

ADDENDUM NO. 3

TO

POLYTECH HIGH SCHOOL
RENOVATIONS AND ADDITIONS
BID PACKAGE 'B'

This addendum is hereby made part of the Project Manual and Drawings dated 9 November 2012.

The Project Manual and Drawings shall be supplemented or amended as specified herein.

This Addendum contains changes to the requirement of the Project Manual. Such changes shall be incorporated into the Contract Documents and shall apply to work with the same meaning and force as if they had been included in the original Documents. Whenever this Addendum modifies a portion of a paragraph of the Project Manual, the remainder of the paragraph affected shall remain in force. Added information is shown as **Bold**, deleted information is shown as ~~striketrough~~.

This Addendum contains changes to the requirement of the Drawings. Such changes shall be incorporated into the Contract Documents and shall apply to work with the same meaning and force as if they had been included in the original Documents. Whenever this Addendum modifies a portion of any drawing, the remainder of the drawing affected shall remain in force. Added, deleted or revised information is shown as "clouded".

The conditions and terms of the basic Contract Documents shall govern work unless otherwise described in this Addendum. Whenever the conditions of work, and the quality or quantity of materials, or workmanship are not fully described in this Addendum, the conditions of work included in the basic Contract Documents for similar items of work shall apply to the work described in this Addendum.

If no similar items of work are included in the basic Contract Document, the best quality of material and workmanship shall apply and all work shall be subject to the written acceptance of the Architect.

THE BID OPENING DATE WAS CHANGED. ALL BIDS ARE DUE AT THE POLYTECH SCHOOL DISTRICT OFFICE, NO LATER THEN 2:00 PM ON WEDNESDAY, 12 DECEMBER 2012. DO NOT DELIVER YOUR PROPOSALS TO THE POLYTECH HIGH SCHOOL OFFICE.

BIDDERS ARE ADVISED THAT THE ONLY RELIABLE SOURCE OF DOCUMENTS FOR THIS SOLICITATION IS THE EDIS FTP SITE. BIDDERS THAT RELY ON INFORMATION PUBLISHED ON ANY OTHER WEBSITES DO SO AT THEIR OWN RISK.

Addendum No. 3 – Consists of the following:

I. Responses to Bidders' Questions

II. Revisions to Project Manual/Specifications:

Section 000115 List of Drawings
Section 011100 Summary of Work
Section 096813 Tile Carpeting
Section 097623 Resinous Flooring
Section 116143 Theater and Stage Equipment
Section 230760 Air Handling Equipment
Section 260721 Fire Alarm and Detection Systems

III. Revisions to Drawings

PA1.2 MISC. RENOVATIONS PLUMBING
PB1.2 PLUMBING ROOF PLAN
PC1.1 FIRST FLOOR PLUMBING PLAN
PD2.1 PLUMBING PLAN AREA 'B'
PUC1.1 ENVIRONMENTAL SCIENCE BELOW SLAB PLUMBING
FP1.2 EXISTING BLDG. AREA "A" ADDIT. B & D FIRE PROTECTION
M1.4 DETAILS MECHANICAL
E1.3 SINGLE LINE DIAGRAM & LEGEND ELECTRICAL
E1.4 SINGLE LINE DIAGRAM & LEGEND ELECTRICAL
DEA1.1 CORRIDOR DEMOLITION ELECTRICAL
DEA1.2 WEIGHT ROOM & LOCKERS DEMOLITION ELECTRICAL
DEA1.3 RADIO/TV & MEDICAL DEMOLITION ELECTRICAL
EA1.1 EXIST. CORRIDOR ELECTRICAL
EA1.2 WEIGHT ROOM & LOCKERS ELECTRICAL
EA1.3 RADIO/TV & MEDICAL ELECTRICAL
E300 SITE UTILITY PLAN ELECTRICAL
EPD1.1 POWER PLAN AREA "B"
EPD1.2 POWER PLAN AREA "B"
EPD1.3 POWER PLAN AREA "B"
ELD1.2 LIGHTING PLAN AREA "B"

I. RESPONSES TO BIDDERS' QUESTIONS

A copy of the responses to RFI's 12, 30, 35, 39, 40, 43, 45, 46, 53, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66 and 67 are attached hereto.

II. REVISIONS TO PROJECT MANUAL/SPECIFICATIONS

A. Section 000115 List of Drawings

1. REVISE the Latest Revision Date for drawings PA1.2, PB1.2, PC1.1, PD2.1, PUC1.1, FP1.2, M1.4, E1.3, E1.4, DEA1.1, DEA1.2, DEA1.3, EA1.1, EA1.2, EA1.3, E300, EPD1.1, EPD1.2, EPD1.3, and ELD1.2 to read 7 Dec 12.

B. Section 011100 Summary of Work

1. Contract B-3 Masonry

- a. ADD the following NEW items after item 3-27 on page 011100-22:

"3-28 Patch existing CMU walls in areas AC, AG, AW, AM, where demolition was performed as shown on the architectural, mechanical, plumbing and electrical drawings."

2. Contract B-4 Structural Steel and Miscellaneous Metals

- a. ADD the following NEW item after item 4-30 on page 011100-25:

"4-31 Provide patching of existing metal roof deck where existing mechanical and plumbing equipment is being removed. Also patch the existing metal roof deck where new mechanical equipment, frames, post, etc. are being installed."

3. Contract B-5 Carpentry and General Work.

- a. DELETE item 5-17 on page 011100-27 and INSERT revised item:

"5-17 Provide interior standing and running trim and base, stair treads and risers at stage, wood paneling system, interior wood handrails **and aluminum brackets**, wood shelving, and clothes rod. **These items shall be shop primed, stained, sealed and/or finished per the specifications.**"

- b. DELETE item 5-42 on page 011100-29 and INSERT revised item:

"5-42. Provide scaffolding in the auditorium for use by all contractors. The scaffolding will be setup in 2 stages. The first stage is full height to allow for the installation of mechanical, plumbing, electrical, and fire protection. **The scaffolding will be within 6 feet of the bottom of the roof joists.** The second stage is to lower

the scaffolding to allow for the installation of the acoustical ceilings, lights, and audio visual. **The scaffolding will be just below the bottom of the lowest acoustical ceiling cloud. Access to the sidewalls of the auditorium, while the scaffold is installed, will be required"**

4. Contract B-10 Caulking and Sealants
 - a. ADD the following NEW items after item 10-1.h. on page 011100-40:

"i. Caulk between the fascia and brick per details 1 & 2 on AC5.1, detail 1 on AC5.3, and details 1 & 4 on AD5.2.

j. Remove the existing caulk and re-caulk the perimeter of the existing stucco. Caulk where the stucco was patched."
 5. Contract B-11 Paint and Wall Finishes
 - a. DELETE item 11-3 on page 011100-42. The priming, staining, sealing and finishing is to be shop applied by the millwork fabricator."
 6. Contract B-17 Stage Rigging and Equipment
 - a. DELETE item 17-5 on page 011100-51. The front of house motorized hoist and light bar are to be provided by the A-V contractor under Contract B-21.
 7. Contract B-19 Mechanical and Plumbing
 - a. ADD the following NEW items after item 19-46 on page 011100-56:

"19-47 This contractor will be responsible for the demolishing and opening up the existing walls in order to perform the work shown on the mechanical and plumbing drawings."

"19-48 Provide for freezing of the existing pipes to make connections to the existing piping systems. Assume that the existing valves will not operate."
 8. Contract B-21 Electrical, Fire Alarm & Special Systems.
 - a. ADD the following sentence to the end of item 21-24 on page 011100-61.

"Provide front-of-house motorized hoist and light bar."
 - b. DELETE item 21-26 on page 011100-61 and INSERT revised item:

"21-26 Provide automatic transfer switch to be connected to the existing generator."
- C. **Section 096813 Tile Carpeting** - REVISE this section as follows and annotate as Addendum No.2, dated 5 December 2012.

1. REPLACE paragraph 2.1.B.1.b with the following:

“b. Colors: 90585 Four Sided with Custom Accent Color: Shaw Contract, Tru Colours,
No. 68851 Regal Red.

- D. Section 097623 Resinous Flooring**
 1. ADD approved manufacturer after paragraph 2.1.A.3 on page 096723-6

“4. Durex Coverings Inc.”

- E. Section 116143 Theater and Stage Equipment**
 1. DELETE paragraph 1.1.A.7 on page 116143-1. The front of house motorized hoist and light bar are to be provided by the A-V contractor under Contract B-21.
 2. ADD approved manufacturer and installer after paragraph 2.1.A.4 on page 116143-5

“5. Janson Industries and JR Clancy.”

- F. Section 133413 Greenhouse & Related Accessories - REVISE** this section as follows and annotate as Addendum No.3, dated 10 December 2012. The section was revised as follows:
 1. ADD approved manufacturer after paragraph 2.01.D on page 133413-2:

“D. Rough Brothers, Inc., Cincinnati, OH, Telephone: 513.242.0310.”

- G. Section 230760 Air Handling Equipment - REVISE** this section as follows and annotate as Addendum No.3, dated 10 December 2012. The section was revised as follows:
 1. Page 230760-5, Paragraph 2.2.P: Add Lennox to the list of Manufacturers.
 2. Page 230760-12, Paragraph 2.4.K: Add Lennox to the list of Manufacturers.

- H. Section 260721 Fire Alarm and Detection Systems - DELETE** this section in its entirety and INSERT revised Section 260721, annotated Addendum No. 3. The section was revised as follows:
 1. Page 260721-1, Paragraph 1.1.A: Delete next to last sentence in paragraph, “The specified panels’ firmware must be enabled to support 16 panels and is to be provided by a Silent Knight “Select” certified Dealer.”
 2. Page 260721-1, Paragraph 1.1.B: Revise to read,

“B. It is the intent of these drawings, schedules and specifications to outline the scope of work required to furnish and install a complete and operating fire alarm and detection

system for the Polytech School District facility. Existing areas of the facility are not documented in the drawings. It shall be the responsibility of the Contractor to provide in their bid the replacement of all existing devices indicated and not indicated in their bid."

3. Page 260721-2, Paragraph 1.3.A: Revise to read,

"A. The electrical contractor shall furnish the services of a manufacturer factory trained and certified representative, experienced in the installation, operation, maintenance and service of the type of system being furnished. The representative shall be licensed in the State of Delaware. The representative shall provide, with the Bid, a copy of their certification provide by Silent Knight for the Provider/Installer of the fire alarm system. He/she shall supervise the installation, software documentation, adjustment, preliminary testing, final testing and certification of the system. The representative shall furnish the required instruction to the owner's personnel in the system's programming, operation and maintenance."

