEV. 331.463
6. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
7. THE EXISTING TOPOGRAPHY INFORMATION SHOWN IS BASED ON A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED ON OR ABOUT AUGUST 2018 BY FISHER, COLLINS & CARTER, INC.
8. BOUNDARY INFORMATION IS BASED ON A SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED OCTOBER, 2017.
9. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
10. STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. STORMWATER MANAGEMENT IS PROVIDED USING FILTERRAS AND BIO-RETENTION TO MEET AND EXCEED THE REQUIRED ESD VOLUME.
11. STORM WATER MANAGEMENT DEVICES LOCATED ON BOE LOTS WILL BE OWNED AND MAINTAINED BY THAT OWNER AND SUBJECT TO THE REQUIREMENTS OF A RECORDED DECLARATION OF COVENANT.
12. ALL PROPOSED UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH COUNTY STANDARDS AND SPECIFICATIONS.
13. ANY DAMAGE TO COUNTY AND OR STATE OWNED RIGHT-OF-WAY TO BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
14. ALL TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNINGS AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
15. ALL PERMANENT DRIVEWAYS AND PARKING TO BE OWNED AND MAINTAINED BY THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM. TEMPORARY DRIVEWAYS AND PARKING ARE TO BE MAINTAINED BY THE CONTRACTOR.
16. GUTTER PAN OF CURBS SHALL BE PITCHED TO CONFORM TO THE ADJACENT DRAINAGE PATTERNS OF THE ADJOINING PAVING FOR VEHICULAR USE.
17. ALL PROPOSED RAMPS SHALL BE IN ACCORDANCE WITH CURRENT A.D.A. STANDARDS ACCESSIBILITY GUIDELINES. MAXIMUM SIDEWALK CROSS SLOPE SHALL BE TWO PERCENT. PROVIDE A (5'X5') FIVE FOOT BY FIVE FOOT LEVEL LANDING (MAX. SLOPE 2%) AT THE TOP AND BOTTOM OF ALL RAMPS AND BUILDING ENTRANCES AND EXITS. HANDRAILS SHALL BE PROVIDED ON ALL RAMPS IN ACCORDANCE WITH SECTION 505 OF THE A.D.A STANDARDS ACCESSIBILITY GUIDELINES.
18. ALL PLAN DIMENSIONS ARE TO THE FACE OF CURB OR FACE OF BUILDING UNLESS OTHERWISE NOTED. DIMENSIONS ARE MEASURED PERPENDICULAR OR RADIAL BETWEEN ITEMS UNLESS OTHERWISE NOTED.
19. INSTALL ALL PLAY FIELDS AND STABILIZE IN ACCORDANCE WITH THE PERMANENT SEEDING AND MULCH AND SOD AS INDICATED ON PLANS. THE CONTRACTOR SHALL ALSO FINE GRADE ALL AREAS WITHIN THE LIMITS OF DISTURBANCE THAT WERE DISTURBED DURING THE BUILDING CONSTRUCTION AND STABILIZE WITH PERMANENT SEEDING AND MULCH. CONTRACTOR MUST ENSURE ALL GRAVEL USED FOR PARKING LOTS AND WALKS IS COMPLETELY REMOVED AND TOPSOIL IS SCREENED AND PLACED ON THE FIELDS. CONTACT GROUNDS MAINTENANCE SUPERVISOR GREG CONNOR AT 410-313-2577 FOR INSPECTION ONE WEEK PRIOR TO FINE GRADING OF THE SITE.
20. THE KNOX BOX IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDING. IT SHALL BE PLACED TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4'-5' IN HEIGHT AND NO MORE THAN 6' LATERALLY FROM THE DOOR. THE BOX SHALL ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSED (INTEGRATED WITH THE FIRE ALARM SYSTEM). NFPA-1.10.12.1.

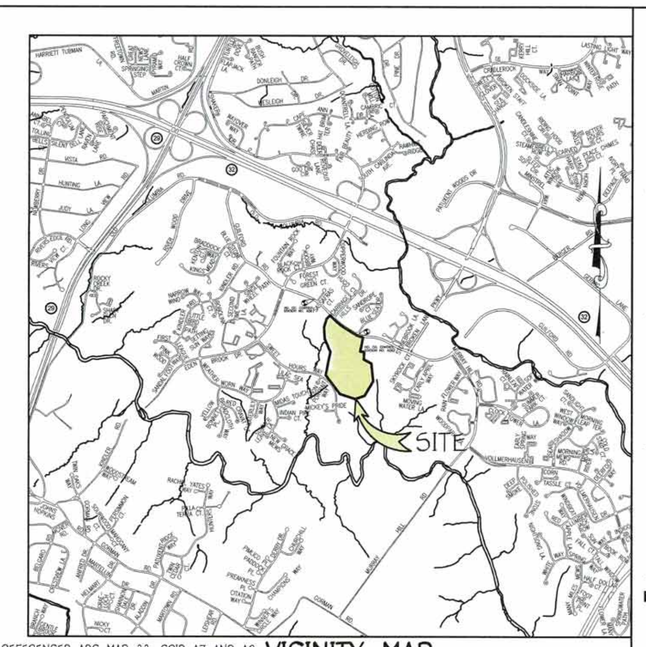


LOCATION MAP
SCALE: 1" = 500'

CONTROL STATIONS

B.M. #1 HOWARD COUNTY GEODETIC SURVEY CONTROL 4281 - HORIZONTAL - (NAD '83)
LOCATED 3.1' NORTH OF THE EDGE OF ROADWAY, 39.8' WEST OF LIGHT POLE, 42.2' SOUTHEAST OF C&P STANCHION.
NORTHING 547,820.225
EASTING 1,351,171.619
ELEVATION = 375.811 - VERTICAL - (NAVD '88)

B.M. #2 HOWARD COUNTY GEODETIC SURVEY CONTROL 4282 - HORIZONTAL - (NAD '83)
LOCATED 63.8' SOUTHEAST OF C&P POLE 8, 56.9' NORTHEAST OF 16" TREE, 36.8' NORTHEAST OF LAMP POST.
NORTHING 546,946.791
EASTING 1,352,118.600
ELEVATION = 331.463 - VERTICAL - (NAVD '88)



REFERENCED ADC MAP 33, GRID A7 AND A8 **VICINITY MAP**
SCALE: 1" = 2000'

HAMMOND HIGH SCHOOL SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT
2. NOTIFY MISS UTILITY (1-800-257-7777) TWO (2) FULL BUSINESS DAYS BEFORE STARTING WORK. NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410-313-1855) 24 HOURS BEFORE STARTING WORK AND NOTIFY THE BALTIMORE GAS AND ELECTRIC COMPANY (410-291-5739) FIVE (5) WORKING DAYS PRIOR TO STARTING WORK.

STEP 1
3. INSTALL ALL PERIMETER CONTROLS ASSOCIATED WITH PHASE 1 WORK. INSTALL SCE WITH WASH RACK. INSTALL PERIMETER SUPER SILT FENCE, TREE PROTECTION FENCE AND PERIMETER CONSTRUCTION FENCING.
4. BEGIN DEMOLITION OF EXISTING BUILDING SECTION.
5. DEMOLISH EXISTING CURB AND GUTTER AT EXISTING BUS LOOP. ROUGH GRADE FRONT OF BUILDING TO ESTABLISH LAY DOWN AREA FOR ALL TRADES. EXISTING PAVING MAY REMAIN.
6. INSTALL TEMPORARY MODULAR CLASSROOM BUILDING.
7. INSTALL WATER LINES UP TO CONNECTION TO EXISTING FIRE HYDRANT (WEST SIDE) AND WATER LINES ON THE EAST SIDE.
8. DEMO CURB AND GUTTER AND PAVING AT EXISTING PARKING AREA.
9. INSTALL STORM DRAINS AND STRUCTURES I-1, I-2, I-3, I-4, I-5, M-1, M-2, M-3, M-4, M-5, M-12, M-13, EX M-2.
10. INSTALL NEW SEWER LINE FROM MH-50 TO MH-65.
11. UPON COMPLETION OF DEMOLITION OF EXISTING BUILDING SECTION, GRADE BUILDING PAD AND PARKING AT SERVICE ENTRANCE.
12. BEGIN CONSTRUCTION OF SCHOOL BUILDING ADDITION - PHASE 1.
13. INSTALL CURB, GUTTER AND PAVING AT EXISTING PARKING AREAS.
14. INSTALL TEMPORARY BARRICADES ALONG TEMPORARY BUS LOOP.
15. INSTALL CURB, GUTTER, AND BASE PAVING FOR SERVICE AREA.
16. INSTALL SIDEWALKS, LIGHTING AND STABILIZATION ALONG WORKING NORTH AND EAST CORNER OF THE SCHOOL BUILDING.

STEP 2
17. BEGIN CONSTRUCTION OF PHASE 3.
18. INSTALL PERIMETER CONTROLS, PERIMETER SUPER SILT FENCE AND PERIMETER CONSTRUCTION FENCING. RELOCATE EXISTING PERIMETER CONSTRUCTION FENCING AND SCE WASH RACK.
19. BEGIN DEMOLITION OF EXISTING BUILDING SECTIONS - PHASE 2.
20. INSTALL STORM DRAINS AND STRUCTURE FROM I-6 TO EX I-29
21. INSTALL 20' TEMPORARY ACCESS ROAD AT WORKING EAST OF THE SCHOOL BUILDING.
22. DEMOLISH EXISTING CURB, GUTTER AND PAVING NECESSARY FOR INSTALLATION OF STORM WATER MANAGEMENT SYSTEM.
23. INSTALL STORM WATER MANAGEMENT SYSTEM INCLUSIVE OF FT-2, FT-3, FT-4, EX-I-4, M-7, M-6, EX-I-5, M-8, I-9, M-9, M-10, M-11, R-1, EX-I-6, I-10, R-2, E-1, E-2.
24. INSTALL CURB, GUTTER, AND PAVING.
25. UPON COMPLETION OF DEMOLITION OF EXISTING BUILDING, GRADE BUILDING PAD.
26. BEGIN CONSTRUCTION OF SCHOOL BUILDING ADDITION - PHASE 2.
27. PROVIDE WEEKLY STREET SWEEPING OF SERVICE ENTRANCE BASE PAVING.
28. EXCAVATE BIO-RETENTION FACILITIES TO SUBGRADE AND STABILIZE WITH TEMPORARY SEED.

STEP 3
29. CONTINUE CONSTRUCTION OF PHASE 2.
30. INSTALL PERIMETER CONTROLS, PERIMETER SUPER SILT FENCE, TREE PROTECTION AND PERIMETER CONSTRUCTION FENCING. RELOCATE EXISTING PERIMETER CONSTRUCTION FENCING.
31. BEGIN CONSTRUCTION OF SCHOOL BUILDING - PHASE 4.
32. PROVIDE WEEKLY STREET SWEEPING OF SERVICE ENTRANCE BASE PAVING.

STEP 4
33. CONTINUE CONSTRUCTION OF PHASE 2.
34. INSTALL PERIMETER CONTROLS, PERIMETER SUPER SILT FENCE, TREE PROTECTION FENCE AND PERIMETER CONSTRUCTION FENCING. RELOCATE EXISTING PERIMETER CONSTRUCTION FENCING.
35. BEGIN CONSTRUCTION OF SCHOOL BUILDING - PHASE 5.
36. PROVIDE WEEKLY STREET SWEEPING OF SERVICE ENTRANCE BASE PAVING.
37. INSTALL CURB AND GUTTER, SIDEWALKS, LIGHTING AND STABILIZATION ALONG WORKING NORTH AND WEST CORNER OF THE SCHOOL BUILDING UPON COMPLETION OF BUILDING PHASE 2.
38. UPON COMPLETION OF PHASE 2, RELOCATE PERIMETER CONTROLS, PERIMETER SUPER SILT FENCE, TREE PROTECTION FENCE AND PERIMETER CONSTRUCTION FENCING.

STEP 5
39. INSTALL PERIMETER CONTROLS, PERIMETER SUPER SILT FENCE, TREE PROTECTION FENCE AND PERIMETER CONSTRUCTION FENCING. RELOCATE EXISTING PERIMETER CONSTRUCTION FENCING. REMOVE SMALL PORTABLES.
40. BEGIN CONSTRUCTION OF PHASE 6 AND 7.
41. PROVIDE WEEKLY STREET SWEEPING OF SERVICE ENTRANCE BASE PAVING.
42. EXTEND TEMPORARY ROADWAY.
43. COMPLETE WORK AT EXISTING BASEBALL FIELD, FOOTBALL FIELD AND CONCESSION STAND. COMPLETE ALL PAVING FROM TENNIS COURTS TO FOOTBALL STADIUM
44. BEGIN DEMOLITION OF EXISTING BUILDING, INDIVIDUAL MODULAR CLASSROOMS AND 12 CLASSROOM MODULAR UNIT, TEMPORARY WALKS AND RAMPS AND UTILITIES. TEMPORARILY STABILIZE AREAS AFTER DEMOLITION.
45. ESTABLISH CONTRACTOR LAYDOWN AREA.
46. DEMOLISH EXISTING PAVING, CURB AND GUTTER AT SOUTH WEST CORNER OF THE SCHOOL BUILDING.
47. BEGIN CONSTRUCTION OF NEW SITE RETAINING WALL. ONCE RETAINING WALL IS COMPLETE, INSTALL CURB, GUTTER AND BASE PAVING.

STEP 6
48. CONTINUE CONSTRUCTION OF PHASE 7. BEGIN CONSTRUCTION OF PHASE 8. BEGIN DEMOLITION AND CONSTRUCTION OF PHASE 9.
49. RELOCATE PERIMETER CONTROLS, PERIMETER SUPER SILT FENCE, TREE PROTECTION FENCE AND PERIMETER CONSTRUCTION FENCING. RELOCATE EXISTING PERIMETER CONSTRUCTION FENCING.
50. PROVIDE WEEKLY STREET SWEEPING OF SERVICE ENTRANCE BASE PAVING.

STEP 7
51. CONTINUE CONSTRUCTION OF PHASE 9.
52. RELOCATE PERIMETER CONTROLS, PERIMETER SUPER SILT FENCE, TREE PROTECTION FENCE AND PERIMETER CONSTRUCTION FENCING. RELOCATE EXISTING PERIMETER CONSTRUCTION FENCING.
53. PROVIDE WEEKLY STREET SWEEPING OF SERVICE ENTRANCE BASE PAVING.
54. UPON COMPLETION OF SCHOOL BUILDING, ROUGH GRADE FOR MULTIPURPOSE FIELD AND INSTALL SPRINKLER WORK.

STEP 8
55. BEGIN CONSTRUCTION OF PHASE 10.
56. PROVIDE WEEKLY STREET SWEEPING OF SERVICE ENTRANCE BASE PAVING.
57. COMPLETE DEMOLITION OF EXISTING FRONT BUS LOOP.
58. COMPLETE GRADING, CONSTRUCT BUS LOOP, INSTALL REMAINING WATER MAIN AND FIRE HYDRANT (WEST REAR CORNER), INSTALL STORM DRAIN AND STRUCTURE FT-1, INSTALL CURB AND GUTTER, INSTALL BASE AND TOP PAVING, COMPLETE ALL SIDEWALKS AND INSTALL ALL PLANTINGS AND LANDSCAPING AT FRONT OF SCHOOL BUILDING

STEP 9
59. FINE GRADE MULTIPURPOSE FIELD AND PLANT BERMUDA GRASS.
60. INSTALL STORM DRAINS AND STRUCTURES FROM M-15 TO EX. I-10 AND M-14 TO I-8.
61. REMOVE TEMPORARY CONSTRUCTION ACCESS ROADWAYS AND CONSTRUCT PERMANENT ACCESS ROADWAY.
62. INSTALL ALL REMAINING CURB, GUTTER, SIDEWALK, BASE AND TOP COATS OF PAVING.
63. UPON FULL STABILIZATION OF THE AREAS DRAINING TO THE BIO-RETENTION FACILITIES REMOVE THE SEDIMENT FROM THE BIO-RETENTION FACILITIES, INSTALL UNDERDRAIN SYSTEM, STONE AND PLANTINGS AT SAME.
64. FINALIZE STABILIZATION THROUGHOUT SITE. REMOVE ALL SEDIMENT CONTROL MEASURES WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEEDING.

EROSION AND SEDIMENT CONTROL NOTE:
THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON ALL SEDIMENT CONTROL DEVICES AND PRACTICES ON A DAILY BASIS AND IMMEDIATELY AFTER EACH RAINFALL.

ARCHITECT
SMOLEN • EMR • ILKOVITCH ARCHITECTS
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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.
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502-326-3085(P)

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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, LICENSE 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

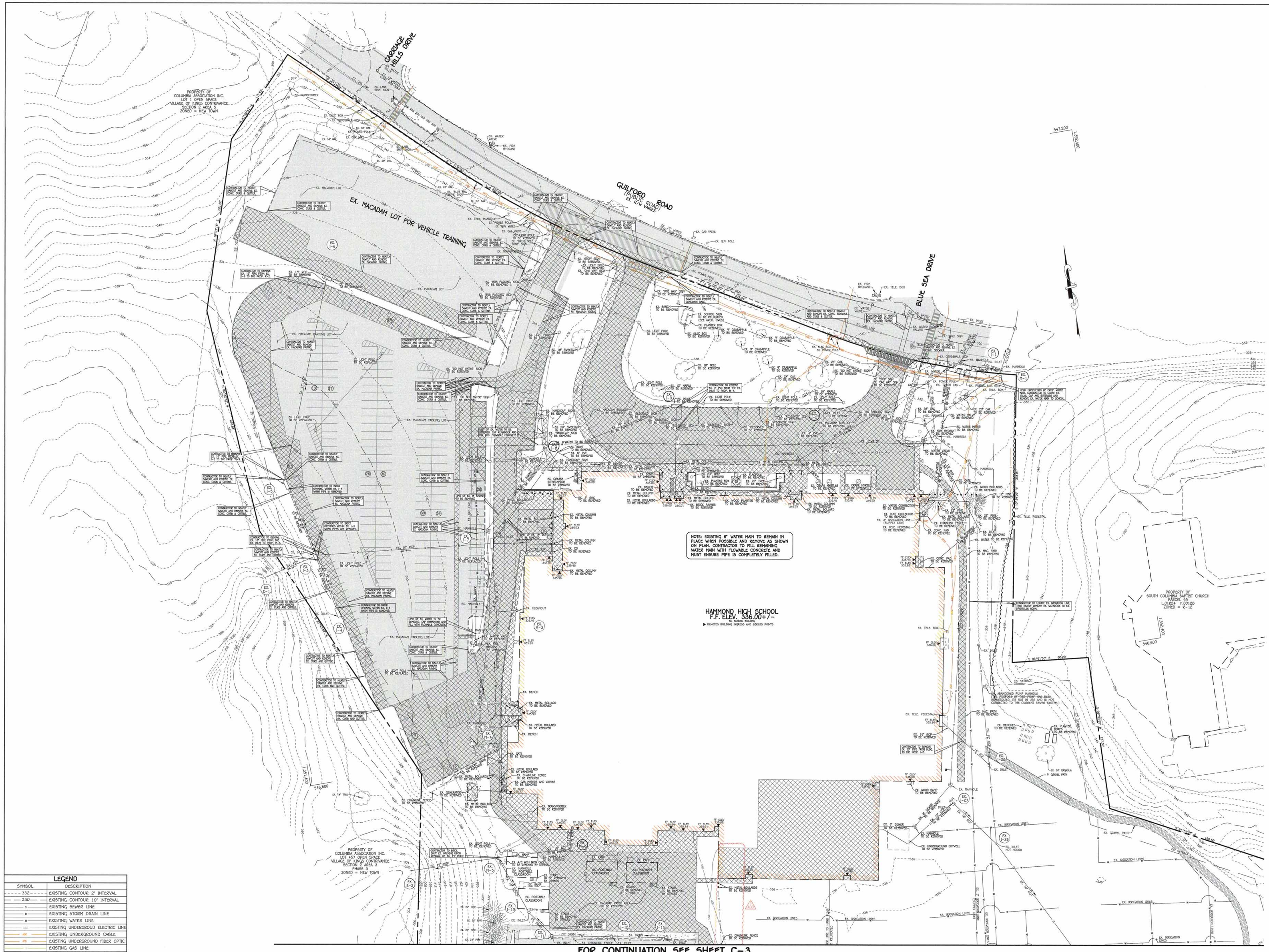
HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
TITLE SHEET AND SEQUENCE OF CONSTRUCTION

PROJECT NO: 18011.00
DATE: 02/19/2020
SCALE: As Indicated
WORKING NORTH

SHEET NO:
C-1



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 UNDERGROUD CABLE
UFO	EXISTING UNDERGROUND FIBER OPTIC
	EXISTING GAS LINE
X	EXISTING FENCE
	EXISTING CONCRETE WALK
	EXISTING MACADAM PAVING
	EXISTING TREE AND SHRUB
	EXISTING TREELINE
	APPROX. AREA OF DEMOLITION
	PROPOSED TREELINE

ARCHITECT

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PROFESSIONAL SEAL:

PRINTS ISSUED

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

DEMOLITION PLAN

PROJECT NO: 18011.00

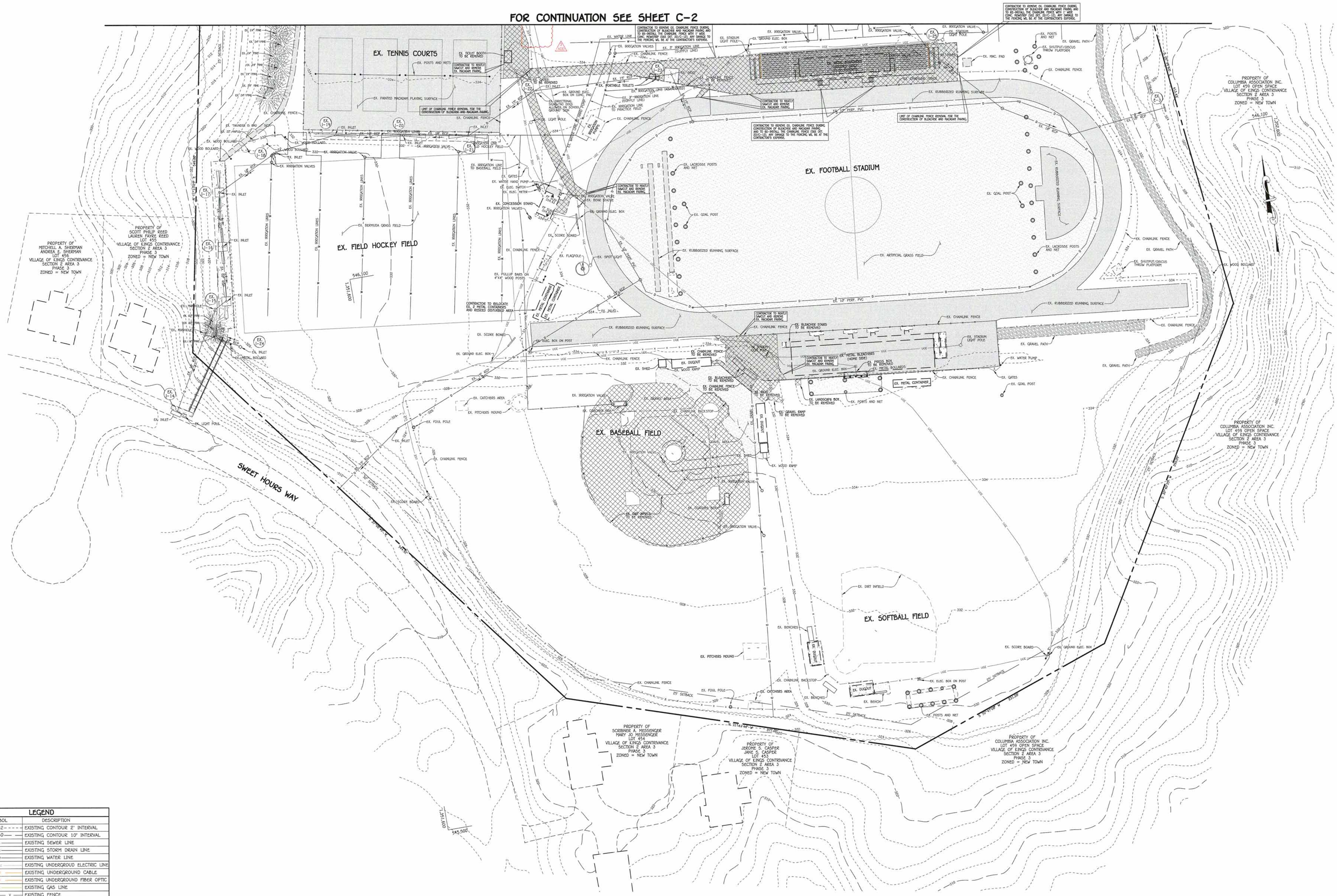
DATE: 02/19/2020

SCALE: 1" = 40'

WORKING NORTH

SHEET NO:

C-2



ARCHITECT

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PROFESSIONAL SEAL:

PRINTS ISSUED

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

DEMOLITION PLAN

PROJECT NO: 18011.00

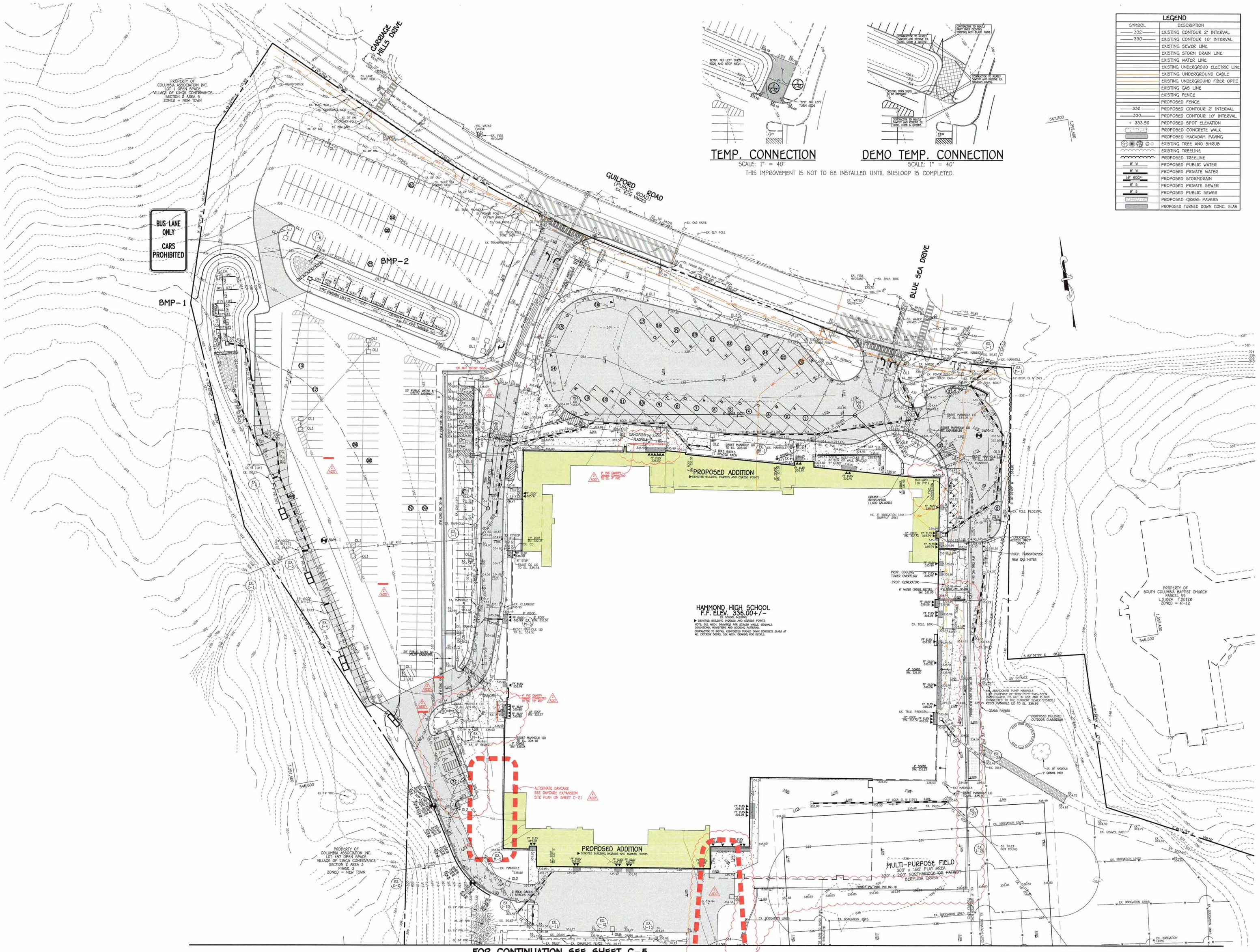
DATE: 02/19/2020

SCALE: 1" = 40'

WORKING NORTH

SHEET NO:

C-3



PLAN
SCALE: 1" = 40'

TEMP. CONNECTION
SCALE: 1" = 40'

DEMO TEMP. CONNECTION
SCALE: 1" = 40'

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

LEGEND	
SYMBOL	DESCRIPTION
332	EXISTING CONTOUR 2' INTERVAL
330	EXISTING CONTOUR 10' INTERVAL
	EXISTING SEWER LINE
	EXISTING STORM DRAIN LINE
	EXISTING WATER LINE
	EXISTING UNDERGROUND 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

ARCHITECT
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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

SITE DEVELOPMENT PLAN

PROJECT NO: 18011.00

DATE: 02/19/2020

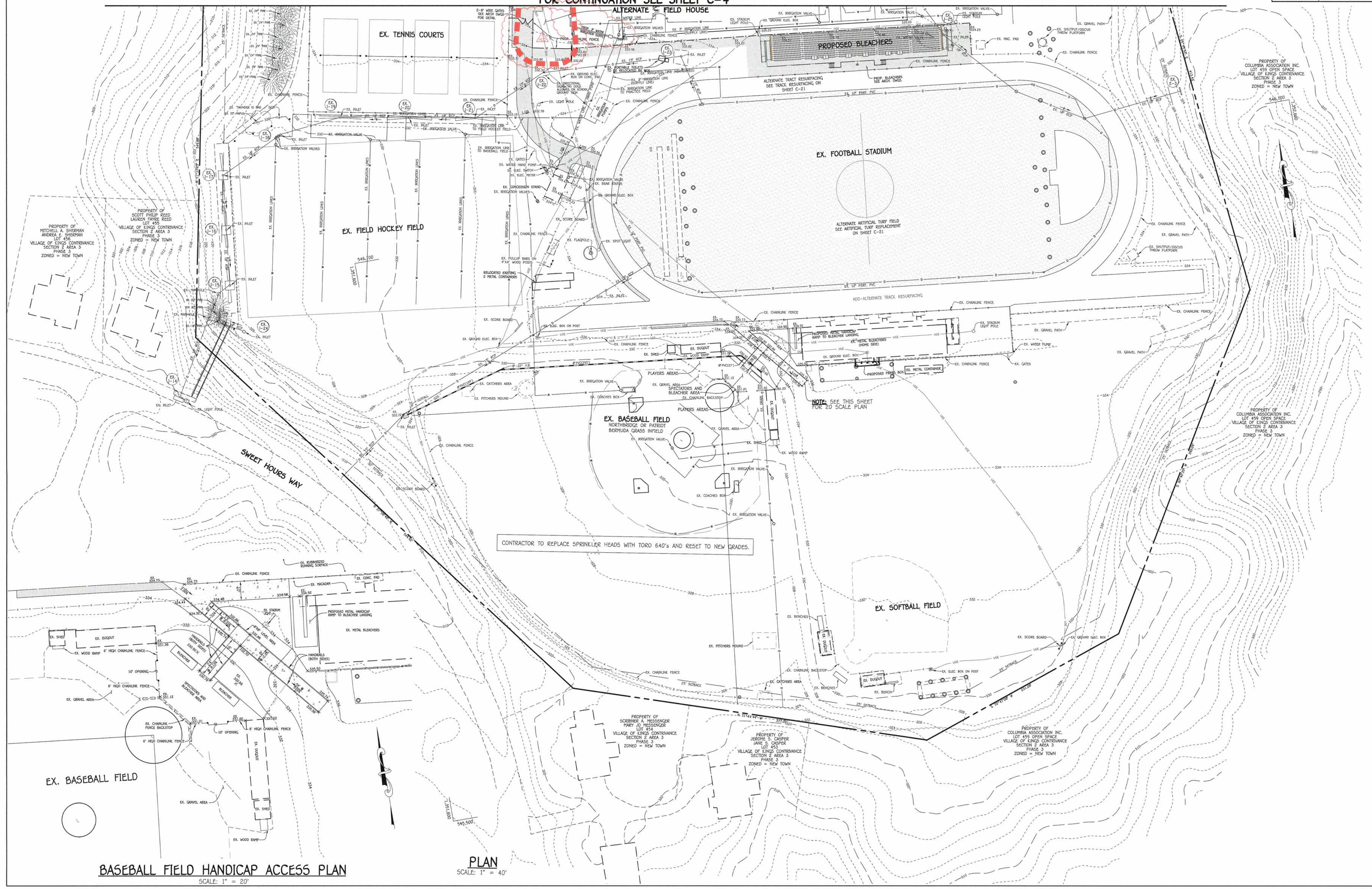
SCALE: 1" = 40'

WORKING NORTH

SHEET NO:

C-4

FOR CONTINUATION SEE SHEET C-4



BASEBALL FIELD HANDICAP ACCESS PLAN

SCALE: 1" = 20'

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" RCP	PROPOSED STORMDRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER
	PROPOSED GRASS PAVERS

ARCHITECT

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

SITE DEVELOPMENT PLAN

PROJECT NO: 18011.00

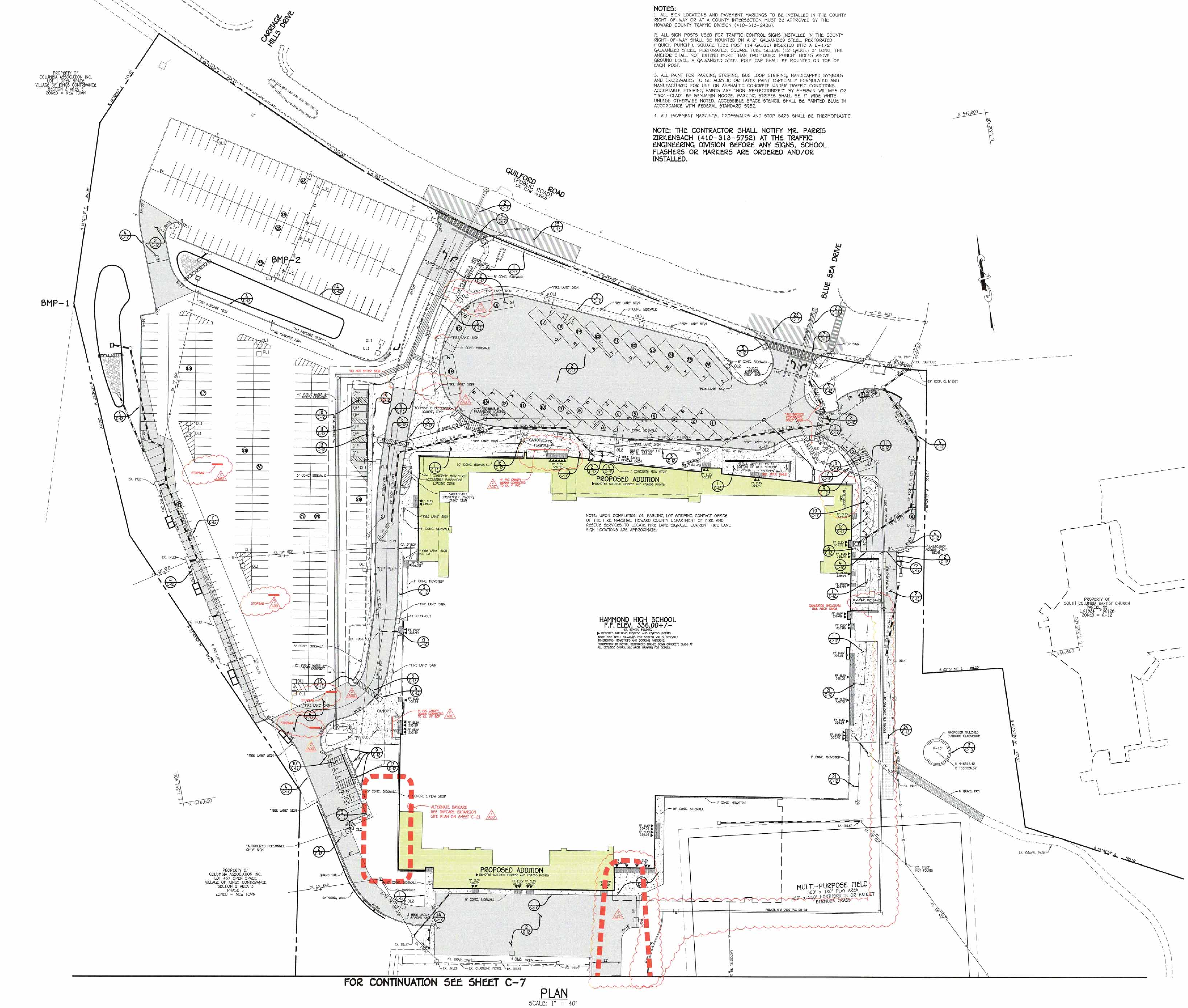
DATE: 02/19/2020

SCALE: 1" = 40'

WORKING NORTH

SHEET NO:

C-5



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.

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 UNDERGROUD ELECTRIC LINE
— UGC —	EXISTING UNDERGROUND CABLE
— UFO —	EXISTING UNDERGROUND FIBER OPTIC
— G —	EXISTING GAS LINE
— X — X —	EXISTING FENCE
— X — 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

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PROFESSIONAL SEAL:

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NO:	DESCRIPTION:	DATE:
1	PERMIT REVISION	02/19/2020
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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

GEOMETRY PLAN AND STRIPING PLAN

PROJECT NO: 18011.00

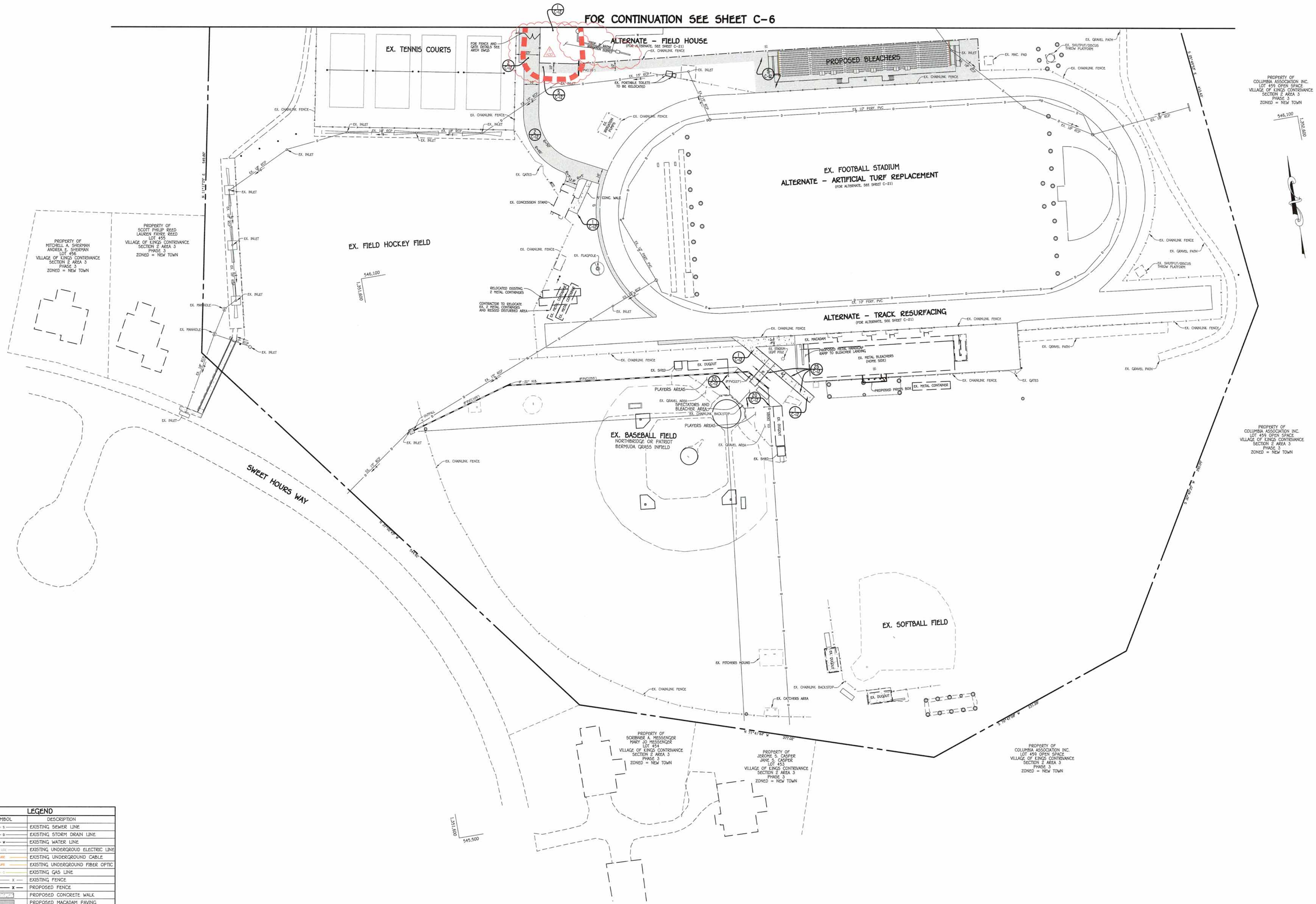
DATE: 02/19/2020

SCALE: 1" = 40'

WORKING NORTH

SHEET NO:

C-6



PLAN
SCALE: 1" = 40'

LEGEND	
SYMBOL	DESCRIPTION
S	EXISTING SEWER LINE
D	EXISTING STORM DRAIN LINE
W	EXISTING WATER LINE
UGE	EXISTING UNDERGROUD ELECTRIC LINE
UTC	EXISTING UNDERGROUND CABLE
UTF	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
12" ECCP	PROPOSED STORMDRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER
	PROPOSED GRASS PAVERS

ARCHITECT

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PROFESSIONAL SEAL:

PRINTS ISSUED

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

GEOMETRY PLAN

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

WORKING NORTH

SHEET NO:

C-7

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

PLAN
SCALE: 1" = 40'

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
UGO	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
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

ARCHITECT
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CIVIL
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10272 BALTIMORE NATIONAL PIKE
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410-461-2855(P)

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NYIKOS ASSOCIATES, INC.
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240-683-9530(P)

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410-821-5930(P)

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443-463-5859(P)

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

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PROFESSIONAL SEAL:

PRINTS ISSUED

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

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

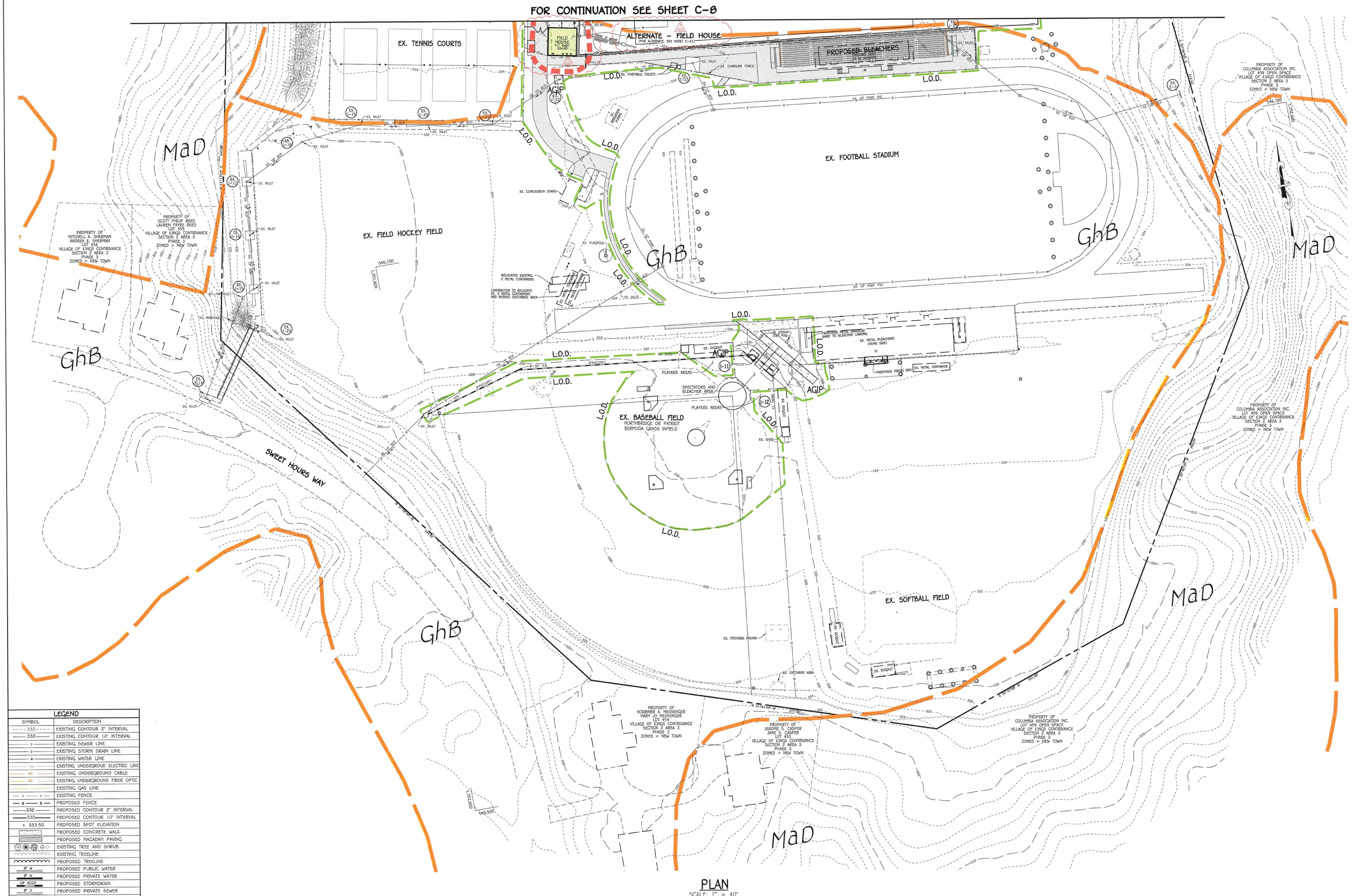
1:\2018\18016\Engineering\Dwgs\18016 CD-8-9 SEC.dwg, SHEET 8 SEC, 3/12/2020 9:34:52 AM, 1:1

SOILS LEGEND

SOIL	NAME	GROUP
GhB	Glenelg loam, 0 to 15 percent slopes, K VALUE = 0.20	B
GhC	Glenelg - Urban loam, 0 to 15 percent slopes, K VALUE = 0.20	B
MaC	Manor loam, 0 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

FOR CONTINUATION SEE SHEET C-8



PLAN
SCALE: 1" = 40'

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
18" RCCP	PROPOSED STORMDRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER
▨	PROPOSED GRASS PAVERS
🟧	SOILS DELINEATION
—SSF—	SUPER SILT FENCE

ARCHITECT

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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-9

3 ADD

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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, 0 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
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
18" 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'

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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

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

FOR CONTINUATION SEE SHEET C-10

PLAN
SCALE: 1" = 40'

LEGEND

SYMBOL	DESCRIPTION
332	EXISTING CONTOUR 2' INTERVAL
330	EXISTING CONTOUR 10' INTERVAL
S	EXISTING SEWER LINE
D	EXISTING STORM DRAIN LINE
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UFO	EXISTING UNDERGROUND FIBER OPTIC
G	EXISTING GAS LINE
X	EXISTING FENCE
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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
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8" S	PROPOSED PRIVATE SEWER
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	PROPOSED GRASS PAVERS
	SOILS DELINEATION

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SOILS AND STORM DRAINAGE AREA MAP

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SCALE: 1" = 40'
WORKING NORTH
SHEET NO: C-11