4. Page 260721-5, Paragraph 2.1.B.2: Add Phone Number for B-Safe Security: (302) 230-7108.
5. Page 260721-5, Paragraph 2.1.B.: Add Anaconda Protective Concepts.

"3) Silent Knight
Anaconda Protective Concepts
1520 Porter Road
Bear, Delaware 19701
(302) 834-1125"

III. REVISIONS TO DRAWINGS

A. Drawing PA1.2, "MISC. RENOVATIONS PLUMBING"

1. Add Partial Roof Plan. See revised Drawing PA1.2.
2. Add F-45 Gas Pressure Regulator to RTU-A4. See revised Drawing PA1.2.

B. Drawing PB1.2, "PLUMBING ROOF PLAN"

1. Add tie-in to 1-1/4" gas pipe. See revised Drawing PB1.2.
2. Add Rooftop Gas Piping to RTU-B1 and RTU-B2. See revised Drawing PB1.2.
3. Add F-44 Gas Pressure Regulators. See revised Drawing PB1.2.
4. Add Note. See revised Drawing PB1.2.
5. Add Gas shut-off valves. See revised Drawing PB1.2.

C. Drawing PC1.1, "FIRST FLOOR PLUMBING PLAN"

1. Add tie in to 1-1/4" gas pipe. See revised Drawing PC1.1.
 2. Add Rooftop Gas Piping to RTU-C1. See revised Drawing PC1.1.
 3. Add F-46 Gas Pressure Regulator. See revised Drawing PC1.1.
 4. Add Note. See revised Drawing PC1.1.
 5. Add Gas Shut off valves. See revised Drawing PC1.1.
 6. Revise Note 16. See revised Drawing PC1.1.
- D. Drawing PD2.1, "PLUMBING PLAN AREA 'B'"
1. Add tie in to 1-1/4" gas pipe. See revised Drawing PD2.1.
 2. Add Roof Top Gas Piping. See revised Drawing PD2.1.
 3. Add notes. See revised Drawing PD2.1.
 4. Add Gas Shut-off valve. See revised Drawing PD2.1.
- E. Drawing PUC1.1, "ENVIRONMENTAL SCIENCE BELOW SLAB PLUMBING"
1. Revise Note 16. See revised Drawing PUC1.1.
- F. Drawing FP1.2, "EXISTING BLDG. AREA "A" ADDIT. B & D FIRE PROTECTION"
1. Add Note for Existing Sprinklers. See revised Drawing FP1.2.
- G. Drawing M1.4, "DETAILS MECHANICAL"
1. Remove all Seismic details and notes. See revised Drawing M1.4.
- H. Drawing E1.3, "SINGLE LINE DIAGRAM & LEGEND ELECTRICAL"
1. Revise note for ATS-1. See revised Drawing E1.3.
- I. Drawing E1.4, "SINGLE LINE DIAGRAM & LEGEND ELECTRICAL"
1. Revise the panel schedule for EVAUD and LPAUD. See revised Drawing E1.4.
- J. Drawing DEA1.1, "CORRIDOR DEMOLITION ELECTRICAL"
1. Revise Fire Alarm Devices and notes. See revised Drawing DEA1.1.
- K. Drawing DEA1.2, "WEIGHT ROOM & LOCKERS DEMOLITION ELECTRICAL"
1. Revise Fire Alarm Devices and notes. See revised Drawing DEA1.2.
- L. Drawing DEA1.3, "RADIO/TV & MEDICAL DEMOLITION ELECTRICAL"

1. Revise Fire Alarm Devices and notes. See revised Drawing DEA1.3.
- M. Drawing EA1.1, "EXIST. CORRIDOR ELECTRICAL"
1. Revise Fire Alarm Devices and notes. See revised Drawing EA1.1.
- N. Drawing EA1.2, "WEIGHT ROOM & LOCKERS ELECTRICAL"
1. Revise Fire Alarm Devices and notes. See revised Drawing EA1.2.
- O. Drawing EA1.3, "RADIO/TV & MEDICAL ELECTRICAL"
1. Revise Fire Alarm Devices and notes. See revised Drawing EA1.3.
- P. Drawing E300, "SITE UTILITY PLAN ELECTRICAL"
1. Revise drawing to show location of ATS-1 and rework for service from transfer switch. See revised Drawing E-300.
- Q. Drawing EPD1.1, "POWER PLAN AREA "B"
1. Revise drawing to show location of ATS-2. See revised Drawing EPD1.1.
- R. Drawing EPD1.2, "POWER PLAN AREA "B"
1. Revise drawing for clarification of type "Y" fixtures. See revised Drawing EPD1.2.
 2. Add power for water heater in room Drama Storage B833. See revised Drawing EPD1.2.
 3. Clarify stage lighting power connections. See revised Drawing EPD1.2.
- S. Drawing EPD1.3, "POWER PLAN AREA "B"
1. Revise drawing to add power for water heater in room Janitor C869. See revised Drawing EPD1.3.
- T. Drawing ELD1.2, "LIGHTING PLAN AREA "B"
1. Add note to FACP "Node 1". See revised Drawing ELD1.2.

END OF ADDENDUM NO. 3



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 12

FROM: CHRISTIAN J. MCCONE DATE: 26 NOV 12

PROJECT: POLYTECH HIGHSCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

1. Please confirm that the sills in detail 13/AA6.2 & 10/AC6.3 are indeed stone and not solid surface. What contract is to provide?
2. Sill detail markers on AB6.1 are all labeled to be on the AA6.x drawings. Please confirm this should be AB6.x drawings
3. Sill detail 13/AB6.2 calls for a composite sill. Does this mean solid surface? What contract is to provide?
4. Elevation 6/AC4.2 item #28 should be #24. Please provide elevation 7/AC4.2 for room 302c
5. TV studio B836 shows elevation markers S-V/AD4.2. There appears to be no casework in this room. Is this mis-marked? The same elevation marker is in ROTC A812
6. Are the Computer Stations in T/AD4.2 by owner?
7. Are the Teacher stations in Y, Z, & FF/AD4.2 by owner?
8. Are the Portable Tables in B-C/AD4.3 by owner?
9. Are the Labvolt Benches in F/AD4.3 by owner?
10. Please provide elevation for sound booth in Auditorium. Detail 2/AD4.7 only shows the low wall, the work area is not shown.
11. There is no "Private" collection for the solid surface material. Please specify a corian pricing group: A, B, C, or D/E

Submitted By: Jason McCoy, Reed Associates Date: 21 NOV 12

RESPONSE:

1. The window sills are to be as specified in section 123661. The sills are assigned to Contract B-6 Manufactured Casework.
2. Window sill detail for Area B is on drawing A6.2 Detail 13
3. See item #1
4. The rolling tables #28 are in the center of the room. Tables #24 are at a distance against wall and under the wall-mounted cabinets #72 at the North and South of 302C. They are not labeled on this Plan. Elevation 7/AC4.2 is shown, but the numbering is confusing. The center row of Interior Elevations on that sheet should be labeled 5, 6, 7; for the Work Room



302C. The bottom row should then be 8, 9, 10, 11; to refer to the Girl's Toilet Room 302G. A revised drawing is included in the addendum.

5. The elevation tag was duplicated in A812 ROTC Classroom and B836 TV Studio. Elevations S-V/AD4.2 are in reference to A812 ROTC.
6. See drawings AD1.7, AD1.13 & AD1.19 for FF&E and related schedule of responsibility.
7. See drawings AD1.7, AD1.13 & AD1.19 for FF&E and related schedule of responsibility.
8. See drawings AD1.7, AD1.13 & AD1.19 for FF&E and related schedule of responsibility.
9. See drawings AD1.7, AD1.13 & AD1.19 for FF&E and related schedule of responsibility.
10. See revised drawing showing detail of the required counter at the FOH sound booth.
11. The Corian pricing group shall be E.

Response By: Harry Pettoni Date: 12/7/12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 30

FROM: CHRISTIAN J. MCCONE DATE: 28 NOV 12

PROJECT: POLYTECH HIGHSCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: 061053 PAGE: _____

REQUEST:

1. Spec section 061053, paragraph 1.3.A calls out:
"Forest Certification: For the following wood products, provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2". FSC certification is usually associated with LEED projects. Are we to assume FSC certification for all wood as described in 061053 is required?
2. Which contract owns the Exterior Gypsum Sheathing? Section 092900 only lists interior.
3. Will Electrical & Plumbing contractor safe off systems for demolition within the building?

Submitted By: Kari Long, John L. Briggs & Co Date: 27 NOV 12

RESPONSE:

1. Forest Certification is not required as this is not a LEED project.
2. Exterior sheathing is assigned to Contract B-9 Metal Framing and Drywall. Specification Section 092900 has been modified. See Addendum No. 2
3. Yes. This has been addressed in the scopes of work. See Addendum No. 1.

Response By: Martin Dusbiber / [Chris McCone](#) Date: 11/29/2012 & [12/6/12](#)



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 35

FROM: CHRISTIAN J. MCCONE DATE: 30 NOV 12

PROJECT: POLYTECH HIGHSCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: 101415 PAGE: _____

REQUEST:

The specs provide a sign schedule, however, there are no drawings or descriptions of the individual sign types. Can you provide an adequate level of detail for bidding?

Submitted By: Ron Anderson, Bayuk Graphic Systems, Inc. Date: 28 NOV 12

RESPONSE:

An allowance of \$27,000 for signage was added to the scope of work for Contract B-5 Carpentry and General Work. See Addendum No. 2.

Response By: Chris McCone Date: 6 Dec 12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 39

FROM: CHRISTIAN J. MCCONE DATE: 30 NOV 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

1. Who owns deck infill/patching at HVAC units that are to be demoed?
2. I'm assuming that the P&P bonds are not required during the bidding process?
3. Per S.O.W for Steel, Note 4-12: "Steel Contractor owns Engineering". Is this for Misc. Metals, Beam Connections etc.? Or just Misc. Stairs?
4. Per Spec Section "055213-10-E. Prep For Shop Priming": Its showing that Exterior Rails, Zinc-Rich Primer Rails, Rails to Receive HPC Coating, need to be Commercial Blasted SSPC-SP 6, Than other Rails to Standard SSPC-SP 3. No rails are called out to have HPC on the Architectural please identify rails to have HPC coating.
5. Per Drawing SD1.3 between Col. Lines H-K will these joist require joist reinforcing at the bottom chord locations where the W8's attach?
6. Per Detail 9/SD2.2, it shows a plate on top of the beam that is NOT called out if this is a plate please call out size and spacing or if con't.
7. For the Alternates in the Existing Building where steel work will be occurring underneath the existing roofs. Will these areas be exposed for the Steel Contractor? If not who owns that? Will the floors need to be protected? Is every trade responsible for their own protection? Also will scissor lifts be accessible to these areas or will work have to be done off ladders?
8. Per Detail 15/S3.3 who owns cutting penetrations through roof for the Steel Posts? Who owns patching those areas?
9. Per Detail 8/S3.3(Web Reinf.): I have only seen Detail 7/S3.3 (Chord Reinf.) called out on the structurals. I have not seen Detail 8/S3.3 called out or I'm just missing it. Is it assumed that when detail 7/S3.3 is called out that Detail 8/S3.3 will be needed as well?
10. Per Structural Steel Spec- It does not call out any HPC coatings, the way I'm reading the Specs it seems to be that ALL Structural Steel will only need Standard Shop Primer (Acceptable Primer Per Paint Spec) and/or Galvanized where indicated. . Just want to clarify that no Structural Steel is to be considered AESS?

Submitted By: Jason Suppe, R.C. Fabricators Date: 30 NOV 12

RESPONSE:

1. This work will be assigned to contract B-4 Structural Steel
2. Performance and payment bonds will be required of the successful low bidder prior to the



award of the contract. See the Instruction to Bidders for items required to be furnished with the bid.

3. This refers to any engineering that is called for in the specifications.
4. All interior and exterior railings to be anodized aluminum.
5. Yes, provide joist reinforcing per 2/S3.3
6. This is to be a 3/8" continuous plate x 11 1/2" similar to detail 10/SB2.1
7. These areas will be exposed to the extent shown on the demolition drawings and will need to be sequenced with the other work. Where the areas are not shown to have ceilings removed due to demolition it will be the responsibility of Contract B-4 Structural Steel to obtain access. Each contractor is required to provide their own protection of surfaces/finishes. The use of scissor lifts or ladders is the decision of the contractor based on their site visit.
8. The Roofing Contractor will own cutting holes in the roofing materials and patching the same. The Steel Contractor will own cutting the metal deck
9. The 3 joists to be reinforced in Area C on E4, E3 and E2 lines required chord (7/S3.3), web (8/S3.3) and seat (9/S3.3) reinforcement. The joists to be reinforced in Area A only required chord reinforcement (7/S3.3)
10. All exposed structural steel is to field painted where indicated and as specified.

Response By: Chris McCone / Cherie Moore

Date: 10 Dec 12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 40

FROM: CHRISTIAN J. MCCONE DATE: 30 NOV 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

1. Do we own the F-35 exterior downspout boots? The detail on drawing P1.2 says by GC but they are on our plumbing schedule.
2. Where are gas PRV's F-34, F-39, F-44 & F-45 shown on the plan drawings? I do not see any gas piping shown for these valves.
3. Where does the detail for service sink on drawing P1.1 apply? I could not find any service sinks.
4. Where does the clothes washer box detail on drawing P1.1 apply? I could not find any washers.
5. Is the gas piping in the natural gas riser detail on drawing P1.1 shown on any plan drawings? I cannot figure out where the 2" 5psi gas originates.
6. Can you please add Condor Technologies to your list of approved water treatment and sterilization companies. They did Clayton Intermediate School in Clayton, DE and did a good job.
7. Are we responsible for slab cutting/patching and ceramic tile work (Ref. Drawing DPAL1)?
8. Are we responsible for wall cutting/patching and ceramic tile work (Ref. Drawing DPAL1)?
9. Are we responsible for the additional slab cutting and patching indicated as note 10 on Drawing DPC1.1?
10. Are we responsible for concrete trench, framing and reinforced fiberglass grating shown on Drawing PUC1.1? If so, can we get a detail?
11. Where is the information for the Aqua Filter Room that we are to coordinate with the vendor per note PN16 on Drawing PUC 1.1?
12. On Drawing PUC1.1 there is underground 1" domestic water pipe around the greenhouse. Is there a detail of how we are supposed to install this piping? There are tees indicated which would involve joints underground.
13. Is the base bid essentially Area D Auditorium (and surrounding rooms) with all other areas being ALTERNATES? Also, it looks like Area C is base bid.
14. Furlow's drawings have me confused over the alternates. Can you go plumbing drawing by plumbing drawing and indicate which drawings pertain to which alternates? For instance, Drawing DPA1.1 indicates Area AG but is titled WEIGHT ROOM. Is it alternate #3 AG or alternate #6 AW? I don't see any plumbing drawings for Area AM or Area AR.



Submitted By: Mark Degli Obizzi, Ralph J. Degli Obizzi Date: 30 NOV 12

RESPONSE:

1. This work will be assigned to contract B-19 Mechanical and Plumbing. See Addendum No. 2
2. Gas piping has been clarified in Addendum No. 3.
3. If there are no service sinks shown then this detail does not apply.
4. If there are no clothes washer boxes shown then this detail does not apply.
5. Gas piping has been clarified in Addendum No. 3.
6. No.
7. Contract B-19 Mechanical and Plumbing is responsible for cutting and patching the concrete slabs. See Addendum No. 2 for added scope item. The patching of the floor finish will be by the contractor providing the finishes per the architectural drawings.
8. Contract B-19 Mechanical and Plumbing is responsible for cutting and patching the walls. See Addendum No. 3 for added scope item. The patching of the walls and finishes will be by the contractor providing the finishes per the architectural drawings.
9. Yes
10. Yes
11. This information is for owner furnished equipment. This equipment has not been purchased. No information is available at this time.
12. This is means and methods. See specification for the type of piping that can be used underground.
13. Area C – Environmental Sciences and Area D – Auditorium (and surrounding rooms) are in the base bid. The alternate areas are as shown on the architectural drawings and described in the specification.
14. These were addressed in Addendum No. 2.

Response By: Chris McCone Date: 10 Dec 12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 43

FROM: CHRISTIAN J. MCCONE DATE: 30 NOV 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: 275115 PAGE: _____

REQUEST:

1. Who owns installing the following owner furnished items (see drawings AA1.5.1, AA1.5.2, AC1.5)
 - a. Item 18 AA1.5.1 – Training Ropes
 - b. Item 19 AA1.5.1 – TRX Suspension
 - c. Item 1 AA1.5.2 – Scoreboard
 - d. Item 2 AA1.5.2 – Wireless Scoreboard
 - e. Item 16 AC1.5 – Tool Rack
 - f. Item 17 AC1.5 – Wood Storage
 - g. Item 19 AC1.5 – Electrical Chord Reel
 - h. Item 31 AC1.5 – Clothes Rack
 - i. Item 65 AC1.5 – Weather Station Control Unit
2. Please provide specifications for the following owner furnished items (see drawings AA1.5.1, AA1.5.2, AC1.5)
 - a. Item 18 AA1.5.1 – Training Ropes
 - b. Item 19 AA1.5.1 – TRX Suspension
 - c. Item 1 AA1.5.2 – Scoreboard
 - d. Item 2 AA1.5.2 – Wireless Scoreboard
 - e. Item 16 AC1.5 – Tool Rack
 - f. Item 17 AC1.5 – Wood Storage
 - g. Item 19 AC1.5 – Electrical Chord Reel
 - h. Item 31 AC1.5 – Clothes Rack
 - i. Item 65 AC1.5 – Weather Station Control Unit
3. Drawing AB1.1 references detail C/AB3.2, which does not exist. Please provide this detail.
4. AD0.1 includes a fire extinguisher legend, which notes "FE by Owner". Are all fire extinguishers on this project by the owner?
5. Who owns the building plaque shown on drawing AD1.10? The plaque is also noted to be on drawing A.5.2, which does not exist.
6. Who owns the maple trim and the glazing shown on detail 3/AD3.14?
7. Who owns painting the poplar wood base and the wood panel backer black? See 4/AD4.11 and 3/AD4.8.
8. Expansion control systems are noted in the Carpentry, Acoustical Ceiling, and Roofing



- scopes. Please clarify which contract owns which expansion control systems.
9. Signage is noted in the Carpentry and the Stage Equipment contracts. Please clarify who owns the signage shown on drawing AD4.11.
 10. Dwg AD4.7 back of stage calls out "Painted black soft wood flooring". Spec section 096400 on references hard woods. Please clarify.

Submitted By: Tony Ventresca, Ventresca Brothers Date: 30 NOV 12

RESPONSE:

1. Contract B-5 Carpentry and General Work is responsible to install owner furnished equipment.
2. Specifications are not available at this time.
3. The reference is not to a detail but to building section C on AB3.2.
4. The fire extinguishers are to be furnished by Contract B-5 Carpentry and General Work. Delete the reference to 'by Owner' on drawing AD0.1.
5. Contract B-5 Carpentry and General Work
6. Glazing is by Contract B-8 Curtain Wall, Glazing, Storefront, & Skylights. Maple trim is by Contract B-5 Carpentry & General Work.
7. Contract B-11 Painting and Wall Finishes
8. Each of these contracts own expansion control that is specific to the systems they will be installing.
9. The signage on AD4.11 is assigned to Contract B-5. Contract B17 Stage Rigging and Equipment owns that signage specific to their work as specified in section 116143.
10. The flooring in front of the curtain is to be a finished hardwood floor as specified in section 96400. The flooring behind the curtain is to be 3/4" a/c plywood painted black on top of 3/4" Homasote 440 or equal. The Homasote and plywood are to be installed on 2x4 treated and embedded furring 24" on center. The plywood and Homasote are to be secured with 3" screws 24" OCEW. The concrete slab heights are to be adjusted to provide a smooth transition between the two flooring systems.

Response By: Chris McCone/Martin Dusbiber Date: 10 Dec 12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 45

FROM: CHRISTIAN J. MCCONE DATE: 3 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS - BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

1. Doors B828a and B830a stainless steel counter shutters NO SPEC
2. Door B833b fire rated door NO SPEC

Submitted By: Hank Steinbrecher, Specialty Finishes Date: 30 NOV 12

RESPONSE:

1. Refer to revised Specification Section 083323.
 - A. Doors B828a and B830a doors to be Manual Rolling Counter Smoke/Fire Doors
 - B. Doors B833b to be Manual Rolling Interior Fire Door
 - C. Door B835B to be Manual Rolling Exterior Insulated Door.
2. See previous RFI, specifications have been revised.

Response By: Harry Pettoni Date: 12/6/12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 46

FROM: CHRISTIAN J. MCCONE DATE: 3 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

First, the logic of the project...as I understand it... Base bid new work...all new fire alarm and new fire alarm panel..etc.

For the existing building, it appears as though the intent is to keep the existing equipment intact...such as the Notifier system, smokes and other initiating devices. And to replace the notification appliances, horn strobes.

Following questions.