DOOR AND FRAME SCHEDULE - FIRST FLOOR - AREA A & B

NO.	LOCATION FROM	LOCATION TO	DOOR LEAVES	DOOR SIZE	DOOR TYPE	DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	FRAME HEAD	FRAME JAMB	FIRE RATING	HARDWARE	COMMENTS
AREA A													
A100	VESTIBULE 1		2	3'-0" x 7'-0" x 1 3/4"	H	AL	-	AL	-	-		08A	
A100.1	VESTIBULE 1		2	3'-0" x 7'-0" x 1 3/4"	H	AL	-	AL	-	-		08A	
A100.2	VESTIBULE 1		2	3'-0" x 7'-0" x 1 3/4"	H	AL	-	AL	-	-		08C	
A100.3	RECEPTION	VESTIBULE 1	1	3'-0" x 7'-0" x 1 3/4"	G	AL	-	AL	-	-		05	180° SWING
A100.4	LOBBY	VESTIBULE 1	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M29	HM	H2	J2		08E	
A100.5	LOBBY	VESTIBULE 1	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M29	HM	H2	J2		08F	
A100.6	LOBBY	VESTIBULE 1	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M29	HM	H2	J2		08F	
A101	LOBBY	STAIR 2	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2	60 MIN	20D	180° SWING, 90° SWING
A101.1		STAIR 2	2	3'-0" x 7'-0" x 1 3/4"	H	AL	-	AL	-	-		19A	
A103	RECEPTION	LOBBY	1	3'-0" x 7'-0" x 1 3/4"	G	AL	-	AL	-	-		02K	180° SWING
A103.1	RECEPTION	BEAR CAGE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		03C	
A103.2	CLO	RECEPTION	-	3'-0" X 9'-0" X 1 3/4"	-	HM	-	HM	H1	J1		00B	BIFOLD
A103.4	RECEPTION	TEST ST	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		04	
A104	RECEPTION	ATTENDANCE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		03A	
A104.1	ATTENDANCE	LOBBY	-	4'-8" X 6'-8" M.O.	-	-	-	-	-	-		00	COILING COUNTER DOOR
A105	CORRIDOR	VOLUNTEER	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		03F	
A106	RECEPTION	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		03E	
A106.1	CORRIDOR	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	C	HM	M1	HM	H2	J2		02D	
A107	CORRIDOR	WORKROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		02F	
A107.1	CORRIDOR	WORKROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02	
A108	CORRIDOR	SECURITY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03E	
A108.1	RECEPTION	SECURITY	-	3'-0" X 4'-0"	-	-	G20	HM	H1	J1		00A	VISION GLASS
A109	CORRIDOR	CONF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A109.1	CORRIDOR	CONF	-	2' X 7'	-	-	G25	HM	H1	J1		00A	VISION GLASS
A110	SP.ED. CONF	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02D	180° SWING
A111	CORRIDOR	SECRETARY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A112	CORRIDOR	A.P. OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A113	CORRIDOR	SP. ED. PLAN	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
A114	CORRIDOR	BUS MGR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A115	ST	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	B	HM	G6	HM	H1	J1		10C	180° SWING
A115.1	CORRIDOR	ELEC	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04D	
A116	CORRIDOR	A.P. OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A117	CORRIDOR	A.P. OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A118	T 1	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		06	180° SWING, UC
A119	CORRIDOR	PRINCIPAL	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A119.1	PRINCIPAL	T 2	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06B	UC
A120	CORRIDOR	T 3	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06A	UC
A121	CORRIDOR	STAIR 1	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2	60 MIN	20A	
A121.1	STAIR 1		2	3'-0" x 7'-0" x 1 3/4"	H	AL	-	AL	-	-		08	
A122	CORRIDOR	ESOL	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
A123	CORRIDOR	ESOL	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
A124	CORRIDOR	ESOL	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
A125	CORRIDOR	CU 1	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04L	180° SWING, UC
A126	CORRIDOR	SUPPORT	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		03F	
A127	CORRIDOR	CONTRACT ROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
A129	AEPS	CONTRACT ROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3B	HM	H2	J2		04	
A130	CORRIDOR	SHARED LIASON OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		03F	
A130.1	CALL	SHARED LIASON OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		04	
A132	CORRIDOR	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	C	HM	M1	HM	H2	J2		12	
A132.1	CAREER CENTER	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		12	
A133	CORRIDOR	CONF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		03	
A134	WORKROOM	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		03I	
A135	CORRIDOR	CONF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A136	CAREER CENTER	RECORDS	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		04M	
A137	CORRIDOR	OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A138	CAREER CENTER	OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A139	CORRIDOR	OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
A140	CAREER CENTER	OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3B	HM	H2	J2		03A	
A141	CAREER CENTER	OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3B	HM	H2	J2		03A	
A142	CAREER CENTER	OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3B	HM	H2	J2		03A	
A143	CAREER CENTER	OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3B	HM	H2	J2		03A	
A144	CAREER CENTER	OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3B	HM	H2	J2		03A	
A145	CORRIDOR	CAREER CENTER	1	3'-0" x 7'-0" x 1 3/4"	G	AL	-	AL	-	-		12B	180° SWING
A146	CORRIDOR	CORRIDOR	2	4'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2	90 MIN	20D	
A147	CORRIDOR	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2	90 MIN	20A	
AREA B													
B101	HEALTH WAITING ROOM	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	180° SWING
B102	HEALTH WAITING ROOM	ST	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		04C	
B103	HEALTH WAITING ROOM	EXAM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G4B	HM	H1	J1		03	
B104	HEALTH OFF	HEALTH WAITING ROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G4B	HM	H1	J1		07	
B106	HEALTH WAITING ROOM	NURSE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G4B	HM	H1	J1		03A	
B106.1	NURSE	COT 1	-	4'-0" X 4'-0"	--	--	G19	HM	H1	J1		00A	VISION GLASS
B106.2	NURSE	COT 2	-	4'-0" X 4'-0"	--	--	G19	HM	H1	J1		00A	VISION GLASS
B108	T 4	HEALTH WAITING ROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06	UC
B109	T 5	HEALTH WAITING ROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06A	UC
B110	ELEV CONTROL	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2, J5	45 MIN	04N	180° SWING
B111	PROFESSIONAL DEVELOPMENT	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		12	180° SWING
B111.1	PROFESSIONAL DEVELOPMENT	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		12	180° SWING
B113	CU 2	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04L	180° SWING, UC
B114	BOYS	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02C	UC
B115	GIRLS	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02C	UC
B116	FAMILY T 1	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06A	UC
B118	CORRIDOR	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2, J4	90 MIN	20A	
B118.1	CORRIDOR	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2, J4	90 MIN	20A	
B119	CORRIDOR	OT/PT	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
B119.1	OT/PT	OT/PT ST 1	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09B	
B119.2	OT/PT	OT/PT ST 2	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09B	
B121	CORRIDOR	A.L.S. RESOURCE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2, J4	90 MIN	02B	
B122	A.L.S. ST	A.L.S. RESOURCE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		09C	180° SWING
B123	A.L.S. RESOURCE	T 7	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06A	UC
B124	CORRIDOR	SPEECH	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2	90 MIN	02A	
B125	CORRIDOR	G&T	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
B125.1	G&T OFF	G&T	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03C	
B125.2	G&T	G&T OFF	-	4'-0" X 4'-0"	--	--	G19	HM	H1	J1		00A	VISION GLASS
B126	CORRIDOR	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2, J4		01	
B126.1	CORRIDOR	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2, J4		01	
B127	MEDIA CENTER	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M10	HM	H2	J2		11B	
B127.1	MEDIA CENTER	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M8	HM	H2	J2		11A	
B127.2	CORRIDOR	MEDIA CENTER	-	8'-0" x 8'-8"	-	HM	M18	HM	H2	J2		00A	VISION GLASS WITH METAL PANEL
B127.3	CORRIDOR	MEDIA CENTER	-	8'-0" x 8'-8"	-	HM	M18	HM	H2	J2		00A	VISION GLASS WITH METAL PANEL
B127.4	CORRIDOR	MEDIA CENTER	-	8'-0" x 8'-8"	-	HM	M18	HM	H2	J2		00A	VISION GLASS WITH METAL PANEL
B127.5	CORRIDOR	MEDIA CENTER	-	8'-0" x 8'-8"	-	HM	M18	HM	H2	J2		00A	VISION GLASS WITH METAL PANEL
B127.6	CORRIDOR	MEDIA CENTER	-	8'-0" x 8'-8"	-	HM	M18	HM	H2	J2		00A	VISION GLASS WITH METAL PANEL
B127.7	CORRIDOR	MEDIA CENTER	-	8'-0" x 8'-8"	-	HM	M18	HM	H2	J2		00A	VISION GLASS WITH METAL PANEL
B127.8	CORRIDOR	MEDIA CENTER	-	8'-0" x 8'-8"	-	HM	M18	HM	H2	J2		00A	VISION GLASS WITH METAL PANEL
B127.9	MEDIA CENTER	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M10	HM	H2	J2		11B	
B128	INNOVATION LAB	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02	
B128.1	INNOVATION LAB	MEDIA CENTER	1	3'-0" x 7'-0" x 1 3/4"	H	HM	M14	HM	H2	J2	90 MIN	02A	VISION GLASS
B128.2	INNOVATION LAB	OFF	-	8'-0" x 8'-8"	-	HM	G18	HM	H1	J1		00A	VISION GLASS
B129	CORRIDOR	TV STUDIO	1	4'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
B129.1	CONTROL	TV STUDIO	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G15	HM	H1	J1		09G	
B130	OFF	CONTROL	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G12B	HM	H1	J1		09F	
B131	MEDIA CENTER	OFF	1	3'-0" x 7'-0" x 1 3/4"	H	HM	M12B	HM	H2	J2	90 MIN	02A	
B131.1	HALL	OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		03A	180° SWING
B131.2	GROUP 1	OFF	-	8'-0" x 8'-8"	-	HM	M18	HM	H2	J2		00A	VISION GLASS
B132	GROUP 1	MEDIA CENTER	1	3'-0" x 7'-0" x 1 3/4"	H	HM	M3A	HM	H2	J2	90 MIN	02D	180° SWING
B132.1	GROUP 1	HALL	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02G	
B133	GROUP 2	MEDIA CENTER	1	3'-0" x 7'-0" x 1 3/4"	H	HM	M3A	HM	H2	J2	90 MIN	02D	180° SWING
B133.1	GROUP 1	GROUP 2	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G13	HM	H1	J1		02G	
B134	MEDIA CENTER	BOOK ST 1	1	4'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2	90 MIN	04B	180° SWING
B135	CORRIDOR	GIRLS	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02C	UC
B136	CORRIDOR	CU 3	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04J	UC
B137	CORRIDOR	T 8	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06A	UC
B138	CORRIDOR	BOYS	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02C	UC
B140	CORRIDOR	HALL	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02	
B141	HALL	IDF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		05B	
B141.1	HALL	ELEC	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		04A	
B142	HALL	BOOK ST 2	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		04O	
B143	CORRIDOR	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M9	HM	H2	J5	90 MIN	01C	
B143.1	CORRIDOR	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M9	HM	H2	J4	90 MIN	01C	

DOOR AND FRAME SCHEDULE - FIRST FLOOR - AREA C & D

NO.	LOCATION FROM	LOCATION TO	DOOR LEAVES	DOOR SIZE	DOOR TYPE	DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	FRAME HEAD	FRAME JAMB	FIRE RATING	HARDWARE	COMMENTS
AREA C													
C100	STAIR 3	CAFETERIA COMMONS	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2	60 MIN	20D	180° SWING
C100.1		STAIR 3	2	3'-0" x 7'-0" x 1 3/4"	H	AL	-	AL				19A	
C101	CAFETERIA	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M24	HM	H2	J5	45 MIN	11E	
C101.1	CAFETERIA	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M24	HM	H2	J5	45 MIN	11E	
C101.2	CAFETERIA		2	3'-0" x 7'-0" x 1 3/4"	H	AL	-	AL				08	
C101.3	CAFETERIA	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M24	HM	H2	J5	45 MIN	11E	
C102	KITCHEN	CAFETERIA	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M8	HM	H2	J2	45 MIN	10	UC
C102.1	KITCHEN	CAFETERIA	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M8	HM	H2	J2	45 MIN	10	UC
C102.2	KITCHEN	CAFETERIA	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M8	HM	H2	J2	45 MIN	10	UC
C102.3	KITCHEN	CAFETERIA	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M8	HM	H2	J2	45 MIN	10	UC
C102.4	CORRIDOR	KITCHEN	1	4'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		09	UC
C103	KITCHEN	J.C.	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04C	UC
C104	KITCHEN	DRY STORAGE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		09A	
C107	KITCHEN	LOCKERS	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2, J5		15	UC
C107.1	LOCKERS	LOCKERS T	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2, J4		06A	UC
C108	KITCHEN	OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2, J5		03A	
C108.1	OFF	KITCHEN	-	4'-0" X 4'-0"	-	-	M19	HM	H2	J2		00A	VISION GLASS
C108.2	OFF	KITCHEN	-	4'-0" X 4'-0"	-	-	M19	HM	H2	J2		00A	VISION GLASS
C109	CAFETERIA	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	H	HM	M8	HM	H2	J2	45 MIN	11E	
C109.1	CORRIDOR	CORRIDOR	2	4'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2	90 MIN	20A	
C110	CORRIDOR		2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H4	J6		08B	
C110.1	CORRIDOR	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2		20B	
C111	CORRIDOR	ELEC	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		23A	
C111.1	ELEC		1	4'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H4	J6		23	180° SWING
C112	MDF	ELEC	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		05C	UC
C113	CORRIDOR	MECHANICAL ROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		23A	180° SWING
C113.1	MECHANICAL ROOM		2	3'-0" x 7'-0" x 1 3/4"	B	HM	M6	HM	H4	J6		19	
C113.2	MECHANICAL ROOM		1	4'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H4	J6		23	
C114	STAFF DINING/ LOUNGE	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2	90 MIN	12D	180° SWING
C114.1	CORRIDOR	STAFF DINING/ LOUNGE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		12	UC
C114.2	STAFF DINING/ LOUNGE	T9	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06	UC
C116	SVC CORRIDOR		2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H4	J6		08B	
C116.1	CORRIDOR	SVC CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	B	HM	M6	HM	H2	J2		20B	
C117	CU OFF	SVC CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	C	HM	M1	HM	H2	J2		02D	UC
C117.1	LOCKERS	CU OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		15A	UC
C117.2	T 10	CU OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06C	UC
C117.3	LOCKERS	CU OFF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		15A	UC
C118	CU SHOP	SVC CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2		21	UC
C119	GENERAL BUILDING STO	SVC CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	B	HM	M6	HM	H2	J2		10A	
C120	WATER		1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H4	J6		04G	
C121	MOWER		2	3'-0" x 7'-0" x 1 3/4"	B	HM	M6	HM	H4	J6		10H	
C121.1	MOWER	SVC CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04N	180° SWING, UC
C122	PHOTO STUDIO	DARK ROOM	-	4'-0" x 7'-0"	-	-	-	-	-	-		00C	4' REVOLVING DOOR
C123	PHOTO STUDIO	ART ST	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09B	
C124	PHOTO STUDIO	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		12	UC
C124.1	PHOTO STUDIO		1	3'-0" x 7'-0" x 1 3/4"	G	HM	M5	HM	H4	J6		16	
C126	CORRIDOR	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	UC
C127	CORRIDOR	E.D. SUPPORT	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02	
C127.1	CORRIDOR	E.D. SUPPORT	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02	
C127.2	ED RESOURCE ROOM	E.D. SUPPORT	-	4'-0" X 4'-0"	-	-	G19	HM	H1	J1		00A	VISION GLASS
C127.3	E.D. SUPPORT	E.D. SUPPORT	-	4'-0" X 4'-0"	-	-	G19	HM	H1	J1		00A	VISION GLASS
C128	CR COMMONS	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M28	HM	H1	J2		02B	UC
C128.2	CLASSROOM	CR COMMONS	-	11'-0" X 2'-0"	-	-	M26	HM	H1	J1		00A	VISION GLASS
C129	CORRIDOR	ED RESOURCE ROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
C130	CR COMMONS	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M28	HM	H1	J2		02B	UC
C130.1	CLASSROOM	CR COMMONS	-	11'-0" X 2'-0"	-	-	M26	HM	H1	J1		00A	VISION GLASS
C132	CR COMMONS	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M5	HM	H1	J2		02B	UC
C133	CR COMMONS	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M28	HM	H1	J2		02B	UC
C133.1	CLASSROOM	CR COMMONS	-	---	-	-	M27	HM	H1	J1		00A	VISION GLASS
C134	CR COMMONS	TEACHER PLANNING 1	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M2	HM	H1	J2		02	UC
C135	CR COMMONS	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M28	HM	H1	J2		02B	UC
C135.1	CLASSROOM	CR COMMONS	-	---	-	-	M27	HM	H1	J1		00A	VISION GLASS
C137	CR COMMONS	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M28	HM	H1	J2		02B	UC
C137.1	CLASSROOM	CR COMMONS	-	11'-0" X 2'-0"	-	-	M26	HM	H1	J1		00A	VISION GLASS
AREA D													
D100	ART STUDIO 2	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		12	180° SWING, UC
D100.1	ART STUDIO 2	PHOTO STUDIO	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		02A	
D100.2	ART STUDIO 2		1	3'-0" x 7'-0" x 1 3/4"	G	HM	M5	HM	H4	J6		16	
D100.3	ART STUDIO 2	SCULPTURE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G4B	HM	H1	J1		09A	UC
D101	ART STUDIO 1	SCULPTURE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G4B	HM	H1	J1		09A	UC
D102	ART ST	ART STUDIO 1	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09C	180° SWING
D102.1	ART ST	ART STUDIO 2	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09B	180° SWING
D103	ART STUDIO 1	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		12	180° SWING, UC
D103.1	ART STUDIO 1		1	3'-0" x 7'-0" x 1 3/4"	G	HM	M5	HM	H4	J6		16	
D104	ART PLAN	ART STUDIO 1	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		09C	
D104.1	ART PLAN		1	3'-0" x 7'-0" x 1 3/4"	G	HM	M5	HM	H4	J6		04G	
D105	CORRIDOR	STO	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04A	
D106	ART ST	ART STUDIO 1	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09B	
D108	CORRIDOR	CU 4	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04J	UC
D109	CORRIDOR	BOYS	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02C	UC
D110	CORRIDOR	GIRLS	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02C	UC
D111	CORRIDOR	T 11	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06A	UC
D112	CR COMMONS	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M28	HM	H1	J2		02B	UC
D113	CR COMMONS	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M28	HM	H1	J2		02B	UC
D113.1	CLASSROOM	CR COMMONS	-	11'-0" X 2'-0"	--	--	M26	HM	H1	J1		00A	VISION GLASS
D114	CR COMMONS	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M28	HM	H1	J2		02B	UC
D115	SCIENCE LAB 1	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2	45 MIN	12D	UC
D115.1	SCIENCE LAB 1	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC
D116	SCIENCE LAB 2	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2	45 MIN	12D	UC
D116.1	SCIENCE LAB 2	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2	45 MIN	12D	UC
D116.2	CORRIDOR	SCIENCE LAB 2	-	8'-0" x 8'-8"	-	HM	M18	HM	H2	J2	60 MIN	00A	VISION GLASS
D117	CORRIDOR	ELEC	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04D	
D117.1	ELEC	IDF	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		05D	
D118	STO	SCIENCE PLAN	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09C	180° SWING
D119	SCIENCE PLAN	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M12A	HM	H2	J2		02D	180° SWING
D120	SCIENCE LAB 3	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2	45 MIN	12D	UC
D120.1	CORRIDOR	SCIENCE LAB 3	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2	45 MIN	12D	UC
D120.2	CORRIDOR	SCIENCE LAB 3	-	8'-0" x 8'-8"	-	HM	M18	HM	H2	J2	60 MIN	00A	VISION GLASS
D121	SCIENCE LAB 4	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2	45 MIN	12D	UC
D121.1	SCIENCE LAB 4	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2	45 MIN	12D	UC
D122	CORRIDOR	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2	90 MIN	01C	
D122.1	CORRIDOR	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J2	90 MIN	01C	
D123	VESTIBULE		2	3'-0" x 7'-0" x 1 3/4"	F	HM	M11	HM	H2	J2		08B	
D123.1	CORRIDOR	VESTIBULE	2	3'-0" x 7'-0" x 1 3/4"	F	HM	M11	HM	H2	J2		24	
D123.2	VESTIBULE		1	3'-0" x 7'-0" x 1 3/4"	E	HM	M11	HM	H2	J2		16B	
D123.3	CORRIDOR	VESTIBULE	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M11	HM	H2	J2		25A	
D124	SCIENCE LAB 5	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC
D124.1	SCIENCE LAB 5	VESTIBULE	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	
D125	SCIENCE LAB 6	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC
D125.1	SCIENCE LAB 6	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC
D126	CORRIDOR	SCIENCE LAB 7	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC
D126.1	SCIENCE LAB 7	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC
D127	SCIENCE LAB 8	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC
D127.1	CORRIDOR	SCIENCE LAB 8	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC
D128	SEM 1	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M12A	HM	H2	J2	45 MIN	02D	180° SWING
D128.1	SCI PREP	SEM 1	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		02F	
D128.2	SCIENCE LAB 8	SEM 1	-	8'-0" x 8'-8"	-	-	G18	HM	H1	J1		00A	VISION GLASS
D129	CORRIDOR	SCI PREP	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2	45 MIN	02	UC
D129.1	SCI PREP	SCIENCE LAB 8	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		02F	180° SWING
D130	SEM 2	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M12A	HM	H2	J2	45 MIN	02D	180° SWING
D130.1	SCIENCE LAB 9	SEM 2	-	8'-0" x 8'-8"	-	-	G18	HM	H1	J1		00A	VISION GLASS
D131	SCI PREP	ISL	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		09B	UC
D132	SCI PREP	ISL	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		09B	UC
D133	SCIENCE LAB 9	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2	45 MIN	12D	UC
D133.1	SCIENCE LAB 9	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC
D134	SCIENCE LAB 10	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC
D134.1	SCIENCE LAB 10	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M1	HM	H2	J2, J5	45 MIN	12D	UC

DOOR AND FRAME SCHEDULE - FIRST FLOOR - AREA E & F

NO.	LOCATION FROM	LOCATION TO	DOOR LEAVES	DOOR SIZE	DOOR TYPE	DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	FRAME HEAD	FRAME JAMB	FIRE RATING	HARDWARE	COMMENTS
AREA E													
E100	ELEC	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	B	HM	M1	HM	H2	J2		04F	
E101	CORRIDOR	CLASSROOM	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	UC
E102	A.L.S. RESOURCE	T 12	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06A	UC
E102.1	A.L.S. ST	A.L.S. RESOURCE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04N	180° SWING
E103	ST	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04H	
E104	CORRIDOR	A.L.S. RESOURCE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
E105	CTE ENGINEERING/ TECHNOLOGY	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		12	180° SWING
E105.1	CTE ENGINEERING/ TECHNOLOGY	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		12	180° SWING
E106	ST	CTE ENGINEERING/ TECHNOLOGY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09B	
E107	CTE ENGINEERING/ TECHNOLOGY	ST	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09C	180° SWING
E108	FABRICATION LAB	CTE ENGINEERING/ TECHNOLOGY	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M17	HM	H2	J2		09D	180° SWING
E108.1	FABRICATION LAB	CTE ENGINEERING/ TECHNOLOGY	1	3'-0" x 7'-0" x 1 3/4"	E	HM	M17	HM	H2	J2		09D	180° SWING
E109	ST	CTE ENGINEERING/ TECHNOLOGY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09B	
E110	CTE ENGINEERING/ TECHNOLOGY	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M5	HM	H2	J2		12	
E110.1	CTE ENGINEERING/ TECHNOLOGY	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M5	HM	H2	J2		12	180° SWING
E110.2	FABRICATION LAB	CTE ENGINEERING/ TECHNOLOGY	1	3'-0" x 7'-0" x 1 3/4"	E	HM	G16	HM	H1	J1		09B	
E111	ST	CTE ENGINEERING/ TECHNOLOGY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09B	
E113	CTE ENGINEERING/ TECHNOLOGY	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		12	180° SWING
E113.1	CTE ENGINEERING/ TECHNOLOGY	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		12	180° SWING
E114	ST	CTE ENGINEERING/ TECHNOLOGY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		09A	
E115	ST	CTE ENGINEERING/ TECHNOLOGY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		09A	
E116	MATERIAL ST	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	B	HM	M6	HM	H2	J2		10B	180° SWING, UC
E116.1	FABRICATION LAB	MATERIAL ST	2	3'-0" x 7'-0" x 1 3/4"	B	HM	M6	HM	H2	J2		10B	UC
E117	CORRIDOR	HEALTH EDUCATION	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
E118	GIRLS	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02C	UC
E119	CORRIDOR	CU 5	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04J	UC
E120	CORRIDOR	T 13	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		06A	UC
E121	CORRIDOR	BOYS	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		02C	UC
E122	CORRIDOR	CTE SEMINAR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2, J5		02	
E122.1	CTE SEMINAR	CTE CAREER ACADEMY	-	4'-0" X 4'-0"	-	-	G19	HM	H2	J2		00A	VISION GLASS
E123	CORRIDOR	CORRIDOR	2	4'-0" x 7'-0" x 1 3/4"	D	HM	M6	HM	H2	J5		01A	
E124	CORRIDOR	CTE CAREER ACADEMY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
E124.1	CTE CAREER ACADEMY	CTE PLAN	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03I	
E125	CTE PLAN	CTE STOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09C	180° SWING
E126	CTE PLAN	CTE ENGINEERING/ TECHNOLOGY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03A	
E126.1	CTE PLAN	CTE ENGINEERING/ TECHNOLOGY	-	4'-0" X 4'-0"	-	-	G19	HM	H1	J1		00A	VISION GLASS
E127	CORRIDOR	CTE CAREER ACADEMY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
E127.1	CTE PLAN	CTE CAREER ACADEMY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		03I	
E129	CU 6	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2		04L	180° SWING, UC
E130	FAMILY T2	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2, J5		06A	UC
E131	CORRIDOR	STUDENT ORG	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M5	HM	H2	J2		02	
E131.1	ST	STUDENT ORG	2	2'-8" x 7'-0" x 1 3/4"	B	HM	G6	HM	H1	J1		10A	
E131.2	ST	STUDENT ORG	2	2'-8" x 7'-0" x 1 3/4"	B	HM	G6	HM	H1	J1		10A	
E132	CORRIDOR	SCHOOL STORE	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M5	HM	H2	J2		02B	
E132.1	SCHOOL STORE	CORRIDOR	-	6'-0" X 6'-8" M.O.	-	-	-	-	-	-		00	OVERHEAD COILING DOOR
E133	ST	SCHOOL STORE	2	3'-0" x 7'-0" x 1 3/4"	B	HM	G6	HM	H1	J1		10A	
AREA F													
F100	CORRIDOR	CORRIDOR	2	4'-0" x 7'-0" x 1 3/4"	B	HM	M6	HM	H3	J3	90 MIN	20A	
F101	CORRIDOR	CTE CAREER ACADEMY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
F101.1	CTE CAREER ACADEMY	CTE PLAN	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G4B	HM	H1	J1		09B	
F102	CORRIDOR	CTE SEMINAR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
F102.1	CTE SEMINAR	CTE CAREER ACADEMY	-	4'-0" X 4'-0"	-	-	G19	HM	H1	J1		00A	VISION GLASS
F103	CTE STORAGE	CTE PLAN	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09D	
F104	CTE PLAN	CTE CAREER ACADEMY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G3B	HM	H1	J1		09C	180° SWING
F105	CORRIDOR	CTE CAREER ACADEMY	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H2	J2		02B	
F106	LAUNDRY	LAUNDRY ST	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09D	UC
F106.1	ELEC	LAUNDRY ST	2	3'-0" x 7'-0" x 1 3/4"	B	HM	M6	HM	H2	J2		10A	
F107	LAUNDRY	CORRIDOR	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H2	J2	45 MIN	09I	UC
F108	ST	A.D.	1	3'-0" x 7'-0" x 1 3/4"	A	HM	G1	HM	H1	J1		09D	
F109	CORRIDOR	TRAINING	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H3	J3		02B	
F110	CORRIDOR	A.D.	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M3A	HM	H3	J3		02B	
F111	CORRIDOR	P.E. ST	2	3'-0"/2'-0" x 7'-0" x 1 3/4"	J	HM	M7	HM	H3	J3		10G	UNEQUAL PAIRED DOOR
F112	CORRIDOR		2	3'-0" x 7'-0" x 1 3/4"	H	AL	-	AL	-	-		08B	
F112.1	CORRIDOR		2	3'-0" x 7'-0" x 1 3/4"	H	AL	-	AL	-	-		19A	
F113	CORRIDOR	GIRLS	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H3	J3		02C	UC
F113.1	GIRLS		1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H4	J6		02I	
F114	CORRIDOR	CU 7	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H3	J3		04J	UC
F115	CORRIDOR	T 14	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H3	J3		06A	UC
F116	CORRIDOR	BOYS	1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H3	J3		02C	UC
F116.1	BOYS		1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H4	J6		02I	
F117	P.E. ST	CORRIDOR	2	3'-0" x 7'-0" x 1 3/4"	B	HM	M6	HM	H3	J3		10A	180° SWING
F117.1	P.E. ST		2	3'-0" x 7'-0" x 1 3/4"	B	HM	M6	HM	H4	J6		10H	180° SWING
F118	OUTDOOR ST		1	3'-0" x 7'-0" x 1 3/4"	A	HM	M1	HM	H4	J6		04G	180° SWING

ARCHITECT

SMOLEN • EMR • ILKOVITCH ARCHITECTS

9211 CORPORATE BLVD, SUITE 340
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FISHER, COLLINS, CARTER

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ELLICOTT CITY, MD 21042
410-461-2855(P)

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

STRUCTURAL
COLUMBIA ENGINEERING

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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

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TOWSON, MD 21204
410-821-5930(P)

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DOO CONSULTING

531 PICCADILLY ROAD
TOWSON, MD 21204
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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 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
2	ADDENDUM 2	03/06/2020
3	ADDENDUM 3	03/12/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

DOOR SCHEDULE - FIRST FLOOR - AREA A - F

PROJECT NO: 18011.00

DATE: 03/12/2020

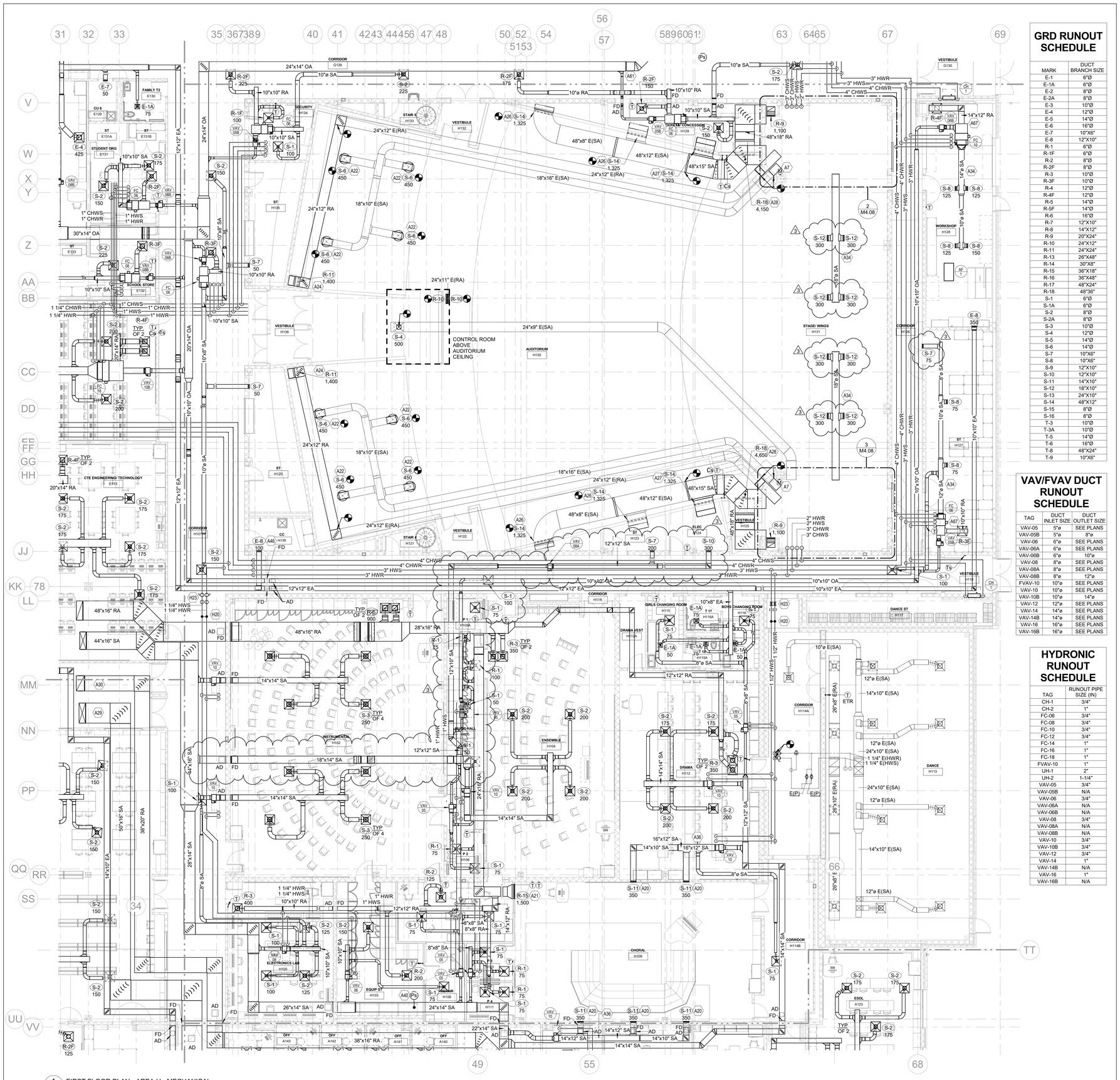
SCALE:

WORKING NORTH

SHEET NO:

A8.00

3/12/2020 9:04:21 AM



1 FIRST FLOOR PLAN - AREA H - MECHANICAL
M3.08 SCALE: 1/8" = 1'-0"

GRD RUNOUT SCHEDULE

MARK	DUCT BRANCH SIZE
E-1	6"Ø
E-1A	6"Ø
E-2	8"Ø
E-2A	8"Ø
E-3	10"Ø
E-4	12"Ø
E-5	14"Ø
E-6	16"Ø
E-7	10"X6"
E-8	12"X10"
R-1	6"Ø
R-1F	6"Ø
R-2	8"Ø
R-2F	8"Ø
R-3	10"Ø
R-3F	10"Ø
R-4	12"Ø
R-4F	12"Ø
R-5	14"Ø
R-5F	14"Ø
R-6	16"Ø
R-7	12"X10"
R-8	14"X12"
R-9	20"X24"
R-10	24"X12"
R-11	24"X24"
R-13	26"X48"
R-14	30"X6"
R-15	36"X18"
R-16	36"X48"
R-17	48"X24"
R-18	48"36"
S-1	6"Ø
S-1A	6"Ø
S-2	8"Ø
S-2A	8"Ø
S-3	10"Ø
S-4	12"Ø
S-5	14"Ø
S-6	14"Ø
S-7	10"X6"
S-8	10"X6"
S-9	12"X10"
S-10	12"X10"
S-11	14"X10"
S-12	18"X10"
S-13	24"X10"
S-14	48"X12"
S-15	8"Ø
S-16	8"Ø
T-3	10"Ø
T-3A	10"Ø
T-5	14"Ø
T-6	16"Ø
T-8	48"X24"
T-9	10"X6"

VAV/FVAV DUCT RUNOUT SCHEDULE

TAG	DUCT INLET SIZE	DUCT OUTLET SIZE
VAV-05	5"ø	SEE PLANS
VAV-05B	5"ø	8"ø
VAV-06	6"ø	SEE PLANS
VAV-06A	6"ø	SEE PLANS
VAV-06B	6"ø	10"ø
VAV-08	8"ø	SEE PLANS
VAV-08A	8"ø	SEE PLANS
VAV-08B	8"ø	12"ø
FVAV-10	10"ø	SEE PLANS
VAV-10	10"ø	SEE PLANS
VAV-10B	10"ø	14"ø
VAV-12	12"ø	SEE PLANS
VAV-14	14"ø	SEE PLANS
VAV-14B	14"ø	SEE PLANS
VAV-16	16"ø	SEE PLANS
VAV-16B	16"ø	SEE PLANS

HYDRONIC RUNOUT SCHEDULE

TAG	RUNOUT PIPE SIZE (IN)
CH-1	3/4"
CH-2	1"
FC-06	3/4"
FC-08	3/4"
FC-10	3/4"
FC-12	3/4"
FC-14	1"
FC-16	1"
FC-18	1"
FVAV-10	1"
UH-1	2"
UH-2	1-1/4"
VAV-05	3/4"
VAV-05B	N/A
VAV-06	3/4"
VAV-06A	N/A
VAV-06B	N/A
VAV-08	3/4"
VAV-08A	N/A
VAV-08B	N/A
VAV-10	3/4"
VAV-10B	3/4"
VAV-12	3/4"
VAV-14	1"
VAV-14B	N/A
VAV-16	1"
VAV-16B	N/A

GENERAL NOTES:

A. PHASING: REFER TO THE NOTES INDICATED ON DEMO/NEW FLOOR PLANS AND TO THE PHASING PLAN ON SHEETS M1.01 AND M1.02.

B. PROVIDE A HIGH-EFFICIENCY TAKE-OFF AND VOLUME DAMPER AT EACH GRILLE, REGISTER, AND DIFFUSER DUCT BRANCH RUNOUT. TYPICAL OF ALL. REFER TO THE DETAIL ON SHEET M6.02 FOR ADDITIONAL REQUIREMENTS.

C. DO NOT ROUTE PIPING OR DUCTWORK ABOVE ELECTRICAL PANELS.

D. PROVIDE DUCT ACCESS DOORS FOR ALL FIRE AND SMOKE DAMPERS AS REQUIRED. COORDINATE LOCATION WITH OTHER TRADES.

E. WHEN CONNECTING TO EXISTING DUCTWORK, CONTRACTOR SHALL PROVIDE TRANSITION FITTINGS AND ELBOWS AS NECESSARY TO MAKE FINAL CONNECTION.

F. DUCT OFFSETS SHALL USE 45° ELBOWS WHERE POSSIBLE.

G. EXPOSED DUCTWORK/PIPING/CONDUIT SHALL BE PAINTED WHITE UNLESS NOTED OTHERWISE. EXPOSED DUCTWORK/PIPING/CONDUIT IN THE TV STUDIO, AUDITORIUM, STAGE, AUDITORIUM WORKSHOP AND AUDITORIUM STORAGE SHALL BE PAINTED BLACK.

H. COORDINATE POWER AND CONTROLS CONNECTIONS TO ALL NEW MECHANICAL EQUIPMENT WITH OTHER TRADES.

I. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL NEW MECHANICAL EQUIPMENT SO THAT ALL REQUIRED CLEARANCES ARE MAINTAINED. COORDINATE LOCATIONS WITH OTHER TRADES. DO NOT BLOCK SIDE OR BOTTOM ACCESS TO NEW MECHANICAL EQUIPMENT INSTALLED ABOVE CEILING.

J. FAN COILS: PROVIDE VIBRATION ISOLATION/HANGING SUPPORT KIT. USE FLEXIBLE CANVAS CONNECTORS AT DUCTWORK CONNECTIONS TO THE UNIT. PROVIDE TRANSITION DUCTWORK FITTINGS FROM UNIT OUTLET TO SIZE INDICATED ON THE FLOOR PLANS. EXTEND A RETURN AIR PLENUM FULL SIZE FROM THE UNIT INLET TO A MINIMUM OF 2'-0" OR LONG ENOUGH TO MAKE ALL REQUIRED DUCT CONNECTIONS. INSTALL 1" THICK ACOUSTICAL INTERNAL DUCT LINER IN ALL RETURN AIR DUCTS AND PLENUMS UP TO UNIT CONNECTION. DUCT SIZES ON PLANS ARE INSIDE CLEAR. FOR BRANCH PIPING SIZES REFER TO THE PIPE RUNOUT SCHEDULE ON THIS SHEET UNLESS NOTED OTHERWISE. REFER TO THE FAN COIL PIPING SCHEMATIC ON SHEET M6.01 FOR ADDITIONAL PIPING REQUIREMENTS.

K. VAV, FVAV BOXES: FOR INLET AND OUTLET DUCTWORK SIZES REFER TO THE RUNOUT SCHEDULE ON THIS SHEET UNLESS NOTED OTHERWISE. REFER TO THE VAV/FVAV BRANCH DUCT CONNECTION DETAIL ON SHEET M6.02 FOR ADDITIONAL REQUIREMENTS. FOR BRANCH PIPING SIZES REFER TO THE PIPE RUNOUT SCHEDULE ON THIS SHEET UNLESS NOTED OTHERWISE. REFER TO THE VAV/FVAV PIPING SCHEMATIC ON SHEET M6.01 FOR ADDITIONAL PIPING REQUIREMENTS.

L. CABINET HEATERS: FOR BRANCH PIPING SIZES REFER TO THE PIPE RUNOUT SCHEDULE ON THIS SHEET UNLESS NOTED OTHERWISE. REFER TO THE CABINET HEATER PIPING SCHEMATIC ON SHEET M6.01 FOR ADDITIONAL PIPING REQUIREMENTS.

M. UNIT HEATERS: FOR BRANCH PIPING SIZES REFER TO THE PIPE RUNOUT SCHEDULE ON THIS SHEET UNLESS NOTED OTHERWISE. REFER TO THE UNIT HEATER PIPING SCHEMATIC ON SHEET M6.01 FOR ADDITIONAL PIPING REQUIREMENTS. INSTALL BOTTOM OF UNIT AT 9'-0" AFF UNLESS NOTED OTHERWISE.

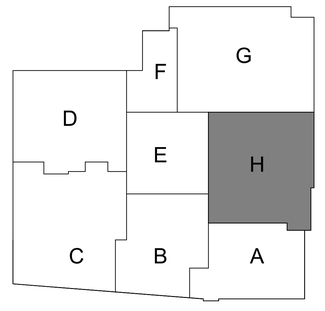
N. AIRFLOW MEASURING STATIONS/DAMPERS: PROVIDE ACCESS DOOR IN DUCTWORK FOR ACCESS TO DAMPER BLADES. PROVIDE MANUFACTURER'S RECOMMENDED INLET/OUTLET CONDITIONS.

O. COORDINATE ALL DUCT SLAB AND ROOF PENETRATIONS WITH EXISTING AND NEW STRUCTURE. COORDINATE REQUIREMENTS WITH THE STRUCTURAL DOCUMENTS.

P. ALL MEP ITEMS SHALL BE SUSPENDED/SUPPORTED FROM THE STRUCTURE.

KEYNOTES

A7	MANUAL RELEASE FOR SMOKE VENT. PROVIDE AND INSTALL ALL NECESSARY PULLEYS, CABLING AND ACCESSORIES REQUIRED. MOUNT AT 4'-0" AFF AND LABEL. REFER TO THE MECHANICAL ROOF PLAN ON SHEET M3.20 FOR CONTINUATION OF SMOKE VENT SCOPE.
A20	INSTALL BOTTOM OF GRILLE/REGISTER/DIFFUSER AT 10'-8" AFF. COORDINATE LOCATION WITH WALL-MOUNTED ACOUSTIC PANELS. REFER TO THE ARCHITECTURAL DOCUMENTS FOR ADDITIONAL INFORMATION.
A21	INSTALL BOTTOM OF GRILLE/REGISTER/DIFFUSER AT 10'-4" AFF. COORDINATE LOCATION WITH WALL-MOUNTED ACOUSTICAL PANELS. REFER TO THE ARCHITECTURAL DOCUMENTS FOR ADDITIONAL INFORMATION.
A22	INSTALL NEW FLEX DUCT TO NEW DIFFUSER. PROVIDE TRANSITION FITTING AS NECESSARY TO CONNECT TO EXISTING BRANCH DUCT.
A24	INSTALL BOTTOM OF GRILLE/REGISTER/DIFFUSER AT 24" AFF.
A26	INSTALL NEW GRILLE/REGISTER/DIFFUSER IN EXISTING OPENING. ENLARGE/INFILL EXISTING OPENING AS REQUIRED FOR INSTALLATION. SEAL PENETRATION AIR TIGHT.
A27	INSTALL BOTTOM OF GRILLE/REGISTER/DIFFUSER AT SAME ELEVATION AS BOTTOM OF ADJACENT GRILLE/REGISTER/DIFFUSER IN EXISTING OPENING.
A28	INSTALL BOTTOM OF GRILLE/REGISTER/DIFFUSER AT 11'-0" AFF.
A29	INSTALL 1" THICK ACOUSTICAL INTERNAL DUCT LINER IN THE FIRST 20' OF SUPPLY AIR DUCTWORK DOWNSTREAM OF UNIT. DIMENSION ON PLAN IS CLEAR INTERNAL DIMENSION.
A30	INSTALL 1" THICK ACOUSTICAL INTERNAL DUCT LINER IN THE FIRST 20' OF RETURN AIR DUCTWORK UPSTREAM OF UNIT. DIMENSION ON PLAN IS CLEAR INTERNAL DIMENSION.
A34	EXPOSED ROUND DUCTWORK SHALL BE DOUBLE WALL INSULATED DUCT AND PAINTED.
A36	INSTALL 1" THICK ACOUSTICAL INTERNAL DUCT LINER IN THE FIRST 10' OF NEW SUPPLY AIR DUCTWORK DOWNSTEAM OF VAV BOX.
A40	INSTALL SUPPLY DUCT DIFFERENTIAL PRESSURE SENSOR ABOVE CEILING IN THIS LOCATION. PROVIDE LAMACOID PLATE ON CEILING GRID AT SENSOR LOCATION. REFER TO SPECIFICATIONS FOR LABELING REQUIREMENTS. INSTALL PRESSURE SAMPLING LINES IN DUCTWORK WHERE INDICATED.
A46	INSTALL BOTTOM OF GRILLE/REGISTER/DIFFUSER AT 10'-6" AFF.
A61	COORDINATE DUCT ROUTING AND SOFFIT CONSTRUCTION WITH GENERAL TRADES CONTRACTOR TO PROVIDE ADDITIONAL BRACING AS REQUIRED.
A67	WRAP EXPOSED NON DOUBLE WALLED DUCTWORK AND INSULATION IN CANVAS AND PAINT.
H20	PROVIDE FULL SIZE DIFFERENTIAL PRESSURE VALVE AND PARTNER BALANCE VALVE ON SUPPLY/RETURN PIPING. REFER TO SPECIFICATION SECTION 202100 FOR ADDITIONAL REQUIREMENTS.
H23	PROVIDE FULL-SIZED ISOLATION VALVES WITH 3/4" VALVED DRAIN LINES IN PIPING. PROVIDE THREADED HOSE CONNECTION WITH CAP ON DRAIN LINES.



KEY PLAN
SCALE : N.T.S.

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KITCHEN
NYIKOS ASSOCIATES, INC.
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DOO CONSULTING
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CONSTRUCTION MANAGER
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1309-Q CONTINENTAL DRIVE
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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.: 47322, Expiration Date: 10/20/2021.