1. Is the Notifier system to remain? One note says it is...other notes indicate that all existing fire alarm control panels are to be replaced.
2. What is Node 1? The drawings clearly show Nodes 2, 3, and 4...however, I cannot find Node 1. Node 1 appears to be a central or master panel. It may be the existing Notifier or the new Silent Knight.
3. Drawing EA1.4 shows three existing fire alarm panels being replaced by power supplies and repeaters. Is this correct? If so, this may require all, maybe 500 to 750 or more devices being replaced because of compatibility issues. This doesn't seem to be the intent when other drawings show devices remaining.
4. Drawing EA1.4 also shows two new annunciators. What panels are these for...what do they annunciate?
5. Is the new Silent Knight panel tied into any of the existing? There is a repeater indicated next to it drawing ELD1.2.
6. Spec 260721-2.3.C.1..page 7...states that the entire system is to comply with NFPA 72. Much of the existing system does not. Does this mean that it will have to be retrofitted to comply..such as adding additional detectors and or notification appliances?
7. Are speaker strobes only to be used throughout the new additions?
8. Is the new Silent Knight panel to connect to areas B, C and D?
9. Does the new Silent Knight panel cross trip all other panels and visa versa?

Submitted By: Paul Flannagan, Anaconda Protective Concepts Date: 30 NOV 12



RESPONSE:

1. No, all notes indicate to replace all panels. Refer to Drawing EA1.4.
2. Note 1 is the Main Fire Alarm Panel "FACP". Refer to Drawing ELD1.2. Added Note "NODE #1" to plan in Addendum #3.
3. Yes. Refer to notes on Drawing EA1.4. Drawing with devices to remain. Revised in Addendum #3.
4. These two remote annunciators replace existing. Remove Annunciator.
5. Yes. NR next to the panel is the repeater.
6. Yes, the entire system will meet NFPA 72.
7. Speaker strobes throughout Area "D".
8. Yes. Drawings indicate panels are to be replaced.
9. New panels will. If the items "Cross Trip" is actually meant to be "Cross Zoning."

Response By: William J. Slusser
Furlow Associates, Inc.

Date: 12/6/12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 53

FROM: CHRISTIAN J. MCCONE DATE: 3 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

1. Seismic details were added in addendum 1 on revised drawing M1.4. Will this be required? Vibration spec doesn't call for any seismic and the rooftop unit curbs are not called out as seismic. Structural drawing S1.0 only indicates Seismic Design Category=C w/ an importance factor of 1.25. To our knowledge, mechanical items do not require seismic restraints per this classification.
2. If seismic is required, is it only for new additions? The existing building isn't constructed seismically so why install seismic in these areas? Please clarify.

Submitted By: Sarra Taylor, Estimator, Worth & Company Date: 3 DEC 12

RESPONSE:

1. Seismic bracing is not required. The documents will be revised in Addendum No. 3
2. Seismic bracing is not required. The documents will be revised in Addendum No. 3

Response By: Chris McCone

Date: 12/07/2012



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 57

FROM: CHRISTIAN J. MCCONE DATE: 5 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: 260721 PAGE: _____

REQUEST:

260721 Part 1

1.1 C. The following specifications and the associated drawings are for reference only and are to only indicate the intent for a required fire alarm system and the level of quality. **These specifications and drawings shall not be used for the basis of providing a bid for the project.** It will be the responsibility of the Electrical Contractor to obtain the services of a licensed fire alarm vendor in the State of Delaware to indicate the required items necessary for a complete and operational system as recognized by the NFPA, State Fire Marshal's Office and the ADA. This responsibility shall also include any coordination with fire protection interface, mechanical equipment shutdown, hood suppression interface, etc. During construction, the shop drawings shall be submitted and approved by the Authority Having Jurisdiction (AHJ). Any changes required by the AHJ during the shop drawing review or during the final walk-thru shall be the responsibility of the Electrical Contractor and shall not be passed on to the Owner, Architect or Engineer in the form of a change order.

Also, on the fire alarm notes on the drawings it states:

2. The fire alarm devices and equipment shown on the floor plans in indicated strictly to show intent and coordination with other trades, and shall not be taken to indicate a complete fire alarm and detection layout; meeting all NFPA , state, and local codes for this project. It shall be the responsibility of the electrical contractor's sub-contractor/vendor and their fire protection engineer to produce a complete set of drawings indicating all required equipment, devices, wiring diagrams, and components needed to meet and fulfill the requirements of NFPA, State of Delaware's office of the Fire Marshal, and the authority having jurisdiction.

Question: Based on the above, when bidding, are we to assume that the devices, locations, etc., may or may not be accurate and if additional detectors, horns, horn strobes, strobes, pull stations, and the like are required, that they need to be added to the bid to make sure a code compliant bid is provided; and, that there will be no extras for additional devices required that may not be shown?

Submitted By: Paul Flannigan, Anaconda Protective Systems Date: 3 DEC 12



RESPONSE:

The Contractor's Bid should include complete replacement of panels and devices throughout the existing Facility.

Response By: William J Slusser
Furlow Associates, Inc. Date: 12/7/12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 58

FROM: CHRISTIAN J. MCCONE DATE: 5 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

1. Pg AA1.2 existing Roof Plan has No scale will there be one provided?
2. There are No roof plans for areas AC, AM, AR, AW, will there be ones provided?

Submitted By: Mark Cribb, CTA Roofing Date: 3 DEC 12

RESPONSE:

1. The scale is indicated as 1/8"=1'-0" in the title block
2. There are Architectural roof plans included in the current construction documents for the AC Area and others for the remaining areas in the structural and ME&P drawings. No further drawings will be issued. Roof inspections were available during the two pre-bid meetings.

Response By: Martin Dusbiber Date: 12/05/2012



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 59

FROM: CHRISTIAN J. MCCONE DATE: 5 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: 096900 PAGE: _____

REQUEST:

1. When is our material required on site?
2. Will we be able to lift gate or use a loading dock to get our material into the building?
3. All the access flooring to get carpet? Carpet by others?
4. The specification calls for stringers on this project. Typically in a school or office building the access floor is installed using a posilock system. Can we provide a deduct to go with a Posilock system?
5. Specification 2.4 B. calls for a gasket on the stringer. Typically this is only done on under floor air distribution jobs. I don't believe this is an under floor air job. While the stringer gasket will eliminate noise it adds costs. We can eliminate the same noise by deleting the stringer entirely and using a posilock system?
6. Floor boxes by others? Cutouts by us?
7. Specification 2.5 B. Calls for High Pressure Laminate. Please confirm this not being used for this project.
8. Provided this portion of the project is not under floor air distribution we can exclude all diffusers, sealers and cavity dividers?
9. With Seal Bond 95 adhesive we can meet the overturn test without post installed anchors. Can we exclude the anchors?
10. Dwg SD1.1B shows a depressed slab for raised access floor in room B841. Dwg AD1.12 does not show access floor in this room. Which drawing is correct?

Submitted By: Matt Kittle, ARI Products Inc. Date: 3 DEC 12

RESPONSE:

1. Winter 2013/Spring 2014. The exact time will be determined once the master schedule is developed after award of contracts.
2. No loading dock. The entrance is at grade.
3. All access flooring will receive Anti-Static High-Pressure Plastic Laminate, Factory applied, not carpet.
4. No. Bid the project as shown in the documents.
5. No. Bid the project as shown in the documents.



6. *Refer to suggested floor box type indicated on Dwg. EPD1.2. FLOOR COVER AND BOXES TO BE SUPPLIED AND INSTALLED BY ACCESS FLOORING CONTRACTOR. WIRING AND ELECTRICAL CONNECTIONS BY ELECTRICAL CONTRACTOR.*
7. Yes, owner does not want carpet at these locations
8. Yes
9. Yes, as long as you can meet the overturn test without post installed anchors.
10. Dwg. AD1.12 is correct.

Response By: _____ Harry Pettoni _____

Date: _____ 12/7/12 _____



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 60

FROM: CHRISTIAN J. MCCONE DATE: 6 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: 096900 PAGE: _____

REQUEST:

1. Reference sheet SB 1.2, there is a note at the upper left hand corner of the building footprint, which references 17/S3.3. It further tells me to see Arch. for locations. I have looked through the AC Drawings and was unsuccessful in locating anything can you please let me know where this occurs?
2. Sheet SD1.3, for the Stage Rigging steel I see that I'm picking up the W8 at the roof, but if you refer to sheet AD4.10, the note calls us out as picking up the 1-1/2" Pipe x 60' as well. My question is that I've seen this picked by the Stage Rigging Contractor, are we picking this up? If so am I just attaching the pipes with knife plates onto the W8 cross members?
3. Per plan SD1.3 @ the high roof along column lines A and C, they are calling out the connections with an empty/un shaded triangle indicating a "Bolted Wind Moment." Now, refer to sheet SD4.1 most of the roof beam connections are called out with a "Shaded Triangle" now this usually indicates a "Full Penetration Welded Connection", involving more Field & Shop labor. Please Advise on which connection is to be used as the FULL PEN Connections require substantial more labor vs. Wind Moment Connections in reference to Fabrication as well as Install.

Submitted By: Jason Suppe R.C. Fabricators Date: 4 DEC 12

RESPONSE:

1. The detail is as indicated on 17/S3.3 and only occurs where the soffit abuts to the brick on the inside of the column. Detail 2 on AB6.3 indicates the continuation of this angle in regard to the soffit.
2. Contract B-4 Structural Steel and Miscellaneous Metals will be responsible for the W8 beams shown on SD1.3. Contract B-17 Stage Rigging and Equipment will be responsible for the 1-1/2" pipes. See Addendum No. 3 for further clarification of scope.
3. All moment connections shown on SD1.3 & SD4.1 are intended to be bolted wind moment connections. The solid triangles are a graphical error.

Response By: Martin Dusbiber Date: 12/06/2012



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 61

FROM: CHRISTIAN J. MCCONE DATE: 6 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

1. Why on drawings MA1.3 and DMA1.3 is the medical area listed as Alternate "AR" (ALT #5) when you have Alternate #4 available for medical listed as "AM"?
2. There are heaters tagged EWH -1, 2 on drawing MD 1.1 but not on the schedule. Are heaters EWH-1, 2 scheduled anywhere?
3. Are we required to do 3D BIM modeling for the coordination drawings or can we get by with 2D coordination drawings?
4. Is it acceptable to use PVC on the condensate drains at the HVAC equipment on the roof? The specs call for copper condensate drain piping everywhere.
5. I notice that the engineer clearly calls for acoustic packages within the roof curbs on plan drawings for RTU's (i.e. RTU-C1 on Dwg MC2.1). However he does not do the same for RAHU's. RAHU's do sit on the roof. Will we be required to provide acoustic packages for RAHU's? This is a very expensive item so we need to be clear.
6. Detail on Drawing M1.2 calls for an enclosure box for service lines calling for lead coated copper. Can we not just use standard Pate Roof curbs with pipe portals like called out in note 8 on Drawing MD2.1? The enclosure on M1.2 would have to be fabricated by a roofer who does copper bending and fabrication.

Submitted By: Mark DegliObizzi, Ralph J. Degli Obizzi Date: 4 DEC 12

RESPONSE:

1. The tags were changed in Addendum No.2
2. **Drawing MD1.1 does not contain HVAC equipment designated as EWH-1 or EWH-2.**
3. 3D BIM modeling is required. See scope of work item 21-31.
4. **PVC piping is not acceptable for condensate drain applications. Provide specified material.**
5. **The notes calling for the acoustic package are clearly shown for rooftop units in areas where it is required. In Area D, the rooftop air handling units do not require this detail.**
6. **On drawing MD2.1 the Pate roof curb and pipe portal is called out in notes 3 and 8. These are the only locations where this material is acceptable. All other locations shall require the enclosure box detail equal to what is described on drawing M1.2.**

Response By: Robert L. Leitsch, P.E.
Furlow Associates, Inc. Date: 12/6/12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 62

FROM: CHRISTIAN J. MCCONE DATE: 6 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: 116143 PAGE: _____

REQUEST:

We request to be listed as an approved contractor for installation B-17 Stage Rigging & Equipment at the Polytech High School specification section 116143-5, para. 2.1.

As one of the larger and most respected stage equipment contractors we are pre-approved for most significant projects nationally. We have been in business for over 75 years and employ over 30 people in our 100,000 square feet manufacturing facility in Canton, Ohio.

Of equal pertinence, we request that JR Clancy be approved to supply the major rigging equipment. JR Clancy has been manufacturing rigging equipment for 120 years specializing in Opera Houses, Cruise Ships, Universities and High Schools.

They are the preferred manufacturer nation wide and have more equipment installed throughout the country than any other manufacturer JR Clancy is also the only rigging manufacturer to be ISO 9001 certified, a guarantee of quality and reliability.

Enclosed you will find a list of some of our significant installations throughout the country and a letter introducing us in more detail along with some of our product line. Also included are JR Clancy cut sheets for your approval.

Submitted By: Lisa A. Whitt, Janson Industries Date: 4 DEC 12

RESPONSE:

This manufacturer is approved for providing and installing the related stage rigging providing their products meet the intent of the drawings and specifications in their entirety.

Response By: Martin Dusbiber Date: 12/06/2012



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 63

FROM: CHRISTIAN J. MCCONE DATE: 6 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS - BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

We would be using the Lennox Emergence for the Gas Fired Units and the Lennox Landmark for the Heat Pump Units. See the attached manufacturer literature.

Submitted By: Dave Ragolia, CNCS Mechanical Date: 5 DEC 12

RESPONSE:

The brand name of Lennox will be added by addendum to the appropriate specification section and paragraph as an acceptable make.

Response By: Robert L Leitsch, P.E.
Furlow Associates, Inc. Date: 12/6/12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 64

FROM: CHRISTIAN J. MCCONE DATE: 6 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

1. Detail P3/SA1.1 lists the area as being the roof framing plan for area AC & AW, both of which are part of individual alternate bids. On this detail there is no delineation as to which is section "AC" and which is section "AW". From trying to piece together where these sections might occur (with the gridlines not being numbered it's quite difficult) it looks like this detail is all part of AW and there is no portion of "AC" shown. Can you please clarify?
2. Can you confirm which sections of the building structure, if any, are to receive spray on fireproofing?
3. On drawing SC1.2, existing joists are shown at 12'-0" spacing. In some areas the existing joists are to receive reinforcing. Can you confirm the existing joist spacing or are we to bid this work exactly as shown?
4. On the same drawing between column lines E2 and E4 a note states that the joists are to be reinforced "full height". Should this read "full length" instead?
5. Can you confirm that Alternate #3, Area "AG" does not affect the structural steel in any way? There is nothing shown on the current structural drawings which deals with this area.

Submitted By: Dave Spaulding, Kinsley Manufacturing Date: 5 DEC 12

RESPONSE:

1. The structural steel requirements on plan P3 indicated in the corridor areas are for the AC alternate. The remaining are for AW.
2. Spray fire proofing is not required.
3. Bid as shown.
4. This should read "Full Length"
5. This alternate does not affect any existing structural steel

Response By: Martin Dusbiber Date: 12/06/2012



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 65

FROM: CHRISTIAN J. MCCONE DATE: 6 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

1. Note 6 in the Fire Alarm notes on the lighting drawings talks about replacing existing initiating devices with new devices. Can you provide us with a count on devices to be replaced or a drawing of the existing devices and there locations? Is it expected of us to replace all existing cable to these devices?
2. Is the location of ATS-2 in the new electric room?

Submitted By: Scott Frieze, Nickle Electric Date: 5 DEC 12

RESPONSE:

1. All devices are to be replaced. Cable is to be reused through existing Facility. Contractor to refer to Drawings and site visits to quantify devices required.
2. Refer to Drawing E-300 in Addendum #3.

Response By: William J Slusser
Furlow Associates, Inc. Date: 12/7/12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 66

FROM: CHRISTIAN J. MCCONE DATE: 6 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS – BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: _____ PAGE: _____

REQUEST:

1. Are the exposed ceilings in the mechanical rooms to be painted?
2. Are we to paint the exposed mechanical, plumbing and electrical in the mechanical rooms?
3. Are we to finish the wood panels at the main street and auditorium? (look Spec 062023 2.5)

Submitted By: Ken VanOstensbridge, Jamestown Painting Date: 5 DEC 12

RESPONSE:

1. No. [Remove the reference to painting the ceilings from the Room Finish Schedules for the mechanical rooms.](#)
2. No, the exposed mechanical, plumbing and electrical is not required to be painted in the mechanical rooms if is insulated. Exposed steel pipe is to be painted to prevent corrosion.
3. Yes, the mill work contractor is responsible for finishing the wood panels per 2.5 & 2.9 of Section 062023. These panels are to be fabricated by the Millwork Contractor.

Response By: Harry Pettoni/Chris McCone Date: 12/6/12



REQUEST FOR INFORMATION

TO: MARTIN DUSBIBER, DALLC RFI#: 67

FROM: CHRISTIAN J. MCCONE DATE: 6 DEC 12

PROJECT: POLYTECH HIGH SCHOOL RENOVATIONS & ADDITIONS - BID PACK 'B'

DWG. # / DETAIL: _____ SPEC. SECTIONS: 096723 PAGE: _____

REQUEST:

I've attached an RFI containing product information for systems that we'd like to submit to the architect for approval.

Durex Coverings, Inc. has been installing Resinous Epoxy Floors since 1964. We do not subcontract our labor and every mechanic on site is employed by and a direct representative of Durex Coverings, Inc. With locations in both Pennsylvania and Maryland, we currently employ over 20 foreman, each with at least 15 years of Resinous Flooring experience.

Submitted By: Brooke Bucher, Durex Coverings, Inc. Date: 5 DEC 12

RESPONSE:

Durex Coverings is an approved supplier/installer providing their product meets the intend of the project drawings and specifications in their entirety.

Response By: Martin Dusbiber Date: 12/06/12

SECTION 260721: FIRE ALARM AND DETECTION SYSTEMS

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

- A. This specification document provides the requirements for the installation, programming and configuration of a complete networked digital protocol analog addressable fire alarm system with distributed voice evacuation or approved equal. This system shall include, but not be limited to, system cabinet, power supply, built in Signaling Line Circuit (SLC), 4 line display 40 character each LCD annunciator, eight programmable Flexputs, built in dual line digital communicator associated peripheral devices, batteries, wiring, conduit and other relevant components and accessories required to furnish a complete and operational Life Safety System. The system shall have the interconnection capability for up to 16 panels. The networked system has two modes of operation, multiple panels covering one larger building, or multiple independent buildings.
- B. It is the intent of these drawings, schedules and specifications to outline the scope of work required to furnish and install a complete and operating fire alarm and detection system for the Polytech School District facility. Existing areas of the facility are not documented in the drawings. It shall be the responsibility of the Contractor to provide in their bid the replacement of all existing devices indicated and not indicated in their bid.
- C. The following specifications and the associated drawings are for reference only and are to only indicate the intent for a required fire alarm system and the level of quality. These specifications and drawings shall not be used for the basis of providing a bid for the project. It will be the responsibility of the Electrical Contractor to obtain the services of a licensed fire alarm vendor in the State of Delaware to indicate the required items necessary for a complete and operational system as recognized by the NFPA, State Fire Marshal's Office and the ADA. This responsibility shall also include any coordination with fire protection interface, mechanical equipment shutdown, hood suppression interface, etc. During construction, the shop drawings shall be submitted and approved by the Authority Having Jurisdiction (AHJ). Any changes required by the AHJ during the shop drawing review or during the final walk-thru shall be the responsibility of the Electrical Contractor and shall not be passed on to the Owner, Architect or Engineer in the form of a change order.
- D. Types of fire alarm and detection systems required in this section include the following:
 - Combination: Manual and Automatic
 - Zoned: Wing, Floor, Level, Area, Machine or Device
 - Non-Coded: Continuous Signal
- E. The system shall include all required hardware, raceways, interconnecting wiring and software to accomplish the intent of this specification and the contract drawings, whether or not specifically itemized herein.
- F. All equipment furnished and installed shall be new and the latest state of the art products of a single manufacturer, engaged in the manufacturing and sale of the specified fire detection devices for over ten (10) years.

- G. The system as specified shall be furnished, installed, tested and approved by the local Authority Having Jurisdiction, and shall be turned over to the owner in an operational condition. In the interest of job coordination and responsibility the installing contractor shall contract with a single supplier for fire alarm equipment, engineering, programming, inspection and tests for the complete system.
- H. Demolition of existing fire alarm equipment indicated on plans, once the new system is installed, functioning and certified. Furnish temporary interface between the old existing system and the new fire alarm system, as both will exist side by side, during completion of the project.
- I. Coordinate with Mechanical Contractor to furnish operations for air handling unit shutdown.

1.2 QUALIFICATIONS OF INSTALLERS

- A. Before commencing work, submit data showing that the manufacturer has successfully installed fire alarm systems of the size, scope, type and design in projects of this type.
- B. The manufacturer's vendor and his fire protection engineer shall have a minimum of five (5) years experience in, and be licensed and certified in, the design and installation of the selected fire alarm system being furnished for this project.
- C. The installing contractor shall submit copies of all required Licenses and Bonds for his selected equipment vender, his fire protection engineer and his own as may be required by the City, County and State of Delaware.