PROFESSIONAL SEAL:

STATE OF MARYLAND · JEFF E. FARMER · 47322 · PROFESSIONAL ENGINEER

PRINTS ISSUED

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

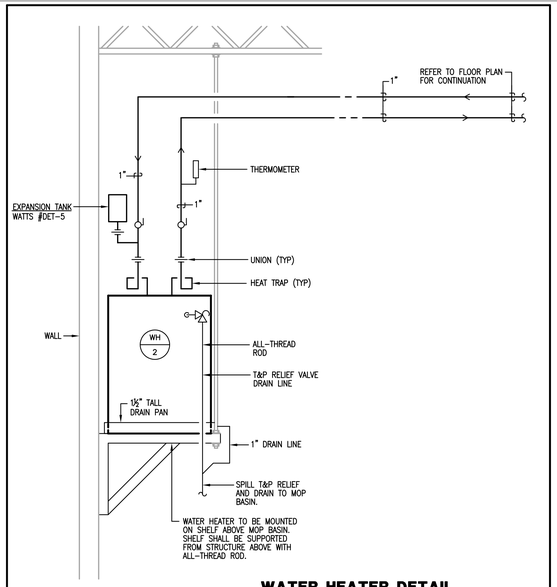
SHEET TITLE:
FIRST FLOOR PLAN - AREA H - MECHANICAL

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

WORKING NORTH

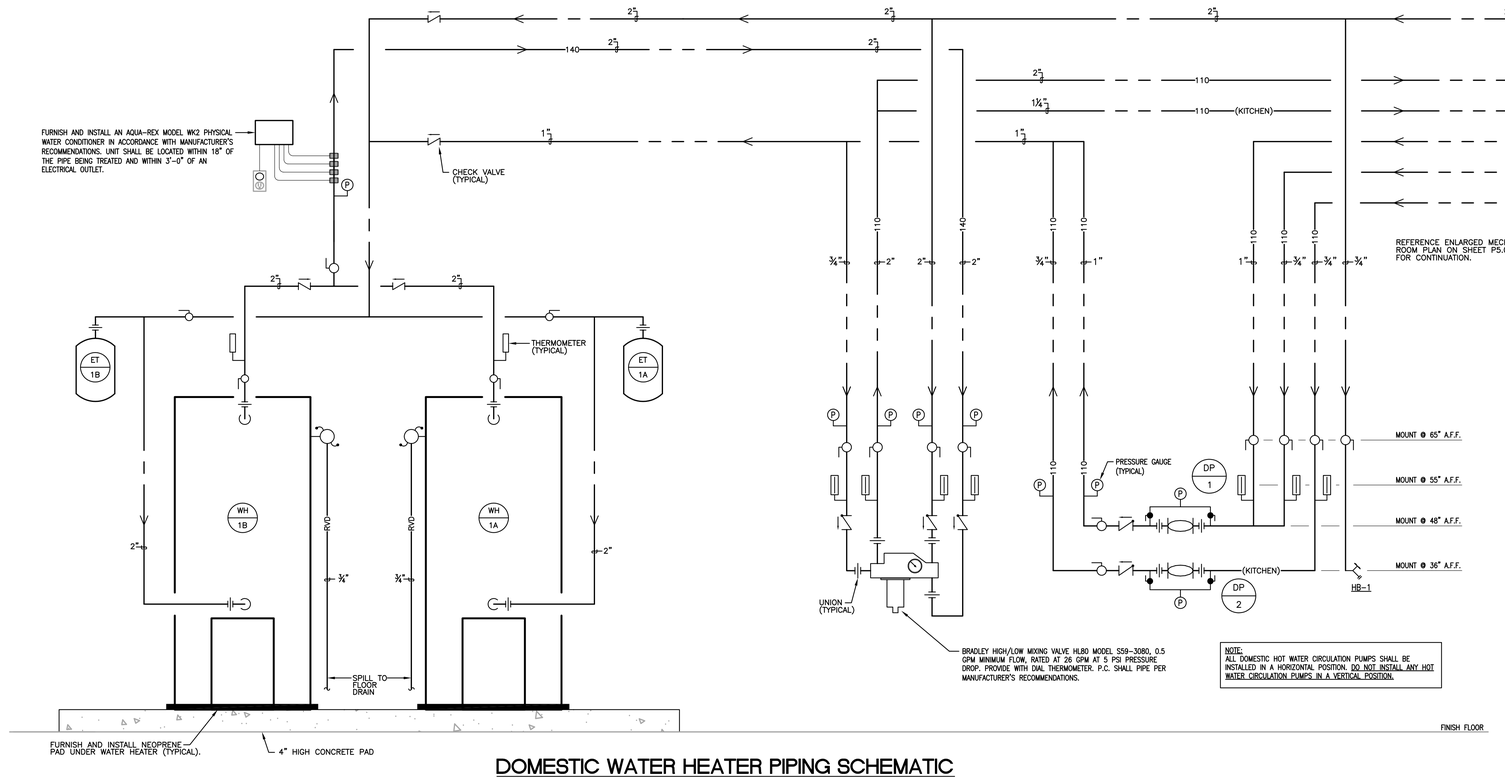
SHEET NO:
M3.08

3/12/2020 9:26:49 AM



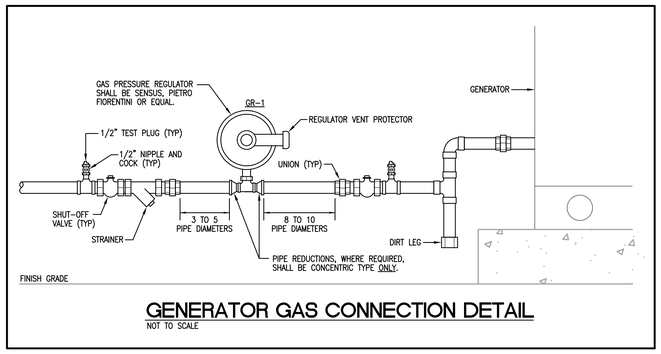
WATER HEATER DETAIL

NOT TO SCALE



DOMESTIC WATER HEATER PIPING SCHEMATIC

NOT TO SCALE



GENERATOR GAS CONNECTION DETAIL

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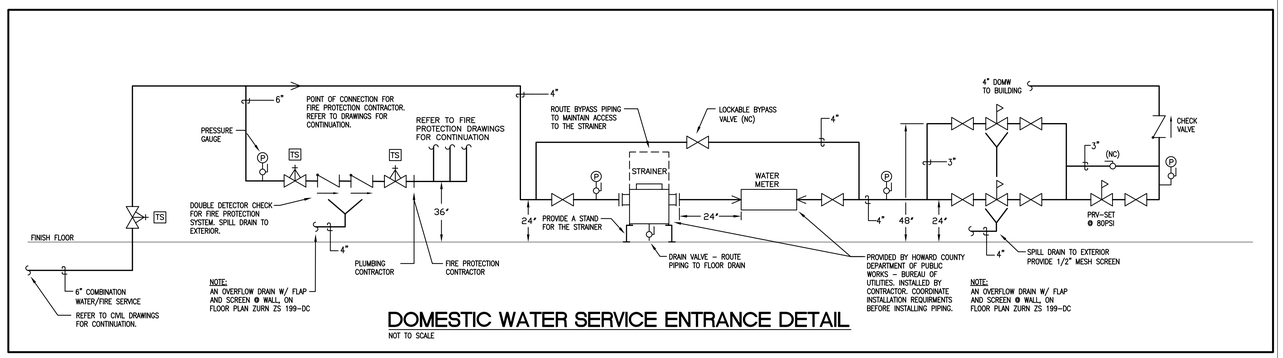

DOMESTIC WATER SERVICE ENTRANCE DETAIL

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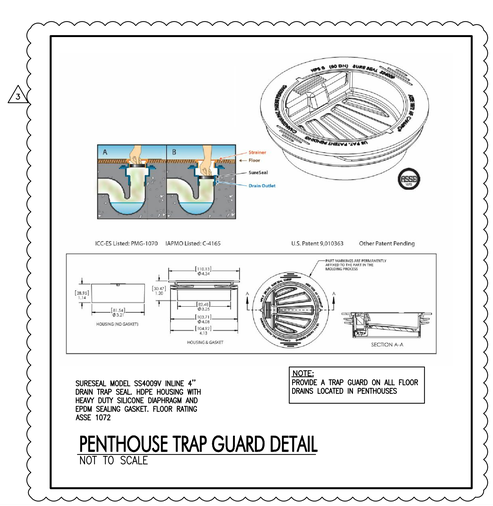

PENTHOUSE TRAP GUARD DETAIL

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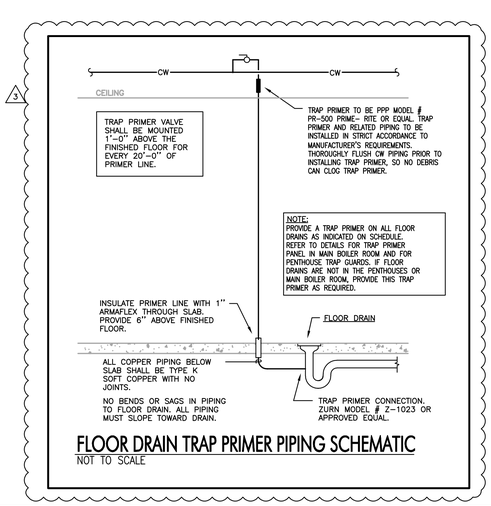
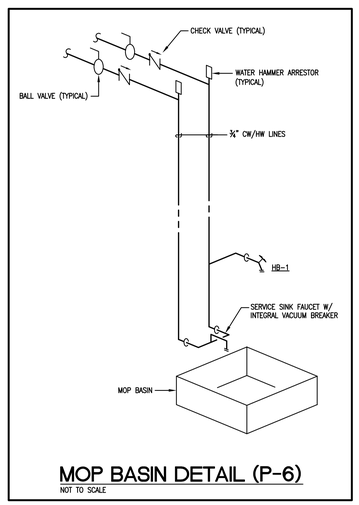


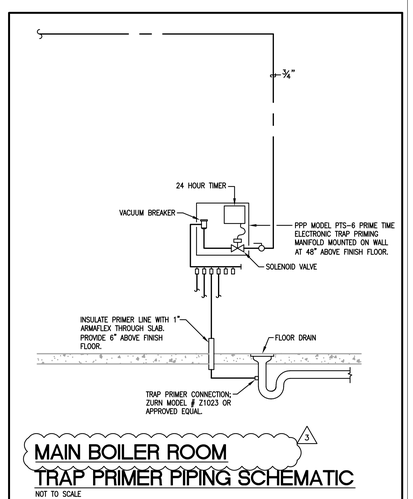
FLOOR DRAIN TRAP PRIMER PIPING SCHEMATIC

NOT TO SCALE



MOP BASIN DETAIL (P-6)

NOT TO SCALE



MAIN BOILER ROOM TRAP PRIMER PIPING SCHEMATIC

NOT TO SCALE

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CONSTRUCTION MANAGER
J. VINTON SCHAFER & SONS
1309-O 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.: 47322, Expiration Date: 10/20/2021.

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

PLUMBING DETAILS

PROJECT NO: 18011.00

DATE: 02/25/2020

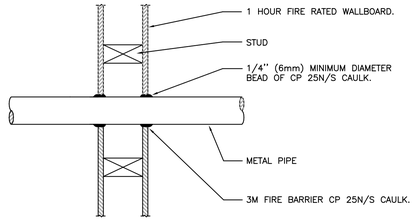
SCALE: As indicated

WORKING NORTH

SHEET NO:

P1.01

2/18/2020 12:31:26 PM



NOTES

1. FORCE THE 3M MODEL# CP 25N/S CAULK INTO THE ANNULAR SPACE TO THE MAXIMUM EXTENT POSSIBLE, FLUSH WITH THE EXTERIOR OF THE PENETRATION SURFACE.
2. FINISH CAULKING WITH A 1/4" (6mm) MINIMUM BEAD OF CP 25N/S CAULK APPLIED TO THE PERIMETER OF THE CONDUIT/PIPE AT ITS EGRESS FROM THE WALL.
3. THE MAXIMUM ANNULAR SPACE IS NOT TO EXCEED 3/16" (5mm). (IF IT DOES PATCH WALL AND PENETRATE WALL AT ANOTHER LOCATION).
4. INSTALL THE 3M FIRESTOP ON BOTH SIDES OF THE WALL.

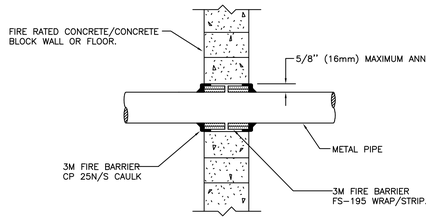
PENETRATION FIRESTOP FOR METAL PIPE/CONDUIT THROUGH ONE HOUR WALL

NTS

FIRE STOPPING NOTES:

1. FIRE STOPPING IS CRITICAL AND MUST BE ACCOMPLISHED.

   ALL PIPES MUST BE FIRESTOPPED WHERE THEY PENETRATE FIRE RESISTIVE, FIRE RATED, AND SMOKE RESISTIVE WALLS OR FLOORS. ALL FLOORS CORRIDOR WALLS, STAIR WALLS, MECHANINCAL ROOM WALLS, STORAGE ROOM WALLS AND OTHER HAZARDOUS ROOM WALLS ARE ONE HOUR RATED.
2. A FOUR-HOUR TRAINING SESSION SHALL BE CONDUCTED BY MANUFACTURER OF THE FIRESTOPPING MATERIAL. THIS SHALL BE DONE PRIOR TO THE INSTALLATION OF THE MATERIAL. CONTACT HOSPITAL ENGINEER AND CMTA TO ADVISE OF DATE AND TIME OF THIS MEETING.
3. ALL PENETRATIONS WILL BE REVIEWED BY THE HOSPITAL ENGINEER OR CMTA. PRIOR TO INSPECTION, ALL CEILING TILES BENEATH THE PENETRATIONS SHALL BE REMOVED BY THE CONTRACTOR.

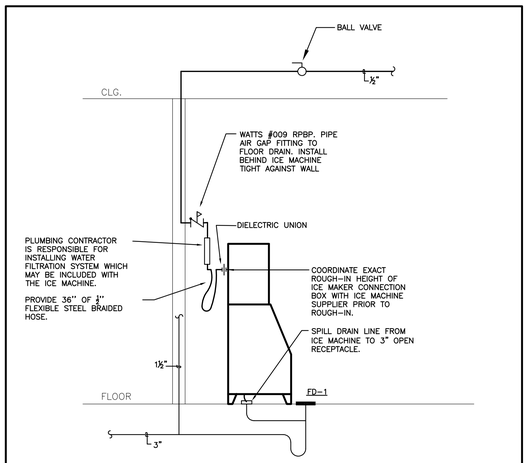


NOTES

1. THE MAXIMUM ANNULAR SPACE AROUND THE METAL PIPE OR CONDUIT IS 5/8" (16mm). (IF THE ANNULAR SPACE EXCEEDS 5/8" PATCH THE WALL AND PENETRATE WALL AT ANOTHER LOCATION).
2. WRAP THE 3M MODEL# FS-195 WRAP/STRIP AROUND THE PIPE/CONDUIT, FOIL SIDE OUT, TO FILL THE SPACE BETWEEN THE PIPE/CONDUIT AND THE WALL OPENING. THE 3M MODEL# FS-195 WRAP/STRIP SHOULD BE TIGHTLY SECURED WITH ALUMINUM FOIL TAPE OR STEEL TIE WIRE AND PUSHED INTO THE OPENING UNTIL THE TOP EDGE OF THE WRAP IS FLUSH WITH THE WALL SURFACE. THE IDENTICAL INSTALLATION SHOULD BE INSTALLED ON THE OTHER SIDE OF THE WALL.
3. USE 3M MODEL# CP 25N/S(NO SAG) CAULK TO FILL THE AREA BETWEEN THE FS-195 WRAP/STRIP AND THE EDGES OF THE OPENING AND ANY VOIDS IN THE 3M MODEL# FS-195 WRAP/STRIP. A FILLM OF CP 25 CAULK SHOULD COAT ALL EXPOSED EDGES OF THE FS-195 WRAP/STRIP AND COMPLETELY SEAL THE AREA BETWEEN THE FS-195 WRAP/STRIP, THE PIPE/CONDUIT AND THE WALL SURFACE.

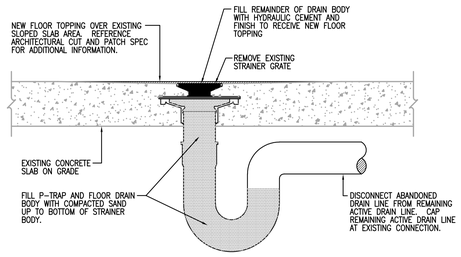
PENETRATION FIRESTOP FOR METAL PIPE/CONDUIT THROUGH A CONCRETE WALL

NTS



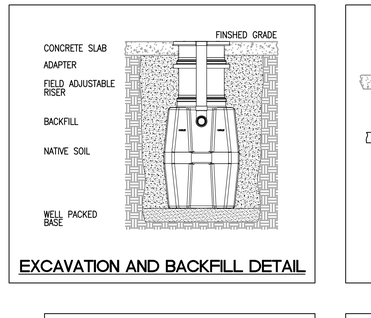
FLOOR STANDING ICE MAKER PIPING SCHEMATIC

NOT TO SCALE

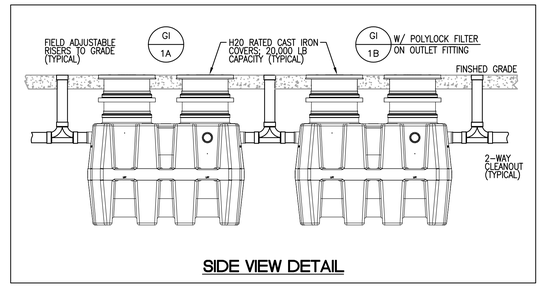


FLOOR DRAIN DEMOLITION DETAIL

NOT TO SCALE

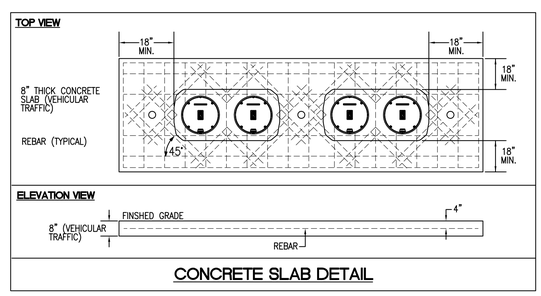


EXCAVATION AND BACKFILL DETAIL



SIDE VIEW DETAIL

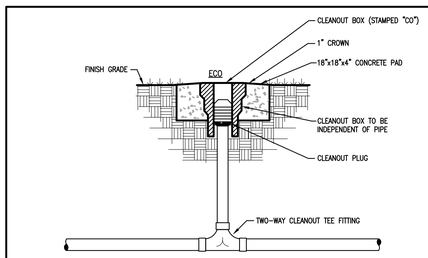
GREASE INTERCEPTORS (GI-1A & GI-1B):
FURNISH AND INSTALL (1) SCHIER PRODUCTS STANDARD MODEL GB-250 (GI-1A; PART # 4055-001-01) AND (1) MODEL GB-250 WITH SLOTTED POLYLOK PL-122 FILTER (GB-1B; PART # 4055-128-01) SEAMLESS MOLDED POLYETHYLENE GREASE INTERCEPTORS, OR EQUAL, EACH WITH 4" INLET/OUTLET, 100 GPM FLOW RATE, 275 GALLON LIQUID CAPACITY, 1,076 LBS. GREASE CAPACITY, (2) 16,000 LB. LOAD RATED, BOLTED, GAS/WATER TIGHT H20 RATED CAST IRON COVERS (20,000 LB CAPACITY) AND TELEGLIDE FIELD ADJUSTABLE RISERS AS REQUIRED. COVERS SHALL BE INSTALLED FLUSH WITH FINISH CONCRETE. NEW CONCRETE PAD SHALL BE INSTALLED PER GREASE INTERCEPTOR MANUFACTURER'S INSTRUCTIONS.



CONCRETE SLAB DETAIL

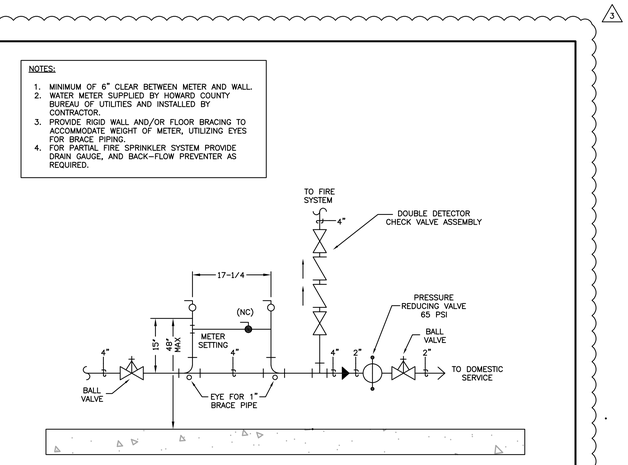
GREASE INTERCEPTOR DETAILS

NOT TO SCALE



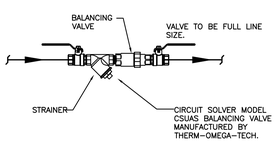
2-WAY EXTERIOR CLEANOUT DETAIL

NOT TO SCALE



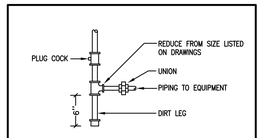
MODULAR BUILDING WATER ENTRY AND METER DETAIL

NOT TO SCALE



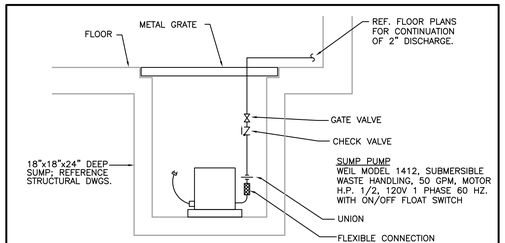
HOT WATER RETURN BALANCING VALVE DETAIL.

NOT TO SCALE



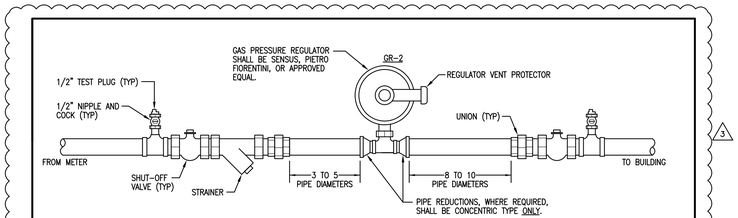
NATURAL GAS DIRT LEG DETAIL

NOT TO SCALE



ELEVATOR SUMP PUMP DETAIL (SP 1)

NOT TO SCALE



EXTERIOR GAS PRESSURE REGULATOR DETAIL

NOT TO SCALE

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240-683-9530(P)

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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.: 47322, Expiration Date: 10/20/2021.

PROFESSIONAL SEAL:

STATE OF MARYLAND · JESSE E. FARBER · 47322 · PROFESSIONAL ENGINEER

PRINTS ISSUED

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

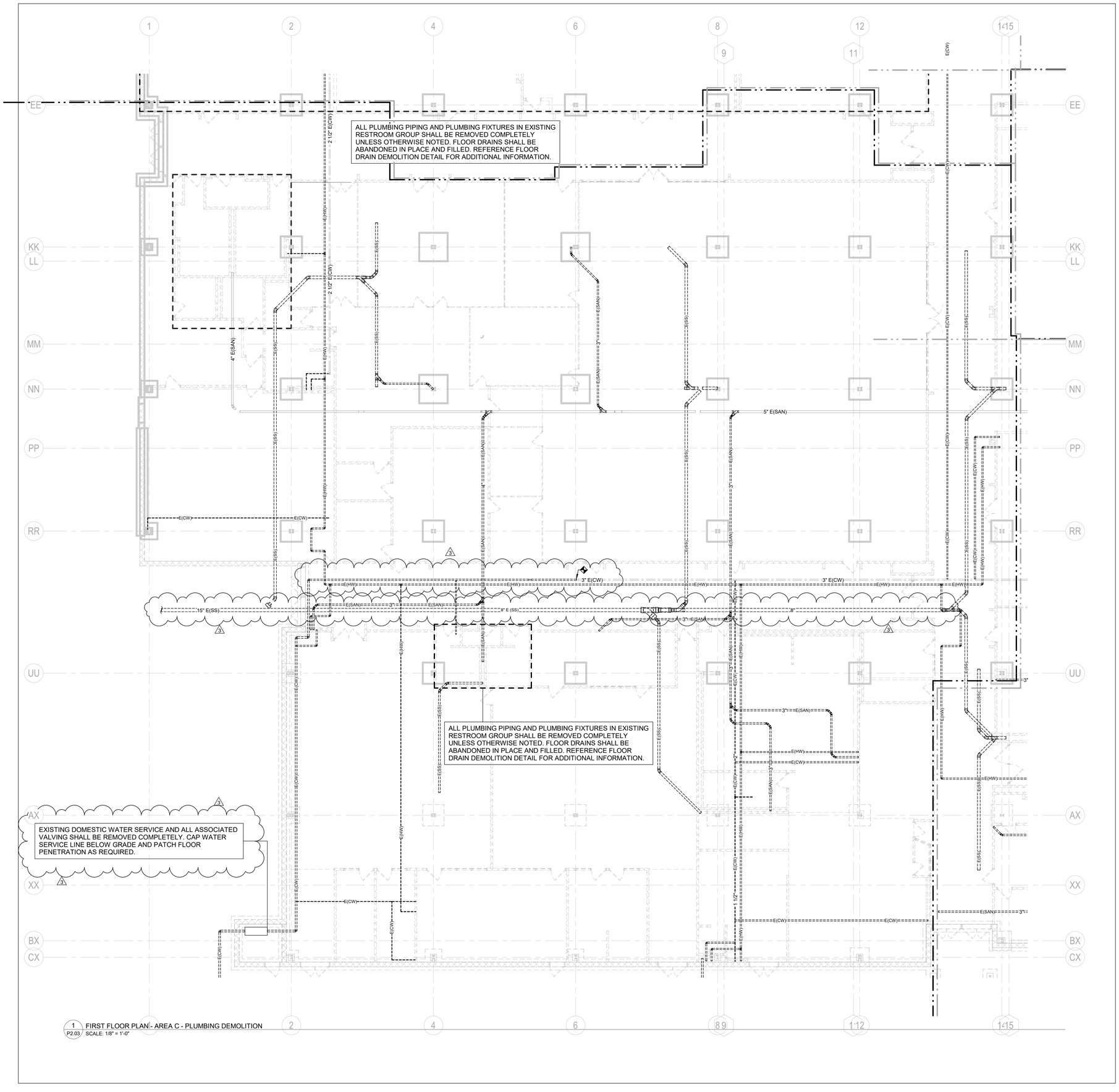
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
PLUMBING DETAILS

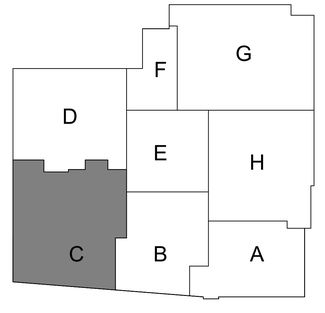
PROJECT NO: 18011.00
DATE: 02/25/2020
SCALE: As Indicated

SHEET NO:
P1.02

2/18/2020 12:31:26 PM



NOTE:
ALL EXISTING PLUMBING FIXTURES, EQUIPMENT, FLOOR DRAINS, ROOF DRAINS, ETC. AND ASSOCIATED PIPING THROUGHOUT THE BUILDING SHALL BE REMOVED COMPLETELY UNLESS NOTED OTHERWISE.



KEY PLAN
SCALE : N.T.S.

ARCHITECT

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PRINTS ISSUED

NO:	DESCRIPTION:	DATE:
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2	ADDENDUM 2	03/06/2020
3	ADDENDUM 3	03/12/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

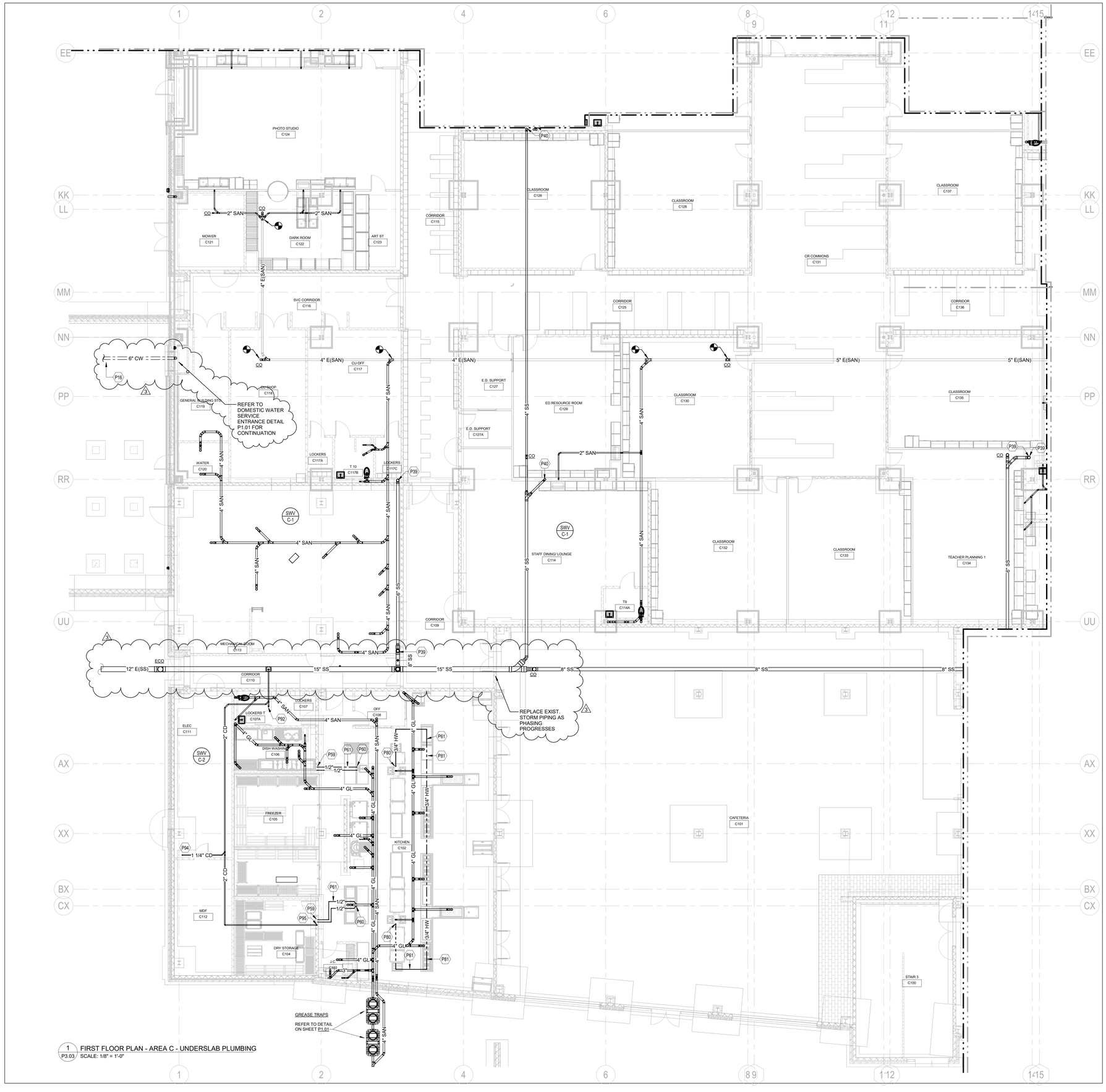
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
FIRST FLOOR PLAN - AREA C - PLUMBING DEMOLITION

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

SHEET NO:
P2.03

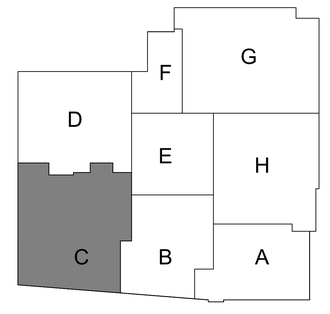
3/12/2020 10:09:34 AM



1 P3.03 FIRST FLOOR PLAN - AREA C - UNDERSLAB PLUMBING
SCALE: 1/8" = 1'-0"

TAGGED NOTES

P16	6" DOMESTIC WATER OUT TO SITE. REFERENCE CIVIL DRAWINGS FOR CONTINUATION.
P39	6" STORM UP
P40	4" STORM UP
P55	4" SAN. UP
P59	1/2" CW/HW UP TO ABOVE CEILING
P60	1/2" CW/HW UP TO SINK
P61	DOMESTIC WATER PIPING BELOW SLAB TO BE TYPE "K" SOFT COPPER WITH NO JOINTS
P80	3/4" HW UP TO ABOVE CEILING.
P81	REFER TO ENLARGED KITCHEN PLAN SHEET P5.01 FOR PIPING STUB-UPS TO WATER CONNECTIONS. PIPING TO BE LOOPED ABOVE SLAB SO THAT NO FITTINGS WILL OCCUR UNDER SLAB.
P92	PROVIDE CONDENSATE CLEAN OUT IN THIS LOCATION.
P94	1 1/4" CD UP.
P95	2" CD UP.



KEY PLAN
SCALE : N.T.S.

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

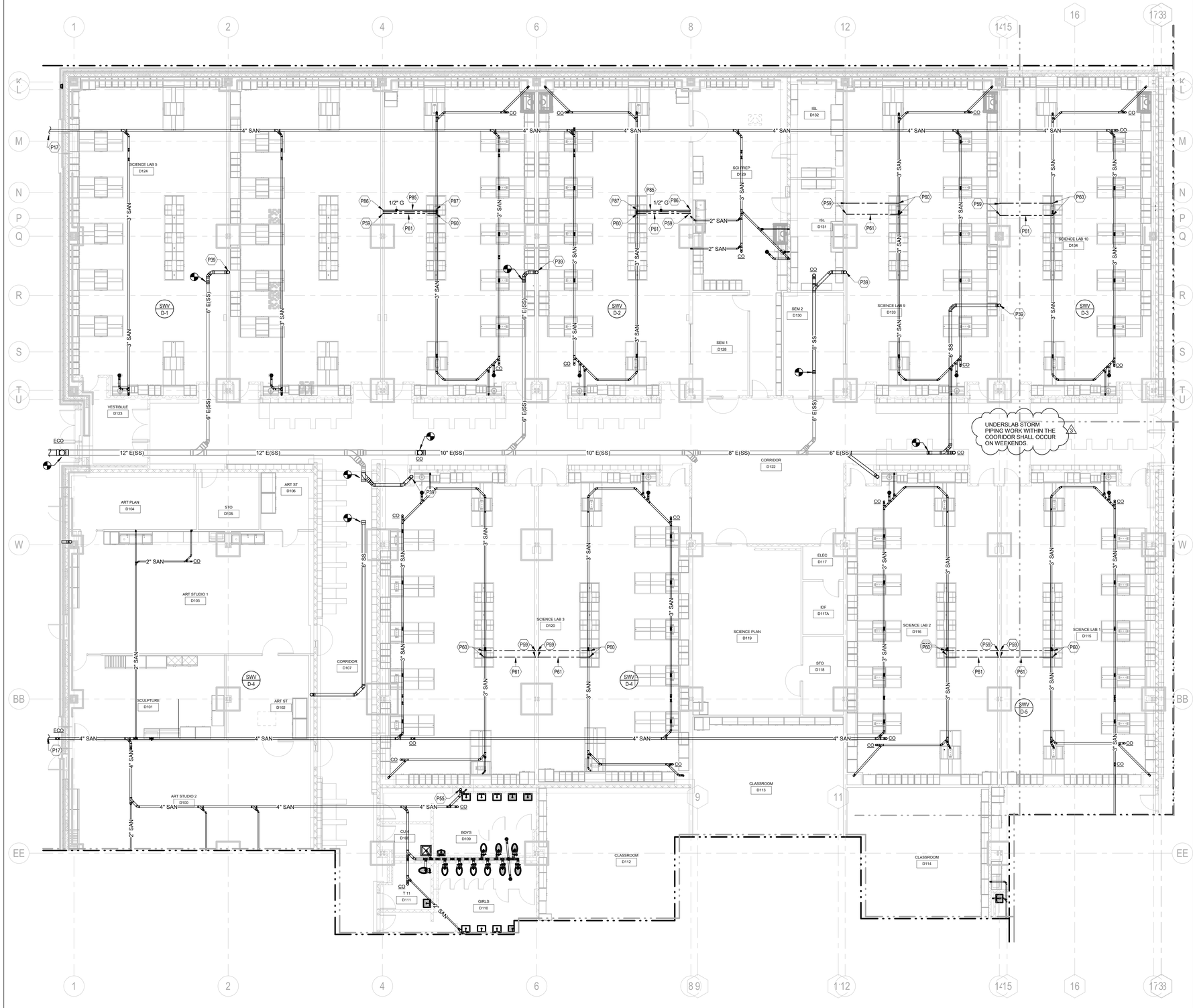
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
FIRST FLOOR PLAN - AREA C - UNDERSLAB PLUMBING

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

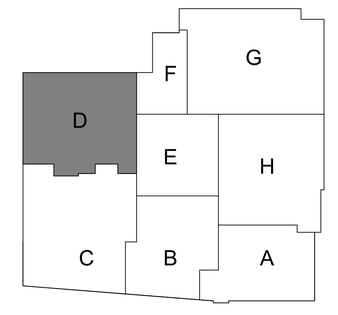
SHEET NO:
P3.03

3/12/2020 10:02:29 AM



1 P3.04 FIRST FLOOR PLAN - AREA D - UNDERSLAB PLUMBING
SCALE: 1/8" = 1'-0"

TAGGED NOTES	##
P17	4" SANITARY OUT TO SITE. REFERENCE CIVIL DRAWINGS FOR CONTINUATION.
P39	6" STORM UP
P55	4" SAN. UP
P59	1/2" CW/HW UP TO ABOVE CEILING
P60	1/2" CW/HW UP TO SINK
P61	DOMESTIC WATER PIPING BELOW SLAB TO BE TYPE "K" SOFT COPPER WITH NO JOINTS
P85	1/2" G. PIPING UNDER SLAB. ENCASE WITH PIPE SLEEVE. SLEEVE TO TERMINATE, OPEN TO ATMOSPHERE, 6" ABOVE SLAB ON BOTH ENDS OF THE PIPE.
P86	1/2" G. UP
P87	1/2" G. UP TO TEACHER SINK



KEY PLAN
SCALE : N.T.S.

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PRINTS ISSUED

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3	ADDENDUM 3	03/12/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

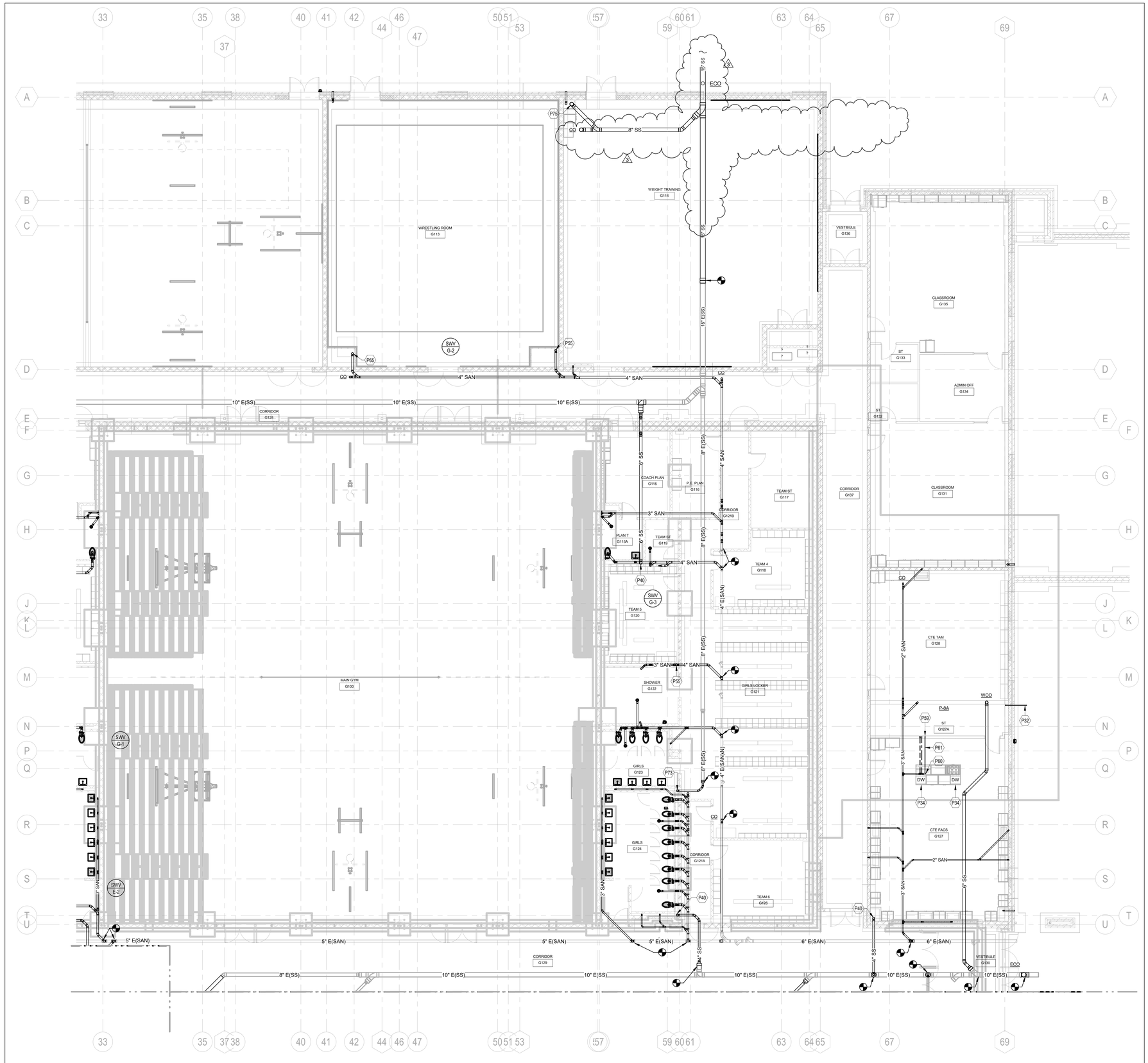
SHEET TITLE:
FIRST FLOOR PLAN - AREA D - UNDERSLAB PLUMBING

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

WORKING NORTH

SHEET NO:
P3.04

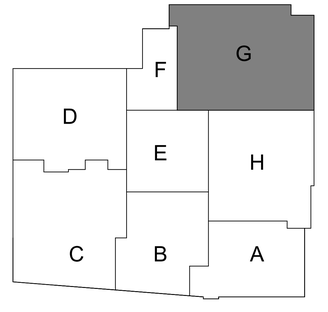
3/12/2020 10:02:32 AM



1 P3.07 FIRST FLOOR PLAN - AREA G - UNDERSLAB PLUMBING
SCALE: 1/8" = 1'-0"

TAGGED NOTES ##

P32	1" DOMESTIC WATER LINE OUT TO SITE 5'-0", REFERENCE CIVIL ENGINEER'S DRAWINGS FOR CONTINUATION.
P34	PROVIDE DISHWASHER WYE, AIRGAP FITTING, HOSES, VALVES, ACCESSORIES, ETC. FOR CONNECTION OF ADJACENT DISHWASHER THROUGH BASE CABINET.
P39	6" STORM UP
P40	4" STORM UP
P55	4" SAN. UP
P59	1/2" CW/HW UP TO ABOVE CEILING
P60	1/2" CW/HW UP TO SINK
P61	DOMESTIC WATER PIPING BELOW SLAB TO BE TYPE "K" SOFT COPPER WITH NO JOINTS
P65	UNDER GROUND GAS PIPING FOR TEMPORARY CONDITIONS. REFER TO THE TEMPERARY CONDITIONS PLAN ON SHEET P2.11 FOR CORDINATION - BELOW GRADE.
P73	3" STORM UP.
P75	8" STORM UP



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 G - UNDERSLAB PLUMBING

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

SHEET NO:
P3.07

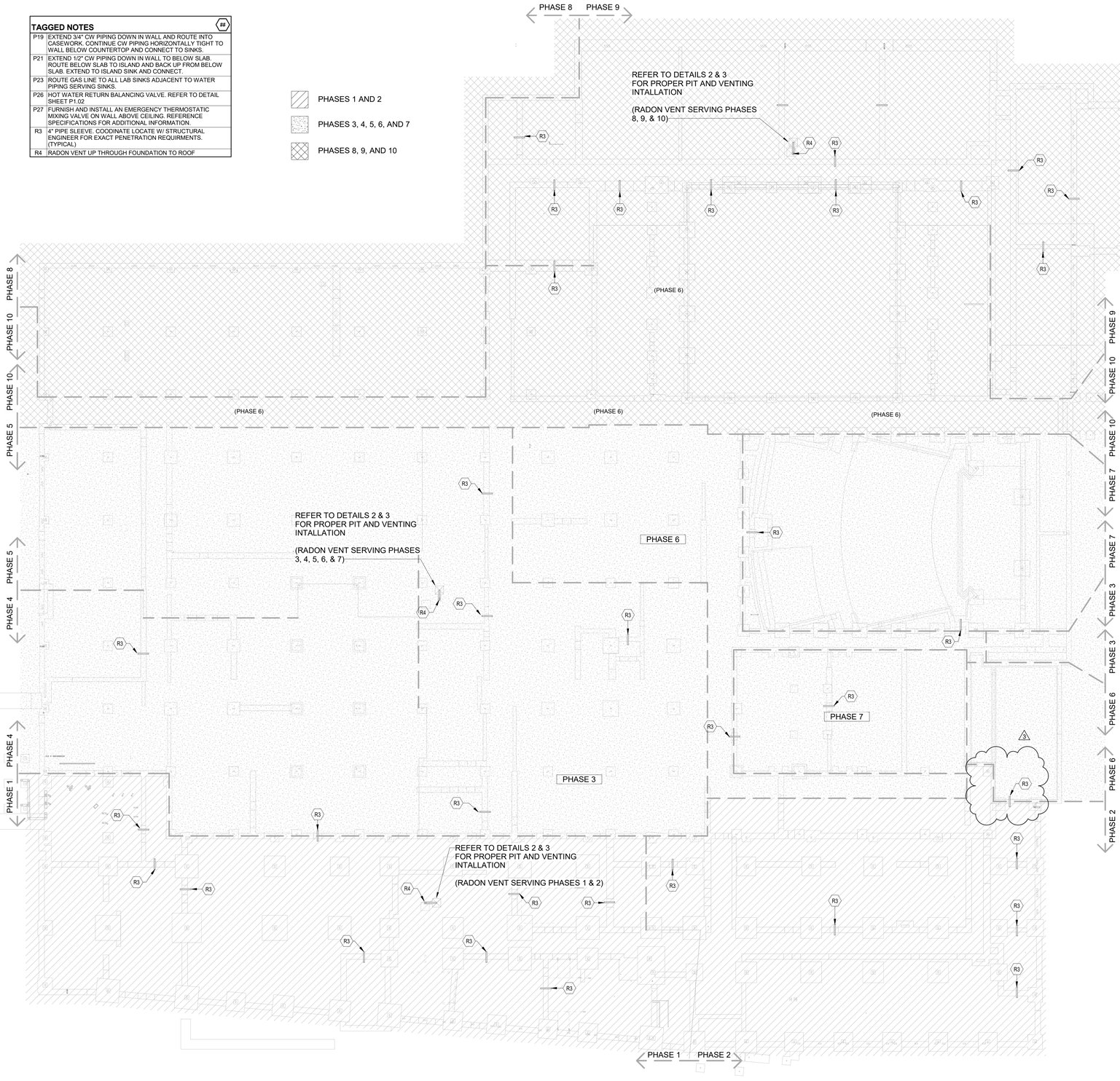
3/12/2020 10:02:39 AM

TAGGED NOTES	##
P19	EXTEND 3/4" CW PIPING DOWN IN WALL AND ROUTE INTO CASEWORK. CONTINUE CW PIPING HORIZONTALLY TIGHT TO WALL BELOW COUNTERTOP AND CONNECT TO SINKS.
P21	EXTEND 1/2" CW PIPING DOWN IN WALL TO BELOW SLAB. ROUTE BELOW SLAB TO ISLAND AND BACK UP FROM BELOW SLAB. EXTEND TO ISLAND SINK AND CONNECT.
P23	ROUTE GAS LINE TO ALL LAB SINKS ADJACENT TO WATER PIPING SERVING SINKS.
P26	HOT WATER RETURN BALANCING VALVE. REFER TO DETAIL SHEET P1.02
P27	FURNISH AND INSTALL AN EMERGENCY THERMOSTATIC MIXING VALVE ON WALL ABOVE CEILING. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
R3	4" PIPE SLEEVE. COODINATE LOCATE W/ STRUCTURAL ENGINEER FOR EXACT PENETRATION REQUIRMENTS. (TYPICAL)
R4	RADON VENT UP THROUGH FOUNDATION TO ROOF

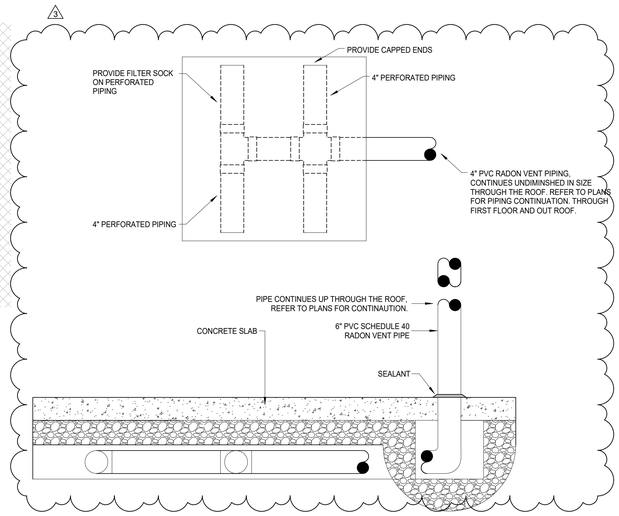
PHASES 1 AND 2

PHASES 3, 4, 5, 6, AND 7

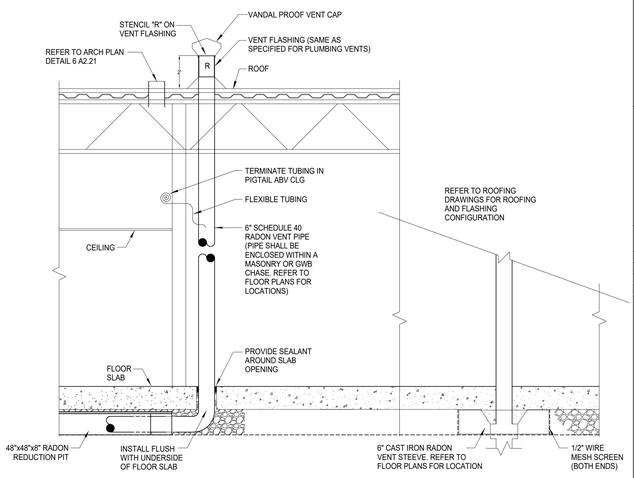
PHASES 8, 9, AND 10



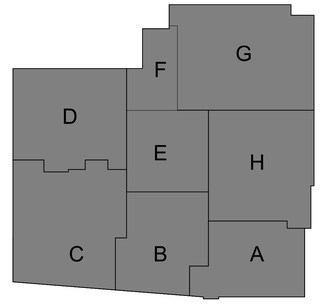
1 RADON PREVENTION LAYOUT
P3.09 SCALE: 3/64" = 1'-0"



2 RADON REDUCTION PIT DETAIL
3/4" = 1'-0"



3 RADON VENT INSTALLATION DETAIL
3/4" = 1'-0"



KEY PLAN
SCALE : N.T.S.

ARCHITECT

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PRINTS ISSUED

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

RADON PREVENTION PLAN - UNDERSLAB PLUMBING

PROJECT NO: 18011.00

DATE: 02/25/2020

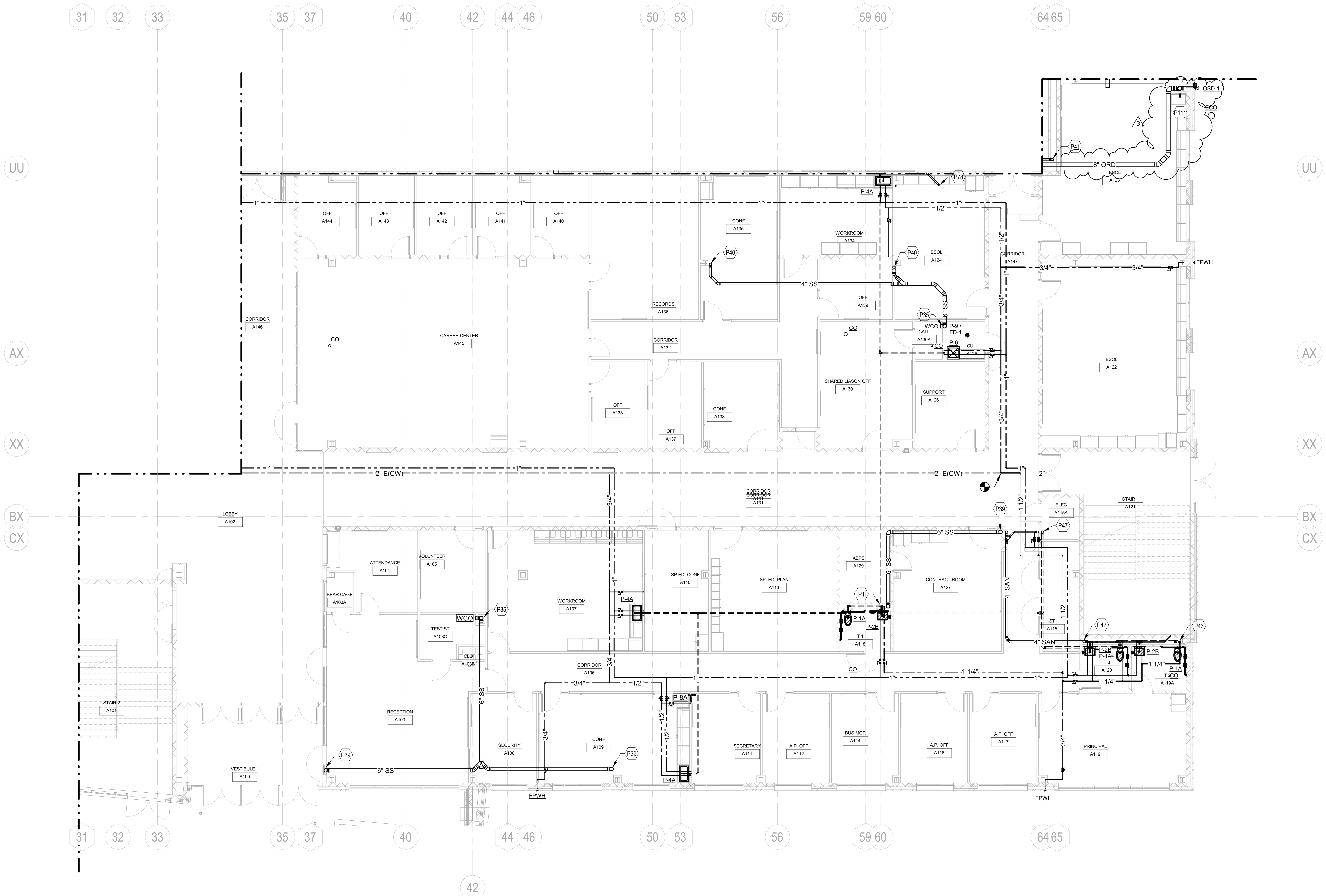
SCALE: As indicated

WORKING NORTH

SHEET NO:

P3.09

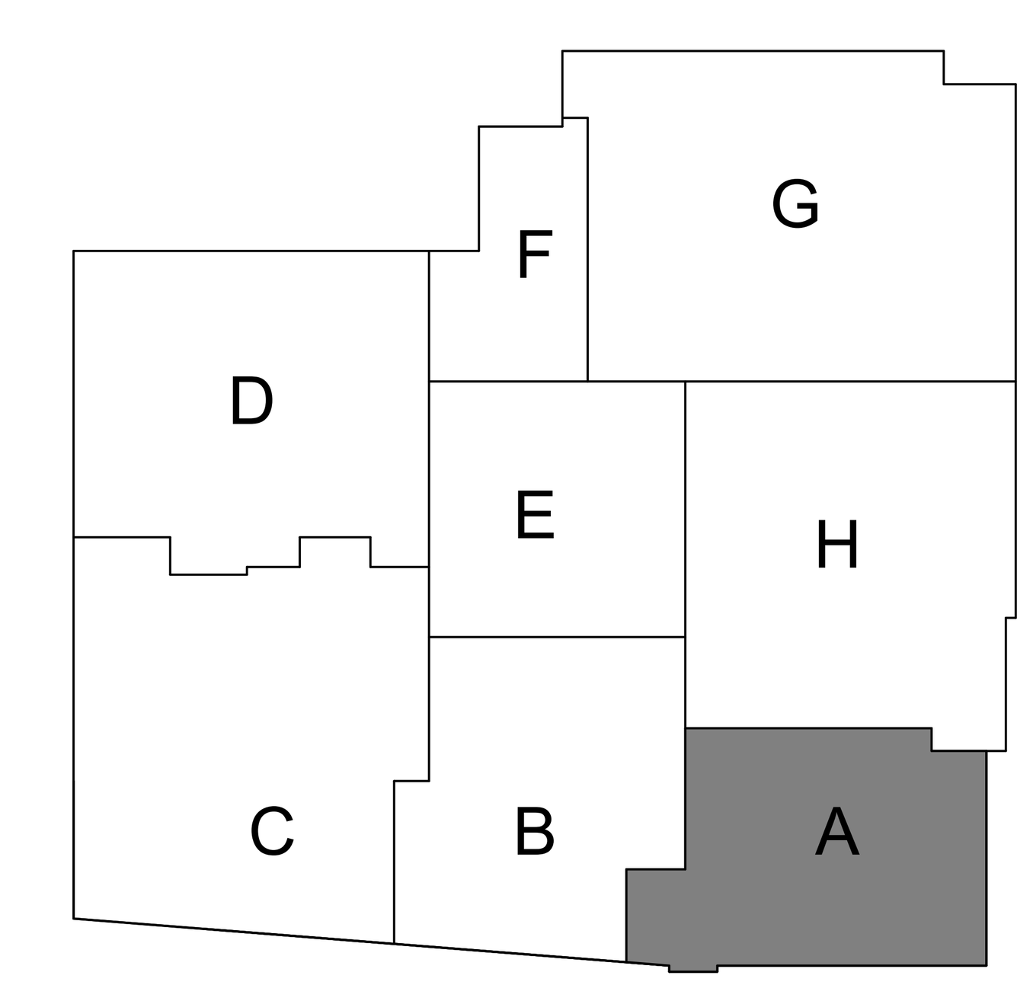
3/12/2020 10:02:44 AM



1 P4.01 FIRST FLOOR PLAN - AREA A - 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.
P35	6" STORM DOWN
P39	6" STORM UP
P40	4" STORM UP
P41	4" STORM DOWN
P42	4" SAN DOWN
P43	EXTEND 1-1/2" 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.
P47	4" VENT UP
P78	2" SAN. DOWN
P111	8" ELBOW, THEN 6" OVERFLOW DN. SPILL AT 6" ABOVE GRADE.



KEY PLAN
SCALE : N.T.S.

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STATE OF MARYLAND JESS E. FARBER 47322 PROFESSIONAL ENGINEER

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1	BID SET	02/25/2020
2	ADDENDUM 2	03/06/2020
3	ADDENDUM 3	03/12/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

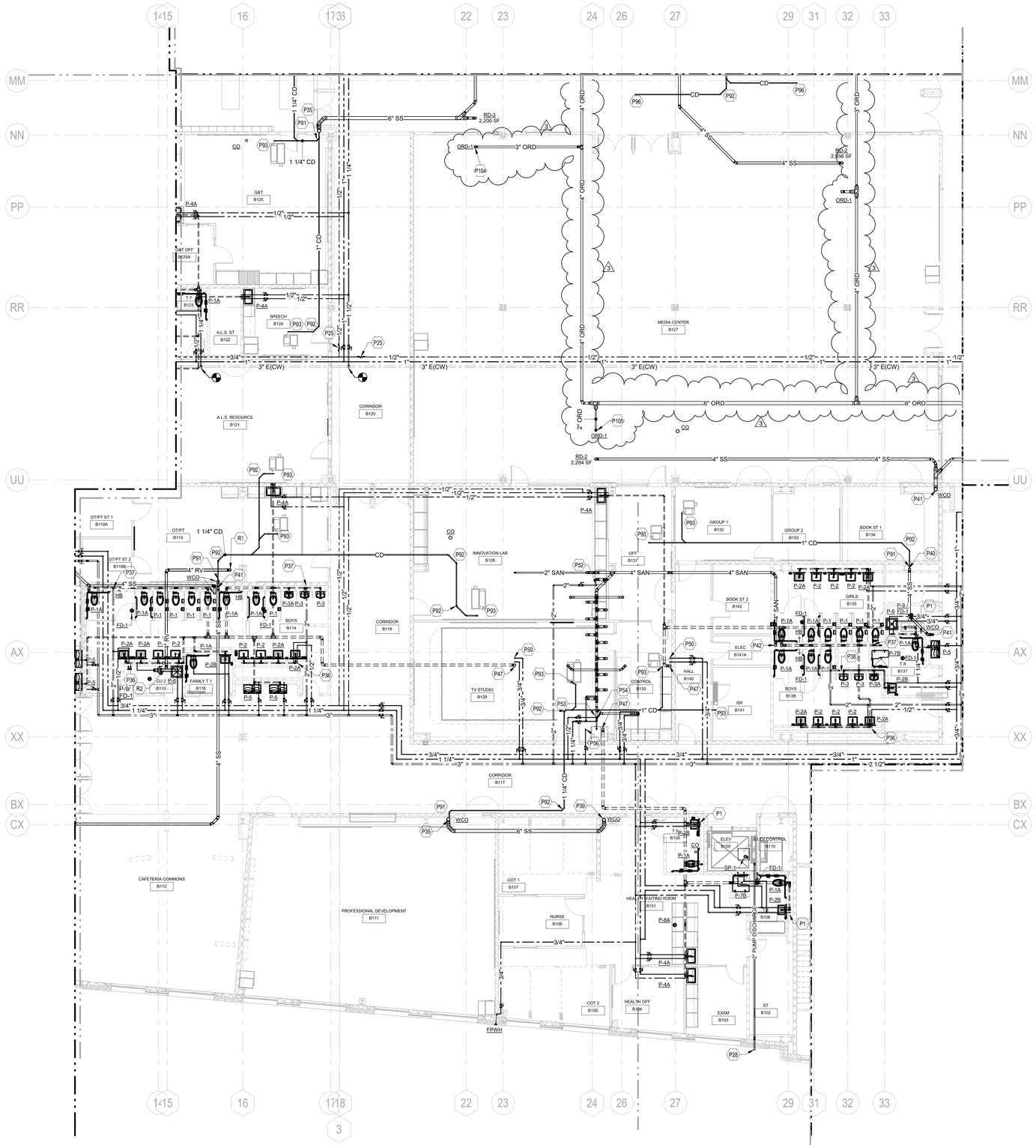
SHEET TITLE:
FIRST FLOOR PLAN - AREA A - PLUMBING

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

WORKING NORTH

SHEET NO:
P4.01

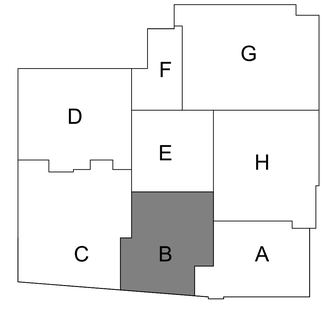
3/12/2020 10:02:51 AM



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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CONSTRUCTION MANAGER
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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 · JESSE E. FISHER · 47322 · PROFESSIONAL ENGINEER

PRINTS ISSUED

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1	BID SET	02/25/2020
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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

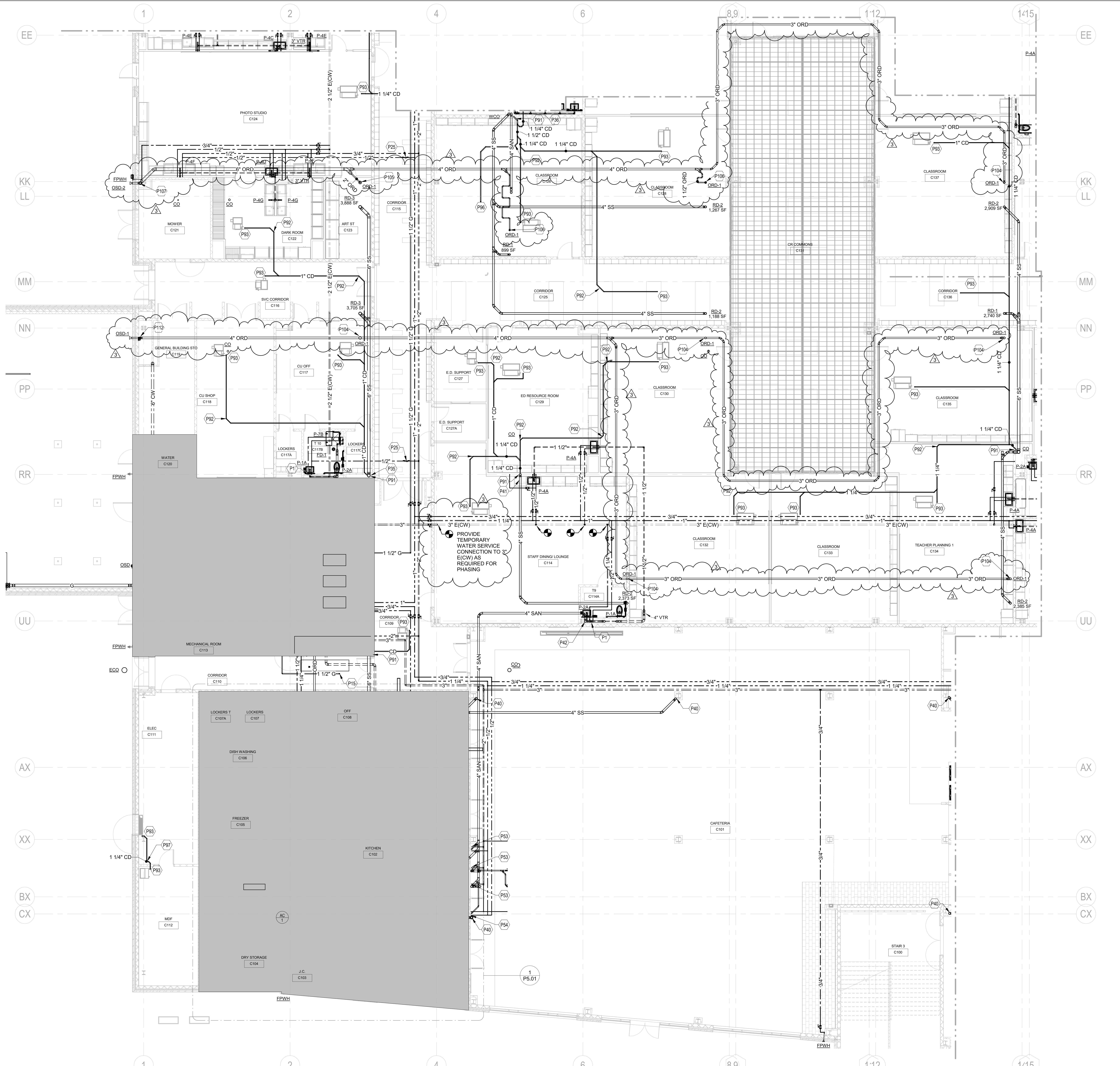
SHEET TITLE:
FIRST FLOOR PLAN - AREA B - PLUMBING

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

WORKING NORTH

SHEET NO:
P4.02

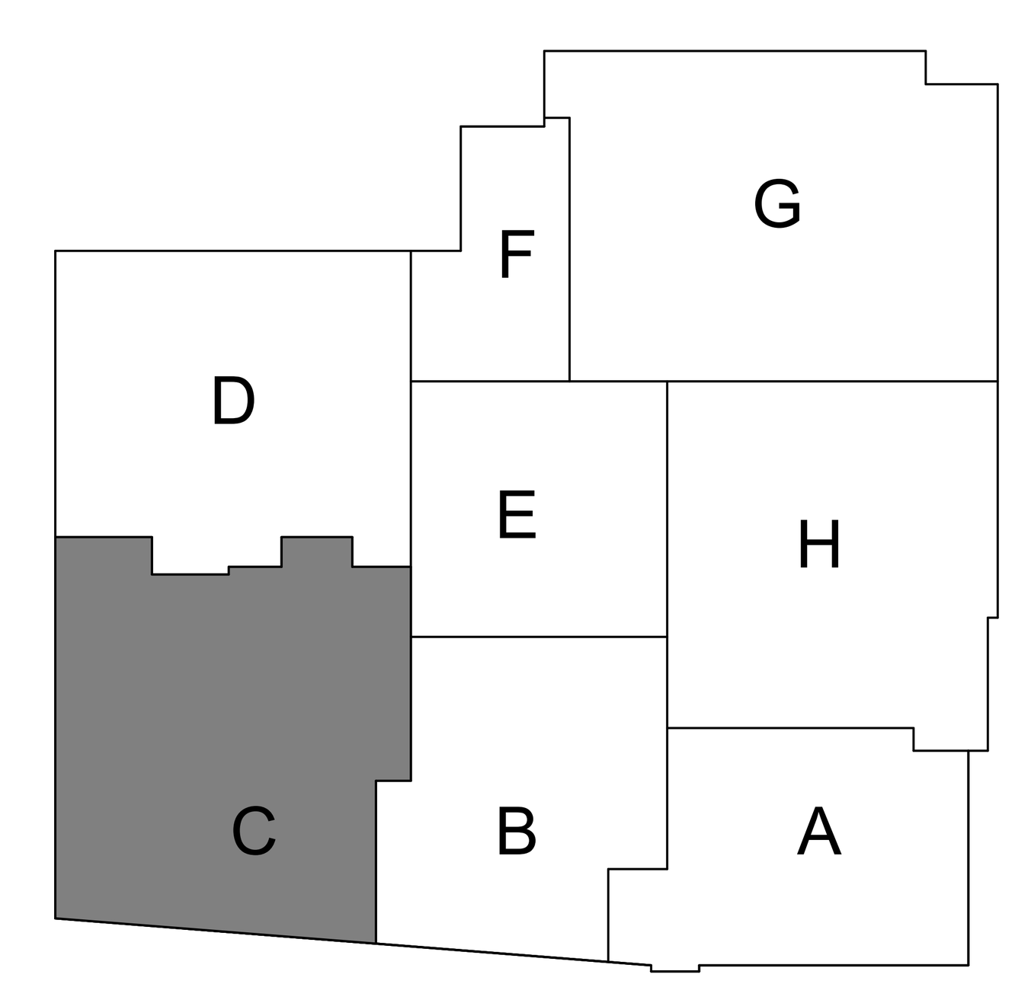
3/12/2020 10:03:01 AM



1 FIRST FLOOR PLAN - AREA C - PLUMBING
P4.03 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.



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 C - PLUMBING

PROJECT NO: 18011.00

DATE: 02/25/2020

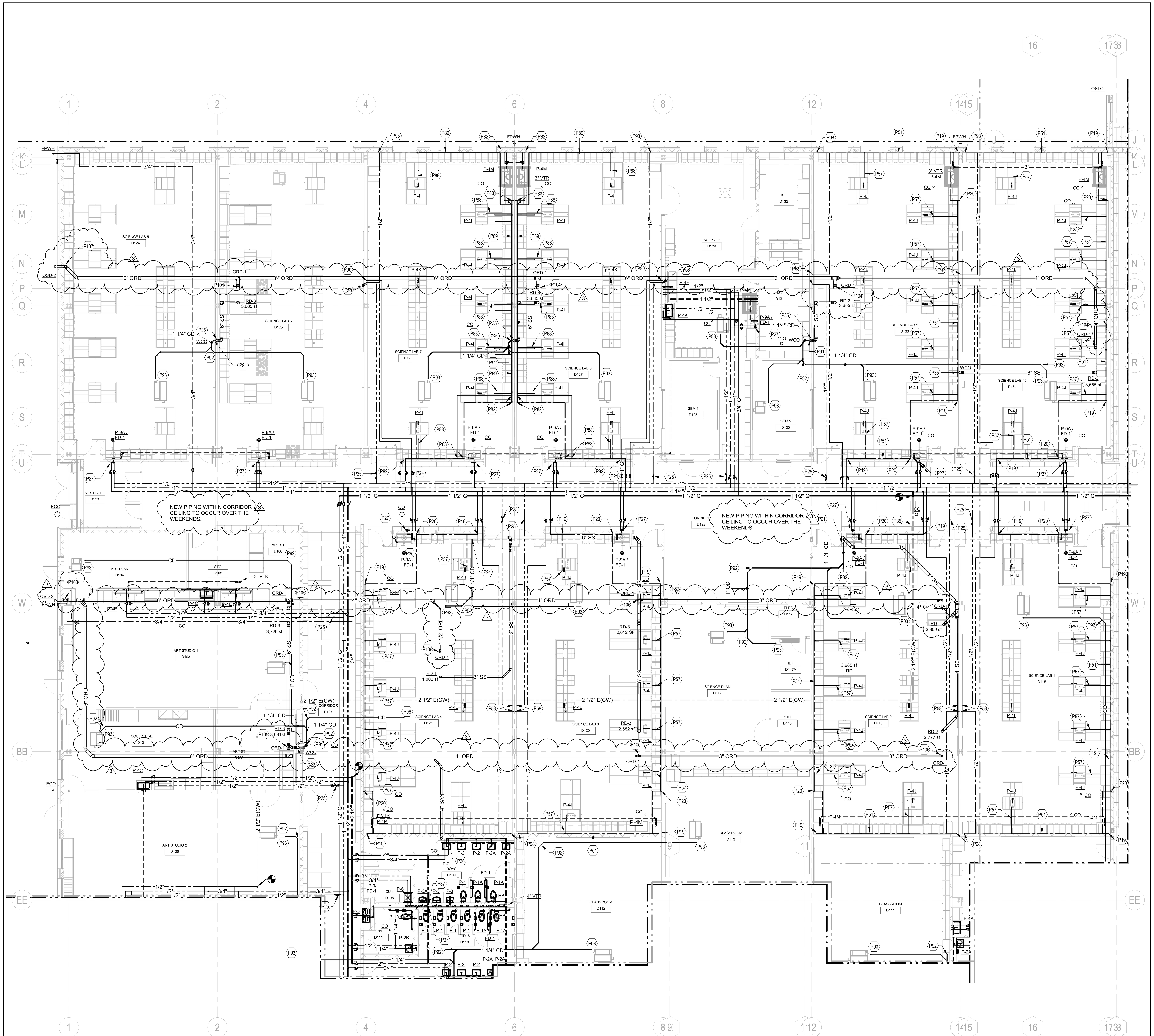
SCALE: 1/8" = 1'-0"

WORKING NORTH

SHEET NO:

P4.03

3/12/2020 10:03:12 AM

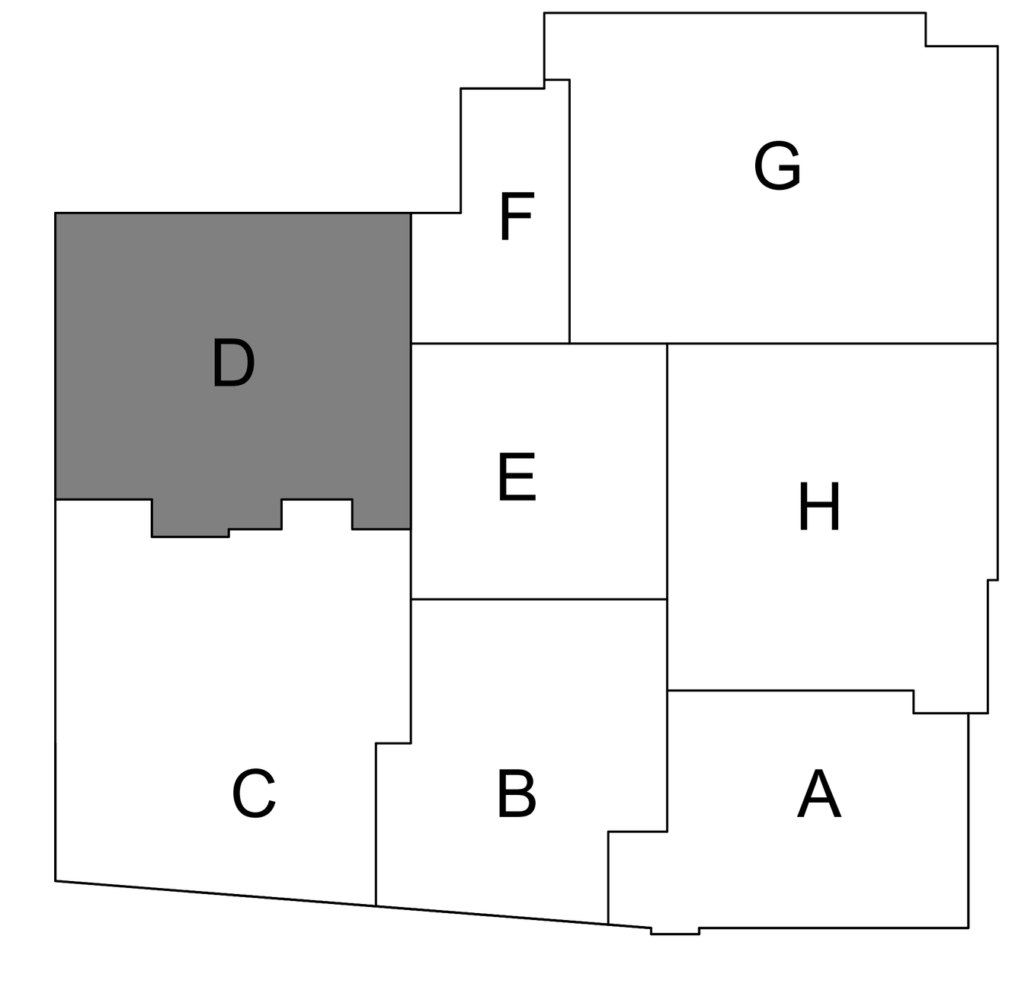


FIRST FLOOR PLAN - AREA D - PLUMBING

1 1/8" = 1'-0"

TAGGED NOTES

P19	EXTEND 3/4" CW PIPING DOWN IN WALL AND ROUTE INTO CASEWORK. CONTINUE CW PIPING HORIZONTALLY TIGHT TO WALL BELOW COUNTERTOP AND CONNECT TO SINKS.
P20	EXTEND 3/4" CW PIPING UP IN WALL AND TO ABOVE CEILING.
P24	FURNISH AND INSTALL SOLENOID VALVES ABOVE CEILING ON CW/HW/GAS PIPING. COORDINATE EXACT REQUIREMENTS WITH ELECTRICAL CONTRACTOR. INSTALL SHUT OFF VALVES UPSTREAM OF SOLENOID VALVES.
P25	HOT WATER RETURN BALANCING VALVE. REFER TO DETAIL SHEET P1.02
P27	FURNISH AND INSTALL AN EMERGENCY THERMOSTATIC MIXING VALVE ON WALL ABOVE CEILING. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
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.
P51	ROUTE 3/4" PIPING HORIZONTALLY TIGHT TO WALL.
P57	ROUTE 1/2" CW WITHIN CASEWORK TO SINK
P58	1/2" CW/HW DOWN TO BELOW SLAB.
P82	EXTEND 3/4" CW & G PIPING DOWN IN WALL AND ROUTE INTO CASEWORK. CONTINUE CW/G PIPING HORIZONTALLY TIGHT TO WALL BELOW COUNTERTOP AND CONNECT TO SINKS.
P83	EXTEND 3/4" CW/G PIPING UP IN WALL AND TO ABOVE CEILING.
P88	ROUTE 1/2" CW/G WITHIN CASEWORK TO SINK
P89	ROUTE 3/4" PIPING HORIZONTALLY TIGHT TO WALL.
P90	1/2" G. DN. TO TEACHER SINK.
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.
P98	EXTEND 1/2" CW PIPING UP IN WALL AND TO ABOVE CEILING.
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
P107	6" ELBOW, THEN 4" OVERFLOW DN. SPILL AT 6" ABOVE GRADE.



KEY PLAN

SCALE : N.T.S.

ARCHITECT

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PROFESSIONAL SEAL:

STATE OF MARYLAND JESS E. FARBER 47322 PROFESSIONAL ENGINEER

[illegible]

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1	BID SET	02/25/2020
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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

FIRST FLOOR PLAN - AREA D - PLUMBING

PROJECT NO: 18011.00

DATE: 02/25/2020

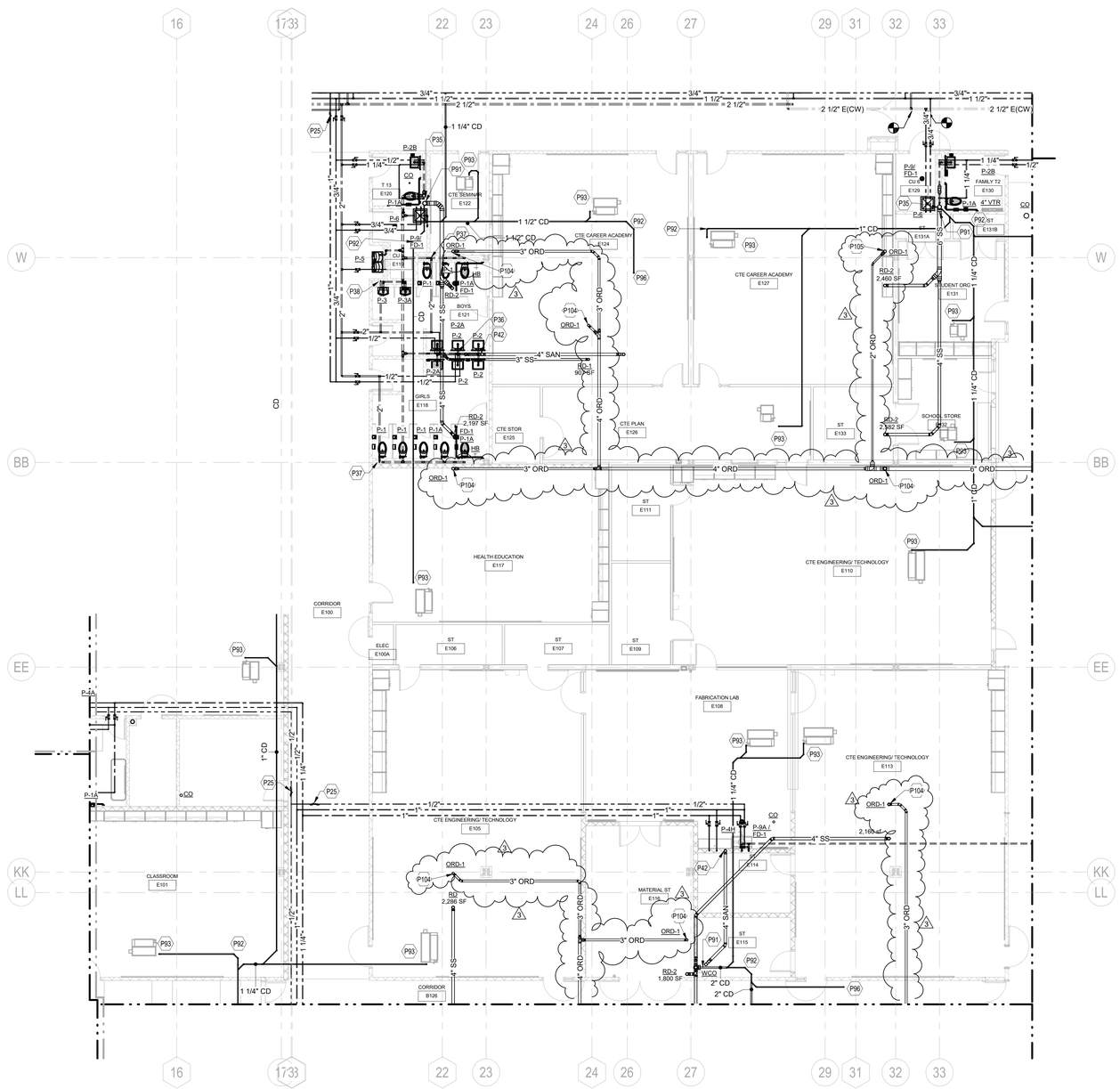
SCALE: 1/8" = 1'-0"

WORKING NORTH

SHEET NO:

P4.04

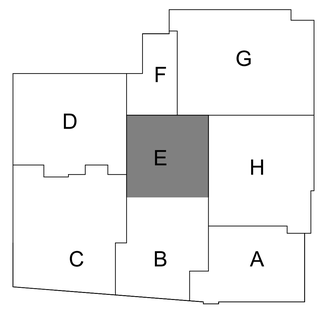
3/12/2020 10:03:25 AM



1 FIRST FLOOR PLAN - AREA E - PLUMBING
P4.05 SCALE: 1/8" = 1'-0"

TAGGED NOTES

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.
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.
P42	4" 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
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



KEY PLAN
SCALE : N.T.S.

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

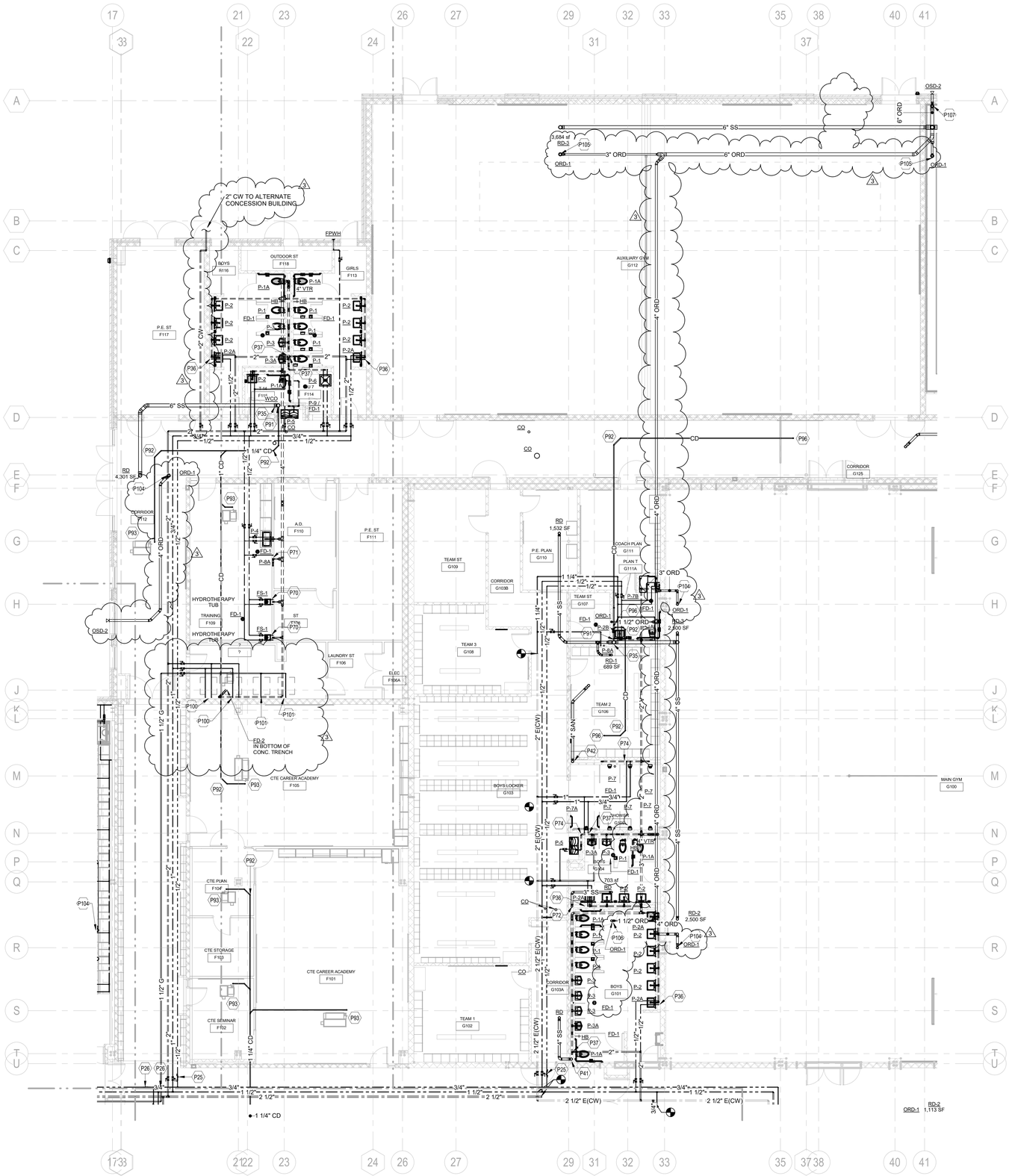
SHEET TITLE:
FIRST FLOOR PLAN - AREA E - PLUMBING

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

WORKING NORTH

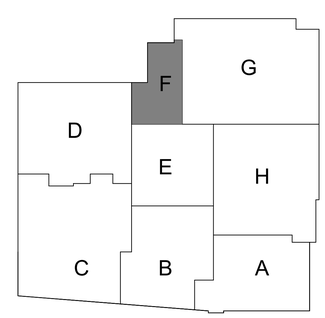
SHEET NO:
P4.05

3/12/2020 10:03:32 AM



1 / P4.06 FIRST FLOOR PLAN - AREA F - PLUMBING
SCALE: 1/8" = 1'-0"

TAGGED NOTES	##
P25	HOT WATER RETURN BALANCING VALVE. REFER TO DETAIL SHEET P1.02
P26	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.
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
P70	3/4" CW/HW DOWN TO HYDROTHERAPY TUB. INSTALL EQUIPMENT PROVIDED MIXING VALVE ASSEMBLY. PIPE DRAIN TO FLOOR SINK.
P71	FLOOR SET ICE MACHINE. REFER TO DETAIL.
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.
P100	3/4" CW/HW TO COMMERCIAL CLOTHES WASHER. PROVIDE WITH RPBPS MOUNTED ON WALL AT 60" A.F.F. BEHIND WASHER. PROVIDE WATER HAMMER ARRESTORS, 48" STAINLESS STEEL BRAIDED HOSE CONNECTIONS, PRESSURE GAUGES AND SHUT OFF VALVES. PIPE DRAIN TO TROUGH.
P101	3/4" G. DN TO DRYER.
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.



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.: 47322, Expiration Date: 10/20/2021.

PROFESSIONAL SEAL:

STATE OF MARYLAND · JESSE E. FISHER · 47322 · PROFESSIONAL ENGINEER

PRINTS ISSUED

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

FIRST FLOOR PLAN - AREA F - PLUMBING

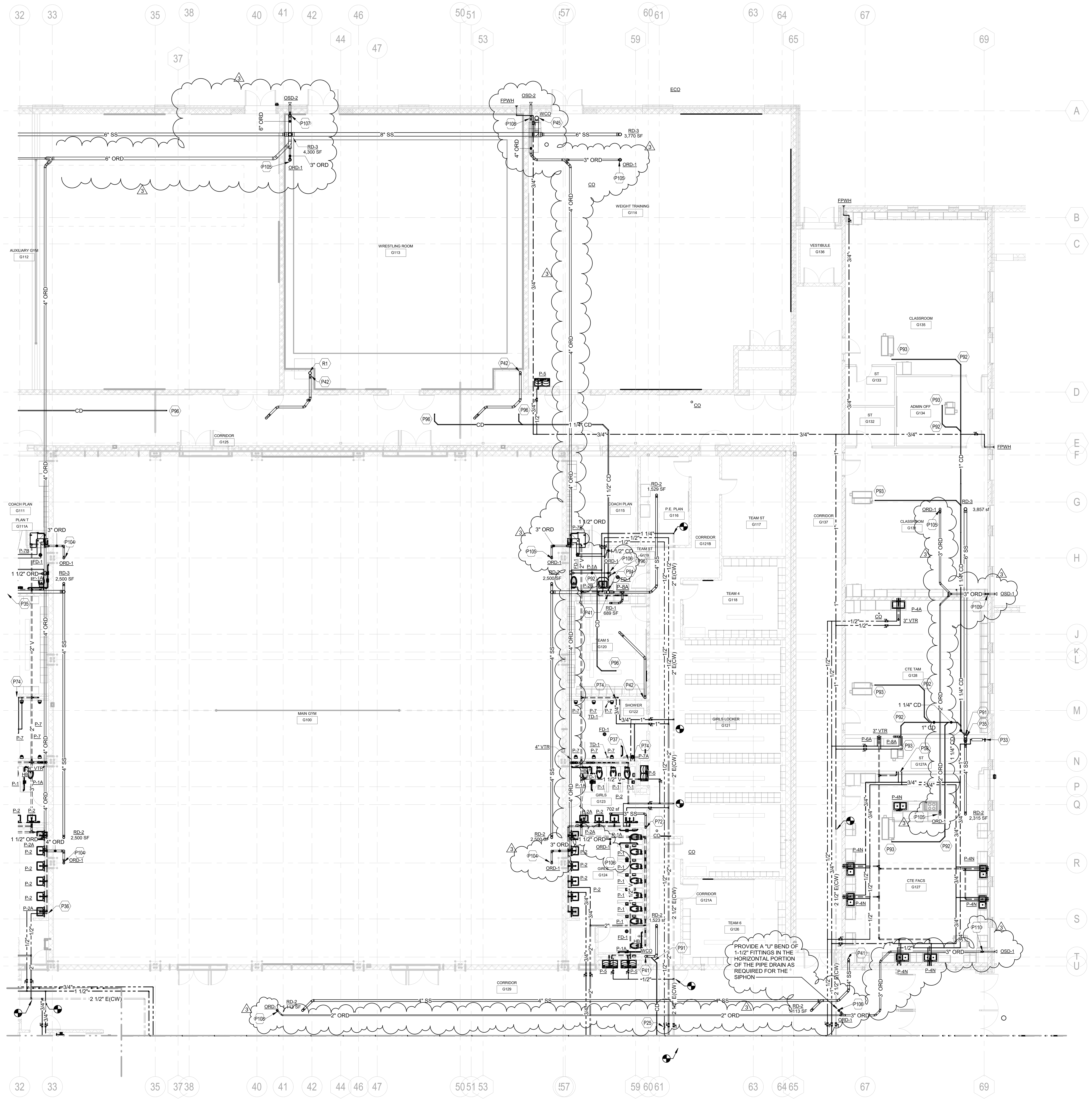
PROJECT NO: 18011.00
DATE: 02/25/2020
SCALE: 1/8" = 1'-0"

WORKING NORTH

SHEET NO:

P4.06

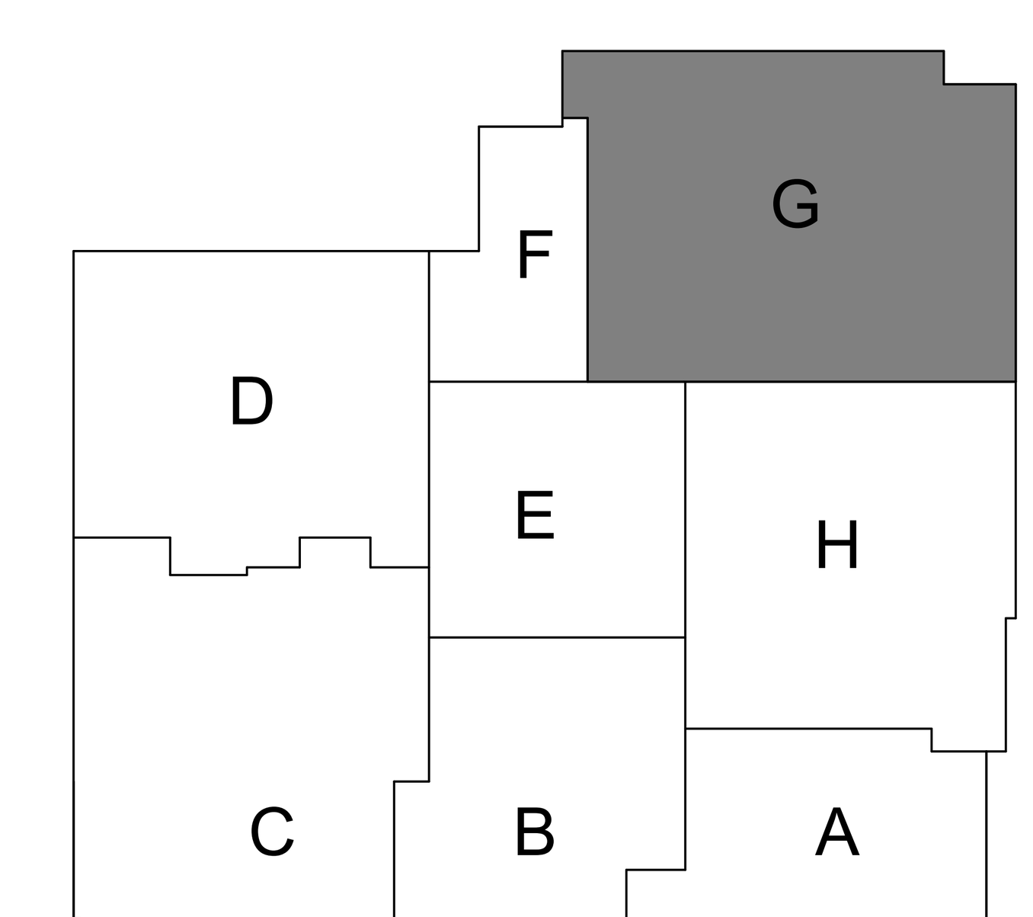
3/12/2020 10:03:41 AM



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.
R1	RADON VENT UP



KEY PLAN
SCALE : N.T.S.