1.3 MANUFACTURER'S REPRESENTATIVE

- A. The electrical contractor shall furnish the services of a manufacturer factory trained and certified representative, experienced in the installation, operation, maintenance and service of the type of system being furnished. The representative shall be licensed in the State of Delaware. The representative shall provide, with the Bid, a copy of their certification provide by Silent Knight for the Provider/Installer of the fire alarm system. He/she shall supervise the installation, software documentation, adjustment, preliminary testing, final testing and certification of the system. The representative shall furnish the required instruction to the owner's personnel in the system's programming, operation and maintenance.

1.4 CODES, REGULATIONS AND STANDARDS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only. The latest version of each listed publication shall be used as a guide unless the authority having jurisdiction has adopted an earlier version.
- B. Factory Mutual (FM)
 - 1. FM AG Approval Guide
- C. National Fire Protection Association (NFPA)
 - 1. NFPA 70 National Electrical Code (NEC)

2. NFPA 72 National Fire Alarm Code
3. NFPA 90A Standard for the Installation of Air Conditioning and Ventilating Systems
4. NFPA 101 Life Safety Code
5. NFPA 170 Standard Fire Safety and Hazmat Symbols

D. Underwriters' Laboratories, Inc. (UL) Appropriate "UL" equipment standards

1. "UL" 864 Control Panels
2. "UL" 268 Smoke Detectors
3. "UL" 268A Smoke Detectors (HVAC)
4. "UL" 1076 Security
5. "UL" 1971 Standard for Visual Signaling Appliances

E. Building Codes

1. BOCA National Building Code and the BOCA Fire Code
2. Standard Building Code and the Standard Fire Code
3. Uniform Building Code and the Uniform Fire Code
4. International Building Code and the International Fire Code

F. State Codes and Regulations

1. Delaware State Fire Prevention Commission
2. State of Delaware
3. State Fire Prevention Regulations as amended through January 1995
4. Americans with Disabilities Act of 1990 and/or State and Local equivalency standards adopted by The Authority Having Jurisdiction.

1.5 COORDINATION

- A. As a requirement of this project, the Electrical Contractor and/or his subcontractor or vendor shall furnish coordination for his equipment and layouts with other subcontractors or vendors furnishing equipment and services for Divisions 1 thru 23. Any and all contractors who install their equipment or furnish services prior to coordination, or any contractor who changes their equipment or services after coordination has occurred, without notifying associated subcontractors, shall be held responsible for making all required changes with no additional cost to the Owner, or delay in construction time.
- B. The Mechanical, Plumbing, Fire Protection and Electrical Contractors are responsible to coordinate all manufacturer's recommended sizes for all circuit breakers, starters, disconnects, fuses, wire and conduit for all equipment. Submission of a shop drawing will certify that this has been completed.
- C. The drawings and specifications reflect the type, number and size of services required for the equipment the design is based upon, should the supplying subcontractor elect to furnish an alternate piece of equipment requiring different services and/or space conditions, he shall inform the subcontractor furnishing those services and be held responsible to pay for all required changes as part of this contract.

1.6 SUBMITTALS

- A. The installing contractor shall include the following information in his shop drawing equipment submittal:
1. Submit manufacturer's data on fire alarm and detection systems including, but not limited to, roughing-in diagrams and instructions for installation, operation and maintenance, suitable for inclusion in maintenance manuals. Also include a standard of a typical riser diagram and wiring diagram for equipment to be furnished and installed under this contract.
 2. The fire alarm devices and equipment shown on the floor plans is indicated strictly to show intent and coordination with other trades, and shall not be taken to indicate a complete fire alarm and detection layout; meeting all NFPA, State and local codes for this project. It shall be the responsibility of the Electrical Contractor's sub-contractor/vendor and his fire protection engineer to produce a complete set of drawings indicating all required equipment, devices, wiring diagrams and components needed to meet and fulfill the requirements of the NFPA, State of Delaware's Office of the Fire Marshal and the Authority Having Jurisdiction.
 3. One (1) complete set of the entire submittal shall be forwarded to the local Fire Marshal's Office for approval. The submission shall also include the following:
 - a. Power calculations. Battery capacity calculations. Battery size shall be a minimum of 125 % of the calculated requirement.
 - b. Supervisory power requirements for all equipment.
 - c. Alarm power requirements for all equipment.
 - d. Power supply justification showing power requirements for each of the system power supplies. Power supplies shall be sized to furnish the total connected load in a worst-case condition plus 25 % spare capacity.
 - e. Voltage drop calculations for wiring runs demonstrating worst-case condition.
 - f. NAC circuit design shall incorporate a 15% spare capacity for future expansion.

The plan review by the Fire Marshal's Office shall be forwarded to the Project's Engineer, signed or under cover sheet, of approval from the Fire Marshal, as a shop drawing, once received in triplicate.

4. Complete manufacturer's catalog data including supervisory power usage, alarm power usage, physical dimensions, finish and mounting requirements.
5. Complete drawings covering the following shall be submitted by the Electrical Contractor for the proposed system:
 - a. Floor plans in a CAD compatible format showing all equipment and raceways, marked for size, conductor count with type and size, showing the percentage of allowable National Electrical Code fill used.
 - b. Furnish a fire alarm system matrix as referenced by NFPA 72 figure A-7.5.2.2 (1999). Matrix shall illustrate alarm input/output events in association with initiation devices. Matrix summary shall include system supervisory and trouble output functions.

- c. Include any and all departures, exceptions, variances or substitutions from these specifications and/or drawings at the time of bid.
6. Should the above-mentioned information not be included in the shop drawing submission, the submission shall be rejected without processing and returned to the contractor.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. The model numbers provided are for use with the Silent Knight Farenhyt IFP-2000VIP fire alarm system and outline the products to be furnished for this project.
- B. Approved equipment manufacturers and installing vendors:
 - 1) Silent Knight
Advantech, Inc
4092 North DuPont Highway
Dover, Delaware 19901
(302) 674-8405
 - 2) Silent Knight
B-Safe Security
109 Baltimore Ave
Wilmington, Delaware 19805
(302) 230-7108
 - 3) Silent Knight
Anaconda Protective Concepts
1520 Porter Road
Bear, Delaware 19701
(302) 834-1125
- C. These specifications are designed and written in such a manner as to represent the minimum Fire Alarm and Detection System requirements. Any other components not indicated in these specifications, but deemed necessary by the selected manufacturer, for a complete and operational system, shall be included at no additional cost to the owner.
- D. Once the vendor's design has been through the Fire Marshal's Office, and received his approval and been submitted as shop drawings any additional devices required by the Fire Marshal shall be taken from the spare equipment list. Refer to paragraph 5.3 SPARE EQUIPMENT herein.

2.2 GENERAL SYSTEM OPERATION

- A. When an alarm occurs on an initiating device, the control panel indicates the alarm condition until manually reset.
- B. An alarm may be acknowledged by actuating the "ACKNOWLEDGE" switch. This shall silence the panel buzzer, and change the "SYSTEM ALARM" LED from flashing to steadily lit.
- C. This project shall be provided with synchronized audible and visual signaling devices. Activation of the signal silence switch at the fire alarm panel shall cause the audible signal to stop. The visual signal shall continue. If a subsequent initiating device causes an alarm, the audible signal shall resound. The visual signals shall continue until the system is reset. Synchronization shall be provided so that horns and strobes on different circuits will operate in unison.

- D. If the microprocessor fails, the system shall execute a default signaling program. This program will enable the panel to sound the audible signals and summon the Fire Department. Inability of the system to sound signals or summon the fire department during microprocessor failure shall not be acceptable.
- E. A single ground or open on the system signaling line circuit shall not cause system malfunction, loss of operating power or the ability to report an alarm from all initiating devices. A wire to wire short on the signaling line circuit shall cause fault isolation modules on either side to open allowing operation of all analog/addressable devices not located between the activated fault isolation modules.

2.3 SPECIFIC OPERATIONS

- A. Operation of a manual station or automatic activation of any smoke detector, heat detector, or kitchen hood suppression system, shall cause the following:
 - 1. Indicate on the Fire Alarm Control Panel and Annunciator Panels the specific device in alarm via the English-language alphanumeric display. The "ALARM" LED shall also flash and the local audible device shall pulse.
 - 2. All strobes to flash in unison. All horns to sound a synchronized "Code 3" output. All speakers within the gymnasium, cafeteria, and auditorium to broadcast a "Code 3" pre-alert tone followed by a prerecorded voice message of the owner's choice.
 - 3. Shutdown all air handling units in the vicinity of the alarm. Provide an addressable relay module at each air handling unit for connection to the low voltage shutdown control circuit. If a 120VAC control circuit is to be interrupted by the fire alarm system, provide an addressable control relay and isolation relay rated for the control circuit load.
 - 4. Printing and history storage equipment shall log the information associated with each alarm condition, along with the time and date of each occurrence.
 - 5. Release all electrically locked or held-open doors.
 - 6. Transmit the fire alarm condition to a U.L. listed central monitoring station, to dispatch the local Fire Department.
- B. Supervisory/Trouble Operations
 - 1. Alarm activation of a duct mounted smoke detector or sprinkler valve tamper switch, shall cause the exact device in alarm to be displayed on the fire alarm panel and remote annunciator alphanumeric display, and initiate a supervisory condition within the fire alarm panel.
 - 2. Transmit a supervisory condition to the central monitoring facility.
 - 3. Duct mounted smoke detectors, when in alarm, shall cause their associated air handling unit to shut down.

4. Activation of any trouble condition within the fire alarm system shall cause the trouble visual and audible indicators to operate within the fire alarm panel, the reason for the trouble condition to be shown in plain English on the alphanumeric display, and a trouble condition to be transmitted to the central monitoring facility.
- C. The fire alarm system is to be connected to a U.L. listed central monitoring station, with the following requirements:
1. The entire installation shall comply with the requirements of NFPA 72, 2002 Edition (Remote Station Protective Signaling System) utilizing a Digital Alarm Communicator Transmitter (DACT) and a Digital Alarm Communicator Receiver (DACR).
 2. The fire alarm system shall transmit alarm, trouble, and supervisory conditions, a daily test signal and the other signals required by NFPA 72.
 3. The contractor shall be responsible for the entire installation (wiring, mounting of system components, connections at panel and the Digital Alarm Communicator Transmitter, programming, and functional testing).
 4. The contractor shall coordinate with the owner to provide off-site monitoring of the fire alarm system. Off-site monitoring shall be provided by the Owner's U.L. listed central station facility, and paid for by the Owner.
 5. The owner shall be responsible for providing two (2) standard telephone lines at the rate demarcation point for connection to the fire alarm system dialer, and pay for all charges from the telephone company.
 6. Digital alarm communicator transmitter shall be an integral component of the fire alarm control panel, and not a separate unit. Provide Digital Alarm Communicator Transmitter.
- D. The fire alarm control panel shall be provided with a firefighter's one-way voice paging system.
1. The one-way voice paging system shall consist of a voice command center audio message generator with microphone and all-call pushbutton, pre-recorded voice message chip, speaker circuits with selector switches/status indicators, and audio amplifiers.