ARCHITECT

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KITCHEN
NYIKOS ASSOCIATES, INC.

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PROFESSIONAL SEAL:

STATE OF MARYLAND
JESS E. FARBER
47322
PROFESSIONAL ENGINEER

PRINTS ISSUED

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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

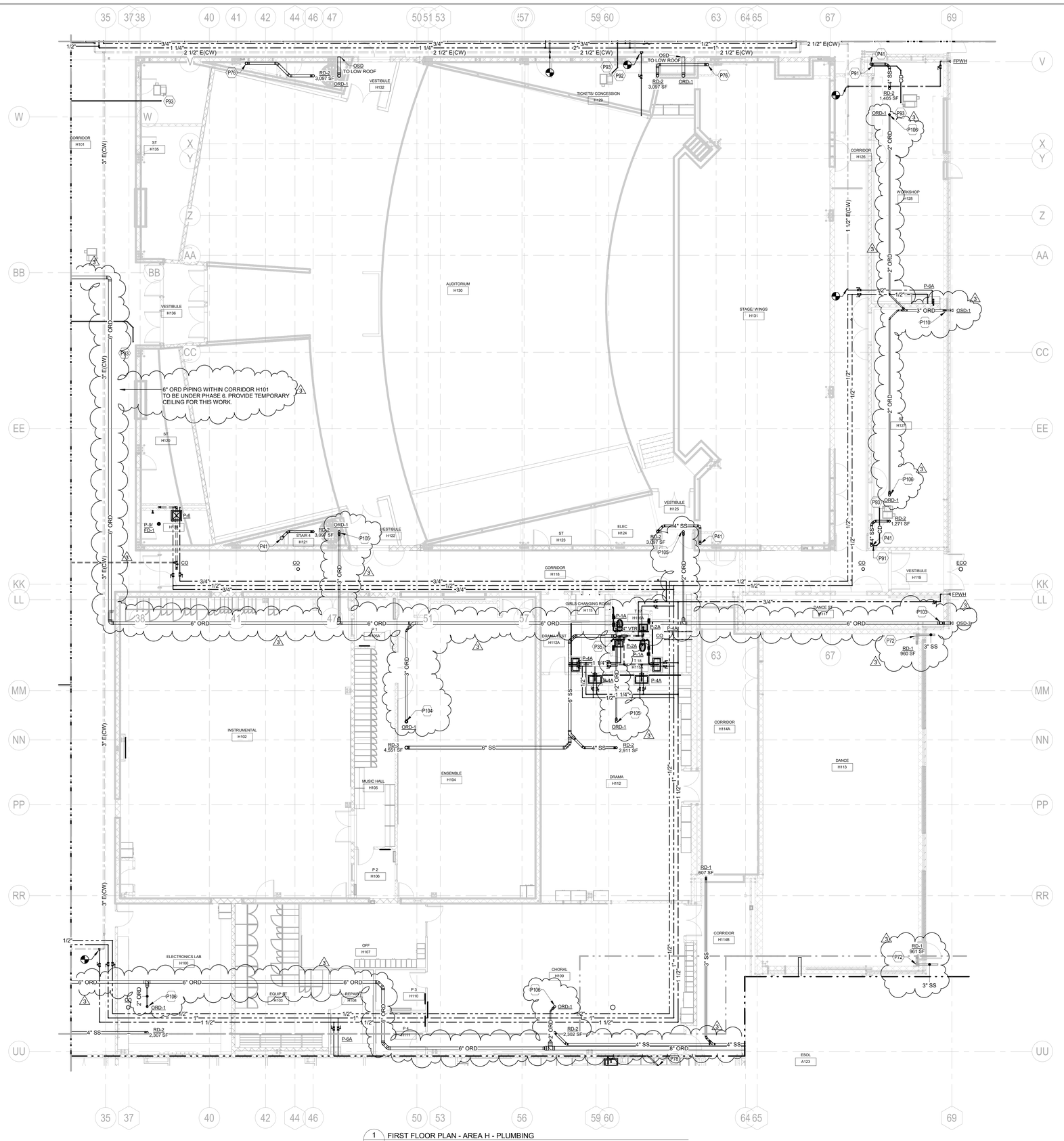
SCALE: 1/8" = 1'-0"

WORKING NORTH

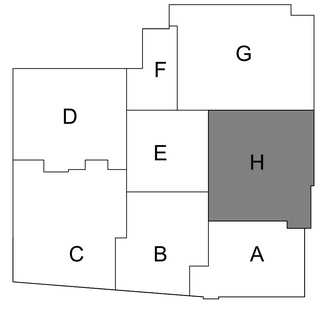
SHEET NO:

P4.07

3/12/2020 10:03:50 AM



TAGGED NOTES	##
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.



KEY PLAN
SCALE : N.T.S.

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STATE OF MARYLAND · BRIAN E. FISHER · 47322 · PROFESSIONAL ENGINEER

PRINTS ISSUED

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

FIRST FLOOR PLAN - AREA H - PLUMBING

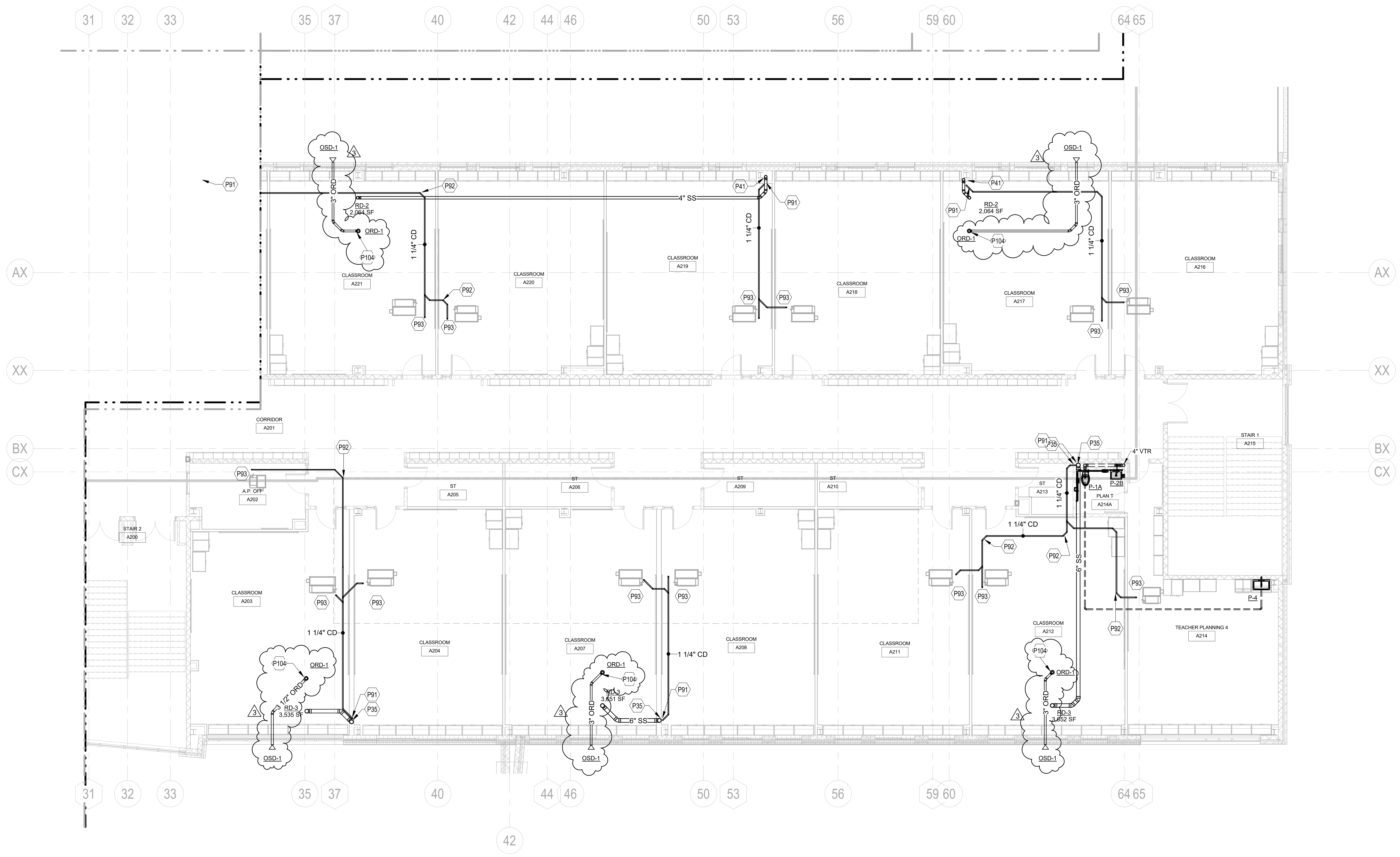
PROJECT NO: 18011.00
DATE: 02/25/2020
SCALE: 1/8" = 1'-0"

WORKING NORTH

SHEET NO:

P4.08

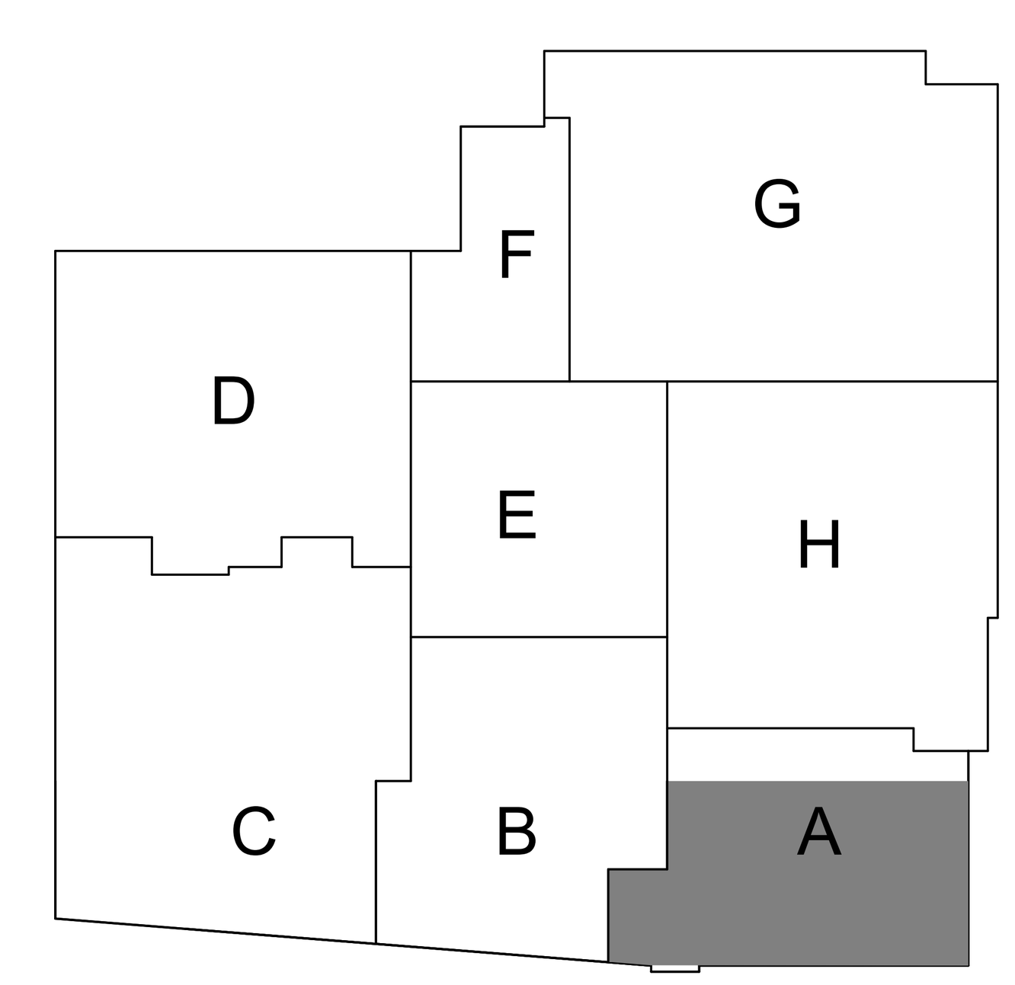
3/12/2020 10:03:58 AM



1
P4.09
SECOND FLOOR PLAN - AREA A - PLUMBING
SCALE: 1/8" = 1'-0"

TAGGED NOTES ##

P35	6" STORM DOWN
P41	4" STORM 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
P104	3" CONNECTION TO OVERFLOW DRAIN



KEY PLAN
SCALE : N.T.S.

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PROFESSIONAL SEAL:

STATE OF MARYLAND
JESS E. FARBER
47322
PROFESSIONAL ENGINEER
[illegible]

PRINTS ISSUED

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3	ADDENDUM 3	03/12/2020

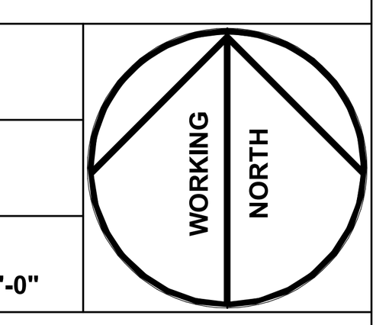
HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:

SECOND FLOOR PLAN - AREA A - PLUMBING

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



SHEET NO:

P4.09

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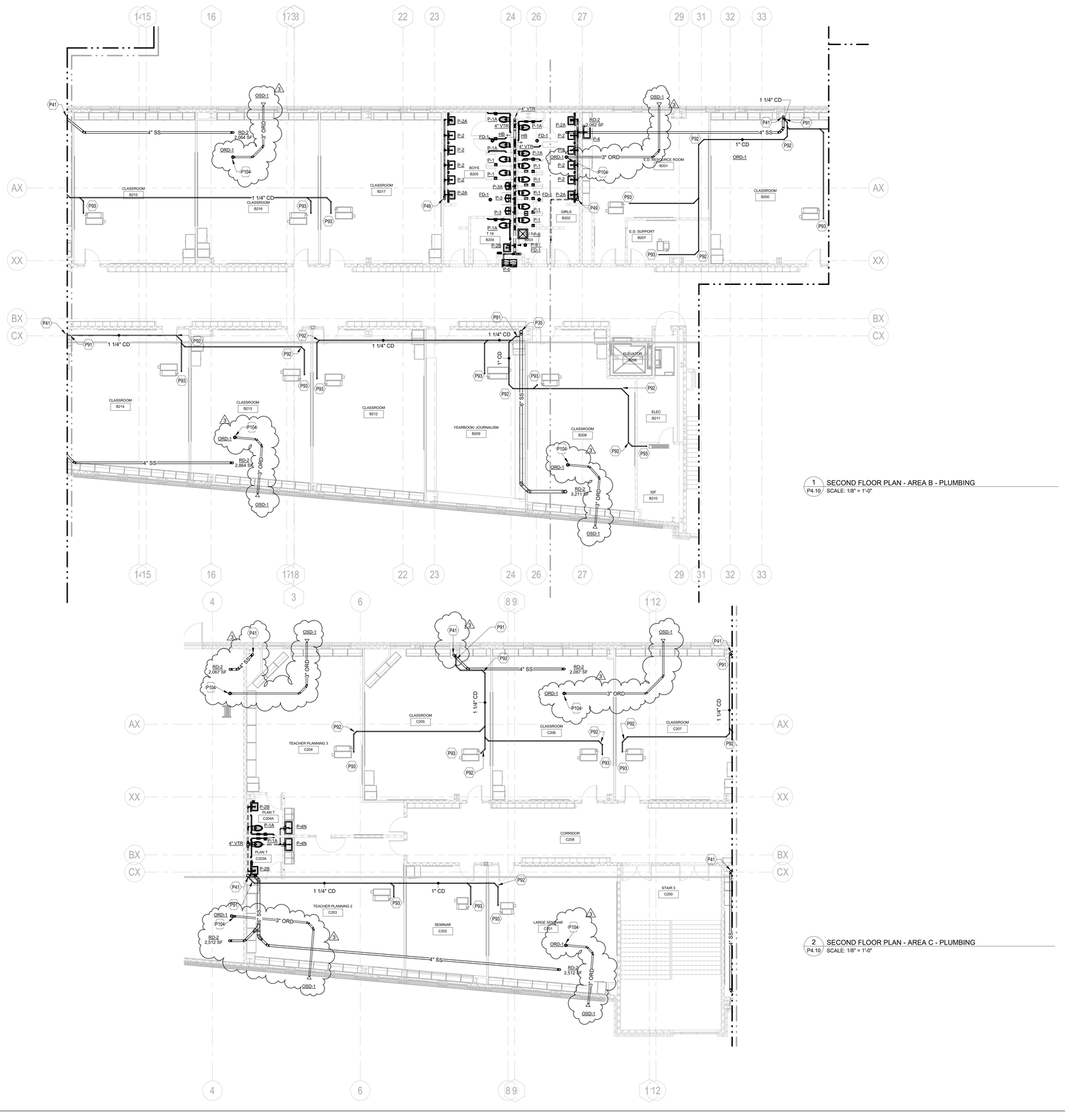
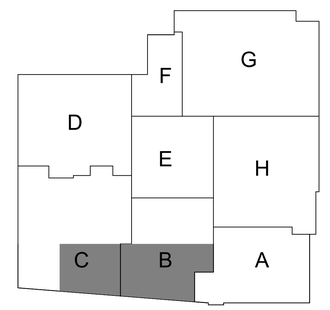


1 SECOND FLOOR PLAN - AREA B - PLUMBING
P4.10 SCALE: 1/8" = 1'-0"

2 SECOND FLOOR PLAN - AREA C - PLUMBING
P4.10 SCALE: 1/8" = 1'-0"

TAGGED NOTES	##
P35	6" STORM DOWN
P41	4" STORM DOWN
P49	4" VENT DOWN AND UP TO 4" V.T.R.
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
P104	3" CONNECTION TO OVERFLOW DRAIN



KEY PLAN
SCALE : N.T.S.

ARCHITECT

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STATE OF MARYLAND · JESSE E. FAUBERT · 47322 · PROFESSIONAL ENGINEER

PRINTS ISSUED

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
SECOND FLOOR PLAN - AREA B & C - PLUMBING

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

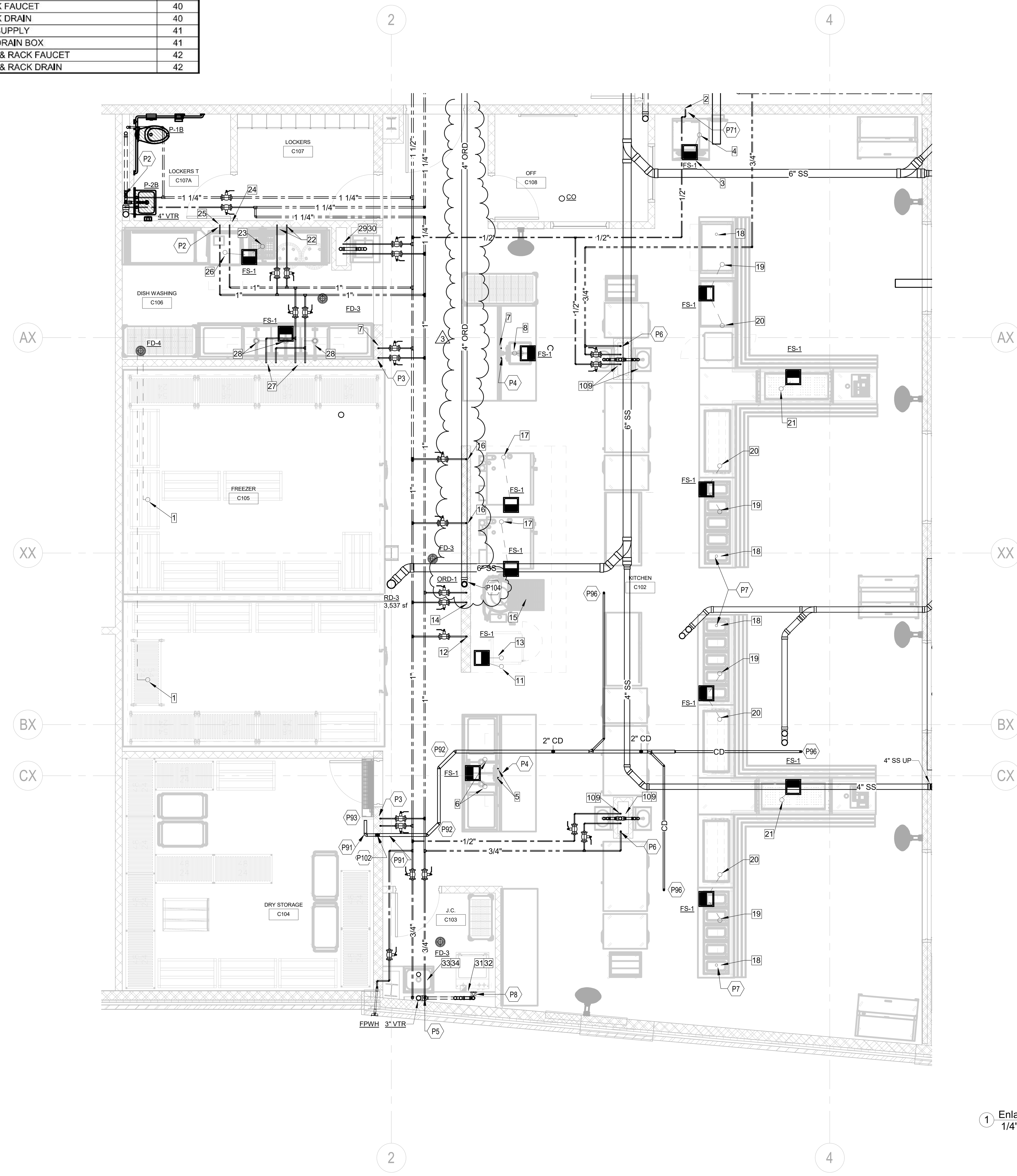
WORKING NORTH

SHEET NO:
P4.10

3/12/2020 10:04:13 AM

KITCHEN EQUIPMENT PLUMBING CONNECTION SCHEDULE

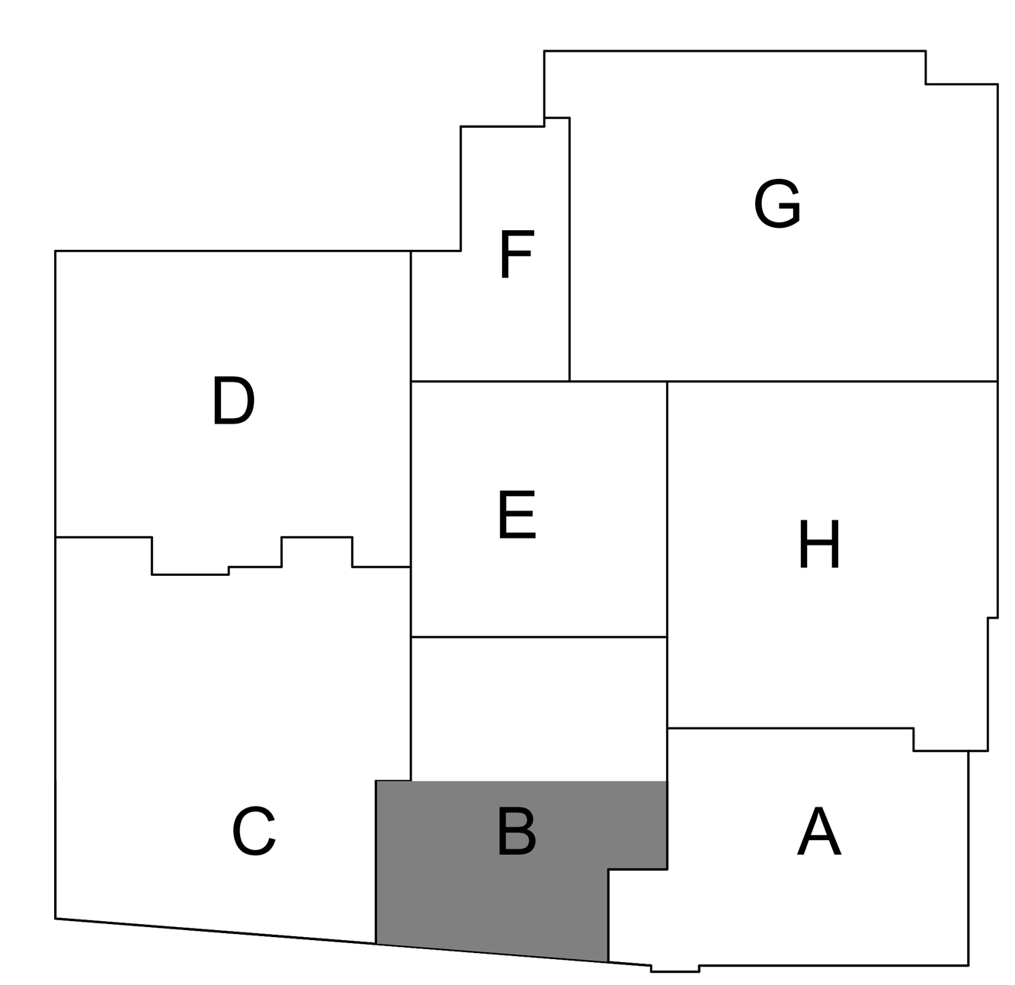
R.I. #	WATER HW	WATER CW	WASTE DIR	WASTE IND	GAS SIZE	GAS MBH	R.I. HGT. A.F.F.	CONN. SIZE	CONN. HEIGHT	DESCRIPTION	EQ. #
1				3/4"				3/4"	84"	BLOWER COIL DRAIN	5
2		1/2"					72"	1/2"	62"	ICE MAKER INLET	13
3				3/4"				3/4"	10"	BIN DRAIN	13
4				1/2"				1/2"	50"	ICE MAKER DRAIN	13
5	1/2"	1/2"						1/2"	40"	PREP SINK FAUCET	14
6				1 1/2"			22"	1 1/2"	22"	PREP SINK DRAIN (2)	14
7	1/2"	1/2"						1/2"	40"	WORKTABLE WITH SINK FAUCET	17
8				1 1/2"				1 1/2"	36"	WORKTABLE WITH SINK DRAIN	17
9	1/2"	1/2"					26"	1/2"	40"	HAND SINK FAUCET	18
10			1 1/2"				24"	1 1/2"	28"	HAND SINK DRAIN	18
11				1/2"				1/2"	80"	CONDENSATE CANOPY DRAIN	20
12		3/4"					26"	3/4"	16"/36"	CONVECTION STEAMER INLET (2)	21
13				3/4"				3/4"	16"/36"	CONVECTION STEAMER DRAIN (2)	21
14	1/2"	1/2"					24"	1/2"	36"	TILTING KETTLE INLET	22
15			4"				STUB	4"	-10"	FLOOR TROUGH DRAIN	23
16		3/4"					24"	3/4"	16"/36"	BRANCH TO:	24
16a.		3/4"						3/4"	16"/36""	COMBI OVEN CONDENSATE INLET	24
16b.		3/4"						3/4"	16"/36"	COMBI OVEN FILTERED INLET	24
17				2"			16"/36"	2"	36"	COMBI OVEN DRAIN (2)	24
18	1/2"						STUB	1/2"	34"	FILL FAUCET	28a
19				1/2"				1/2"	6"	HOT FOOD COUNTER DRAIN	28a
20				3/4"				3/4"	6"	FROST TOP COUNTER DRAIN	28b
21				3/4"				3/4"	6"	SALAD BAR COUNTER DRAIN	28d
22	1/2"	1/2"					D.F.A.	1/2"	40"	HOSE REEL SPRAY CABINET	37
23				1 1/2"				1 1/2"	36"	SOILED DISHTABLE DRAIN	36
24	3/4"						8"	3/4"	6"	BOOSTER HEATER/DISHMACHINE	38
25		1/2"						1/2"	12"	WATER TEMP DEVICE	38
26				2"				2"	10"	DISHMACHINE DRAIN	38
27	3/4"	3/4"					15"	3/4"	40"	POT WASHING SINK FAUCET	34
28				2"				2"	22"	POT WASHING SINK DRAIN (3)	34
29	1/2"	1/2"					26"	1/2"	40"	HAND SINK FAUCET	40
30			1 1/2"				24"	1 1/2"	28"	HAND SINK DRAIN	40
31	3/4"	3/4"					D.F.A.	3/4"	48"	WASHER SUPPLY	41
32			1 1/4"				36"	1 1/4"	36"	WASHER DRAIN BOX	41
33	1/2"	1/2"					36"	1/2"	36"	MOP SINK & RACK FAUCET	42
34			4"				STUB	4"	3"	MOP SINK & RACK DRAIN	42



1 Enlarged Kitchen Plumbing New Work
1/4" = 1'-0"

TAGGED NOTES

P2	EXTEND 3/4" CW/HW PIPING DOWN IN WALL. ROUTE 3/4" CW LINE TO DRAIN TEMPERING DEVICE AND CONNECT. ROUTE 3/4" HW LINE TO DISHWASHER AND CONNECT. FURNISH AND INSTALL ALL REQUIRED BACKFLOW PREVENTERS, PRESSURE REGULATORS, CHECK VALVES, SHUT-OFF VALVES, STRAINERS, WATER HAMMER ARRESTOR PER SPECIFICATIONSS PER SPECIFICATIONSAND ANY OTHER ITEMS RECOMMENDED BY THE DISHWASHER MANUFACTURER. REFERENCE KITCHEN VENDOR DRAWINGS FOR ADDITIONAL INFORMATION.
P3	EXTEND 1/2" CW/HW PIPING DOWN IN WALL AND CONTINUE TO BELOW SLAB.
P4	EXTEND 1/2" CW/HW PIPING UP FROM BELOW SLAB TO SINK AND CONNECT.
P5	EXTEND 3/4" CW/HW PIPING DOWN IN CHASE. ROUTE HORIZONTALLY IN CHASE TO MOP BASIN, WASHING MACHINE CONNECTION BOX AND FREEZE-PROOF WALL HYDRANT. FURNISH AND INSTALL WATER HAMMER ARRESTOR PER SPECIFICATIONSS PER SPECIFICATIONSAS REQUIRED.
P6	EXTEND 3/4" HW LINE DOWN TO BELOW SLAB.
P7	EXTEND 3/4" HW LINE UP FROM AND BACK DOWN TO BELOW SLAB. EXTEND 1/2" HW LINE TO FILL FAUCET AND CONNECT.
P8	FURNISH AND INSTALL A 4" WATTS REDUCED PRESSURE ZONE BACKFLOW PREVENTER WITH 2" BYPASS. REFERENCE DOMESTIC WATER SERVICE ENTRY DETAIL ON DRAWING P1.01 FOR ADDITIONAL INFORMATION.
P61	DOMESTIC WATER PIPING BELOW SLAB TO BE TYPE "K" SOFT COPPER WITH NO JOINTS
P71	FLOOR SET ICE MACHINE. REFER TO DETAIL.
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.
P102	2" CONDENSATE DOWN
P104	3" CONNECTION TO OVERFLOW DRAIN



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.: 47322, Expiration Date: 10/20/2021.

PROFESSIONAL SEAL:

STATE OF MARYLAND JESS E. FARBER 47322 PROFESSIONAL ENGINEER

PRINTS ISSUED

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

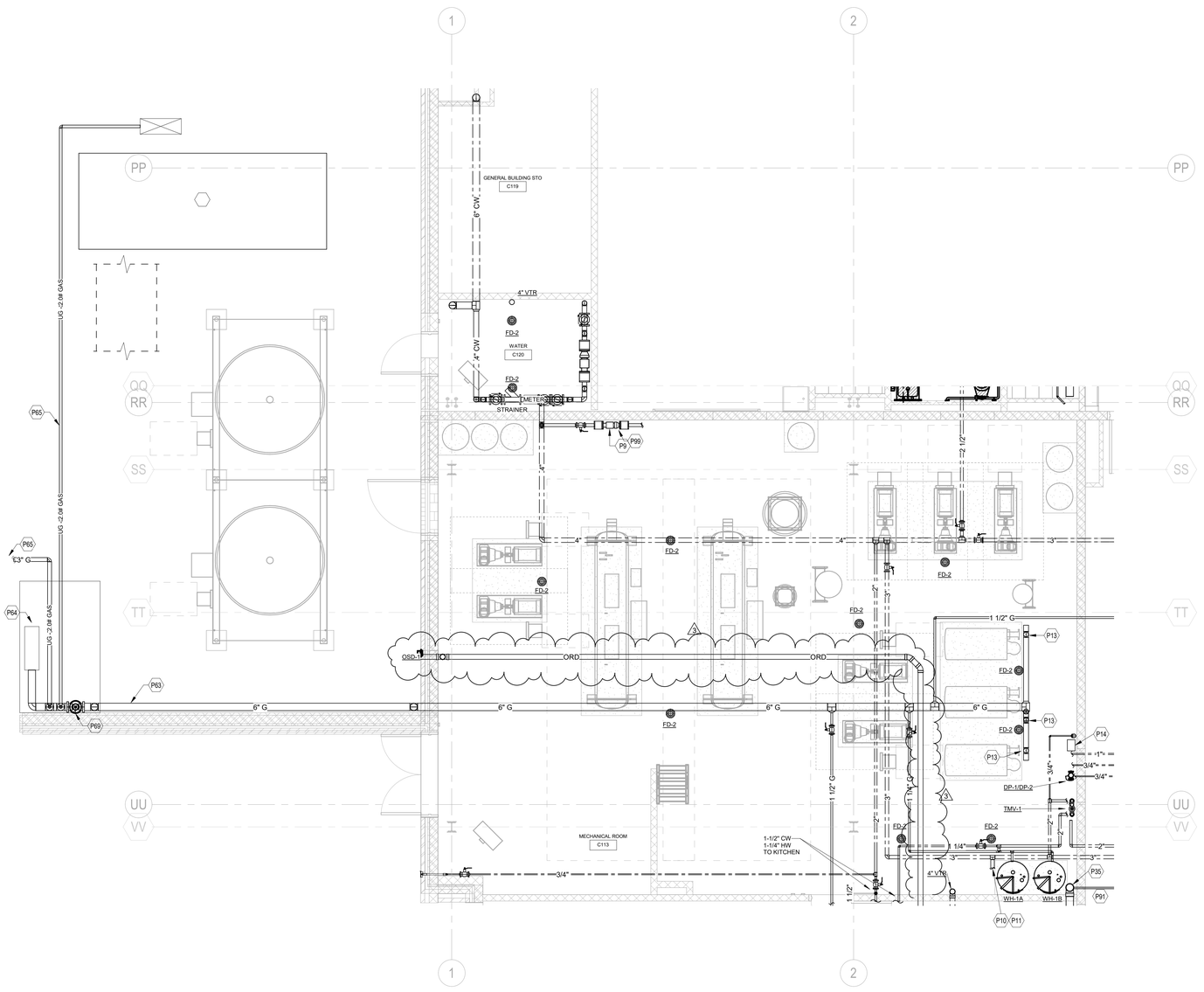
SHEET TITLE:
ENLARGED KITCHEN PLAN - PLUMBING

PROJECT NO: 18011.00
DATE: 02/25/2020
SCALE: 1/4" = 1'-0"

WORKING NORTH

SHEET NO:
P5.01

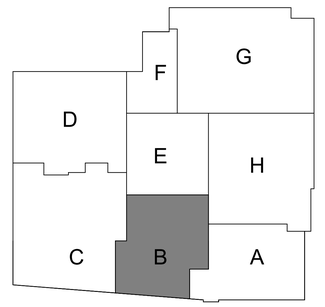
3/12/2020 10:04:18 AM



1 Enlarged Boiler Room Plumbing New Work
1/4" = 1'-0"

TAGGED NOTES

P9	FURNISH AND INSTALL (1) 2" AND (1) 1" WATTS MODEL LF-909M1-QT-S BACKFLOW PREVENTERS OR EQUAL, WITH STRAINERS AND AIR GAPS FOR HVAC FILL SYSTEM. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. REFERENCE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
P10	EXTEND 2" CW/HW PIPING TO DOMESTIC WATER HEATING SYSTEM. REFERENCE WATER HEATER PIPING SCHEMATIC ON DRAWING P1.01 FOR ADDITIONAL INFORMATION.
P11	EXTEND 3" CPVC WATER HEATER INTAKE/EXHAUST THROUGH ROOF AND INSTALL CONCENTRIC VENT KIT. REFER TO HVAC DRAWINGS FOR ROUTING. ALL VENTING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE WATER HEATER MANUFACTURER'S RECOMMENDATIONS.
P13	EXTEND 3" GAS LINE TO BOILER AND CONNECT. FURNISH AND INSTALL GAS SHUT-OFF VALVE AND 6" DIRT LEG. (TYPICAL OF 3 BOILERS)
P14	FURNISH AND INSTALL A PRECISION PLUMBING PRODUCTS MODEL PTS-12 PRIME TIME ELECTRONIC TRAP PRIMING MANIFOLD. REFERENCE TRAP PRIMER PIPING SCHEMATIC ON DRAWING P1.01 FOR ADDITIONAL INFORMATION. PIPE 1/2" CW UNDER SLAB TO EACH FLOOR DRAIN.
P35	6" STORM DOWN
P63	RACK PIPING ON WALL 8'-0"
P64	BG&E SHALL FURNISH AND INSTALL (1) NEW NATURAL GAS METERS, INCLUDING ALL REQUIRED METERS, PIPING, VALVES, REGULATORS, BYPASS, ETC.THE METER SHALL HAVE A 2 PSIG OUTLET PRESSURE. THE PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIED PIPING, VAVLES, REGULATORS, ETC. DIMOLISION OF THE METER. COORDINATE THIS SCOPE WITH BG&E PRIOR TO BEGINNING WORK
P65	UNDER GROUND GAS PIPING FOR TEMPORARY CONDITIONS. REFER TO THE TEMPERARY CONDITIONS PLAN ON SHEET P2.11 FOR CORDINATION - BELOW GRADE.
P66	FURNISH AND INSTALL SHUT-OFF VALVES, GAS PRESSURE REGULATORS AND 6" JUNTION BOX ABOVE GRADE IN THIS LOCATION.
P69	FURNISH AND INSTALL SHUT-OFF VALVES, GAS PRESSURE REGULATOR, AND 6" DIRT LEG ABOVE GRADE IN THIS LOCATION. SET OUTLET PRESSURE OF REGULATOR PER GENERATOR MANUFACTURER'S RECOMMENDATIONS. REFERENCE GENERATOR GAS CONNECTION DETAIL ON DRAWING P1.0 FOR ADDITIONAL INFORMATION. VERIFY RECOMMENDED DISTANCE BETWEEN REGULATOR OUTLET AND GENERATOR GAS CONNECTION WITH REGULATOR AND GENERATOR MANUFACTURERS PRIOR TO ROUGH-IN. GENERATOR GAS LOAD: 4615 MBH.
P91	ROUTE CONDENSATE TO NEW STORM LINE AND CONNECT. INSTALL SWING CHECK VALVE IN CONDENSATE LINE PRIOR TO CONNECTION.
P99	2" CW TP BOILER SYSTEM FILL. PROVIDE WITH A RPBP. PIPE AIR GAP FITTING TO FLOOR DRAIN. INSTALL RPBP AT 60" A.F.F. ON WALL. REFER TO MECHANICAL PLANS FOR CONTINUATION.



KEY PLAN
SCALE : N.T.S.

ARCHITECT

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PROFESSIONAL SEAL:

STATE OF MARYLAND · JESSE E. FISHER · 47322 · PROFESSIONAL ENGINEER

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
ENLARGED BOILER ROOM PLAN - PLUMBING

PROJECT NO: 18011.00
DATE: 02/25/2020
SCALE: 1/4" = 1'-0"

WORKING NORTH

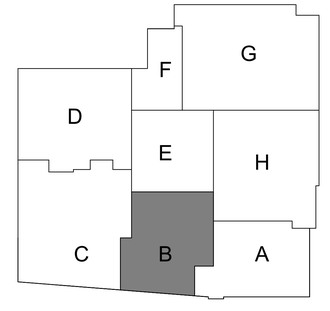
SHEET NO:
P5.02

3/12/2020 10:04:24 AM

1 E2.02 FIRST FLOOR PLAN - LIGHTING - AREA B
SCALE: 1/8" = 1'-0"

TAGGED NOTES

- L1 ROUTE EXTERIOR LIGHTING BRANCH CIRCUIT THROUGH OUTDOOR LIGHTING CONTACTOR PANEL. REFER TO DETAIL "OUTDOOR LIGHTING CONTROL SCHEMATIC" FOR REQUIREMENTS.
- L3 PROVIDE TUNABLE WHITE LIGHTING CONTROLS FOR LIGHT FIXTURES IN THIS AREA.
- ~~L9 EXISTING STUDIO LIGHT FIXTURE SHALL BE RELOCATED TO SOON RESOURCED~~ COORDINATE EXACT MOUNTING POINTS AND LOCATIONS WITH ARCHITECT DRAWINGS OF STEEL PIPE SUPPORT SYSTEM. INTERCEPT AND EXTEND POWER FOR FIXTURES "P3" IN TV STUDIO ROOM FOR POWER. ROUTE CONDUCTORS AND CONDUIT AS REQUIRED FOR PROVIDING POWER AND CONTROLS TO RELOCATED STUDIO LIGHTS.
- L10 RELOCATED LIGHTING CONTROLLER SHALL BE INSTALLED AT LOCATION INDICATED. ROUTE CONDUCTORS AND CONDUIT AS REQUIRED FOR CONTROLLING STUDIO LIGHT FIXTURES. COORDINATE ALL EXISTING CONDITIONS AND REQUIREMENTS TO PROVIDE A COMPLETE SYSTEM.



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 B - LIGHTING

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

WORKING NORTH

SHEET NO:

E2.02

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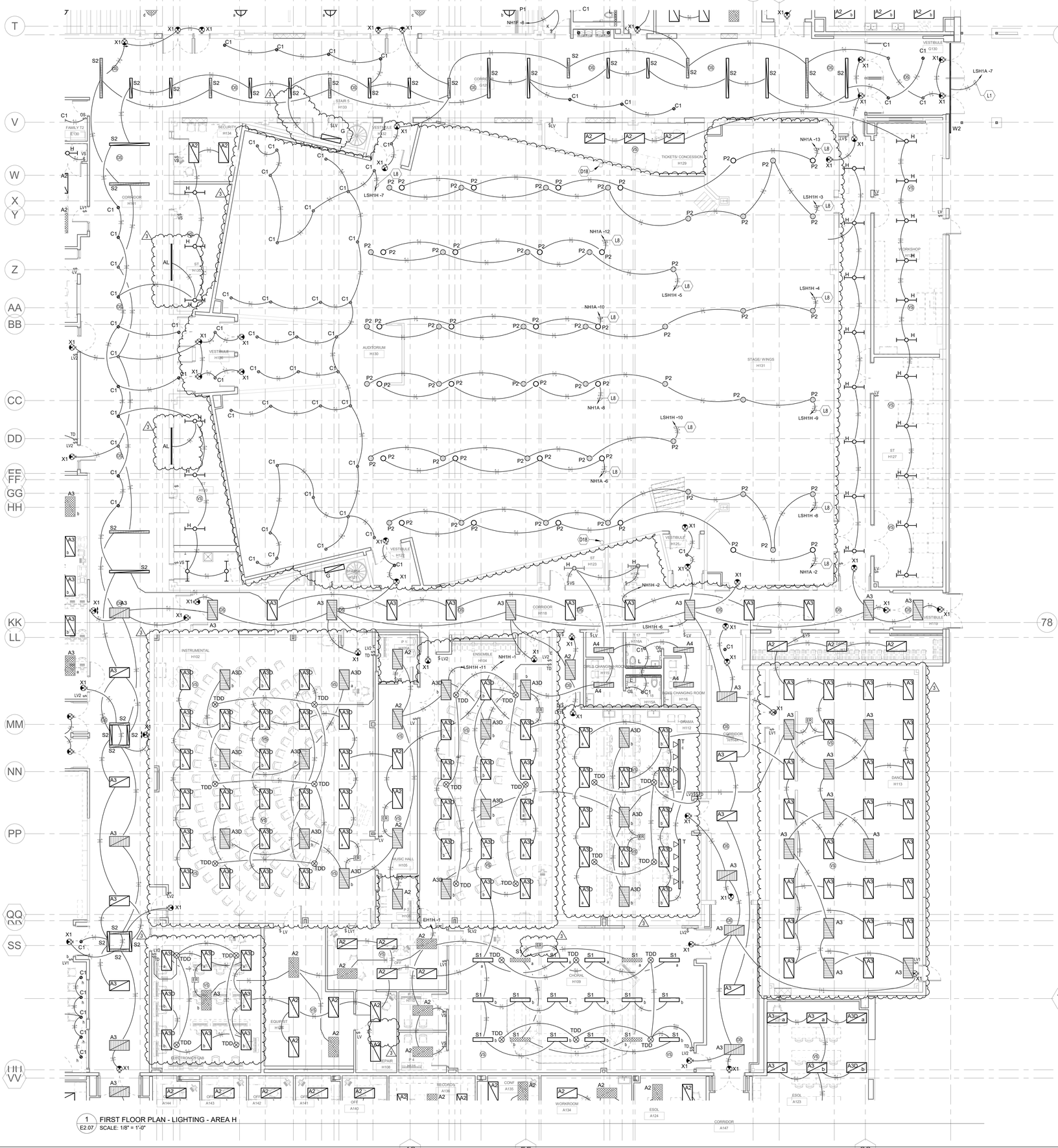


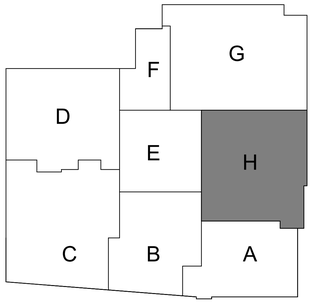
1 E2.07 FIRST FLOOR PLAN - LIGHTING - AREA H
SCALE: 1/8" = 1'-0"

TAGGED NOTES ##

D18 EXISTING THEATRICAL LIGHTING TORM TO REMAIN. ELECTRICAL CONTRACTOR SHALL PROTECT ALL CONDUIT AND WIRE AS REQUIRED DURING CONSTRUCTION FOR LIGHTING TORM TO REMAIN COMPLETELY OPERATIONAL. FIELD VERIFY ALL REQUIREMENTS.

L1 ROUTE EXTERIOR LIGHTING BRANCH CIRCUIT THROUGH OUTDOOR LIGHTING CONTACTOR PANEL. REFER TO DETAIL "OUTDOOR LIGHTING CONTROL SCHEMATIC" FOR REQUIREMENTS.

L8 DMX CONTROL TO BE PROVIDED FOR ALL FIXTURES IN THIS AREA.



KEY PLAN
SCALE : N.T.S.

ARCHITECT

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HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

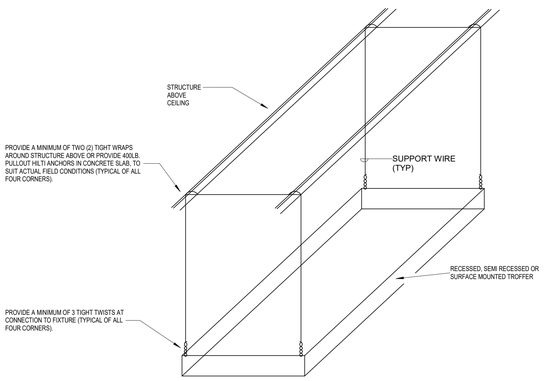
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
FIRST FLOOR PLAN - AREA H - LIGHTING

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

SHEET NO:
E2.07

3/12/2020 11:13:10 AM



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

ELEC - LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	BASIS OF DESIGN	EQUAL MANUFACTURERS	MOUNTING	LAMPS / CCT	VOLTAGE	REMARKS
A1	2'x4' LAY-IN LED TROFFER WITH 1% DIMMING DRIVER, PATTERN A19 LENS, AND REPLACABLE, UPGRADABLE LED MODULES.	LITHONIA # 2GTL 4 40L RW A19 EZ1 LP840 LATC GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A1D	SAME AS ABOVE EXCEPT WITH INTEGRAL DAYLIGHT SENSOR	LITHONIA # 2GTL 4 40L RW A19 EZ1 LP840 LATC GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A2	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	
A2D	SAME AS ABOVE EXCEPT WITH INTEGRAL DAYLIGHT SENSOR	LITHONIA # 2GTL 4 48L RW A19 EZ1 LP840 LATC GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A2V	SAME AS 'A2' EXCEPT VANDAL RESISTANT		COOPER, PHILIPS	RECESSED	LED	120/277	
A2VE	SAME AS 'A2' EXCEPT VANDAL RESISTANT AND INTEGRAL BATTERY		COOPER, PHILIPS	RECESSED	LED	120/277	
A3	2'x4' LAY-IN LED TROFFER WITH 1% DIMMING DRIVER, PATTERN A19 LENS, AND REPLACABLE, UPGRADABLE LED MODULES.	LITHONIA # 2GTL 4 60L RW A19 EZ1 LP840 LATC GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A3D	SAME AS "A3" EXCEPT WITH INTEGRAL DAYLIGHT SENSOR	LITHONIA # 2GTL 4 60L RW A19 EZ1 LP840 LATC GLR	COOPER, PHILIPS	RECESSED	LED	120/277	
A3E	SAME AS "A3" EXCEPT WITH INTEGRAL BATTERY	LITHONIA # 2GTL 4 60L RW A19 EZ1 LP840 LATC 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	SAME AS 'A2' EXCEPT GASKETED		COOPER, PHILIPS	RECESSED	LED	120/277	
AGE	SAME AS 'A2' EXCEPT GASKETED AND INTEGRAL BATTERY		COOPER, PHILIPS	RECESSED	LED	120/277	
AL	ARCHITECTURAL LINEAR LIGHTING SYSTEM		COOPER, PHILIPS		LED	120/277	
AT	2'x4' LAY-IN LED TROFFER WITH 1% DIMMING DRIVER, PATTERN A19 LENS, AND REPLACABLE, UPGRADABLE LED MODULES. AND TUNABLE WHITE LIGHTING CHARACTERISTICS.	LITHONIA # 2GTL 4 48L RW A19 EZ1 LP840 LATC GLR	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	SAME AS "C1" EXCEPT WITH AMBER LED	GOTHAM # ICO 40 60 6AR LD 70D EZB SF TRW	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 WGG 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				ARCHITECT TO SELECT FINISH
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	

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" AFFIXED 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.

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CONSTRUCTION MANAGER
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1309-Q CONTINENTAL DRIVE
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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

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

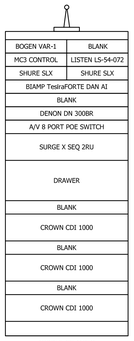
SHEET TITLE:
DETAILS - ELECTRICAL

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

WORKING NORTH

SHEET NO:
E7.00

3/12/2020 11:04:40 AM



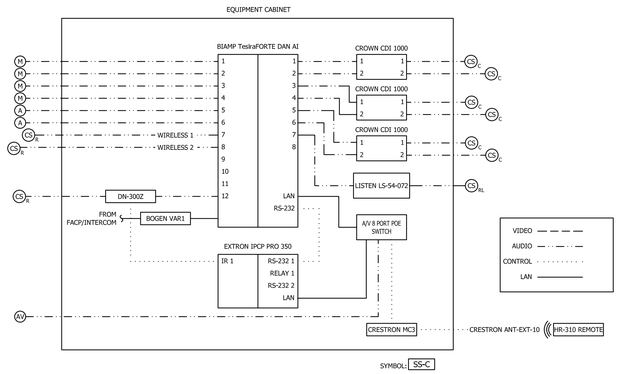
NOTES:

1. PROVIDE ALL REQUIRED PATHWAYS, CABLING, RACK EQUIPMENT, MICS, ELECTRONICS AND SPEAKERS FOR THE A/V SYSTEM AS DESCRIBED IN THE SYSTEMS DRAWINGS.
2. ELECTRONICS FOR THE A/V SYSTEMS SHALL BE PROVIDED AND TESTED AND BE SHOWN TO BE FREE FROM DEFECT.
3. INSTALL AND PROPERLY SUPPORT EQUIPMENT CABINET TO HOLD THE ANTICIPATED AMOUNT OF EQUIPMENT AND WEIGHT. PROPERLY SECURE TO FLOOR.
4. TIE THE A/V SYSTEM TO THE FACP AND INTERCOM SYSTEM TO SHUNT DURING AN EMERGENCY CALL OR ALERT, COORDINATE WORK WITH INTERCOM, FACP AND ELECTRICAL INSTALLERS.
5. ALL CABLES SHALL BE RUN IN RIGID METALLIC CONDUIT RUN BEHIND SURFACES WHERE POSSIBLE.
6. ALL CABLES SHALL BE LABELED AT BOTH ENDS WITH IDENTIFICATION, SIGNAL STRENGTH AND CABLE LENGTH.
7. SOUND AND VIDEO SHALL BE ADJUSTED, VERIFIED AND DEMONSTRATED AS PART OF SYSTEM INSTALLATION. EDID AND HDCP SETTINGS SHALL BE ADJUSTED, VERIFIED AND RECORDED FOR VIDEO SIGNALS.
8. PROVIDE AN EASE PLOT FOR THE SPEAKERS SELECTED WHICH SHOW SOUND PRESSURE LEVELS FOR THE SPACE BEING SERVED.
9. COORDINATE ALL WORK WITH ASSOCIATED ELECTRICAL AND ARCHITECTURAL COMPONENTS.
10. THE EXTRON CONTROLLER SHALL OPERATE THE ELECTRIC DROP DOWN SCREEN. PROVIDE ALL REQUIRED CONNECTIONS.
11. COORDINATE THE LARGE FORMAT PROJECTOR WITH THE PROJECTION SCREEN SIZE HEIGHT AND SURFACE PRIOR TO INSTALLATION.
12. SEE RELATED SPECIFICATION SECTION FOR EQUIPMENT AND INSTALLATION DETAILS.

SYMBOL: SS-C

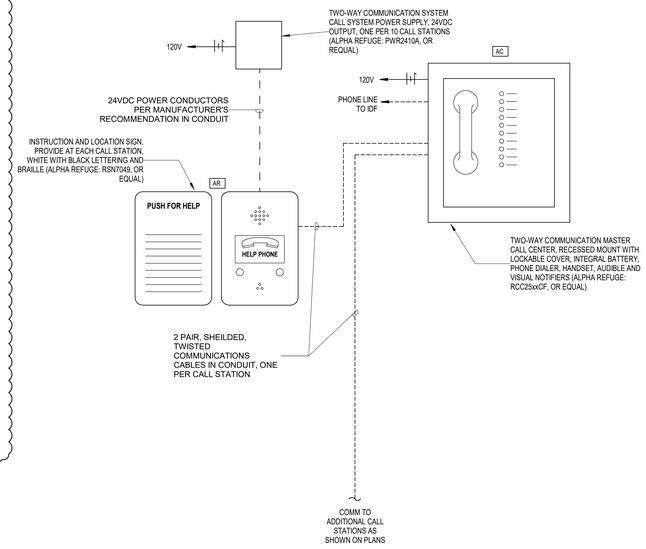
7 CAFETERIA EQUIPMENT CABINET

SCALE: NONE



4 CAFETERIA LINE DIAGRAM

SCALE: NONE

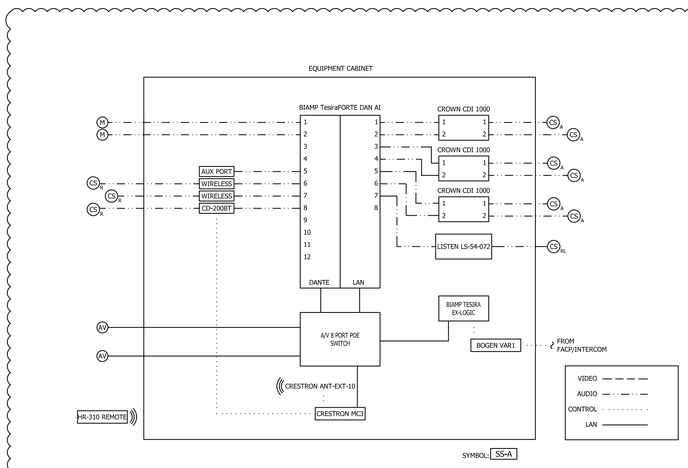


GENERAL NOTES:

1. INSTALLED SYSTEM SHALL BE IBC, NFPA, ADAAG, AND ELEVATOR CODE COMPLIANT.
2. COORDINATE EQUIPMENT LOCATIONS WITH ARCHITECTURAL ELEVATIONS AND ELEVATOR CALL STATIONS (WHEN APPLICABLE).
3. PROVIDE SYSTEM CAPACITY FOR NUMBER OF CALL BOXES SHOWN ON PLANS.
4. INSTALL POWER SUPPLY ABOVE ACCESSIBLE CEILING NEAR MASTER STATION.
5. SYSTEM TO HAVE INTEGRAL BATTERY BACKUP.
6. CALL CENTER CABINET SHALL BE ABLE TO ACCEPT FIREMAN'S LOCK (BY OTHERS).
7. PROVIDE 'ABL-VOIP' WHERE USED WITH VOIP PHONE SYSTEM.
8. SYSTEM SHALL BE CAPABLE OF DIALING OUT TO FIVE REMOTE PHONE NUMBERS INCLUDING 911.

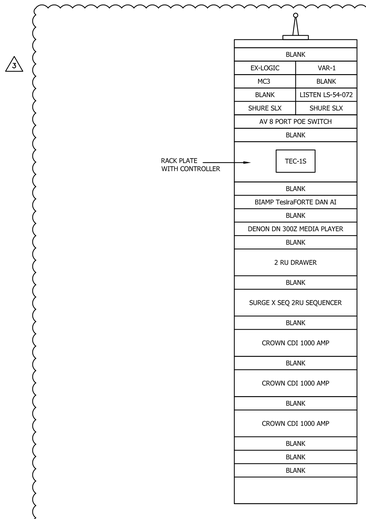
2 TWO-WAY AREA OF RESCUE COMMUNICATION DETAIL

SCALE: NONE



6 AUX GYM SOUND SYSTEM LINE DIAGRAM

SCALE: NONE



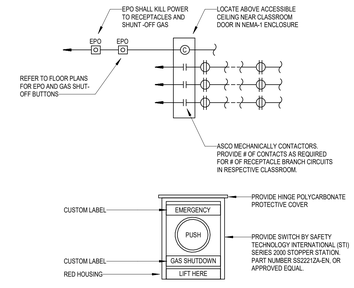
NOTES:

1. PROVIDE ALL REQUIRED PATHWAYS, CABLING, RACK EQUIPMENT, MICS, ELECTRONICS AND SPEAKERS FOR THE A/V SYSTEM AS DESCRIBED IN THE SYSTEMS DRAWINGS.
2. ELECTRONICS FOR THE AUXILIARY SOUND SYSTEMS SHALL BE PROVIDED AND TESTED AND BE SHOWN TO BE FREE FROM DEFECT.
3. INSTALL AND PROPERLY SUPPORT SLIDE OUT EQUIPMENT CABINET TO HOLD THE ANTICIPATED AMOUNT OF EQUIPMENT AND WEIGHT. PROPERLY SECURE TO FLOOR.
4. TIE THE AUXILIARY SOUND SYSTEM TO THE FACP AND INTERCOM SYSTEM TO SHUNT DURING AN EMERGENCY CALL OR ALERT, COORDINATE WORK WITH INTERCOM, FACP AND ELECTRICAL INSTALLERS.
5. ALL CABLES SHALL BE RUN IN RIGID METALLIC CONDUIT RUN BEHIND SURFACES WHERE POSSIBLE.
6. ALL CABLES SHALL BE LABELED AT BOTH ENDS WITH IDENTIFICATION, SIGNAL STRENGTH AND CABLE LENGTH.
7. SOUND SHALL BE ADJUSTED, VERIFIED AND DEMONSTRATED AS PART OF SYSTEM INSTALLATION.
8. PROVIDE AN EASE PLOT FOR THE SPEAKERS SELECTED WHICH SHOW SOUND PRESSURE LEVELS FOR THE SPACE BEING SERVED.
9. COORDINATE INSTALLATION WITH ARCHITECTURE.
10. SEE RELATED SPECIFICATION SECTION FOR EQUIPMENT AND INSTALLATION DETAILS.

SYMBOL: SS-A

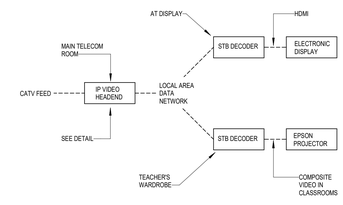
5 AUX GYM SOUND SYSTEM EQUIPMENT CABINET

SCALE: NONE



4 EMERGENCY POWER OFF/GAS OFF DETAIL

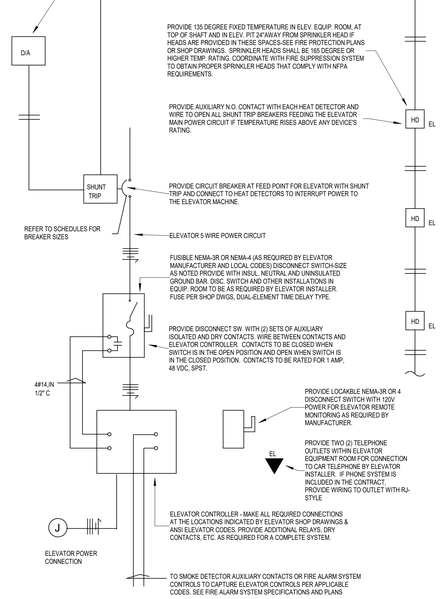
SCALE: NONE



1. SET TOP BOX (STB) LOCATED IN TEACHER'S WARDROBE IN CLASSROOMS AT 'M' OUTLET. SET TOP BOX LOCATED AT / ON ELECTRONIC DISPLAY AT ALL OTHER LOCATIONS AROUND THE BUILDING.
2. STB SHALL CONNECT TO EPSON BRIGHTLINK 595WI PROJECTORS THROUGH THE COMPOSITE VIDEO CONNECTION. STB SHALL CONNECT TO ALL OTHER DISPLAYS THROUGH HDMI CONNECTIONS.
3. EACH ELECTRONIC DISPLAY SHALL HAVE A STB
4. STB SHALL BE SECURELY MOUNTED TO ELECTRONIC DISPLAY MOUNT.
5. COORDINATE ALL WORK WITH OWNER AND SERVICE PROVIDER PRIOR TO INSTALLATION.

3 IP VIDEO ONE-LINE DIAGRAM

SCALE: NONE



1 ELEVATOR POWER WIRING DIAGRAM

SCALE: NONE

ARCHITECT

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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

NO:	DESCRIPTION:	DATE:
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2.	ADDENDUM 2	03/06/2020
3.	ADDENDUM 3	03/12/2020

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
DETAILS - ELECTRICAL

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

WORKING NORTH

SHEET NO:
E7.06

3/12/2020 11:04:47 AM

ELEC RISER - FEEDER SCHEDULE

EQUIPMENT NAME	VOLTAGE	RATING	SETS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
ATFL	208 V	100 A	1	2	6	1-1/2"
ED	208 V	600 A	2	350	1	3"
EDEG	480 V	600 A	2	350	1	3"
EDLS	480 V	100 A	1	3	8	1-1/4"
EH1A	480 V	100 A	1	3	8	1-1/4"
EH1B	480 V	100 A	1	3	8	1-1/4"
EH1D	480 V	100 A	1	3	8	1-1/4"
EH1F	480 V	100 A	1	3	8	1-1/4"
EH1H	480 V	100 A	1	3	8	1-1/4"
EH2A	480 V	100 A	1	3	8	1-1/4"
EK	208 V	200 A	1	3/0	6	2-1/2"
EL1B	208 V	100 A	1	1	4	2"
EL1C	208 V	100 A	1	3	8	1-1/4"
EL1D	208 V	100 A	1	1/0	3	2"
EL1H	208 V	100 A	1	3/0	1	2-1/2"
EL2A	208 V	100 A	1	1/0	3	2"
ELP2	208 V	100 A	1	3/0	1	2-1/2"
ELP5	208 V	100 A	1	2	6	1-1/2"
ELP6	208 V	100 A	1	1/0	3	2"
ELP7	208 V	100 A	1	3	8	1-1/4"
ELP8A	208 V	100 A	1	4/0	1/0	2-1/2"
ELSP2	480 V	100 A	1	2	6	1-1/2"
ELSP5	480 V	100 A	1	3	8	1-1/4"
ELSP6	480 V	100 A	1	3	8	1-1/4"
ELSP7	480 V	100 A	1	3	8	1-1/4"
EMH1C	480 V	200 A	1	3/0	3	2-1/2"
KH	480 V	400 A	2	3/0	3	2-1/2"
KL	208 V	400 A	2	3/0	3	2-1/2"
LS1A	208 V	100 A	1	3/0	1	2-1/2"
LS1C	208 V	100 A	1	3	8	1-1/4"
LS1D	208 V	100 A	1	1/0	3	2"
LS1G	208 V	100 A	1	4/0	1/0	2-1/2"
LSH1A	480 V	100 A	1	3	8	1-1/4"
LSH1B	480 V	100 A	1	3	8	1-1/4"
LSH1D	480 V	100 A	1	3	8	1-1/4"
LSH1H	480 V	100 A	1	2	6	1-1/2"
LSH2A	480 V	100 A	1	3	8	1-1/4"
MH1C	480 V	400 A	2	3/0	3	2-1/2"
MH1H	480 V	100 A	1	2	6	1-1/2"
MH2	480 V	100 A	1	3	8	1-1/4"
ML1A	208 V	100 A	1	2	6	1-1/2"
ML1C	208 V	100 A	1	3	8	1-1/4"
ML1D	208 V	200 A	1	4/0	1/0	2-1/2"
ML2	208 V	200 A	1	4/0	1/0	2-1/2"
MLD	208 V	400 A	2	3/0	6	2-1/2"
NH1A	480 V	100 A	1	3	8	1-1/4"
NH1B	480 V	100 A	1	3	8	1-1/4"
NH1C	480 V	100 A	1	3	8	1-1/4"
NH1D	480 V	100 A	1	3	8	1-1/4"
NH1F	480 V	100 A	1	2	6	1-1/2"
NH1H	480 V	100 A	1	2	6	1-1/2"
NH2A	480 V	100 A	1	3	8	1-1/2"
NHP1A	480 V	100 A	1	2	6	1-1/2"
NHP2A	480 V	100 A	1	2	6	1-1/2"
NHP3A	480 V	100 A	1	2	6	1-1/2"
NHP4A	480 V	100 A	1	2	6	1-1/2"
NHP5A	480 V	100 A	1	3	8	1-1/4"
NHP6A	480 V	400 A	1	3	8	1-1/4"
NHP7A	480 V	100 A	1	3	8	1-1/4"
NHP8A	480 V	100 A	1	1	4	2"
NL1A	208 V	250 A	1	350	4	3"
NL1B	208 V	250 A	1	250	4	2-1/2"
NL1C	208 V	300 A	1	350	4	3"
NL1D	208 V	600 A	2	400	1/0	3-1/2"
NL1D2	208 V	200 A	1	4/0	4	2-1/2"
NL1E	208 V	300 A	1	3/0	6	2-1/2"
NL1F	208 V	400 A	2	350	1/0	3"
NL1G	208 V	300 A	2	350	1/0	3"
NL1G2	208 V	100 A	1	250	3	2-1/2"
NL1H	208 V	200 A	1	300	1	3"
NL2A	208 V	200 A	1	4/0	4	2-1/2"
NL2B	208 V	200 A	1	4/0	4	2-1/2"
NLAV	208 V	100 A	1	3	8	1-1/4"
NLCS	208 V	100 A	1	3	8	1-1/4"
NLD	208 V	1600 A	4	400	4/0	3"
NLP1A	208 V	100 A	1	1/0	3	2"
NLP2A	208 V	100 A	1	3/0	1	2-1/2"
NLP3A	208 V	100 A	1	2/0	2	2-1/2"
NLP4A	208 V	100 A	1	1/0	3	2"
NLP5A	208 V	200 A	1	3/0	6	2-1/2"
NLP6A	208 V	100 A	1	2	6	1-1/4"
NLP7A	208 V	100 A	1	3	8	1-1/4"
PP1	480 V	400 A	2	4/0	2	3"
T-AV	480 V	70 A	1	3	8	1-1/4"
T-EG	480 V	225 A	1	250	4	2-1/2"
T-LS	480 V	50 A	1	8	10	3/4"
T-NLM	480 V	750 A	3	300	1/0	3"

GENERAL NOTES (RISER):

A. ALL NEW CONDUCTORS SHALL BE COPPER (REFER TO SPECIFICATIONS FOR TYPES).
B. REFER TO DETAILS FOR TYPICAL PANEL LABELING REQUIREMENTS.
C. REFER TO PANEL SCHEDULES FOR EQUIPMENT ACCESSORIES, BREAKER SIZES, AND RELATED INFORMATION.
D. AS PART OF THIS CONTRACT, PROVIDE A COMPREHENSIVE ARC FLASH HAZARD ANALYSIS FOR ALL POWER DISTRIBUTION DEVICES ON THIS PROJECT. PROVIDE ALL LABELS, WARNING SIGNAGE, ETC. PER NPFA-70E AND OSHA REQUIREMENTS. ALL LABELS SHALL BE AFFIXED PRIOR TO FINAL ELECTRICAL INSPECTIONS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DATA TO THE SWITCHGEAR MANUFACTURER NO LATER THAN TWO WEEKS FOLLOWING AWARD OF PROJECT AS REQUIRED TO COMPLETE THE ANALYSIS. STUDY SHALL INCLUDE ALL EXISTING EQUIPMENT IN EXISTING FACILITY. REFER TO SPECIFICATION SECTION 260573, "ELECTRICAL STUDIES", FOR ADDITIONAL REQUIREMENTS.
E. AS PART OF THIS CONTRACT, PROVIDE A COORDINATION/FAULT CURRENT STUDY FOR BREAKERS ON THIS PROJECT. STUDY SHALL INCLUDE ALL MAINS AND FEEDERS SHOWN ON THESE DRAWINGS AND SHALL EXTEND TO THE MAIN LUGS OR BREAKER OF THE FURTHEST DEVICE DOWNSTREAM. THE EMERGENCY POWER SYSTEMS SHALL BE SELECTIVELY COORDINATED TO 0.1 SECONDS THROUGH BOTH THE UTILITY AND GENERATOR DERIVED SYSTEMS. EQUIPMENT PRESENTLY SHOWN IS THE BASIS OF DESIGN - OTHER MANUFACTURERS LISTED AS EQUALS MAY NEED TO MODIFY LAYOUTS AND EQUIPMENT IN ORDER TO MEET THIS REQUIREMENT. ALL MANUFACTURERS MUST UTILIZE ELECTRONIC TRIP BREAKERS WITH ADJUSTABLE TRIP SETTINGS WHERE REQUIRED TO MEET SELECTIVE COORDINATION REQUIREMENTS. WHERE MODIFICATION TO EQUIPMENT INDICATED ON THESE DRAWINGS IS REQUIRED IN ORDER TO ACHIEVE COORDINATION, THESE CHANGES SHALL BE CLEARLY NOTED IN THE STUDY. WHERE ALL BREAKER AMPACITIES ARE INCREASED TO ACHIEVE COORDINATION, THE CONTRACTOR IS RESPONSIBLE FOR INCLUDING ALL COST ASSOCIATED WITH THESE CHANGES IN THEIR BID (INCLUDING INCREASES IN FEEDER SIZES). SUBMIT STUDY AS SHOP DRAWING TO ENGINEER PRIOR TO ORDERING ANY POWER DISTRIBUTION EQUIPMENT. ANY EQUIPMENT SUBMITTED PRIOR TO SUBMISSION OF THIS STUDY WILL NOT BE REVIEWED. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DATA TO THE SWITCHGEAR MANUFACTURER NO LATER THAN TWO WEEKS FOLLOWING AWARD OF PROJECT AS REQUIRED TO COMPLETE THE ANALYSIS. REFER TO SPECIFICATION SECTION 260573, "ELECTRICAL STUDIES", FOR ADDITIONAL REQUIREMENTS.
F. AS PART OF THIS CONTRACT, PROVIDE AN IEEE 1547 CERTIFICATION.
G. CONTRACTOR SHALL INSTALL SEPARATE CONDUITS, PULL BOXES, ETC. FOR EMERGENCY POWER AND NORMAL POWER FEEDERS PER NEC FOR COMPLETE SEPARATION OF POWER SERVICES.
H. THERMAL SCAN OF PANEL AND LARGE EQUIPMENT TERMINATIONS SHALL BE PROVIDED TO OWNER AT COMPLETION OF PROJECT. CONTRACTOR TO CORRECT DIFICIENCIES DISCOVERED AT NO ADDITIONAL COST TO CONTRACT.
I. POWER INTERRUPTIONS SHALL BE PLANNED WITH TWO WEEK MINIMUM NOTICE PRIOR TO INTERRUPTION TO EXISTING FACILITY POWER. CONTRACTOR SHALL COORDINATE ALL EXPECTED PROCEDURES WITH OWNER AND ALL LOCAL INSPECTION AGENCIES. ONE MONTH PRIOR TO INTERRUPTING POWER, CONTRACTOR SHALL SUBMIT TO ENGINEER A DETAILED OUTLINE AND DESCRIPTION OF HOW THIS PROCEDURE IS TO TAKE PLACE, FOR HOW LONG POWER WIL BE DOWN, WHO HAS BEEN CONTACTED, ETC. THIS OUTLINE AND DESCRIPTION IS TO BE SUBMITTED AS SHOP DRAWINGS TO THE ENGINEER FOR REVIEW. NO INTERRUPTION OF MAIN SERVICE POWER SHALL OCCUR WITHOUT THE ENGINEER'S WRITTEN APPROVAL OF THE ABOVE REFERENCED MATERIAL.
J. REFER TO PANEL AND EQUIPMENT SCHEDULES FOR FEEDER AND OVERCURRENT DEVICE SIZES.
K. SERVICE EQUIPMENT SHALL BE MARKED WITH THE MAXIMUM AVAILABLE FAULT-CURRENT AT THE EQUIPMENT AND THE DATE THE CALCULATION WAS PERFORMED. APPLY A TYPE-WRITTEN ADHESIVE LABEL WITH WHITE BACKGROUND AND 1/2" HIGH BLACK LETTERING.
L. ALL CIRCUIT BREAKERS AND/OR DISCONNECTS SERVING THE PRIMARY SIDE OF A TRANSFORMER WHICH ARE NOT WITHIN SITE OF THE TRANSFORMER SHALL BE PROVIDED WITH PERMANENTLY INSTALLED MEANS TO LOCK THE BREAKER IN THE OFF POSITION. SUCH TRANSFORMERS SHALL HAVE THE ROOM NAME AND NUMBER OF THE PRIMARY DISCONNECTING MEANS ENGRAVED ON THE EQUIPMENT NAMEPLATE.
M. ALL SPD'S SHALL BE EXTERNALLY MOUNTED. INTEGRATED SPD'S ARE NOT ACCEPTABLE.
N. ALL UN-USED SPACES WITHIN SWITCHBOARD, DISTRIBUTION PANELBOARDS AND PANELBOARDS SHALL BE "PREPARED SPACES" THAT ALLOW EASY INSTALLATION OF A CIRCUIT BREAKER.
O. PROVIDE FULL-SIZE "LAMACOID" TYPE MIMIC BUSS ON FRONT OF SWITCHBOARD.
P. PROVIDE 4" THICK REINFORCED CONCRETE HOUSEKEEPING PAD UNDER SWITCHBOARD AND ALL DRY-TYPE TRANSFORMER.
Q. ALL LIFE-SAFETY FEEDER SHALL BE MI CABLE.
R. MINERAL INSULATED CABLE, TYPE MI
   a. CABLE: UL 2196 LISTED FOR FIRE RESISTANCE; MINERAL-INSULATED, METAL-SHEATHED TYPE MI CABLES, FACTORY-ASSEMBLED OF ONE OR MORE CONDUCTORS AS SHOWN ON THE DRAWINGS, INSULATED AND ENCLOSED IN A SEAMLESS LIQUID- AND GAS-TIGHT CONTINUOUS COPPER SHEATH, EQUAL TO PENTAIR BUILDING SOLUTIONS "SYSTEM 1850."
      1. CONDUCTORS: SOLID COPPER WITH CROSS-SECTION AREA CORRESPONDING TO STANDARD AWG SIZES.
      2. SHEATH: SEAMLESS SOFT-DRAWN COPPER JACKET.
      3. INSULATION: COMPRESSED MAGNESIUM OXIDE, PROVIDING SPACE FOR CONDUCTORS. THICKNESS AT LEAST 55 MILS FOR CABLE 14 AWG THROUGH 250 KCMIL.
      4. RATINGS: CABLE SHALL COMPLY WITH NEC ARTICLE 332 AND THE OTHER APPLICABLE PROVISIONS OF NFPA 70, AND SHALL BE UL CLASSIFIED AS HAVING A TWO-HOUR FIRE RESISTANCE RATING.
      5. ACCESSORIES FOR TERMINATION: CORRESPONDING TO THE DIAMETER OF SHEATH AND NUMBER OF CONDUCTORS.
   b. PROVIDE UNITS FACTORY-CUT TO SIZE, COMPLETE WITH BOTH END TERMINALS, SHIPPED ON A REEL.
S. INSTALLING MINERAL INSULATED CABLE, TYPE MI
   a. WHEN CABLES ARE CUT IN THE FIELD, SEAL THE ENDS WITH STANDARD SEALING COMPOUND AND PVC TYPE.
   b. PREVENT DAMAGE TO THE CABLE FROM BLOWS WITH SHARP INSTRUMENTS OR PULLING OVER SHARP OBJECTS. DO NOT PERMIT CABLE TO KINK OR SNARL.
   c. CABLE INSTALLATION:
      - SUPPORT ON TRAPEZE HANGERS OR CLIP DIRECTLY TO BEAMS OR CEILINGS USING CLIPS OR STRAPS AVAILABLE FROM THE MANUFACTURER.
      - FOR FIRE-RATED CIRCUITS, SECURE THE CABLE TO A TWO-HOUR FIRE RATED SURFACE, USING SUPPORTS NO MORE THAN THREE FEET ON CENTERS.
      - WHERE SUBJECT TO POTENTIAL DAMAGE, PROTECT CABLES WITH ANGLE IRON, CHANNEL, OR SHORT PIECES OF CONDUIT.
      - BENDING: USE HICKEYS AVAILABLE FROM THE MANUFACTURER. THE RECOMMENDED MINIMUM BEND RADIUS IS FIVE (5) TIMES THE CABLE DIAMETER.
      - WHEN FORMING PART OF A CIRCUIT, SINGLE-CONDUCTOR CABLES SHALL BE RUN CLOSE TOGETHER WITH SHEATHS TOUCHING THROUGHOUT THE LENGTH OF THE RUN, AS RECOMMENDED BY THE MANUFACTURER.
   d. TERMINATING THE CABLE:
      - TERMINATE WITH GLANDS AND SEALS, AVAILABLE FROM THE MANUFACTURER, APPROVED FOR THE APPLICATION, AND FOLLOWING THE MANUFACTURER'S RECOMMENDATIONS. AT ORDINARY LOCATIONS, USE STANDARD TERMINATION AND SEALING COMPOUND.
      - USE STRIPPING TOOLS, POT WRENCHES, CRIMPING AND COMPRESSING TOOLS, AVAILABLE FROM THE MANUFACTURER, AND DESIGNED FOR THE PURPOSE, TO PREPARE THE CABLE AND INSTALL THE GLANDS AND SEAL ASSEMBLIES.
      - UPON COMPLETION OF THE TERMINATIONS, CHECK THE INSULATION RESISTANCE OF THE CABLE WITH A 500-VOLT INSULATION TESTER. RESISTANCE VALUE SHALL BE SUBMITTED FOR REVIEW BY THE ARCHITECT.
   e. SPLICING THE CABLE:
      - CABLE MAY BE SPLICED IN A JUNCTION BOX. INSTALL A STANDARD TERMINATION ON THE END(S) OF THE CABLE ENTERING THE BOX. THE BOX SHALL BE ACCESSIBLE TO COMPLY WITH NFPA 70 REQUIREMENTS.
      - A STRAIGHT-THROUGH JOINT AS SUPPLIED BY THE MANUFACTURER AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS MAY BE USED.
      - FIRE-RATED JOINTS SHALL BE INSTALLED BY THE MANUFACTURER.
   f. CONNECTIONS TO FERROUS ENCLOSURES: WHEN USING SINGLE-CONDUCTOR CABLES, HEATING BY INDUCTION AND HYSTERESIS WILL OCCUR IF PRECAUTIONS ARE NOT TAKEN TO PREVENT THIS EFFECT. SUBSTITUTE A BRASS PLATE, 0.25-INCH MINIMUM THICKNESS, FOR THE STEEL OF THE BOX, BY CUTTING OUT THE BOX SECTION CONTAINING THE KNOCKOUTS OR ENTRY HOLES, AND FIXING THE BRASS PLATE SECURELY TO THE BOX WITH A MINIMUM OF FOUR BOLTS."

COMMERCIAL PEDESTAL GENERAL NOTES

A. THE PEDESTAL SHALL BE MANUFACTURERED BY MILBANK. PEDESTALS SHALL BE OF NEMA TYPE 3R RAINPROOF CONSTRUCTION AND SHALL BE UL LISTED AS "ENCLOSED INDUSTRIAL CONTROL EQUIPMENT" (UL 508A). EXTERNAL CONSTRUCTION SHALL COMPLY WITH UL50 REQUIREMENTS AND SHALL BE STAINLESS STEEL. INTERNAL CONSTRUCTION SHALL BE G90 GALVANIZED STEEL AND 1.7 MIL MINIMUM THICKNESS POLYURETHANE INDUSTRIAL GRADE POWDER COAT PAINTED OR BARE ALUMINUM. NO FASTENERS EXCEPT SEALING SCREWS SHALL BE REMOVABLE BY EXTERNAL ACCESS. HINGES SHALL BE STAINLESS STEEL AND OF THE CONTINUOUS PIANO HINGE TYPE.

B. VOLTAGE RATING: AS INDICATED
AMPERAGE RATING: AS INDICATED

C. THE PEDESTAL MOUNTING BOLTS SHALL NOT BE EXTERNALLY ACCESSIBLE. THE PEDESTAL SHALL PROVIDE WITH ANCHOR BOLTS. EITHER PEDESTAL MOUNTING BASE OR ANCHOR BOLT KIT IS REQUIRED FOR INSTALLATION.

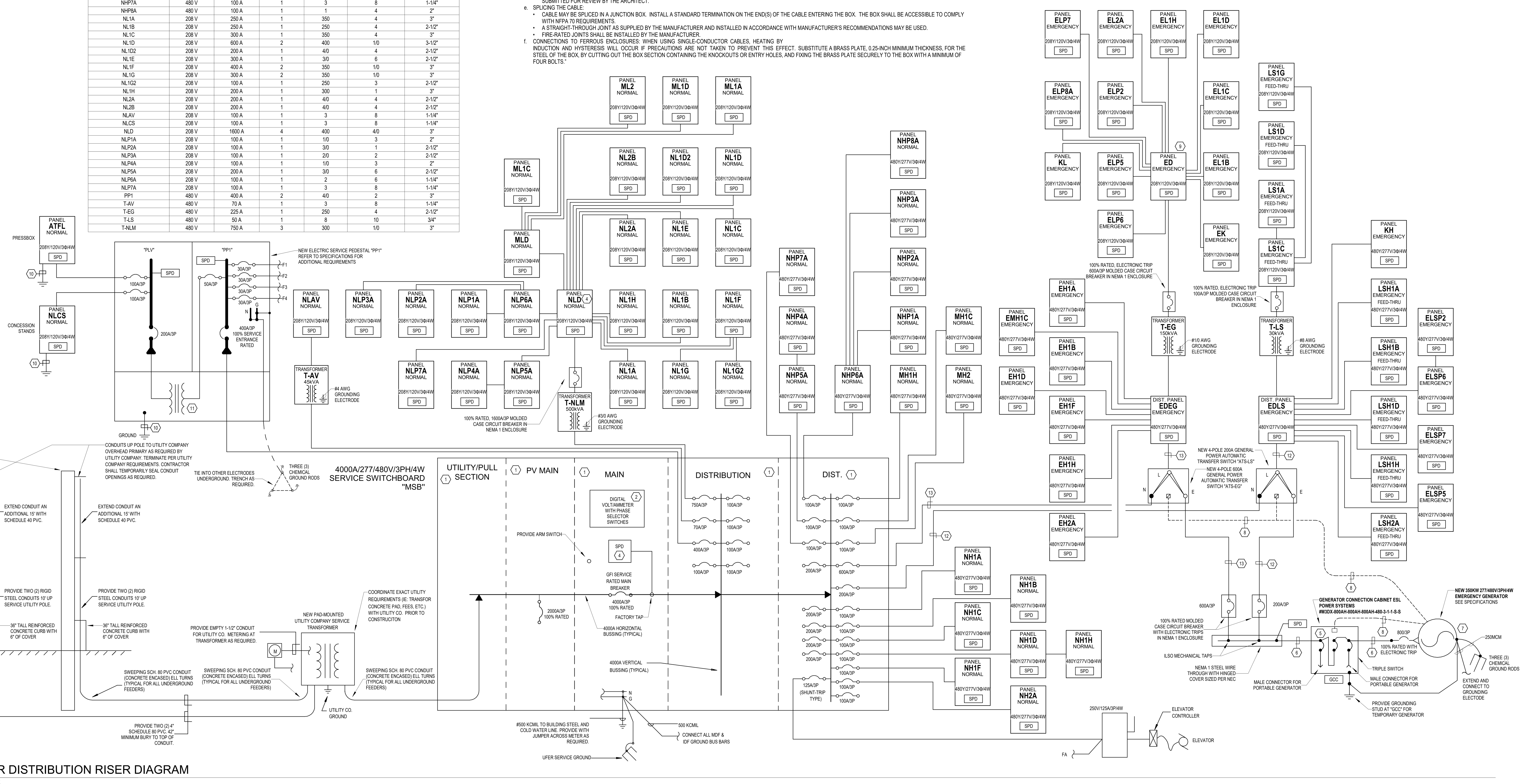
D. THE SERVICE PEDESTALS SHALL HAVE FOUR SEPARATE ISOLATED SECTIONS FOR METERING EQUIPMENT, TERMINATION AND TWO (2) CUSTOMER EQUIPMENT SECTIONS.

E. THE CUSTOMER COMPARTMENT DOORS TO BE HINGED ON THE LEFT HAND SIDE. A STAINLESS PAD-LOCKABLE HASP PROVIDED TO THE SECURE CUSTOMER COMPARTMENT. A DOOR KEEPER PROVIDED TO KEEP THE DOOR IN AN OPEN POSITION. A PRINT POCKET ON THE INSIDE OF THE DOOR SHALL HOLD ALL WIRING SCHEMATICS, CIRCUIT DIRECTORIES AND INSTRUCTIONS IN A CLEAR, WEATHERPROOF SLEEVE. REQUIRED UL LABELING SHALL BE LOCATED ON THE INSIDE OF THE CUSTOMER DOOR. DISTRIBUTION AND CONTROL EQUIPMENT SHALL BE BEHIND AN INTERNAL DEAD-FRONT DOOR WITH A QUARTER-TURN SECURING LATCH AND BE HINGED TO OPEN MORE THAN 90 DEGREES. THE DEAD-FRONT DOOR SHALL BE HINGED ON THE SAME SIDE AS THE CUSTOMER SECTION DOOR. ALL DISTRIBUTION AND CONTROL EQUIPMENT SHALL BE FACTORY WIRED USING 600 VOLT WIRE SIZED TO NEC AND UL REQUIREMENTS.

F. THE SERVICE PEDESTAL SHALL BE RATED FOR OPERATION AT 65K MINIMUM (AIC) AMPS INTERRUPTING CAPACITY. THE PROVIDED DOCUMENTATION SHALL LIST CIRCUIT BREAKER COMBINATIONS AND THOSE TO BE USED FOR DE-RATED OPERATION FOR SERIES RATINGS. CIRCUIT BREAKERS SHALL BE PERMANENTLY LABELED WITH ENGRAVED NAME PLATES.

POWER RISER TAGGED NOTES: (X)

1. PROVIDE NEW (4) SECTION 4000A/277/480V/3PH/4W SWITCHBOARD RATED AT 100KAIC MIN., SQUARE "D" QED-2 STYLE WITH THE FOLLOWING SECTIONS : (REFER TO FLOOR PLANS FOR LAYOUT - MAY BE MIRRORED OF THIS LAYOUT)
   A. UTILITY SECTION: SECTION SHALL MEET ALL REQUIREMENTS OF THE LOCAL UTILITY COMPANY. SUBMIT TO UTILITY COMPANY PRIOR TO SUBMISSION OF SHOP DRAWINGS TO THE ENGINEER.
   B. MAIN SECTION: SECTION SHALL HOUSE 4000A/3P, 100% RATED FULL-FUNCTION, ELECTRONIC TRIP, MOLDED CASE "MICRO-LOGIC" MAIN CIRCUIT BREAKER WITH DIGITAL VOLT/AMMETER AND PROVIDE WITH GROUND FAULT PROTECT 5.0 TRIP UNIT. PROVIDE MAINTENANCE ARC ENERGY REDUCTION SWITCH FOR COMPLIANCE WITH NEC 240.87. PROVIDE WITH TOP HAT FOR INCOMING FEEDS.
   C. DISTRIBUTION SECTIONS: (2) 4000A DOUBLE-ROW SECTIONS WITH MINIMUM 110" OF MOUNTING SPACE FOR CIRCUIT BREAKER STYLE SWITCHGEAR. ALL EXTRA SPACE SHALL BE COMPLETELY FILLED WITH SPARES AS INDICATED AND PREPARED SPACES. MATCH LAYOUT INDICATED ON PLAN.
2. DIGITAL METER (SQUARE "D" # PM5563RD OR APPROVED EQUAL) TO BE MOUNTED IN SWITCHBOARD. MANUFACTURER TO PROVIDE INTERFACE TO TCC SPECIFIED IN SECTION 250400. INTERFACE TO INCLUDE ALL HARDWARE NECESSARY TO COMMUNICATE WITH MODBUS PROTOCOL. PROVIDE HARDWARE AND SOFTWARE IDENTIFIERS FOR THE INTERFACE POINTS, VALUES, UNITS, ETC. PROVIDE TECHNICAL PHONE SUPPORT TO FACILITATE DESIGN AND ENGINEERING OF INTERFACE AND ON SITE TECHNICAL PERSONNEL TO COMMISSION THE INTERFACE WITH TCC. REFER TO SPECIFICATIONS FOR SERIAL COMMUNICATIONS REQUIREMENT.
3. PROVIDE A PARALLEL CONNECTED TRANSIENT VOLTAGE SURGE SUPPRESSOR (SPD). UNIT SHALL BE MOUNTED IN SWITCHBOARD. PROVIDE WITH EVENT COUNTER.
4. PROVIDE NEW (2) SECTION 1600A/277/480V/3PH/4W SWITCHBOARD RATED AT 65KAIC MIN., SQUARE "D" QED-2 STYLE WITH THE FOLLOWING SECTIONS : (REFER TO FLOOR PLANS FOR LAYOUT - MAY BE MIRRORED OF THIS LAYOUT)
   A. MAIN SECTION: SECTION SHALL HOUSE 1600A/3P, 100% RATED FULL-FUNCTION, ELECTRONIC TRIP, MOLDED CASE "MICRO-LOGIC" MAIN CIRCUIT BREAKER WITH DIGITAL VOLT/AMMETER AND PROVIDE WITH GROUND FAULT PROTECT 5.0 TRIP UNIT. PROVIDE MAINTENANCE ARC ENERGY REDUCTION SWITCH FOR COMPLIANCE WITH NEC 240.87. PROVIDE WITH TOP HAT FOR INCOMING FEEDS.
   B. DISTRIBUTION SECTIONS: (1) 1600A DOUBLE-ROW SECTIONS WITH MINIMUM 110" OF MOUNTING SPACE FOR CIRCUIT BREAKER STYLE SWITCHGEAR. ALL EXTRA SPACE SHALL BE COMPLETELY FILLED WITH SPARES AS INDICATED AND PREPARED SPACES. MATCH LAYOUT INDICATED ON PLAN.
5. PROVIDE 800AMP 3-WAY MANUAL TRANSFER SWITCH WITH CAPABILITY OF BEING SIMULTANEOUSLY CONNECTED TO BOTH A LOAD BANK AND ATS'S. REFER TO SPECIFICATION SECTION 263290 FOR ADDITIOANL REQUIREMENTS PROVIDE WITH:
   A. PHASE MONITOR
   B. UTILITY 'ON' INDICATOR (UNIT MOUNTED)
   C. TERMINAL STRIP FOR REMOTE GENERATOR START, REMOTE MONITORING, ETC.
   D. 20AMP, 120VAC RECEPTACLE FOR BATTERY CHARGING
   E. 30AMP, 240VAC RECEPTACLE FOR HEATERS
   F. SIGNAGE INDICATING BONDING/GROUNDING REQUIREMENTS
   G. ANNUNCIATOR GENERATOR ANNUNCIATOR
6. PROVIDE THREE (3) SETS OF FOUR #300KCMIL AND ONE (1) #3/0 IN 3" CONDUIT.
7. GROUND AND NEUTRAL BARS SHALL BE BONDED AT GENERATOR AS SEPARATELY DERIVED SYSTEM.
8. PROVIDE CONDUIT AND WIRING AS REQUIRED FROM TRANSFER SWITCHES TO GENERATOR CONTROLS AS REQUIRED FOR GENERATOR START-UP, ETC. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER PRIOR TO BID.
9. NEW 600A/120/208V/3PH/4W TWO-STEP, ELECTRONIC TRIP, FULL FUNCTION MOLDED CASE "MICRO-LOGIC" MAIN CIRCUIT BREAKER. 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. ALL REMAINING SPACE SHALL BE FILLED WITH EQUAL AMOUNTS OF SPARE 100A/3P BREAKERS.
10. PROVIDE ONE (1) #3/0 COPPER GROUNDING ELECTRODE FROM NEW GROUND BAR AT PANELBOARD INDICATED TO NEW GROUND ROD AS REQUIRED. CONTRACTOR SHALL TEST GROUND SYSTEM IMPEDANCE LEVEL AND IF NOT 5 Ohm, CONTRACTOR SHALL ADD GROUND RODS AS NECESSARY TO MEET THIS REQUIREMENT.
11. 75KVA 480V/3PH TO 120/208V/3P TRANSFORMER. PROVIDE NEW TRANSFORMER INTEGRAL TO NEW ELECTRIC SERVICE PEDESTAL.
12. PROVIDE FOUR (4) #3/0 AND ONE (1) #6AWG GROUND IN 2" CONDUIT.
13. PROVIDE TWO (2) SETS OF FOUR (4) #350 KCMIL AND ONE (1) #1 AWG GROUND IN 3" CONDUIT.