Provide a minimum of (1) speaker circuit per area required to have voice evacuation signaling. Speaker circuits to be wired using a Style Y (Class B) circuit. Speaker circuits shall be provided with a maximum usage of 80% of it's rated maximum output, to allow for future additions. Provide calculations and supporting data in submittal booklet, for verification by review authorities. 25 watt audio amplifiers shall be provided so that no amplifier will exceed 80% of it's maximum capacity, to allow for future additions. Provide calculations and supporting data in submittal booklet, for verification by review authorities.
- E. The fire alarm control panel shall be provided with strobe indicating circuits. Strobe circuits to be wired using a Style Y (Class B) circuit. Auxiliary power supplies and circuits shall be provided so that neither power supply or circuit will exceed 80% of its rated output, based on the strobe light intensities required by NFPA 72. Provide calculations and supporting data in submittal booklet, for verification by review authorities.

- F. The fire alarm control panel shall be provided with a minimum of two (2) signaling line circuits, so that no one circuit exceeds 80% of its rated maximum. Provide calculations and supporting data in submittal booklet, for verification by review authorities.

Signaling line circuits shall be wired using a Style 7 (Class A) circuit, incorporating fault isolation modules. Provide the required quantity of fault isolation modules so that no more than 20 analog/addressable devices are located between modules.

- G. The fire alarm control panel components shall be housed in multiple cabinets of the same dimensions. All components shall be integrally compatible with the main central processor, to provide a neat, and professional appearance. The use of separate central processors, strobe power supplies, or audio evacuation panels at the main fire alarm control panel location is forbidden. Remote audio/visual power supplies, as shown on the drawings, is acceptable. Care shall be taken during the system design phase so that both audible and visual signals located in the same viewing area will be synchronized.

PART 3 – SYSTEM COMPONENTS

- A. The fire alarm control panel (FACP) shall be the Silent Knight IFP-2000VIP analog addressable control panel. The audio amplifiers shall be the Silent Knight VIP-50 voice evacuation units. The FACP must have a 6 amp power supply and be capable of expansion to a maximum of 54 total amps via bus connected expander modules that supervise low battery, loss off AC and loss of communication.
1. The electrical contractor is required to arrange for and coordinate integration and/or interfaces with the School District's security system vendor, Advantech, Inc. of Dover, DE. The electrical contractor's fire alarm submittals must include a Coordinating Instructions document provided by the School District's security system vendor. The electrical contractor must employ the School District's security systems vendor to do the required fire alarm to security system integration and/or interfaces.
 2. The system must contain at least one Silent Knight VIP-50 50 watt amplifier and shall be expandable to 400 watts utilizing up to 7 additional amplifiers. Each amplifier shall be capable of adding a 4 zone splitter (Silent Knight VIP-CE4) to distribute the audio information to different locations in the installation. The system shall have the capability of controlling up to 32 notification zones. The amplifiers must contain the capability of being remotely located through a four-wire communications circuit and a two-wire VBUS circuit. The system shall have the capability of adding up to 2 remote supervised microphones.
 3. The voice evacuation system must have the capability of downloading up to three separate messages and utilize DSP technology for higher audio intelligibility.
 4. The voice evacuation system shall be capable of operating at 25vrms or 70.7vrms and must be field selectable at the amplifier level. Systems that require additional modules for voltage conversion shall not be accepted.
 5. The FACP must have Day/Night sensitivity capabilities on detectors and be capable of supporting up to 636 analog addressable points. (SLC) capable of supporting a minimum of 159 detectors and 159 module devices each. The FACP network must support up to sixteen FACP's on the network providing a maximum addressable point capacity of 10,176 points

- (636 x 8 = 10,176). The FACP's firmware must be enabled to support 16 panels. The system components must be provided and programmed by a Silent Knight "Select" certified dealer.
6. The FACP must support a minimum of eight programmable "Flexputs". The panel must have a built in 160 character LCD annunciator with the capability of having a minimum of eight supervised remote annunciators connected in the field.
 7. The FACP must have a built in UL approved digital communicator. The communicator must allow local and remote up/downloading of system operating options, event history, and detector sensitivity data.
 8. The FACP must automatically test the smoke detectors in compliance with NFPA standards to ensure that they are within listed sensitivity parameters and be listed with Underwriters Laboratories for this purpose.
 9. The FACP must compensate for the accumulation of contaminants that affect detector sensitivity. The FACP must have day/night sensitivity adjustments, maintenance alert feature (differentiated from trouble condition), detector sensitivity selection, auto-programming mode (Jumpstart) and the ability to upgrade the core operating software on site or over the telephone.
 10. The FACP shall have a Jumpstart feature that can automatically enroll all properly connected accessories into a functional system within 60 seconds of powering up the panel. Panels that do not have these capabilities will not be accepted.
 11. The main communication bus (SBUS RS485) shall be capable of class A or class B configuration with a total Bus length of 6,000 feet.

B. System Wiring

1. The Signaling Line Circuit (SLC) and Data Communication Bus (S-BUS) shall be wired with standard NEC 760 compliant wiring, no twisted, shielded or mid capacitance wiring is required for standard installations. All FACP screw terminals shall be capable of accepting 14-18 AWG wire. All system wiring shall be in accordance with the requirements of NFPA 70, the National Electrical Code (NEC) and also comply with article 760 of the NEC.

C. Signaling Line Circuits

1. Each SLC shall be capable of a wiring distance of 10,000 feet from the SLC driver module (5815XL) and be capable of supporting 636 devices. The communication protocol to SLC devices must be digital. Any SLC loop device, which goes into alarm, must interrupt the polling cycle for priority response from the FACP. The FACP must respond consistently to a device that goes into alarm on an SLC in under 3 seconds. The auxiliary 5815XL SLC loop module must be capable of being located up to 6000 feet from the FACP on an RS-485 bus, which is separate from the SLC bus. The SLC shall be capable of functioning in a class A or class B configuration.

D. SLC loop devices

1. Devices supported must include analog photoelectric, ionization smoke detectors, analog heat detectors, addressable input modules, relay output modules or addressable notification modules. There is to be no limit to the number of any particular device type up to the maximum of 636, that can be connected to the SLC.

E. Analog detector functions

1. The products of combustion detectors must communicate analog values using a digital protocol to the control panel for the following functions:
 - a. Automatic compliance with NFPA 72 standards for detector sensitivity testing
 - b. Drift compensation to assure detector is operating correctly
 - c. Maintenance alert when a detector nears the trouble condition
 - d. Trouble alert when a detector is out of tolerance

F. Sensitivity function

1. The FACP shall have the ability to set three different sensitivity levels. A zone can be programmed to a day and a night sensitivity value. The day/night schedule shall allow for 16 holiday dates that are user programmable to allow the FACP to respond at the night level on those days.

G. Programmable FlexPuts

1. The FACP shall support eight programmable Flexput circuits that are capable of being programmed as supervised reverse polarity notification circuits or supervised auxiliary power circuits that can be programmed as continuous, reset able or door holder power. The circuits shall also be programmable as input circuits in class A or B configurations to support dry contact or compatible two wire smoke detectors.

H. Addressable Notification Module

1. The contractor shall furnish and install where indicated on the plans, addressable notification modules, Silent Knight model IDP-Control The modules shall be U.L. listed compatible with Silent Knight's IFP-2000VIP fire alarm control panel. The notification module must provide one class A (Style Z) or class B (Style Y) notification output with one auxiliary power input. The notification module must be suitable for mounting in a standard 4 square electrical box and must include a plastic cover plate. The notification module must provide an LED that is visible from the outside of the cover plate. The notification module must be fully programmable for such applications as required by the installation. The IDP-control shall reside on the SLC loop and can be placed up to 10,000ft. from the control or 5815XL SLC loop module.

I. Annunciators

1. The main control must have a built in annunciator with an 160-character LCD display and feature LED's for General alarm, Supervisory, System trouble, System Silence and Power. When in the normal condition the LCD shall display time and date based on a 200 year clock

which is capable of automatic daylight savings time adjustments. All controls and programming keys are silicone mechanical type with tactile and audible feedback. Keys have a travel of .040 in.. No membrane style buttons will be permissible. The annunciator must be able to silence and reset alarms through the use of a keypad entered code. The annunciators must have twenty levels of user codes that will allow the limitation of operating system programming to authorized individuals.

J. Remote Annunciators

1. The fire system shall be capable of supporting up to eight remote annunciators. LCD Remote annunciator Model VIP-RM2000 shall have the same control and display layout so that they match identically the built in annunciator. Remote annunciators shall be available in red . Remote annunciators shall have the same functionality and operation as the built in annunciator. All annunciators must have -character LCD displays and must feature five LED's for general alarm, supervisory, system trouble, system silence, and system power. All controls and programming keys are silicone mechanical type with tactical and audible feedback. Keys shall have a travel of .040 inches. No membrane style buttons will be permitted.
2. The annunciator must be able to silence and reset alarms through the use of a code entered on the annunciator keypad . The annunciator must have twenty levels of user codes that will limit the operating system programming to authorized individuals. The control panel must allow all annunciators to accommodate multiple users input simultaneously. Remote annunciators shall be capable of operating at a distance of 6000 feet from the main control panel on unshielded non-twisted cable.

- K. The fire system shall be able to support up to eight I/O modules (SK5880) that shall be used to drive remote LED graphic style displays and accommodate up to eight dry contact type switch inputs. The I/O modules shall each drive up to 40 LEDs without requiring external power connections. The I/O module inputs shall be supervised and be suitable for alarm and trouble circuits as well as reset and silence switches. The system shall also support up to 40 LED drivers that reside on the two-wire SLC loop. These driver boards shall contain 80 LED outputs that are powered by an external power source.

L. Serial/Parallel interface

1. The fire system shall be capable of supporting up to two serial / parallel interfaces (SK5824) that are capable of driving standard computer style printers. The interface shall be programmable as to what information is sent to it and shall include the ability to print out Detector Status by point, Event History by point and System Programming.