1 POWER DISTRIBUTION RISER DIAGRAM
SCALE: NONE

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SEI SMOLEN • EMR • ILKOVITCH ARCHITECTS

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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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

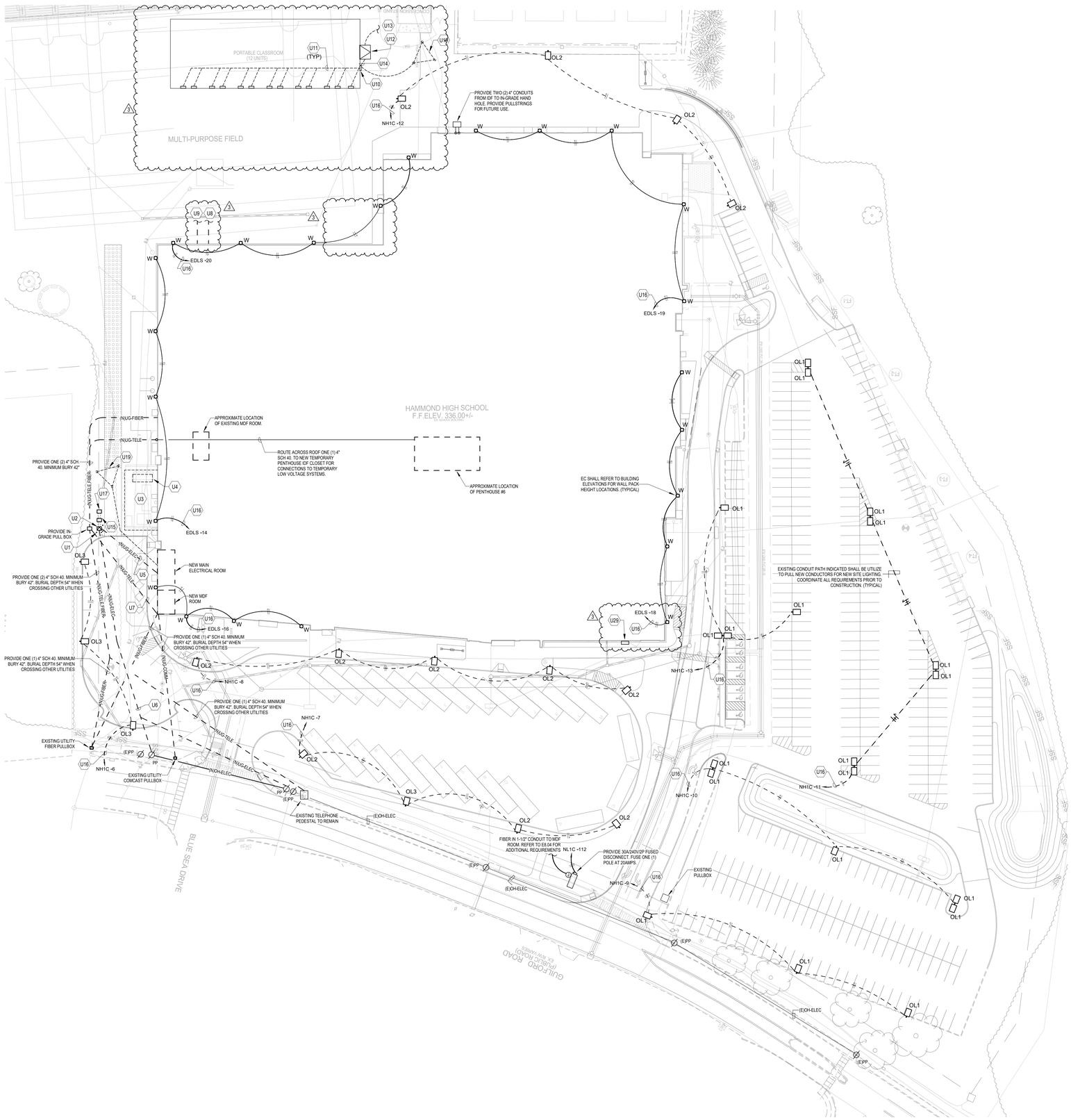
SHEET TITLE:

POWER DISTRIBUTION RISER DIGRAM - NEW WORK

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

SHEET NO: E9.02 (3)

3/12/2020 11:04:51 AM



1 SITE PLAN - ELECTRICAL
UE1.1 SCALE: 1" = 40'-0"

GENERAL NOTES (SITE):

A. DO NOT SCALE FROM MECHANICAL AND ELECTRICAL DRAWINGS. FIELD VERIFY REQUIRED DIMENSIONS AND COORDINATE WITH CIVIL DRAWINGS AND SURVEYS.
B. REFER ALSO TO ALL OTHER PLANS AND THE SPECIFICATION, BUT ESPECIALLY TO: THE SITE SURVEY, THE ARCHITECTURAL SITE PLAN, THE SITE GRADING PLAN, THE PLANTING PLAN (WHERE AVAILABLE), FOUNDATION PLAN(S), APPROPRIATE MECHANICAL & ELECTRICAL FLOOR PLANS FOR SERVICE CONTINUATIONS, THE SITE UTILITY PLAN - MECHANICAL & ELECTRICAL. WHERE THERE ARE CONFLICTS AMONG THESE PLANS AND/OR RELATED SPECIFICATIONS, ADVISE THESE ENGINEERS AT LEAST TEN DAYS PRIOR TO SUBMISSION OF BIDS.
C. ALL FEES AND ANY OTHER COSTS TO UTILITY COMPANIES, MUNICIPALITIES, INSPECTORS, REVIEWING AGENCIES, ETC. ARE TO BE INCLUDED AS A PART OF THIS CONTRACT.
D. FEDERAL, STATE, LOCAL, MUNICIPALITY AND UTILITY COMPANY CODES, RULES, REGULATIONS AND REQUIREMENTS APPLY UNLESS EXCEEDED BY THIS DESIGN.
E. WHEN INTERRUPTION OF AN EXISTING UTILITY OR SERVICE IS PLANNED OR OCCURS ACCIDENTALLY, THE CONTRACTOR(S) SHALL WORK CONTINUOUSLY AS NEEDED TO RESTORE SAME PROVIDING PREMIUM TIME AS NEEDED AT NO INCREASE IN THE CONTRACT PRICE.
F. LOCATIONS, DEPTHS, MATERIAL TYPES, ELEVATIONS, ETC. OF ALL APPURTENANCES, LINES, BUILDINGS, ETC. INDICATED ON THESE DRAWINGS WERE TAKEN FROM VARIOUS SOURCES, ARE DIAGRAMMATIC ONLY AND ARE SUBJECT TO SUBSTANTIAL VARIATION FROM EXISTING CONDITIONS, EXISTING UTILITIES LOCATIONS MAY VARY. CONSEQUENTLY ALL CONTRACTORS SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK SO AS TO ENSURE THAT THEY DO NOT INTERRUPT ANY EXISTING SERVICE. FOR SAFETY PURPOSES, PAY PARTICULAR ATTENTION TO THIS PRECAUTION RELATIVE TO NATURAL GAS AND ELECTRICAL LINES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND/OR LOCAL RULES, REGULATIONS, STANDARDS AND SAFETY REQUIREMENTS.
G. PROVIDE LONG RADIUS ELBOWS FOR UNDERGROUND CONDUIT BENDS. WHERE SERVING A UTILITY OWNED TRANSFORMER, THE UTILITY STANDARDS SHALL TAKE PRECEDENCE.
H. UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE MUNICIPALITY OR UTILITY COMPANY STANDARDS. IN ALL CASES, THE MOST STRINGENT REQUIREMENT SHALL APPLY. IF ANY VARIATION OCCURS, CONSULT THE ENGINEER. CONTRACTOR SHALL VISIT THE SITE AND FIELD VERIFY THE ROUTING OF ALL UTILITIES NEW AND EXISTING PRIOR TO SUBMISSION OF BIDS. SUBMISSION OF A BID PROPOSAL INDICATES THAT THE CONTRACTOR IS FULLY AWARE OF ALL OBSTRUCTIONS AND WILL INSTALL ALL OF THE NEW UTILITIES WITHOUT REQUESTS FOR ANY ADDITIONAL CHANGES.
I. PROVIDE GALVANIZED RIGID CONDUIT FOR EXTERIOR UNDERGROUND TRANSITIONS TO ABOVE GRADE; EXTEND CONDUIT A MINIMUM OF 6' ABOVE GRADE.
J. CONTRACTOR SHALL PERFORM A SMOKE TEST ON ALL CONDUITS INSTALLED ON SITE AND SHALL TAKE ALL NECESSARY CORRECTIVE ACTION IF NOT FOUND IN COMPLIANCE WITH FACILITY STANDARDS.
K. CONTRACTOR SHALL CONTACT ENGINEER FOR INSPECTION OF TRENCHES PRIOR TO INSTALLATION OF CONDUITS OR RACEWAYS. PROVIDE PHOTOS UPON REQUEST.
L. CONTRACTOR SHALL CUT AND PATCH ALL PAVEMENT, CURBING, ETC. AS REQUIRED FOR WORK. CONTRACTOR SHALL REPAIR ALL LANDSCAPING THAT IS DAMAGED FOR WORK. FINISH GRADE, SEED AND STRAW ALL DISTURBED GREEN SPACES. ALL PATCH AND REPAIR WORK SHALL BE IN ACCORDANCE WITH BOTH CIVIL AND LANDSCAPE DRAWINGS AND SPECIFICATIONS.
M. DO NOT CUT OR ROUTE ANY CONDUIT UNDER TRACK OR TURF.

TAGGED NOTES

3 (##)

U1 NEW UTILITY BOLLARDS MAXIMUM SPACING OF 5'-0". (TYPICAL) PROVIDE MINIMUM OF 11 TRAFFIC RATED BOLLARDS. REFER TO BGE HANDBOOK.
U2 NEW UTILITY TRANSFORMER. COORDINATE EXACT REQUIREMENTS WITH BGE PRIOR TO CONSTRUCTION.
U3 NEW MECHANICAL YARD REFER TO ENLARGED VIEW ON SHEET E6.02 FOR ADDITIONAL DETAILS.
U4 NEW 36KW GENERATOR. LOCATED IN MECHANICAL YARD COORDINATE ALL REQUIREMENTS PRIOR TO CONSTRUCTION.
U5 PROVIDE (11) 4" EMPTY SCH 40 CONCRETE ENCASED CONDUITS AT MINIMUM BURY 54". BGE TO PROVIDE AND TERMINATE SECONDARY CONDUCTORS.
U6 PROVIDE TWO (2) 4" SCH. 40. CONCRETE ENCASED CONDUITS AT MINIMUM BURY MINIMUM BURY 42"
U7 PROVIDE ONE (1) 4" SCH 40. MINIMUM BURY 54".
U8 PROVIDE ONE (1) 4" SCH. 40. MINIMUM BURY 42" FOR FIBER CONNECTIONS. REFER TO TEMPORARY AND DEMOLITION RISER FOR EXACT REQUIREMENTS.
U9 PROVIDE ONE (1) 4" SCH. 40. MINIMUM BURY 42" FOR FIRE ALARM CONNECTIONS. REFER TO FIRE ALARM RISER FOR EXACT REQUIREMENTS.
U10 NEW 1200A/120/208V/3PH/4W TWO-STEP, 100% RATED, ELECTRONIC TRIP, FULL FUNCTION MOLDED CASE "MICRO-LOGIC" MAIN CIRCUIT BREAKER. POWER DISTRIBUTION PANEL SHALL BE AN "I-LINE" TYPE PANEL WITH 108" MIN WITH NEMA 3R. OF BREAKER MOUNTING SPACE. CIRCUIT BREAKERS WITH MINIMUM RATINGS OF 65KAIC, SQUARE "D", HCP OR EQUAL. PROVIDE TWELVE (14) 125A/2P BREAKERS FOR TEMPORARY CLASSROOMS.
U11 ROUTE THREE (3) #2 CONDUCTORS AND ONE (1) #6 GROUND IN 1-1/2" CONDUIT TO PANELBOARD FEEDING TEMPORARY CLASSROOMS. COORDINATE ALL REQUIREMENTS AND NUMBER OF TEMPORARY CLASSROOMS WITH VENDOR PRIOR TO CONSTRUCTION.
U12 NEW (OFCI)TEMPORARY 500KVA TRANSFORMER (480V/3P TO 120Y/208V/3PH). PROVIDE CONCRETE PAD.
U13 PROVIDE FOUR (4) PARALLEL RUNS OF (4) #250 Kcmil AND ONE (1) #4/0 IN 4" SCHEDULE #40 PVC CONDUITS TO NEW NEMA 3R ENCLOSURE. REFER TO DEMOLITION SITE PLAN FOR LOCATION OF TEMPORARY ENCLOSURE AND TEMPORARY/DEMOLITION RISER FOR ADDITIONAL INFORMATION.
U14 PROVIDE FOUR (4) PARALLEL RUNS OF (4) #250 Kcmil AND ONE (1) #4/0 IN 4" SCHEDULE #40 PVC CONDUITS TO NEW DIST. PANEL FOR MODULAR CLASSROOMS.
U15 PROPOSED UTILITY POS PM MODULE. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH BGE PRIOR TO CONSTRUCTION.
U16 ROUTE EXTERIOR LIGHTING BRANCH CIRCUIT THROUGH OUTDOOR LIGHTING CONTACTOR PANEL. REFER TO DETAIL "OUTDOOR LIGHTING CONTROL SCHEMATIC" FOR REQUIREMENTS.
U17 PROPOSED UTILITY 1200 KVAR CAP. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH BGE PRIOR TO CONSTRUCTION.
U19 ROUTE ONE (1) #250 Kcmil GROUND FROM NEW GROUND BAR AT NEW SWITCHBOARD "MSB" TO THREE NEW 5/8"X10'-0" COPPERWELD GROUND RODS AT LEAST 20' AWAY FROM EACH OTHER AT 12" BELOW GRADE. ROUTE WIRING IN 1-1/2" CONCRETE ENCASED SCHEDULE #40 PVC CONDUIT. NO METAL RACEWAYS, ELLS OR FITTINGS SHALL BE INSTALLED. CONTRACTOR SHALL TEST GROUND SYSTEM IMPEDANCE LEVEL AND IF NOT 5 Ohm, CONTRACTOR SHALL ADD GROUND RODS AS NECESSARY TO MEET THIS REQUIREMENT. GROUNDS SHALL ALSO BE CONNECTED TO BUILDING STEEL AND COLD WATER PIPING AS REQUIRED. FIELD VERIFY BEST GROUNDING LOCATION IN UNPAVED LOCATION. PATCH AND REPAIR ALL DISTURBED SURFACES TO MATCH EXISTING. CONTRACTOR SHALL COORDINATE GROUND FIELD WITH EXISTING SANITARY PIPING. LOCATE IN GRASS FIELD VERIFY.
U29 NEW LOCATION OF IR REPEATER FOR SITE SIGNAGE CONTROL. MOUNT AT 13' AFF. ALL RACEWAYS SHALL BE CONCEALED ABOVE ACCESSIBLE CEILING. COORDINATE EXACT PENETRATIONS OF CONDUITS THROUGH EXTERIOR WALLS WITH ARCHITECT AND STRUCTURAL ENGINEER. CONDUITS SHALL NOT BE ROUTED ON EXTERIOR OF BUILDING FACADE. ROUTE INSIDE BUILDING (TYPICAL).

ELECTRICAL SITE UTILITIES LINE LEGEND

	EXISTING	DEMOLITION	NEW
OVERHEAD	(E)OH	(ED)OH	(N)OH
UNDERGROUND	(E)UG	(ED)UG	(N)UG
POWER POLE	(E)PP	(ED)PP	(N)PP
SITE LIGHTS			
ELECTRIC	ELEC		
TELEPHONE	TEL		
CABLE TV	CATV		
FIBER OPTICS	FIBER		
TELECOM	COM		

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1309-Q CONTINENTAL DRIVE
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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

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

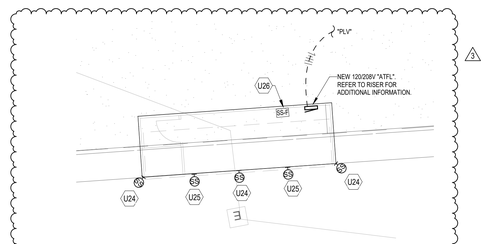
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
SITE PLAN - ELECTRICAL

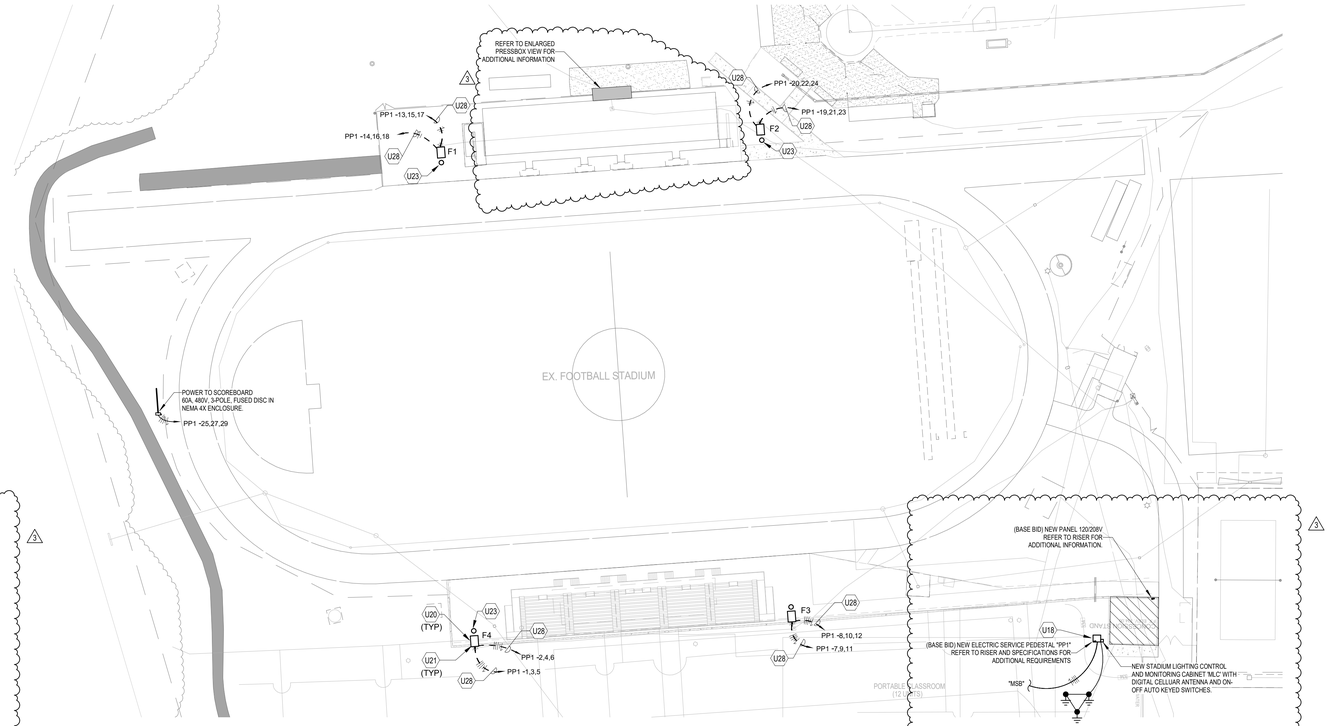
PROJECT NO: 18011.00
DATE: 03/12/2020
SCALE: As indicated
WORKING NORTH

SHEET NO:
UE1.1

3/12/2020 11:04:58 AM



3 ENLARGED PRESSBOX PLAN - ELECTRICAL (BASE BID)
UE2.0 SCALE: 1/8" = 1'-0"



1 ATHLETIC FIELD SITE PLAN - ELECTRICAL
UE2.0 SCALE: 1" = 40'-0"

GENERAL NOTES (SITE):

A. DO NOT SCALE FROM MECHANICAL AND ELECTRICAL DRAWINGS. FIELD VERIFY REQUIRED DIMENSIONS AND COORDINATE WITH CIVIL DRAWINGS AND SURVEYS.
B. REFER ALSO TO ALL OTHER PLANS AND THE SPECIFICATION, BUT ESPECIALLY TO: THE SITE SURVEY; THE ARCHITECTURAL SITE PLAN, THE SITE GRADING PLAN, THE PLANTING PLAN (WHERE AVAILABLE), FOUNDATION PLAN(S), APPROPRIATE MECHANICAL & ELECTRICAL FLOOR PLANS FOR SERVICE CONTINUATIONS, THE SITE UTILITY PLAN - MECHANICAL & ELECTRICAL. WHERE THERE ARE CONFLICTS AMONG THESE PLANS AND/OR RELATED SPECIFICATIONS, ADVISE THESE ENGINEERS AT LEAST TEN DAYS PRIOR TO SUBMISSION OF BIDS.
C. ALL FEES AND ANY OTHER COSTS TO UTILITY COMPANIES, MUNICIPALITIES, INSPECTORS, REVIEWING AGENCIES, ETC. ARE TO BE INCLUDED AS A PART OF THIS CONTRACT.
D. FEDERAL, STATE, LOCAL, MUNICIPALITY AND UTILITY COMPANY CODES, RULES, REGULATIONS AND REQUIREMENTS APPLY UNLESS EXCEEDED BY THIS DESIGN.
E. WHEN INTERRUPTION OF AN EXISTING UTILITY OR SERVICE IS PLANNED OR OCCURS ACCIDENTALLY, THE CONTRACTOR(S) SHALL WORK CONTINUOUSLY AS NEEDED TO RESTORE SAME PROVIDING PREMIUM TIME AS NEEDED AT NO INCREASE IN THE CONTRACT PRICE.
F. LOCATIONS, DEPTHS, MATERIAL TYPES, ELEVATIONS, ETC. OF ALL APPURTENANCES, LINES, BUILDINGS, ETC. INDICATED ON THESE DRAWINGS WERE TAKEN FROM VARIOUS SOURCES, ARE DIAGRAMMATIC ONLY AND ARE SUBJECT TO SUBSTANTIAL VARIATION FROM EXISTING CONDITIONS. EXISTING UTILITIES LOCATIONS MAY VARY. CONSEQUENTLY ALL CONTRACTORS SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK SO AS TO ENSURE THAT THEY DO NOT INTERRUPT ANY EXISTING SERVICE. FOR SAFETY PURPOSES, PAY PARTICULAR ATTENTION TO THIS PRECAUTION RELATIVE TO NATURAL GAS AND ELECTRICAL LINES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND/OR LOCAL RULES, REGULATIONS, STANDARDS AND SAFETY REQUIREMENTS.
G. PROVIDE LONG RADIUS ELBOWS FOR UNDERGROUND CONDUIT BENDS. WHERE SERVING A UTILITY OWNED TRANSFORMER, THE UTILITY STANDARDS SHALL TAKE PRECEDENCE.
H. UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE MUNICIPALITY OR UTILITY COMPANY STANDARDS. IN ALL CASES, THE MOST STRINGENT REQUIREMENT SHALL APPLY. IF ANY VARIATION OCCURS, CONSULT THE ENGINEER. CONTRACTOR SHALL VISIT THE SITE AND FIELD VERIFY THE ROUTING OF ALL UTILITIES NEW AND EXISTING PRIOR TO SUBMISSION OF BIDS. SUBMISSION OF A BID PROPOSAL INDICATES THAT THE CONTRACTOR IS FULLY AWARE OF ALL OBSTRUCTIONS AND WILL INSTALL ALL OF THE NEW UTILITIES WITHOUT REQUESTS FOR ANY ADDITIONAL CHANGES.
I. PROVIDE GALVANIZED RIGID CONDUIT FOR EXTERIOR UNDERGROUND TRANSITIONS TO ABOVE GRADE; EXTEND CONDUIT A MINIMUM OF 6" ABOVE GRADE.
J. CONTRACTOR SHALL PERFORM A SMOKE TEST ON ALL CONDUITS INSTALLED ON SITE AND SHALL TAKE ALL NECESSARY CORRECTIVE ACTION IF NOT FOUND IN COMPLIANCE WITH FACILITY STANDARDS.
K. CONTRACTOR SHALL CONTACT ENGINEER FOR INSPECTION OF TRENCHES PRIOR TO INSTALLATION OF CONDUITS OR RACEWAYS. PROVIDE PHOTOS UPON REQUEST.
L. CONTRACTOR SHALL CUT AND PATCH ALL PAVEMENT, CURBING, ETC. AS REQUIRED FOR WORK. CONTRACTOR SHALL REPAIR ALL LANDSCAPING THAT IS DAMAGED FOR WORK. FINISH GRADE, SEED AND STRAW ALL DISTURBED GREEN SPACES. ALL PATCH AND REPAIR WORK SHALL BE IN ACCORDANCE WITH BOTH CIVIL AND LANDSCAPE DRAWINGS AND SPECIFICATIONS.
M. DO NOT CUT OR ROUTE ANY CONDUIT UNDER TRACK OR TURF.

TAGGED NOTES

U18 PROVIDE CONCRETE PAD FOR ELECTRIC SERVICE PEDESTAL. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER.

U20 ELECTRICAL CONTRACTOR SHALL INTERCEPT EXISTING STADIUM LIGHTING FIXTURE AND EXTEND TO NEW EXTERIOR PEDESTAL "PP1" FOR POWER. CONTRACTOR SHALL VERIFY EXISTING BREAKER, CONDUIT AND WIRE SIZE FEEDING EXISTING STADIUM FIXTURE AND MATCH TO PROVIDE COMPLETE LIGHTING SYSTEM. ROUTE POWER THROUGH CONTROLS CONTACTOR AS REQUIRED FOR CONTROLS. COORDINATE EXACT REQUIREMENTS WITH EXISTING CONDITIONS PRIOR TO BID.

U21 ALTERNATE: ELECTRICAL CONTRACTOR SHALL DEMOLISH EXISTING FOOTBALL FIELD STADIUM LIGHT COMPLETE. PROVIDE NEW STADIUM LIGHT FIXTURE AND POLE AS REQUIRED. REFER TO ALTERNATE FIXTURE SCHEDULE ON THIS SHEET FOR ADDITIONAL DETAILS. COORDINATE ALL REQUIREMENTS WITH LIGHTING MANUFACTURER AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION. NEW POLES F4 AND F3 SHALL BE 105' FROM EACH OTHER AND 150' FROM POLES F1 AND F2. POLES F1 AND F2 SHALL BE 105' FROM EACH OTHER. EXACT LOCATION OF NEW POLES SHALL BE DETERMINED BY MAINTAINING 50FT.

U23 ALTERNATE: PROVIDE IN-GRADE HANDHOLE 5' FROM POLE.

U24 PROVIDE NEW ROOF CURB FOR MOUNTING OF NEW SOUND SYSTEM SPEAKER. COORDINATE EXACT LOCATION AND DIMENSION OF ROOF CURB WITH SOUND SYSTEM VENDOR TO OPTIMIZE SOUND PRESSURE FOR MAXIMIZE SPEAKER COVERAGE.

U25 SPEAKER INDICATED IS MOUNTED TO FRONT OF PRESSBOX. PROVIDE UNISTRUT INSIDE OF PRESSBOX TO REINFORCE EXTERIOR SPEAKER. COORDINATE EXACT LOCATION OF SPEAKER WITH VENDOR PRIOR TO INSTALLATION TO ENSURE MAXIMIZE SPEAKER COVERAGE.

U26 PROVIDE NEW WALL MOUNTED AV RACK FOR MOUNTING OF TWO NEW AMPLIFIER. LOCATE NEW SURGE PROTECTION QUADRUPLEX INSIDE NEW AV RACK. COORDINATE LOCATION AND REQUIREMENTS FOR NEW AV RACK WITH EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

U28 ROUTE THROUGH STADIUM LIGHTING CONTROL PANEL. ROUTING SHALL BE DONE DO NO CUTTING OR ROUTING UNDER THE TRACK OR TURF IS DONE.

(ALTERNATE) ATHLETIC FIELD – LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	POLE HEIGHT	MOUNTING HEIGHT	BASIS OF DESIGN	QTY/POLE	EQUAL MANUFACTURERS	LAMPS / CCT	VOLTAGE
F1	STADIUM LED LIGHT FIXTURES. MINIMUM 50FT CANDLES ON FIELD	80'	80' 15.6' 70'	MUSCO #TLC LED 1500 MUSCO #TLC LED 575 MUSCO #TLC LED 400	9 2 1	COOPER, PHILIPS	LED	480/3P
F2	STADIUM LED LIGHT FIXTURES. MINIMUM 50FT CANDLES ON FIELD	80'	80' 15.6' 70'	MUSCO #TLC LED 1500 MUSCO #TLC LED 575 MUSCO #TLC LED 400	9 2 1	COOPER, PHILIPS	LED	480/3P
F3	STADIUM LED LIGHT FIXTURES. MINIMUM 50FT CANDLES ON FIELD	80'	80' 15.6' 70'	MUSCO #TLC LED 1500 MUSCO #TLC LED 575 MUSCO #TLC LED 400	10 2 1	COOPER, PHILIPS	LED	480/3P
F4	STADIUM LED LIGHT FIXTURES. MINIMUM 50FT CANDLES ON FIELD	80'	80' 15.6' 70'	MUSCO #TLC LED 1500 MUSCO #TLC LED 575 MUSCO #TLC LED 400	10 2 1	COOPER, PHILIPS	LED	480/3P

FIXTURE TYPE SUMMARY							
TYPE	SOURCE	WATTAGE	LUMENS	L90	L80	L70	QUANTITY
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>81,000	>81,000	>81,000	4
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>81,000	>81,000	>81,000	38
TLC-LED-575	LED 5700K - 75 CRI	575W	52,000	>81,000	>81,000	>81,000	8

CALCULATION GRID SUMMARY								
GRID NAME	CALCULATION METRIC	ILLUMINATION					CIRCUITS	QUANTITY
		AVE	MIN	MAX	MAX/MIN	AVE/MIN		
AWAY BLEACHERS	HORIZONTAL	6.57	5	9	1.78	1.31	B	4
FOOTBALL	HORIZONTAL ILLUMINANCE	53.4	44	57	1.32	1.21	A	46
HOME BLEACHERS	HORIZONTAL	6.82	3	10	3.81	2.27	B	4
TRACK SPILL	HORIZONTAL ILLUMINANCE	0.09	0	0.48	369.07		A	46
TRACK	HORIZONTAL ILLUMINANCE	20.6	2	42	19.32	10.31	A	46

ELECTRICAL SITE UTILITIES LINE LEGEND

	EXISTING	DEMOLITION	NEW
OVERHEAD	(E)OH	(ED)OH	(N)OH
UNDERGROUND	(E)UG	(ED)UG	(N)UG
POWER POLE	(E)PP	(ED)PP	(N)PP
SITE LIGHTS			
ELECTRIC	ELEC		
TELEPHONE	TEL		
CABLE TV	CATV		
FIBER OPTICS	FIBER		
TELECOM	COM		

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

HAMMOND HIGH SCHOOL RENOVATION AND ADDITION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SHEET TITLE:
ALTERNATE SITE PLAN - ELECTRICAL

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

WORKING NORTH

SHEET NO:
UE2.0

3/12/2020 11:05:03 AM

SECTION 035416 - HYDRAULIC CEMENT UNDERLAYMENT

PART 1 - GENERAL

1.1 RELATED SECTIONS

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

B. Section 012300: Alternates

C. Section 096519: Resilient Tile Flooring

1.2 SUMMARY

A. Section includes polymer-modified, self-leveling, hydraulic cement underlayment for application below interior floor coverings.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site>.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Installer who is approved by manufacturer for application of underlayment products required for this Project.

1.7 FIELD CONDITIONS

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

1. Place hydraulic cement underlayments only when ambient temperature and temperature of substrates are between 50 and 80 deg F (10 and 27 deg C).

PART 2 - PRODUCTS

2.1 HYDRAULIC CEMENT UNDERLAYMENTS

A. Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic cement product that can be applied in minimum uniform thickness of 1/4 inch (6 mm) and that can be feathered at edges to match adjacent floor elevations.

1. Ardex K 15 or equivalent by Schonox,, Laticrete, or MAPEI
2. Cement Binder: ASTM C 150/C 150M, portland cement, or hydraulic or blended hydraulic cement as defined by ASTM C 219.
3. Compressive Strength: Not less than 4000 psi (27.6 MPa) at 28 days when tested according to ASTM C 109/C 109M.
4. Underlayment Additive: Resilient-emulsion product of underlayment manufacturer, formulated for use with underlayment when applied to substrate and conditions indicated.

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

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

D. Surface Sealer: Designed to reduce porosity as recommended by manufacturer for type of floor covering to be applied to underlayment.

2.2 [1]HYDRAULIC CEMENT PATCHING COMPOUND

A. Patching compound: Polymer-modified, self-leveling, hydraulic cement product that can be applied in minimum uniform thickness of 1/4 inch (6 mm) and that can be feathered at edges to match adjacent floor elevations.

1. Ardex SD-F feather finish or equivalent by Schonox,, Laticrete, or MAPEI
2. Cement Binder: Minimum 80% Portland cemeber per ASTM C 150/C 150M. Gypsum products not acceptable.

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

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

D. Surface Sealer: Designed to reduce porosity as recommended by manufacturer for type of floor covering to be applied to underlayment.

PART 3 - EXECUTION

3.1 EXAMINATION

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

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

[1] Addendum 3, 3/12/2020

3.2 PREPARATION

A. General: Prepare and clean substrate according to manufacturer's written instructions.

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

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

1. Moisture Testing: Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates do not exceed a maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/100 sq. m) in 24 hours.

C. Adhesion Tests: After substrate preparation, test substrate for adhesion with underlayment according to manufacturer's written instructions.

3.3 APPLICATION

A. General: Mix and apply underlayment components according to manufacturer's written instructions.

1. Close areas to traffic during underlayment application and for time period after application recommended in writing by manufacturer.
2. Coordinate application of components to provide optimum adhesion to substrate and between coats.

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

C. Apply underlayment to produce uniform, level surface.
1. Feather edges to match adjacent floor elevations.
2. [2]Subfloor scheduled for Hydraulic Cement Floor Patching are to receive two coats of patching compound finish prior to application of flooring cement.

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

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

F. Apply surface sealer at rate recommended by manufacturer.

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

3.4 PROTECTION

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

[2] Addendum 3, 3/12/2020

3.5 SCHEDULE

A. Base Bid: All corridors within areas of renovation are to receive 1/4" thick underlayment. Taper to meet existing elevation at doorways.

B. Alternate: All classrooms scheduled to receive resilient tile flooring within areas of renovation are to receive 1/4" thick underlayment.

END OF SECTION

SECTION 07 42 13.13 - FORMED METAL WALL PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Concealed-fastener, lap-seam metal wall panels.
2. Concealed-fastener, rain screen metal wall panels.

B. Related Sections:

1. Section 061613 "Insulated Sheathing Panels" for board insulation bonded to plywood

1.3 PREINSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, metal panel Installer, metal panel manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects metal panels, including installers of doors, windows, and louvers.
2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to metal panel installation, including manufacturer's written instructions.
4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
5. Review flashings, special siding details, wall penetrations, openings, and condition of other construction that affect metal panels.
6. Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.
7. Review temporary protection requirements for metal panel assembly during and after installation.
8. Review of procedures for repair of metal panels damaged after installation.
9. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Sustainable Design Submittals:

1. LEED v4 Requirements: Material submittals shall be in accordance with the requirements of Section 018113 and the following LEED v4 credit requirements listed below:

a. MRc, Building Product Disclosure and Optimization, Sourcing of Raw Materials: Option 2, Leadership Extraction Practice:

1) Extended Producer Responsibility: Product data and certification letter from product manufacturers, indicating participation in an extended producer responsibility program and statement of costs.
2) Bio-Based Materials: Product data and certification for bio-based materials, indicating that they comply with requirements. Include statement of costs.
3) Certified Wood: Product data and chain-of-custody certificates for products containing certified wood. Include statement indicating cost for each certified wood product.
4) Recycled Content: Product data and certification letter from product manufacturers, indicating percentages by weight of postconsumer and preconsumer recycled content for products having recycled content. Include statement of cost.

C. Shop Drawings:

1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches (1:10).

D. Samples for Initial Selection: For each type of metal panel indicated with factory-applied finishes.

1. Include Samples of trim and accessories involving color selection.

E. Samples for Verification: For each type of exposed finish, prepared on Samples of size indicated below:

1. Metal Panels: 12 inches (305 mm) long by actual panel width. Include fasteners, closures, and other metal panel accessories.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

C. Field quality-control reports.

D. Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal panels to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. UL-Certified, Portable Roll-Forming Equipment: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of work.

C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Build mockup of typical metal panel assembly as shown on Drawings, including corner, supports, attachments, and accessories.
2. Water-Spray Test: Conduct water-spray test of metal panel assembly mockup, testing for water penetration according to AAMA 501.2.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Retain strippable protective covering on metal panels during installation.

E. Copper Panels: Wear gloves when handling to prevent fingerprints and soiling of surface.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

1.10 COORDINATION

A. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.11 WARRANTY

A. Special Warranty: Installer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including rupturing, cracking, or puncturing.
b. Deterioration of metals and other materials beyond normal weathering.

2. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:

1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: As indicated on Drawing**s**.
3. Deflection Limits: For wind loads, no greater than 1/180 of the span.

B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. of wall area when tested according to ASTM E 283 at the following test-pressure difference:

1. Test-Pressure Difference: 1.57 lbf/sq. ft..

C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 331 at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

E. Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 CONCEALED-FASTENER, LAP-SEAM METAL WALL PANELS

A. General: Provide factory-formed metal panels designed to be field assembled by lapping side edges of adjacent panels and mechanically attaching panels to supports using concealed fasteners in side laps. Include accessories required for weathertight installation.

B. Flush-Profile, Concealed-Fastener Metal Wall Panels (Type A): Formed with horizontal panel edges with flush joint between panels.

1. Acceptable Manufacturers:

a. MBCI
b. Fabral
c. Metecno-Morin
d. Approved equal manufacturer

2. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with ASTM A 653/A 653M, G90 (Z275) coating designation, or aluminum-zinc alloy-coated steel sheet complying with ASTM A 792/A 792M, Class AZ50 (Class AZM150) coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A 755/A 755M.

a. Nominal Thickness: 20 gauge steel minimum.
b. Exterior Finish: Two-Coat Fluoropolymer.
c. Color: As selected by Architect from manufacturer's full range of standard colors.

C. Schedule
1. Provide at all penthouses and at existing volume wall recladding

2.3 [1]CONCEALED-FASTENER, RAIN SCREEN METAL WALL PANELS

A. General: Provide factory-formed, metal plate wall panels fabricated from single sheets of metal formed into profile for installation method indicated. Include attachment assembly components, panel stiffeners, and accessories required for weathertight system.

B. Reveal-Profile, Concealed-Fastener Rainscreen Metal Wall Panels: Formed with vertical and horizontal panel edges and intermediate stiffening ribs symmetrically spaced between panel edges; with reveal joint between panels.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Overly RLS Wall Panel or comparable product by one of the following:
a. CENTRIA Architectural Systems.
b. Dimension Metals, Inc.
c. Fabral.
d. Metecno-Morin.

[1] Addendum 3, 3/12/2020

e. Petersen Aluminum Corporation.

C. Panel Depth: 1-1/2 inches.

D. Aluminum Sheet: Tension-leveled, smooth aluminum sheet, ASTM B 209 (ASTM B 209M), 0.125 inch thick.

1. Exterior Finish: Two-coat fluoropolymer.

a. Color: As selected by Architect from manufacturer's full range.

E. Attachment Assembly: Rainscreen-principle system, with continuous horizontal clips and guttered vertical joints.

F. Schedule
1. Provide between first floor windows as shown on exterior elevations

2.4 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C 645, cold-formed, metallic-coated steel sheet, ASTM A 653/A 653M, G90 (Z275 hot-dip galvanized) coating designation or ASTM A 792/A 792M, Class AZ50 (Class AZM150) aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

1. Closures: Provide closures at eaves and rakes, fabricated of same metal as metal panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, endwalls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

D. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.

E. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.

1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
2. Joint Sealant: ASTM C 920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer.
3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C 1311.

2.5 FABRICATION

A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
3. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
4. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.
5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
6. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.

    a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal wall panel manufacturer for application but not less than thickness of metal being secured.

2.6 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Steel Panels and Accessories:

1. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.

1. Examine wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by metal wall panel manufacturer.
2. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal wall panel manufacturer.

a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.

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

3.2 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer's written recommendations.

3.3 METAL PANEL INSTALLATION

A. General: Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise

indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
3. Install screw fasteners in predrilled holes.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal panel work proceeds.
6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
7. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
8. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:

1. Steel Panels: Use stainless-steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.
2. Aluminum Panels: Use aluminum or stainless-steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized-steel fasteners for surfaces exposed to the interior.

C. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.

D. Watertight Installation:

1. Apply a continuous ribbon of sealant or tape to seal lapped joints of metal panels, using sealant or tape as recommend by manufacturer on side laps of nesting-type panels; and elsewhere as needed to make panels watertight.
2. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
3. At panel splices, nest panels with minimum 6-inch (152-mm) end lap, sealed with sealant and fastened together by interlocking clamping plates.

E. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal wall panel manufacturer; or, if not indicated, provide types recommended by metal panel manufacturer.

F. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches

(610 mm) of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

3.4 FIELD QUALITY CONTROL

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

B. Water-Spray Test: After installation, test area of assembly as directed by Architect for water penetration according to AAMA 501.2.

C. NOT USED.

D. Remove and replace metal wall panels where tests and inspections indicate that they do not comply with specified requirements.

E. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.

F. Prepare test and inspection reports.

3.5 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

B. After metal panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

C. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074213.13

DIVISION 23 - HVAC

SECTION 230200 - HVAC EQUIPMENT

PART 16 - AIR HANDLING UNITS 12A/B:

16.1 GENERAL

16.1.1 Acceptable Manufacturers are AAON, Trane, Carrier, Daikin or JCI York.

16.1.2 Provide factory built and factory tested air handling units as indicated, of sizes and capacities as scheduled, and as specified herein.

16.2 CASINGS

16.2.1 All cabinet walls, access doors, and roof shall be fabricated of double wall, impact resistant, rigid polyurethane foam panels. Unit insulation shall have a minimum thermal resistance R-value of 6.25. Foam insulation shall have a minimum density of 2 pounds/cubic foot and shall be tested in accordance with ASTM D1929-11 for a minimum flash ignition temperature of 610°F. Unit construction shall be double wall with G90 galvanized steel on both sides and a thermal break. Double wall construction with a thermal break prevents moisture accumulation on the insulation, provides a cleanable interior, prevents heat transfer through the panel and prevents exterior condensation on the panel. Unit shall be designed to reduce air leakage and infiltration through the cabinet. Sealing shall be included between panels and between access doors and openings to reduce air leakage. Piping and electrical conduit through cabinet panels shall include sealing to reduce air leakage. As required for routine service access, unit shall be supplied with full height, galvanized, double wall, hinged, removable access doors. Access doors shall be flush mounted to cabinetry. Doors shall open against system pressure. Units with a cooling coil shall include double-sloped 304 stainless steel drain pan, extended under the complete coil section. It shall be pitched towards the drain connection and shall be designed to totally prevent standing water in order to comply with the current indoor air quality ASHRAE Standard 62.

16.3 COIL SECTIONS

16.3.1 Provide individual double wall casing for heating and cooling coils as required. Design internal structure of coil section to allow for removal of coils, and provide suitable baffles to assure no air bypass around coils. Insulate casings as previously specified. Access to each coil shall be through hinged access door with lockable quarter turn handles. All coils shall be certified in accordance with AHRI Standard 410 and be hydrogen leak tested. All coils shall be designed and constructed of copper tubes with aluminum fins mechanically bonded to the tubes and aluminum end casings. Fin design shall be sine wave rippled. All hot water coils shall have mill galvanized steel casings and all chilled water coils shall have stainless steel casings. Coil connections shall be labeled, extend beyond the unit casing, and be factory sealed on both the interior and exterior of the unit casing to minimize air leakage.

16.3.2 Cooling coil shall be mechanically supported above the drain pan by multiple supports that allow for drain pan cleaning and coil removal. Coil shall have minimum 6 rows and maximum 10 fins per inch. Provide drain pan as previously specified.

16.3.3 Heating coil shall have minimum 2 rows and maximum 10 fins per inch. Heating coil shall be located in the preheat position upstream of the cooling coil.

16.4 FAN SECTIONS (ECM):

16.4.1 Provide direct drive, unhoused, backward curved, plenum supply fan. Blower and motor assembly shall be dynamically balanced. Motor shall be a high efficiency electrically commutated motor

(ECM). Blower and motor assembly shall utilize neoprene gasket. ECM driven supply fan shall include a factory installed potentiometer within the control compartment for cfm setpoint. The factory provided terminal block shall include a jumper wire that can be removed when wired to field provided 0-10 VDC control signal. Access to supply fan shall be through removable bolted access panels on the top and bottom of the unit. Removable access panels and supply duct flanges shall be interchangeable.

5.6 MOTORS

5.6.1 High efficiency motor shall meet the requirements of section 250100 Electrical Motors, Motor Starters and Other Electrical Requirements for Mechanical Equipment, and shall be of the size, voltage and enclosure called for in the plans. Where variable frequency drives are utilized the fan motor shall be inverter rated with Class F insulation. Fan and motor shall be factory aligned, and shall be realigned by contractor after installation. It shall then be thoroughly cleaned and painted with at least one coat of high grade machinery enamel prior to shipment.

5.7 FILTER BOXES

5.7.1 Provide filter boxes with hinged access door. **Filter access shall not require tools to access including filter end panels without hinges.** Provide racks to receive filters in either flat or angle type pattern. Provide air filters to fit in filter box of the type scheduled on the drawings. Unit shall be provided with four sets of filters. One set shall be used during construction and replaced after construction is complete.

5.8 CONTROLS

5.8.1 Unit shall be provided with a proof of airflow switch. When airflow is not detected, the supply fans will shut down. Unit shall be provided with an internal control panel with separated low and high voltage control wiring. Unit shall include factory wired control panel compartment LED service lights. Access to internal control panel shall be through and access door with removable pin hinges and lockable quarter turn handles. Controls shall be field provided and field installed by others. Unit shall be provided with a terminal block and a supply air setpoint potentiometer. Unit shall be provided with standard power block for connecting power to the unit. Unit shall include a factory installed 24V control circuit transformer. Unit shall have a 5kAIC SCCR.

DIVISION 28 - SECURITY

SECTION 281000 – ACCESS CONTROLS AND INTRUSION DETECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The Contractor is directed to examine each and every section of these specifications, all drawings relating to the Contract Documents, any and all Addenda, etc., for work described elsewhere that may relate to the provision of the work described herein. Materials and performance requirements are specified elsewhere herein that relate to these systems.

C. All layout and installation of communications infrastructure shall be in accordance with ANSI / TIA 568 and the BICSI TDMM.

D. Each Contractor's attention is directed to Section 260501 - General Provisions, Electrical, and all other Contract Documents as they apply to his work.

1.2 SUMMARY

A. Section Includes:

1. Intrusion Detection cabling
2. Intrusion Detection sensors
3. Intrusion Detection end devices
4. Access Control Card Reader
5. Access Control Panels
6. Access Control Cards
7. Aiphone Equipment
8. Time Clocks
9. Associated power supplies, terminations, equipment, labeling and associated cable performance testing.

1.3 DEFINITIONS

A. Intrusion Detection system refers to burglar alarm equipment including motion detectors, door contacts, control panels, communication panels, power supplies, expansion modules and associated wiring.

1.4 SYSTEM DESCRIPTION

B. Design Requirements

1. Provide labor, materials, equipment, services and operations required for complete installation of an Access Control and Intrusion Detection System

a. Expansion modules
b. Keypads
c. Annunciators
d. Motion Detectors
e. Door Contacts
f. Communication Modules
g. Power Supplies
h. Card Reader

2. All wiring shall be wired according to manufactures specifications.

a. Refer to notes on each drawing to determine exact installation methods.

b. Strictly adhere to most current version of TIA/EIA Telecommunications cabling standards.
c. Permanently identify and label all cables and termination devices, at distribution rack and workstation in accordance with ANSI TIA/EIA-606 Standard or as agreed by Design consultant and Authority.
d. Remove and replace any cables failing to meet end-to-end testing requirements; do not abandon cable in place. All cable shall be terminated at both ends, unless noted in Drawings.

3. A complete entry door video intercom system.
4. All licensing for this specification section shall be provided for a complete and operational system.

C. Performance Requirements

1. The system shall produce a signal if the system is breached by an unauthorized user.
2. Each sensor shall be individually alarmed.
3. The intrusion detection system will alert and record movement throughout the facility that is both authorized and unauthorized.
4. The systems shall be controllable in case of emergency situation.
5. The system shall be interconnected to other system at the facility.
6. All systems shall operate on dedicated circuits with associated cabling in EMT.
7. Comply with applicable requirements in Local, State and Federal Codes, TIA/EIA Standards, and BICSI methodology.
8. Specified cabling system derived from recommendations in approved telecommunications industry codes, standards and methods, including the following documents:

a. Articles 250, 725, 760, 770, 800,810 and 820 of the current National Electrical Code.
b. ANSI/TIA/EIA-568-B.1: Commercial Building Telecommunications Cabling Standard Part 1 – General Requirements
c. ANSI/TIA/EIA-568-B.2: Commercial Building Telecommunications Cabling Standard Part 2 – Balanced Twisted Pair Cabling Components and subsections.
d. ANSI/TIA/EIA-568-B.3: Commercial Building Telecommunications Cabling Standard Part 3 – Optical Fiber Cabling Components
e. ANSI/TIA/EIA-569-A: Commercial Building Standard for Telecommunications Pathways and Spaces
f. ANSI/TIA/EIA-606: Administration Standard for Telecommunications Infrastructure of Commercial Buildings
g. ANSI/TIA/EIA-607: Commercial Building Grounding and Bonding Requirements for Telecommunications
h. ANSI/TIA/EIA-758: Customer-Owned Outside Plant Telecommunications Cabling Standard
i. BICSI Telecommunications Distribution Methods Manual (TDMM), Latest Edition
j. National Fire Protection Agency (NFPA-70): National Electrical Code (NEC)
k. NFPA 731: Standard for the installation of Electronic Premises Security Systems
l. NFPA 730: Guide for Premises Security

D. Regulatory requirements

1. All work will conform to the National Electric Code and applicable local ordinances.

1.5 SUBMITTALS

A. Submittals shall be in compliance with SUBMITTAL PROCEDURES specification section.

B. Product Data: Submit manufacturer's product literature, technical specifications and similar information for the following items demonstrating compliance with the specified requirements.

1. Motion Detectors, Door Contacts, Keypads
2. Communications Modules

3. Power supplies
4. Copper cable and termination devices.
5. Inner duct and accessories.
6. Wiring diagrams.
7. Card Readers
8. Sample of each cable test report.

C. Shop Drawings shall include the following items but are not limited to:

1. Wire types
2. System wiring diagrams showing all connections
3. Drawings including all equipment locations
4. Associated equipment specifications and cut sheets
5. Product data including catalog cut sheets, manufacturer's default specifications, user operation guides and a bill of materials

D. Quality Control Submittal

1. Test Reports: Submit complete sample test data and reports with exact labels used on cables and patch panels
2. Submit the name, address and telephone number of the nearest fully equipped service organization.
3. Submit a certificate of completion of installation and service training from the system manufacturer.
4. Certificates

a. Manufacturer Certification: Submit certification from manufacturer of products to be installed under this contract certifying that Installer is authorized by manufacturer to install specified products.
b. Installer Experience Listing: Submit list of at least 5 completed projects as specified below in "Quality Assurance – Qualifications – Installer."

E. Contract Closeout Submittal: Comply with requirements of Division 0, including submission of operating and maintenance instructions as item in "Operation and Maintenance Data" manual described in that Section.

1.6 AS-BUILTS

A. All systems must have as-built drawings provided in electronic CAD and hardcopy format that clearly show all system components, wiring schemes and system interconnections.

1.7 QUALITY ASSURANCE

A. All Work shall be installed in a first class, neat and workmanlike manner by skilled Technicians. The quality of the workmanship shall be subject to inspection and approval by authorized HCPSS personnel. Any work found to be of inferior quality and/or workmanship shall be replaced and/or reworked until the approval of HCPSS is obtained.

B. Qualifications

1. Installer

a. Must be qualified to cable, terminate, install and program the equipment specified in this Section, certified by manufacturer of products to be installed, and completed at least 5 installations of similar size, nature and complexity as specified for this project.

1.8 SINGLE SOURCE RESPONSIBILITY AND OBSOLETE EQUIPMENT

A. Except where specifically noted otherwise, all equipment supplied by the contractor shall be the standard product of a single manufacturer of known reputation and experience in the industry. Only equipment, components and accessories in current production for at least five years beyond the completion date of this system shall be used and installed. Any equipment found to be obsolete or not in future production will be removed and replaced at contractor's expense.

1.9 CONTRACTOR QUALIFICATIONS AND QUALITY ASSURANCE

B. The installation contractor shall be an established communications and electronics contractor that has had and currently maintains a locally run and operated business for at least five years. Further this contractor shall have a minimum of 5 years' experience in the specific installation and application of intercommunications and class change signaling systems, i.e.: school intercom systems.

C. The installation contractor shall show satisfactory evidence, upon request, that it maintains a fully equipped service organization capable of furnishing adequate inspection and service to the equipment and materials installed.

1.10 WARRANTY

A. Installer's Warranty: Provide manufacturer's system warranty against electrical or mechanical defects for 2 years from date of final acceptance.

B. Manufacturer warranty coverage for cable systems associated with the Intrusion Detection System and associated Access Control System

1.11 TRAINING

A. Installing contractor shall provide a minimum of 16 hours of factory training on system operation and managements as part of their scope of work.

1. Additional hours shall be provided on a time and materials basis at the request of the owner.

B. Training shall include:

1. Service Manuals, programming at the headend, trouble shooting, servicing, configurations and all adaptations prior to turnover of the initial phase of the project.

C. Installing contractor shall provide a video recording on a standard format DVD to the owner which includes training sessions.

1.12 OPERATION AND MAINTENANCE MANUALS

A. Installing contractor shall provide a minimum of two hardcopy and one electronic copy of all operation and maintenance manuals to the owner at project completion.

PART 2 - PRODUCTS

2.1 Manufacturers

A. No Substitutions

1. Intrusion Detection – DMP
2. Access Control – AMAG
3. Entry Door Video Intercom – AIPHONE
4. Time Clocks - Accutime
5. Any system component not meeting the design and performance criteria will be rejected.

2.2 Intrusion Detection

A. DMP security system. No substitute.

B. The communications format shall be Modem II to allow reporting of individual point numbers and text and other expanded diagnostic reports.

C. Remote Access

1. The system shall provide a method for users to remotely access the system and perform all of the functions possible on an operator terminal by LAN (IP). Provide network interface module and Cat 6 cable and associated connections to school's data network.

D. System Design and Operation

1. The system shall be installed so that 10 percent future area protection of each zone may be added without compromising system performance in any way and no additional control equipment is necessary.
2. Entre Enterprise Software
3. Provide the following equipment:

   a. DMP XR550E Intrusion Panel
   b. DMP 7000A Keypads with STI-9600 Locking Covers.
   c. DMP Cellular Communicator for Verizon or AT&T
   d. Battery Charger module.
   e. DMP Addressable expansion modules, qty as required
   f. DMP relay modules (Form C relays)
   g. DMP Expansion modules, qty as required
   h. DMP, various models
   i. Standby batteries. Quantity as required to support system for specified hours upon loss of power. Note: Security system shall be fed from school's emergency generator power source. It is the responsibility of contractor to coordinate with other trades to fulfill this requirement regardless if shown on contract drawings (electrical drawings).

E. Passive Infrared Motion Detectors:

1. Shall be either wall mounted or ceiling mounted with built-in interface. See drawings for locations.

   a. Long Range Wall mounted devices: Bosch ISC PDL WA18G. The detectors shall have a standard range of 60 feet x 80 feet.
   b. Wide Angle Wall mounted devices: Bosch ISC PDL WA18G. The detectors shall have a standard range of 25 feet x 33 feet.
   c. Ceiling mounted devices: Bosch ISC PDL WA18G. When mounting to acoustical ceiling tiles, must use backbox connected to grid system. Fastening only to ceiling tile is unacceptable.

2. All devices shall be individually addressable.
3. Damage Stoppers (wire guards): Safety Technology International, STI series. Provide for all devices in gym, auxiliary gym, weight room, wrestling room, locker rooms, restrooms, and other high abuse areas noted on drawings.
4. All devices shall be mounted on Gimbal mounts or corner mounts.

F. Door Contacts

1. Sentrol DPDT Contacts 1076D-G

G. Entre Software

1. Entre Enterprise Software

   a. The software shall be fully programmed with the associated panels.
   b. The software shall display a graphical map of all sensors and positions
   c. All programming necessary shall be provided to accomplish system installation, activation, setup and reporting.
   d. Client software install, set-up and reporting on admin, police SRO and security computer.
   e. Any licensing for client and panels needed shall be included for the entire system.
   f. Provide training of staff on operation of the system.

2. Server: HPE ProLiant DL380 Gen9 E5-2620v4 1P 16GB-R P440ar 8SFF 500W PS Server

   a. Intel Xeon e5-2600 Quad Processors
   b. 3.5 GHZ Processors
   c. 3.0TB With 128 GB DDR4 2400 MHz LRDIMM
   d. 32 GB RDIMM

H. Cable/Wiring

1. All wiring shall be concealed. No surface metal raceway shall be used unless approved by owner, and if approved, shall be painted to match adjacent wall color.

   a. General: 18-AWG, 4-wire, unshielded, plenum rated. Provide two (2) cable loops for connection of all devices. Alternate connection of devices between cable loops such that every other device in series is connected to one cable and the other cable is connected to every other device remaining. Cable shall be plenum rated West Penn Model 25244, or approved equal.

2. Surge Protection: Provide transient surge protection devices on the power feeds for all major components of equipment. This shall include equipment with electronic components such as the control panel. Surge protection devices shall be UL listed, equal to Transtector or Isobar. The devices shall have a 5 nanosecond or less response time for clipping excessive voltage. The surge protection devices shall consist of solid-state circuitry, will automatically reset after an operation with no degradation in protective capability and have an indicated light to indicate when the unit is non-operational. Devices shall be direct plug-in type plug strip type, or hard-wired connection type as applicable.

I. Access Control

1. AMAG Symmetry multiNODE M2150.
2. I/O Modules to interface security system

   a. Arming/Disarming via prox pin reader
   b. Arming/Disarming disable readers/enable readers
   c. Fire alarm monitor troubles and supervisory troubles.
   d. Node based commands, no server-based commands.

3. Access power controller for interface to the school’s fire alarm control panel.
4. Network module for LAN connection.
5. Card Readers,

   a. Provide WIM modules for HID readers.
   b. HID Thinline II proximity style card reader with LED, indoor/outdoor design
   c. HID MiniProx proximity style card readers with LED, indoor/outdoor design for Mullions
   d. Provide AMAG Javelin S870-KP prox card reader for security interface at ALL security keypad locations.

6. Access Card, ProxCard II proximity style access card, RF-programmable (1586LGGMN). Quantity of two-hundred (200).
    a. Coordinate with HCPSS for card range and facility codes before purchasing and providing.
7. Wiring per manufacturer's specifications
8. All wiring shall be concealed.
9. Sentrol DPDT Contacts 1076D-G
    a. Contacts shall be used to monitor door position for all exterior doors and doors with card readers.
    b. Wire only to IMP security system, not AMAG door access.
10. HCPSS existing AMAG Access system is Server/Client based. Provide additional AMAG Enterprise Symmetry card reader licenses (one license per one card reader) including labor to upload/download licenses into server to accommodate all card readers listed with this project.
11. Any licensing needed shall be included for the entire system.
12. Provide and install client licenses and software on HCPSS building services technician laptops. Provide for a total of 3 laptops.

J. Entry Door Video Intercom
1. Aiphone IX-DVF
2. Aiphone IX-DVF-P
3. Aiphone IX-MV
4. Aiphone IX-MV7-HB
5. Aiphone IX Mobile App
6. Aiphone KMB-45
7. Aiphone SBX-IDVF
8. Aiphone SBX-IDVFRA
9. Aiphone RY-IP-44

K. Time Clock
1. Accu-time Peoplepoint with POE Module

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Examine conditions under which access control and intrusion detection cabling and equipment and related components are to be installed in coordination with Installer of materials and components specified in this section and notify affected prime contractors and design consultant in writing of any conditions detrimental to proper and timely installation. Do not proceed with installation until unsatisfactory conditions have been corrected to ensure a safe and timely installation.

B. When Installer confirms conditions as acceptable to ensure proper and timely installation and to ensure requirements for applicable warranty or guarantee can be satisfied, submit to design consultant written confirmation from applicable Installer. Failure to submit written confirmation and subsequent installation will be assumed to indicate conditions are acceptable to Installer.

C. Visit Site to identify and become familiar with existing field conditions and specific requirements of each Site.

D. Verify all dimensions in field and confirm condition of existing hardware to be utilized.

E. Confirm space requirements and physical confines of all work areas to ensure that all materials can be installed in indicated spaces.

F. Confirm all device and outlet locations and cable pathways and advise design consultant in writing of any discrepancies or issues in design described in Contract Documents.

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

3.2 PREPARATION

A. Protection: Provide adequate protection of equipment and hardware before and after installation.

B. Identify any additional outlets, circuits, and wiring at the site not shown on Drawings and interfering with installation of specified equipment.

C. Identify any additional intercom equipment, devices, and wiring at the site not shown on Drawings and interfering with installation of specified equipment.

D. Remove all accessible portions of abandoned communications cabling per NEC 800.52. Tag all communications cabling not terminated at both ends but retained for future use.

3.3 WIRING METHODS

A. Wiring Method: Install cables completely within raceways, J-hooks and cable trays. Conceal raceway.

1. Complete with requirements for raceways and boxes specified in Division 26 Sections "Raceway and Fittings for Electrical Systems" and "Cabinets, Outlet Boxes, and Pull Boxes for Electrical Systems".

B. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

3.4 PREPARATION

A. Protection: Provide adequate protection of equipment and hardware before and after installation.

B. Existing Intrusion Detection Equipment: Ensure all systems remain operational throughout the project.

1. Identify any circuits and/or wiring at the site not shown on Drawings and interfering with installation of specified Equipment.
2. Remove all accessible portions of abandoned communications cabling per NEC 800.52. Tag all communications cabling not terminated at both ends but retained for future use.

3.5 INSTALLATION

A. Provide and install all components necessary to install complete Access Control and Intrusion Detection System, including (but is not limited to) cable, connectors, sensors, panels, power supplies, patch panels, etc. Splicing of any cable is prohibited.

B. Cable runs shall be per manufacturer's recommendations in all cases. Any deviation will result in system rejection.

C. Secure all horizontal cables within ceiling cavities to building structure.

D. Loosely bundle all cables and support from structure at unequal intervals from 3 to 4 feet with j-hooks rated for use with high performance cables where cable tray or other support structure has not been provided as indicated on Drawings.

E. Do not violate manufacturer's recommended loadings. Provide 50% capacity for future use of pathway.

F. Do not support cables from ceiling grid T-Bars, grid wire supports or bridle rings. Do not allow cables to touch ceiling grid.

G. Install cables in EMT conduit in all unfinished, exposed areas.

H. Do not secure cables with permanent cable ties. Do not tighten cable bundles in such a way as to cause jacket deformation or damage.

I. Place cables in compliance with TIA/EIA-568.B standards and BICSI recommended methods.

J. Tight 90-degree bends are unacceptable and use of plastic “cinch-type” tie-wraps are not permitted, in order to prevent damage to cable jacket and compromise the cable’s electrical or optical characteristics.

K. Cable bundles shall be neatly routed with a service loop to provide 10 feet of slack at the cross-connect end and as noted in the T-drawings. Cable bundles shall be secured using only black Velcro cable wraps.

L. Install all exposed cabling in surface raceway by Wiremold, Hubbell or Panduit where in-wall conduit has not been provided. Follow all manufacturers’ guidelines requirements regarding bending radius and slack. All bends, offsets and fittings shall be appropriately sized to provide 50% capacity after installation.

M. Verify all horizontal cable run lengths prior to installation. Ensure cables do not exceed distances that would degrade the signal transmission requirements

N. Re-terminate and re-test any cables or pairs of cables failing end-to-end testing requirements. Replace any faulty cables/pairs or termination devices. Remove all defective cables completely from pathways.

O. Install all cable in accordance with National, state and local codes and TIA/EIA Standards, and BICSI methods.

    1. Follow manufacturer’s guidelines and requirements for all cable termination.
    2. Follow detail drawings to locate equipment racks and cabinets. Where it is necessary to deviate, to obtain 30-inch clearance between equipment, obtain Design consultant’s written approval before mounting cabinet/rack.
    3. Ladder-type cable tray shall be affixed 6 inches above all data racks and equipment cabinets, and routed to all points of entry into each telecommunications room.

        a. Include transition to proper height for penetration into hallway or other wall penetration as indicated on Drawings.
        b. Install sufficient 4-inch conduits from telecom rooms into hallway (minimum of 2) with protective insulating bushings, cable spillway or specially designed cable tray sections, with appropriate firestop materials.

P. Properly terminate all cables at camera locations and distribution racks. Permanently identify all cables in pullboxes, transition points, and termination points by affixing pre-marked self-adhesive wraps similar to Brady “B-500+ Plastic Cloth Markers.”

Q. Tight 90-degree bends are unacceptable, and use of plastic “cinch-type” tie-wraps are not permitted, in order to prevent damage to cable jacket and compromise the cable’s electrical or optical characteristics.

R. Cable bundles shall be neatly routed with a service loop to provide 10 feet of slack at the cross-connect end and as noted in the drawings. Cable bundles shall be secured using only black Velcro cable wraps.

S. 10 feet of service loop shall be provided in the ceiling at each location. Contractor shall not secure service loop in coils, but route in such a manner as to minimize EMI.

T. Determine allowable cable proximity to other electrical power sources of 480 Volts or less using TIA/EIA-569A “Cabling Pathway Standard” for UTP cable separations from sources of EMI.

U. Install all cable in accordance with National, state and local codes and TIA/EIA Standards, and BICSI methods.

    1. Follow manufacturer’s guidelines and requirements for all cable termination.

2. Identification: Provide permanent identification labels for patch panels, access panels and entrance facilities.

V. Permanently identify all system components following TIA/EIA-606A “Administration Standard for Commercial Telecommunications Infrastructure” with identification format:

1. Identification: Provide permanent identification labels for outlets, faceplates and cables.
2. Each individual cable shall be labeled on both ends of cable terminations regardless of cable intended use. Labels must be machine printed with permanent black ink on laminated white label material. Contractors must check with appropriate school district personnel for appropriate labeling scheme. The intended format and labeling material must be approved by the school district technology department before labeling begins.

W. Comply with ANSI/TIA-569-C for pull-box sizing and length of conduit and number of bends between pull points.

X. Install manufactured conduit sweeps and long-radius elbows whenever possible.

Y. Comply with NECA 1, ANSI/TIA-568-C.1 and BICSI ITSIM, Ch. 6, "Cable Termination Practices."

Z. Cables may not be spliced.

AA. Pulling Cable: Comply with BICSI ITSIM, Ch. 4, "Pulling Cable." Monitor cable pull tensions.

BB. Group connecting hardware for cables into separate logical fields.

CC. A pull string shall be installed in all conduits, including those with cables installed. String shall be securely tied off at both ends.

DD. Terminate all conductors; no cable shall contain un-terminated elements. Make terminations only at outlets and terminals.

EE. All cables shall be concealed by all means possible unless shown otherwise on the drawings. Cables concealed within walls shall be installed in electrical metallic tubing (EMT). Cables concealed above suspended ceilings shall be installed in “J” hooks.

FF. All intercommunications system cable runs are to be installed in a neat and clean fashion and shall not rest directly on ceiling tiles, lamp fixtures, etc. Support from any piping/ductwork/ steel structure is strictly prohibited.

GG. All intercommunications system cabling shall be supported by: separate 4” j-hooks spaced a maximum of every 4’. Conduit pathways traversing across hard surfaced ceiling spaces are provided by the EC under the base contract. Contractor shall review pathways as shown on plan and coordinate any adjustments before rough-in.

HH. Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures. Cables may not be spliced.

II. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.

JJ. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.

KK. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.

LL. Cold-Weather Installation: Bring cable to room temperature before de-reeling. Heat lamps shall not be used for heating

MM. Pulling Cable: Comply with BICSI ITSIM, Ch. 4, “Pulling Cable.” Monitor cable pull tensions.

NN. Install cabling with horizontal and vertical cable guides in telecommunication spaces with terminating hardware and interconnection equipment.

OO. Cable shall not be run through structural members or be in contact with pipes, ducts, or other potentially damaging items.

3.6 FIRESTOPPING

A. Comply with requirements in Division 07 Section "Penetration Firestopping."

B. Comply with ANSI/TIA-569-C, Annex A, "Firestopping."

C. Comply with BICSI TDMM, "Firestopping Systems" Article.

3.7 GROUNDING

A. Install grounding according to BICSI TDMM, "Grounding, Bonding, and Electrical Protection" Chapter and Division 27 section "Grounding and Bonding for Communication Systems". Refer to the drawings for interconnections and cable sizes.

B. Comply with ANSI-607-B.

3.8 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 Identification.

B. Identify system components, wiring, and cabling complying with ANSI/TIA-606-B. The identification scheme shall be coordinated with the owner prior to any labeling or testing.

C. Contractor shall install HCPSS inventory labels on each piece of equipment. Provide Spread Sheet Listing Room Number, Equipment number, Serial Number, MAC Address, IP Address, HCPSS Inventory Number, Network Connection LLDP information. Provide sample for shop drawing review.

D. Cable and Wire Identification:
   1. Label each cable within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
   2. Label each terminal strip and screw terminal in each cabinet, rack, or panel.
      a. Individually number wiring conductors connected to terminal strips, and identify each cable or wiring group being extended from a panel or cabinet to a building-mounted device shall be identified with name and number of particular devices as shown.
      b. Label each unit and field within distribution racks and frames.
   3. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and connecting hardware.
   4. Both ends of all cables shall be labeled. Labels shall be self-laminating and machine generated. Handwritten labels will not be acceptable.

3.9 TESTING

A. Intrusion Detection and Access Control Systems

   1. Upon completion of work, all parts of the installation shall be tested by the Contractor and demonstrated free of any defects. Preliminary testing will be permitted but shall not be accepted in lieu of obtaining final test results. Final test results shall be accomplished by the use of proper test equipment for the system being tested.
   2. Each device shall be demonstrated to individually alarm and pin point the exact triggered sensor. Any system failing this requirement will be wholly rejected at the contractor’s expense.
   3. All card reading equipment shall be demonstrated to function to manufacturer’s specifications.
   4. Re-terminate and re-test any cables failing end-to-end testing requirements. Replace any faulty cables or termination devices. Remove all defective cables completely from pathways.

3.10 AS-BUILTS

A. All devices shall be shown in their accurate location.

B. All equipment and cables shall be properly identified and labeled.

C. Accurate As-builts shall be provided by the contractor in hardcopy and electronic CAD format prior to project completion and inspection. PDFs inserted into CAD documents are not acceptable.

1. 3 copies of electronic (CAD) drawings shall be distributed on appropriate media: 1 to construction management, 1 to designers and 1 to the school district.
2. 3 hard copies of CAD drawings shall be plotted on full size sheets and test results of every installed cable have been given to the construction management for appropriate distribution.

D. As-builts by contractor must include parts lists and wiring diagrams that clearly indicate all equipment, locations, wiring and connections.

E. Owner's manuals shall be supplied as part of the as-built documentation.

3.11 DEMONSTRATION AND TRAINING

A. Installing contractor shall provide a minimum of 16 hours of factory training on system operation and managements as part of their scope of work.

1. Additional hours shall be provided on a time and materials basis at the request of the Owner.

B. Training shall include:

1. Service Manuals, programming at the headend, trouble shooting, servicing, configurations and all adaptations prior to turnover of the initial phase of the project.

C. Installing contractor shall provide a video recording on a standard format DVD to the owner which includes training sessions.

D. All aspects of the systems must be demonstrated for the owner at the time of training

E. A minimum of 24 hours of training shall be provided.

F. Training shall be video and audio recorder for the owner and turned over to the owner at acceptance.

G. Additional training, beyond the initial time shall be provided for the owner at their request on an hourly rate basis.

3.12 ACCEPTANCE

A. Contractors work shall be considered complete after the following conditions have been met:

1. A school district technology representative has successfully tested the "LIVE" system.
2. As-built documentation has been provided and approved.
3. Cable installation is complete and all cable runs have been tested and documented to be installed according to specifications and drawings.
4. Equipment installation is complete and all functions have been tested and documented to function as designed and per the manufacturer's recommendations.
5. All punch list items have been reconciled.
6. All disturbed ceiling panels, fire stopping materials, covers, etc. have been properly reinstalled.
7. All materials and trash have been removed from the site.
8. A 2-Year Installers warranty has been given to a school district Technology representative.
9. Submit Manufacturers Extended Warranty Application.

3.13 ADJUSTING

A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two (2) 8-hour visits to Project during other-than-normal occupancy hours for this purpose.

END OF SECTION 281000

DIVISION 28 - SECURITY

SECTION 282000 – VIDEO SURVEILLANCE SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The Contractor is directed to examine each and every section of these specifications, all drawings relating to the Contract Documents, any and all Addenda, etc., for work described elsewhere that may relate to the provision of the work described herein. Materials and performance requirements are specified elsewhere herein that relate to these systems.

C. All layout and installation of communications infrastructure shall be in accordance with ANSI / TIA 568 and the BICSI TDMM.

D. Each Contractor's attention is directed to Section 260501 - General Provisions, Electrical, and all other Contract Documents as they apply to his work.

1.2 SUMMARY

A. Section Includes:

1. Video Surveillance Cabling, Cameras and Equipment.
2. All materials, terminations, equipment, labeling and associated cable performance testing

1.3 DEFINITIONS

1.4 CCTV and video surveillance refer to the same system and are used interchangeably. Terms refer to cabling system included in this specification section.

1.5 SYSTEM DESCRIPTION

A. Design Requirements

1. Provide labor, materials, equipment, services and operations required for complete installation of NVR based IP camera CCTV System.

B. Performance Requirements

1. Comply with applicable requirements in Local, State and Federal Codes, TIA/EIA Standards, and BICSI methodology.
2. Specified cabling system derived from recommendations in approved telecommunications industry codes, standards and methods, including the following documents:

a. Articles 250, 725, 760, 770, 800,810 and 820 of the current National Electrical Code.
b. ANSI/TIA/EIA-568-B.1: Commercial Building Telecommunications Cabling Standard Part 1 – General Requirements
c. ANSI/TIA/EIA-568-B.2: Commercial Building Telecommunications Cabling Standard Part 2 – Balanced Twisted Pair Cabling Components and subsections.
d. ANSI/TIA/EIA-568-B.3: Commercial Building Telecommunications Cabling Standard Part 3 – Optical Fiber Cabling Components
e. ANSI/TIA/EIA-569-A: Commercial Building Standard for Telecommunications Pathways and Spaces
f. ANSI/TIA/EIA-606: Administration Standard for Telecommunications Infrastructure of Commercial Buildings
g. ANSI/TIA/EIA-607: Commercial Building Grounding and Bonding Requirements for Telecommunications
h. ANSI/TIA/EIA-758: Customer-Owned Outside Plant Telecommunications Cabling Standard

i. BICSI Telecommunications Distribution Methods Manual (TDMM), Latest Edition
j. National Fire Protection Agency (NFPA-70): National Electrical Code (NEC)

C. Regulatory requirements

1. All work will conform to the National Electric Code and applicable local ordinances.

1.6 SUBMITTALS

A. Submittals shall be in compliance with SUBMITTAL PROCEDURES specification section.

B. Product Data: Submit manufacturer's product literature, technical specifications and similar information for the following items demonstrating compliance with the specified requirements.

1. Video Recorder Units (NVRs)
2. Cameras
3. Copper cable, patch cables and termination devices.
   Inner duct and accessories.
4. Wiring diagrams.
5. Sample of each cable test report.

C. Samples: Provide samples of assemblies and connections as described below, prior to installation, for approval by designer.

1. CCTV cables and connections – Submit samples of cables and terminations to be provided including following components and characteristics:

   a. Provide all components as specified by design consultant.

D. Shop Drawings shall include the following items but are not limited to:

1. Wire types
2. System wiring diagrams showing all connections
3. Drawings including all equipment locations
4. Associated equipment specifications and cut sheets
5. Product data including catalog cut sheets, manufacturer's default specifications, user operation guides and a bill of materials

E. Quality Control Submittal

1. Test Reports: Submit complete sample test data and reports with exact labels used on cables and patch panels
1. Submit the name, address and telephone number of the nearest fully equipped service organization.
2. Submit a certificate of completion of installation and service training from the system manufacturer.
3. Certificates

   a. Manufacturer Certification: Submit certification from manufacturer of products to be installed under this contract certifying that Installer is authorized by manufacturer to install specified products.
   b. Installer Experience Listing: Submit list of at least 5 completed projects as specified below in "Quality Assurance – Qualifications – Installer."

F. Contract Closeout Submittal: Comply with requirements of Division 0, including submission of operating and maintenance instructions as item in "Operation and Maintenance Data" manual described in that Section.

1.7 AS-BUILTS

A. All systems must have as-built drawings provided in electronic CAD and hardcopy format that clearly show all system components, wiring schemes and system interconnections.

1.8 QUALITY ASSURANCE

A. All Work shall be installed in a first class, neat and workmanlike manner by skilled Technicians. The quality of the workmanship shall be subject to inspection and approval by authorized HCPSS personnel. Any work found to be of inferior quality and/or workmanship shall be replaced and/or reworked until the approval of HCPSS is obtained.

B. Qualifications

1. Installer

a. Must be qualified to cable, terminate, install and program the equipment specified in this Section, certified by manufacturer of products to be installed, and completed at least 5 installations of similar size, nature and complexity as specified for this project.

C. Conditions for Consideration of "Or Equal" Products: Where products are specified by name and accompanied by the term "or equal", the proposed "or equal" product will be considered when the following conditions are satisfied. If all the following conditions are not satisfied, design consultant will return requests without action, except to record noncompliance with these requirements:

1. Proposed product does not require extensive revisions to the contract documents.
2. With the exception of the product name or number and manufacturer's name, proposed product conforms with requirements indicated on the drawings and in the specifications in every respect and will produce indicated results.
3. Proposed product is fully documented and properly submitted.
4. Proposed product has received necessary approvals of authorities having jurisdiction.
5. Proposed product is compatible with AND has been coordinated with other portions of the work.
6. Proposed product provides specified warranty.
7. If proposed product involves more than one contractor, proposed product has been coordinated with other portions of the work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
8. Submission is accompanied with detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
9. Submission is accompanied with a list of similar installations for completed projects with project names and addresses and names and addresses of design consultants and authorities, if requested.
10. Submission is accompanied with proposed products manufacturer signed written statement on manufacturer's letterhead, certifying that manufacturer complies with requirements in the contract documents.

1.9 SINGLE SOURCE RESPONSIBILITY AND OBSOLETE EQUIPMENT

A. Except where specifically noted otherwise, all equipment supplied by the contractor shall be the standard product of a single manufacturer of known reputation and experience in the industry. Only equipment, components and accessories in current production for at least five years beyond the completion date of this system shall be used and installed. Any equipment found to be obsolete or not in future production will be removed and replaced at contractor's expense.

1.10 CONTRACTOR QUALIFICATIONS AND QUALITY ASSURANCE

A. The installation contractor shall be an established communications and electronics contractor that has had and currently maintains a locally run and operated business for at least five years. Further this contractor shall have a minimum of 5 years' experience in the specific installation and application of video surveillance systems.

B. The installation contractor shall show satisfactory evidence, upon request, that it maintains a fully equipped service organization capable of furnishing adequate inspection and service to the equipment and materials installed.

1.11 WARRANTY

A. Provide manufacturer's system warranty against electrical or mechanical defects for 2 years from date of final acceptance.

1. System Certification: Upon successful completion of the installation and subsequent inspection, the Authority shall be provided with a numbered certificate, from the manufacturing company, registering the installation.

1.12 TRAINING

A. Installing contractor shall provide a minimum of 24 hours of factory training on system operation and managements as part of their scope of work.

1. Additional hours shall be provided on a time and materials basis at the request of the owner.

B. Training shall include:

1. Service Manuals, programming at the headend, trouble shooting, servicing, configurations and all adaptations prior to turnover of the initial phase of the project.

C. Installing contractor shall provide a video recording on a standard format DVD to the owner which includes training sessions.

1.13 OPERATION AND MAINTENANCE MANUALS

A. Installing contractor shall provide a minimum of two hardcopy and one electronic copy of all operation and maintenance manuals to the owner at project completion.

PART 2 - PRODUCTS

2.1 Materials

A. Remote Access

1. The system shall provide a method for users to remotely access the system and perform all of the functions possible on an operator terminal by LAN (IP). Provide Cat 6 cable and associated connections to school's data network. Install associated manufacturer's system software on all administrative and custodial office computers (pc's) for controlling and monitoring system. Turn over software disc to owner after installations.

B. General

1. All materials, equipment, accessories, devices and other facilities for the CCTV Systems shall be new, best suited for its intended use and shall conform to applicable and recognized standards for their use. All equipment shall be the standard cataloged products of the manufacturers shown.

C. The video surveillance system basis-of-design is Avigilon

1. No Substitutions

D. Application Software: Avigilon

E. Recording Equipment (Network Video Recorders): Avigilon HD NVR4 Premium

1. Drive Configuration:

a. Video Storage: Up to 18 x large form factor near-line SAS hard disk drives, hot-swappable, RAID 6.
b. Operating System: (2) M.2 SSD drives, RAID 1.

2. Storage Capacity: 64 TB when configured with RAID 6.
3. Storage Capacity: 96 TB when configured with RAID 6.
4. Storage Capacity: 128 TB when configured with RAID 6.

5. Storage Capacity: 157 TB when configured with RAID 6.
6. Operating System: Microsoft Windows Server 2016.
7. Processor: Intel Xeon.
8. RAM: 32GB DDR4.
9. Networking: (2) 10GB Ethernet SFP+ ports and (2) 1GB Ethernet RJ-45 ports (1000Base-T).
10. Power Supply: (2) 80 plus Titanium power supplies configured to allow swapping without the need
11. to power down.
12. Video Output: VGA.
13. Mounting: 2U rack mount chassis.
14. Operational Range:

    a. Temperature: 10 degrees C to 35 degrees C [50F to 95F].
    b. Relative Humidity: 10–80 percent (non-condensing).
    c. Altitude: 3048 meters [10,000 ft].

F. Switching Equipment. Provide the following equipment/quantities, as required, for a complete and operational system:

1. Aruba Switch 2930M
2. Aruba 3810M/2930M 4 SFP+ MACsec Module
3. Aruba 2930M 2-port Stacking Module
4. Aruba X372 54VDC 1050W PS
5. Aruba 2920/2930M 1M Stacking Cable
6. HPE SFP+ LRM

G. 16 Channel Decoder

7. Crestron NVX

H. Video Cameras:

1. In-Ceiling Indoor Dome: Avigilon 4.0C-H5A-DC1-IR
2. Surface Mount Indoor Dome: Avigilon 4.0C-H5A-D1-IR
3. Surface Mount Outdoor Dome: Avigilon 2.0C-H5A-DO1-IR
4. Surface Mount Outdoor Dome Hi-Res: Avigilon 6.0C-H5A-DO1-IR
5. Pendant Mount Outdoor Dome: 4.0C-H5A-DP1-IR
6. Pendant Mount Outdoor Dome Hi-Res: 8.0C-H5A-DP1-IR
7. Stadium Camera: Avigilon 16L-H4PRO with LEF163528CA2 Lenses and wall mount vented enclosure.
8. Concessions Camera: Avigilon 24C-H4A-3MH-270 with IR Ring and Corner Mount.

I. Cabling:

1. Acceptable manufacturers: Belden, Berk-Tek, Coleman, General Cable Technologies, Mohawk/CDT, and West Penn Wire/CDT.
2. NFPA 70, Type CMP plenum rated per manufacturer's recommendations.
3. Unshielded twisted pair (UTP) camera cabling: Category 6, plenum rated. See Section 271000 for acceptable cable.
4. MM OM4 Fiber Backbone in 6 Strands, plenum rated. See Section 270610 for acceptable cable.
5. All wiring shall be concealed. No surface metal raceway shall be used unless approved by owner, and if approved, shall be painted to match adjacent wall color.

J. Patch Panels

1. Cat 6 UTP
2. Fiber Patch Panes
3. See Section 270610 for acceptable equipment.

K. Accessories:

1. Surge protection: DITEK Corporation or approved equal.
2. Uninterruptible power supply (UPS) for recording equipment: APC or approved equal.
   a. APC 2200 VAC UPS with L6-20p

L. CPU

3. Dell Precision 3431 Workstation

   a. Intel Core i(-9900, 8 Core HT, 16 MB Cache, 3.1 GHz, 5.0 GHZ Turbo w/UHD Graphics 630)
   b. Windows107 Professional
   c. 32 GB, 2133 MHZ DDR64 Memory
   d. 1 TB SSD
   e. NVIDIA Quadro P1000, 4GB
   f. DVD-RW
   g. Multiple monitor outputs. Provide total of 4 to support operation of Avigilon client software operation.

M. Monitors

4. Commercial Grade Color units designed for continuous operation.
5. Provide one 17” flat panel color monitor in CCTV equipment rack for connection to digital video recorder. Pelco 400 series flat panel, TFT LCD monitor with rack mount kit
6. Provide two (2) 42” UHD, LG 42LX53OS flat panel color monitors with wall mounts in the main office area. Mounting locations shall be reviewed with HCPSS building services prior to rough-in.
7. Provide one (1) 32”, UHD NEC V323-3 flat panel color monitor with wall mount in the principal’s office. Mounting locations shall be reviewed with HCPSS building services prior to rough-in.
8. Mount shall be similar to Peerless SmartMount and include all parts for a complete installation. Mounting locations shall be reviewed with HCPSS building services prior to rough-in.
9. Monitors shall be hardwired via HDMI or display port to PC workstation.
10. Electrical: 120-Volt ac, 60 Hz.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Examine conditions under which CCTV cabling and equipment and related components are to be installed in coordination with Installer of materials and components specified in this section and notify affected prime contractors and design consultant in writing of any conditions detrimental to proper and timely installation. Do not proceed with installation until unsatisfactory conditions have been corrected to ensure a safe and timely installation.

B. When Installer confirms conditions as acceptable to ensure proper and timely installation and to ensure requirements for applicable warranty or guarantee can be satisfied, submit to design consultant written confirmation from applicable Installer. Failure to submit written confirmation and subsequent installation will be assumed to indicate conditions are acceptable to Installer.

C. Visit Site to identify and become familiar with existing field conditions and specific requirements of each Site.

D. Verify all dimensions in field and confirm condition of existing hardware to be utilized.

E. Confirm space requirements and physical confines of all work areas to ensure that all materials can be installed in indicated spaces.

F. Confirm all device locations and cable pathways and advise design consultant in writing of any discrepancies or issues in design described in Contract Documents.

G. Confirm all outlet locations and cable pathways and advise design consultant in writing of any discrepancies or issues in design described in contract documents.

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

3.2 PREPARATION

A. Protection: Provide adequate protection of equipment and hardware before and after installation.

B. Existing Communications Services: Ensure all telecommunications systems (CCTV, voice, video and data) remain operational throughout the project.

C. Identify any additional outlets, circuits, and wiring at the site not shown on Drawings and interfering with installation of specified equipment.

D. Identify any additional intercom equipment, devices, and wiring at the site not shown on Drawings and interfering with installation of specified equipment.

E. Remove all accessible portions of abandoned communications cabling per NEC 800.52. Tag all communications cabling not terminated at both ends but retained for future phases.

3.3 WIRING METHODS

A. Wiring Method: Install cables completely within raceways and cable trays. Conceal raceway except in unfinished spaces.

1. Complete with requirements for raceways and boxes specified in Division 26 Sections "Raceway and Fittings for Electrical Systems” and “Cabinets, Outlet Boxes, and Pull Boxes for Electrical Systems”.
2. Complete with requirements for cable trays specified in Division 27 Section "Cable Trays for Communication Systems".

B. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

3.4 INSTALLATION

A. Provide and install all components necessary to install complete CCTV system, including (but is not limited to) cable, connectors, patch panels, etc. Cable runs shall be factory terminated. Splicing of any cable is prohibited.

B. Cable runs shall be continuous and unbroken from end to end. Splicing of any LAN, or coaxial video distribution cable is prohibited.

C. Loosely bundle all cables and support from structure at unequal intervals from 3 to 4 feet with J-hooks.

D. Do not violate manufacturer’s recommended loadings. Leave 30% capacity for future use of pathway.

E. Verify all horizontal cable run lengths prior to installation. Ensure cables do not exceed distances that would degrade the signal transmission requirements

F. Do not support cables from ceiling grid T-Bars, grid wire supports or bridle rings.

G. Do not allow cables to touch ceiling grid.

H. Install cables in EMT in all unfinished or exposed areas

I. Do not secure cables with permanent cable ties. Do not tighten cable bundles in such a way as to cause jacket deformation or damage.

J. Place cables in compliance with TIA/EIA-568.B standards and BICSI recommended methods.

K. Re-terminate and re-test any cables or pairs of cables failing end-to-end testing requirements. Replace any faulty cables/pairs or termination devices. Remove all defective cables completely from pathways.

L. Install all cable in accordance with National, state and local codes and TIA/EIA Standards, and BICSI methods.

1. Follow manufacturer's guidelines and requirements for all cable termination.
2. Follow detail drawings to locate equipment racks and cabinets. Where it is necessary to deviate, to obtain 30-inch clearance between equipment, obtain Design consultant's written approval before mounting cabinet/rack.
3. Ladder-type cable tray shall be affixed 6 inches above all data racks and equipment cabinets, and routed to all points of entry into each telecommunications room.

    a. Include transition to proper height for penetration into hallway or other wall penetration as indicated on Drawings.
    b. Install sufficient 4-inch conduits from telecom rooms into hallway (minimum of 2) with protective insulating bushings, cable spillway or specially designed cable tray sections, with appropriate firestop materials.

M. Properly terminate all cables at camera locations and distribution racks. Permanently identify all cables in pullboxes, transition points, and termination points by affixing pre-marked self-adhesive wraps similar to Brady "B-500+ Plastic Cloth Markers."

N. Tight 90-degree bends are unacceptable, and use of plastic "cinch-type" tie-wraps are not permitted, in order to prevent damage to cable jacket and compromise the cable's electrical or optical characteristics.

O. Cable bundles shall be neatly routed with a service loop to provide 15 feet of slack at the cross-connect end and as noted in the drawings. Cable bundles shall be secured using only black Velcro cable wraps.

P. 15 feet of service loop shall be provided in the ceiling at each location. Contractor shall not secure service loop in coils, but route in such a manner as to minimize EMI.

Q. Determine allowable cable proximity to other electrical power sources of 480 Volts or less using TIA/EIA-569A "Cabling Pathway Standard" for UTP cable separations from sources of EMI.

R. Permanently identify all system components following TIA/EIA-606A "Administration Standard for Commercial Telecommunications Infrastructure" with identification format:

1. Identification: Provide permanent identification labels for outlets, faceplates and cables.
2. Each individual cable shall be labeled on both ends of cable terminations regardless of cable intended use. Labels must be machine printed with permanent black ink on laminated white label material. Contractors must check with appropriate school district personnel for appropriate labeling scheme. The intended format and labeling material must be approved by the school district technology department before labeling begins.

S. Comply with ANSI/TIA-569-C for pull-box sizing and length of conduit and number of bends between pull points.

T. Install manufactured conduit sweeps and long-radius elbows whenever possible.

U. Comply with NECA 1, ANSI/TIA-568-C.1 and BICSI ITSIM, Ch. 6, "Cable Termination Practices."

V. Group connecting hardware for cables into separate logical fields.

W. A pull string shall be installed in all conduits, including those with cables installed. String shall be securely tied off at both ends.

X. Terminate all conductors; no cable shall contain un-terminated elements. Make terminations only at outlets and terminals.

Y. All cables shall be concealed by all means possible unless shown otherwise on the drawings. Cables concealed within walls shall be installed in electrical metallic tubing (EMT). Cables concealed above suspended ceilings shall be installed in “J” hooks.

Z. All intercommunications system cable runs are to be installed in a neat and clean fashion and shall not rest directly on ceiling tiles, lamp fixtures, etc. Support from any piping/ductwork/ steel structure is strictly prohibited.

AA. All intercommunications system cabling shall be supported by: separate 4” j-hooks spaced a maximum of every 4’. Conduit pathways traversing across hard surfaced ceiling spaces are provided by the EC under the base contract. Contractor shall review pathways as shown on plan and coordinate any adjustments before rough-in.

BB. Cables may not be spliced.

CC. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.

DD. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.

EE. Do not install bruised, kinked, scored, deformed, or abraded cable. Remove and discard cable if damaged during installation and replace it with new cable.

FF. Cold-Weather Installation: Bring cable to room temperature before de-reeling. Heat lamps shall not be used for heating

GG. Pulling Cable: Comply with BICSI ITSIM, Ch. 4, “Pulling Cable.” Monitor cable pull tensions.

HH. Install cabling with horizontal and vertical cable guides in telecommunication spaces with terminating hardware and interconnection equipment.

II. Cable shall not be in contact with pipes, ducts, or other potentially damaging items.

JJ. Separation: Cables shall be separated from power as follows: 6” from light fixtures, 12” from power conduits and minimum 48” from motors/ transformers.

3.5 FIRESTOPPING

A. Comply with requirements in Division 07 Section "Penetration Firestopping."

B. Comply with ANSI/TIA-569-C, Annex A, "Firestopping."

C. Comply with BICSI TDMM, "Firestopping Systems" Article.

3.6 GROUNDING

A. Install grounding according to BICSI TDMM, "Grounding, Bonding, and Electrical Protection" Chapter and Division 27 section "Grounding and Bonding for Communication Systems". Refer to the drawings for interconnections and cable sizes.

B. Comply with ANSI-607-B.

3.7 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 Identification.

B. Identify system components, wiring, and cabling complying with ANSI/TIA-606-B. The identification scheme shall be coordinated with the owner prior to any labeling or testing.

C. Contractor shall install HCPSS inventory labels on each piece of equipment. Provide Spread Sheet Listing Room Number, Equipment number, Serial Number, MAC Address, IP Address, HCPSS Inventory Number, Network Connection LLDP information. Provide sample for shop drawing review.

D. Cable and Wire Identification:

1. Label each cable within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
2. Label each terminal strip and screw terminal in each cabinet, rack, or panel.
    a. Individually number wiring conductors connected to terminal strips, and identify each cable or wiring group being extended from a panel or cabinet to a building-mounted device shall be identified with name and number of particular devices as shown.
    b. Label each unit and field within distribution racks and frames.
3. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and connecting hardware.
4. Both ends of all cables shall be labeled. Labels shall be self-laminating and machine generated. Handwritten labels will not be acceptable.

3.8 TESTING

A. CCTV System

1. Upon completion of work, all parts of the installation shall be tested by the Contractor and demonstrated free of any defects. Preliminary testing will be permitted but shall not be accepted in lieu of obtaining final test results. Final test results shall be accomplished by the use of proper test equipment for the system being tested.
2. Re-terminate and re-test any cables failing end-to-end testing requirements. Replace any faulty cables or termination devices. Remove all defective cables completely from pathways.

3.9 AS-BUILTS

A. Accurate As-builts shall be provided by the contractor in hardcopy and electronic CAD format prior to project completion and inspection. PDFs inserted into CAD documents are not acceptable.

1. 3 copies of electronic (CAD) drawings shall be distributed on appropriate media: 1 to construction management, 1 to designers and 1 to the school district.
2. 3 hard copies of CAD drawings shall be plotted on full size sheets and test results of every installed cable have been given to the construction management for appropriate distribution.

B. As-builts by contractor must include parts lists and wiring diagrams that clearly indicate all equipment, locations, wiring and connections.

C. Owner’s manuals shall be supplied as part of the as-built documentation.

3.10 DEMONSTRATION AND TRAINING

A. Installing contractor shall provide a minimum of 16 hours of factory training on system operation and managements as part of their scope of work.

1. Additional hours shall be provided on a time and materials basis at the request of the owner.

B. Training shall include:

1. Service Manuals, programming at the headend, trouble shooting, servicing, configurations and all adaptations prior to turnover of the initial phase of the project.

C. Installing contractor shall provide a video recording on a standard format DVD to the owner which includes training sessions.

D. All aspects of the systems must be demonstrated for the owner at the time of training

E. A minimum of 16 hours of training shall be provided.

F. Training shall be video and audio recorder for the owner and turned over to the owner at acceptance.

3.11 ACCEPTANCE

A. Contractors work shall be considered complete after the following conditions have been met:

1. A school district technology representative has successfully tested the “LIVE” system.
2. As-built documentation has been provided and approved.
3. Cable installation is complete and all cable runs have been tested and documented to be installed according to specifications and drawings.
4. Equipment installation is complete and all functions have been tested and documented to function as designed and per the manufacturer’s recommendations.
5. All punch list items have been reconciled.
6. All disturbed ceiling panels, fire stopping materials, covers, etc. have been properly reinstalled.
7. All materials and trash have been removed from the site.
8. A 2-Year Installers warranty has been given to a school district Technology representative.
9. Submit Manufacturers Extended Warranty Application.

3.12 ADJUSTING

A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two (2) 8 hour visits to Project during other-than-normal occupancy hours for this purpose.

END OF SECTION 282000