M. Distributed Power Module

1. The contractor shall supply a power module #RPS-1000 compatible with the IFP2000VIP fire alarm control panel. The power module must have 9 amps of output power, six flexput circuits rated at 3amps each, and two form C relay circuits rated at 2.5 amps at 24 volts DC. The fire system shall be capable of supporting a minimum of eight (8) RPS-1000 power modules. The six flexput circuits shall have the same functionality as the flexput circuits on the main panel. The Distributed Power Supply shall be capable of being connected via an RS-485 system bus (SBUS) at a maximum distance of 6000ft. from the main control panel. The

power module shall contain an additional RS-485 bus that is completely compatible with all IFP-200VIP add on modules; including 5815XL SLC expanders, RA-2000-SK5880 annunciators, 5824 serial/parallel module and addressable devices. The power module will also act as a bus repeater so that additional RS-485 (modules) devices can be connected at a maximum distance of 6000ft. from the power module.

2. The power module's RS-485 bus shall be electrically isolated providing ground loop isolation and transient protection.

N. Digital Communicator

1. The digital communicator must be an integral part of the control panel and be capable of reporting all zones or points of alarm, supervisory, and trouble as well as all system status information such as loss of AC, low battery, ground fault, loss of supervision to any remote devices with individual and distinct messages to a central station or remote station. The communicator must also be capable of up/downloading of all system programming options, Event history and Sensitivity compliance information to a PC on site or at a remote location.
2. The communicator shall have an answering machine bypass feature that will allow the panel to respond to communication even on phone lines that have other communication equipment present. The communicator must be capable of reporting via SIA and Contact ID formats. The communicator shall have a delayed AC loss report function which will provide a programmable report delay plus a 10-25 min random component to help ease traffic to the central station during a power outage. No controls that use External modems for remote programming and diagnostics shall be accepted.

O. Dry Contacts

1. The FACP will have three form "C" dry contacts, one will be dedicated to trouble conditions, the other two will be programmable for alarm, trouble, sprinkler supervisory, notification, pre-alarm, waterflow, manual pull, aux. 1 or aux. 2. The trouble contact shall be normal in an electrically energized state so that any total power loss (AC and Backup) will cause a trouble condition. In the event that the Microprocessor on the FACP fails the trouble contacts shall also indicate a trouble condition.

P. Ground Fault Detection

1. A ground fault detection circuit shall be used to detect positive and negative grounds on all field wiring. The ground fault detector shall operate the general trouble devices as specified but shall not cause an alarm to be sounded. Ground faults will not interfere with normal operation, such as alarm, or other trouble conditions.

Q. Over Current Protection

1. All low voltage circuits will be protected by microprocessor controlled power limiting or have a self restoring polyswitches for the following: smoke detector power, main power supply, indicating appliance circuits, battery standby power and auxiliary output.

R. Test Functions

1. A “Lamp Test” mode shall be a standard feature of the fire alarm control panel and shall test all LED’s and the LCD display on the main panel and remote annunciators.
2. A “Walk Test” mode shall be a standard feature of the fire alarm control panel. The walk test feature shall function so that each alarm input tested will operate the associated notification appliance for two seconds. The FACP will then automatically perform a reset and confirm normal device operation. The event memory shall contain the information on the point tested, the zone tripped, the zone restore and the individual points return to normal.
3. A “Fire Drill” mode shall allow the manual testing of the fire alarm system notification circuits. The “Fire Drill” shall be capable of being controlled at the main annunciator, remote annunciators and via a remote contact input.
4. A “Bypass Mode” shall allow for any point or nac circuit to be bypassed without effecting the operation of the total fire system.

S. Remote Input Capabilities

1. The control panel shall have provisions for supervised switch inputs for the purpose of Alarm reset and Alarm and trouble restore.

T. Notification Appliance Mapping Structure

1. All notification circuits and modules shall be programmable via a mapping structure that allows for a maximum of 999 output groups. Each of these groups shall have the ability to be triggered by any of the panels 999 Zones. A zone may trigger from groups individually, or may contain a global trigger for manual pull stations, fire drills and two different system alarms. Additionally each Zone will individually control the cadence pattern of each of the Groups that it is “Mapped” to so that sounders can indicate a variety of conditions. The Zone shall be capable of issuing a different cadence pattern for each of the Groups under it’s control. The mapping structure must also allow a group to be designated to “ignore cadence” for use with strobes and other continuous input devices. Zones shall have eight different output categories; Detector alarm, Trouble, Supervisory, Pre-alarm, Waterflow, Manual pull, Zone auxiliary one and Zone Auxiliary two. Each of the categories shall have the ability to control from 1 to 8 output groups with a cadence pattern. The patterns are; March code, ANSI 3.41, Single Stroke Bell Temporal, California code, Zone 1 coded, Zone 2 coded, Zone 3 coded, Zone 4 coded, Zone 5 coded, Zone 6 coded, Zone 7 coded, Zone 8 coded, Custom output pattern 1, Custom output pattern 2, Custom output pattern 3, Custom output pattern 4, and Constant. This mapping/cadence pattern shall be supported by all system power supplies and Notification Expander Modules.

U. Downloading Software

1. The fire alarm control panel must support up/downloading of system programming from a PC under Windows 3.1 or Windows 95, 98 & Windows N/T. The FACP must also be able to download the detector sensitivity test results and a 1000 event system event buffer to the PC. Communication shall take place over a direct connection to the PC and/or via the same telephone lines as the built in digital communicator and shall not require an external modem

to be connected to the panel. The downloading software shall contain a code that will block unauthorized persons from accessing the panel via direct connection or over the phone lines.

V. Service reminder

1. The FACP shall be capable of automatically generating textual service reminder and the main and remote annunciator LCD's to inform the user of required testing or service. The service reminder shall not interfere with the normal operation of the FACP.

W. English language descriptions

1. The FACP shall provide the ability to have an text description of each system device, input zone and output group on the system. The use of individual lights to provide descriptions will not be acceptable.

PART 4 – SYSTEM OPERATION

4.1 ALARM

- A. When a device indicates any alarm condition the control panel must respond within 3 seconds. All programmed audio and visual devices will activate at this time. The General Alarm or Supervisory Alarm LED on the annunciator(s) should light and the LCD should prompt the user as to the number of current events. The alarm information must be stored in event memory for later review. Event memory must be available at the main and all remote annunciators.
- B. When the alarmed device is restored to normal, the control panel shall be required to be manually reset to clear the alarm condition, except that the alarms may be silenced as programmed.
- C. An alarm shall be silenced by a code or Firefighter key at the main or remote annunciators. When silenced, this shall not prevent the resounding of subsequent events if another event should occur (subsequent alarm feature). When alarms are silenced the silenced LED on the control panel, and on any remote annunciators shall remain lit, until the alarmed device is returned to normal

4.2 TROUBLES

- A. When a device indicates a trouble condition, the control panel System Trouble LED should light and the LCD should prompt the user as to the number of current events. The trouble information must be stored in event memory for later review. Event memory must be available at the main and all remote annunciators.
- B. When the device in trouble is restored to normal, the control panel shall be automatically reset. The trouble restore information must be stored in event memory for later review. Event memory must be available at the main and all remote annunciators. A trouble shall be silenced by a code or Firefighter key at the main or remote annunciators. When silenced, this shall not prevent the resounding of subsequent events if another event should occur.

4.3 SUPERVISION METHODS

- A. Each SLC loop shall be electrically supervised for opens and ground faults in the circuit wiring, and shall be so arranged that a fault condition on any loop will not cause an alarm to sound. Additionally, every addressable device connected to the SLC will be supervised and individually identified if in a fault condition. The occurrence of any fault will light a trouble LED and sound the system trouble sounder, but will not interfere with the proper operation of any circuit which does not have a fault condition.
- B. Each indicating appliance circuit shall be electrically supervised for opens, grounds and short circuit faults, on the circuit wiring, and shall be so arranged that a fault condition on any indicating appliance circuit or group of circuits will not cause an alarm to sound. The occurrence of any fault will light the trouble LED and sound the system trouble sounder, but will not interfere with the proper operation of any circuit which does not have a fault condition.

PART 5 – CONTROL UNIT

5.1 SYSTEM CABINET

- A. Mounting
 - 1. The system cabinets shall be red and can be either surface or flush mounted. The cabinet door shall be easily removable to facilitate installation and service.
- B. Audible System Trouble Sounder
 - 1. An audible system trouble sounder shall be an integral part of the control unit. Provisions shall also be provided for an optional supervised remote trouble signal.
- C. Power Supply and Charger:
 - 1. The entire system shall operate on 24 VDC, filtered switch mode power supply with the rated current available of 9 Amps. The FACP must have a battery charging circuit capable of complying with the following requirements:
 - a. Twenty-four (24) hours of battery standby with five (5) minutes of alarm signaling at the end of this twenty-four (24) hour period (as required per NFPA 72 central station signaling requirements) using rechargeable batteries with automatic charger to maintain gel-cell batteries in a fully charged condition.
 - 2. The power supply shall comply with U.L. Standard 864 for power limiting.
 - 3. The FACP will indicate a trouble condition if there is a loss of AC power or if the batteries are missing or of insufficient capacity to support proper system operation in the event of AC failure. A “Battery Test” will be performed automatically every minute to check the integrity of the batteries. The test must disconnect the batteries from the charging circuit and place a load on the battery to verify the battery condition.
 - 4. In the event that it is necessary to provide additional power one or more of the model RPS-1000 Distributed Power Modules shall be used to accomplish this purpose.

D. Connections and Circuits

1. Connections to the light and power service shall be on a dedicated branch circuit in accordance with the National Fire Alarm Code NFPA 72, National Electrical Code (NEC) NFPA 70, and the local authority having jurisdiction (AHJ).
2. The circuit and connections shall be mechanically protected.
3. A circuit disconnecting means shall be accessible only to authorized personnel and shall be clearly marked "FIRE ALARM CIRCUIT CONTROL".

PART 6 – ACCESSORY COMPONENTS

6.1 The FACP shall support the following devices on the RS-485 data bus:

| | |
|------------|--|
| VIP-VCM | Voice Control Module |
| VIP-SW16 | Additional 16 Zone Switch Module |
| VIP-50 | 50 Watt Amplifier (8 max.) |
| VIP-CE4 | 4 Zone Splitter |
| VIP-RM2000 | Remote Microphone (2 max.) |
| 5815XL | Signaling Line Circuit Expander (SLC) Module |
| 5824 | Printer Interface Module |
| RA-2000 | LCD Remote Annunciator |
| 5865-3 | LED Remote Annunciator |
| 5865-4 | LED Remote Annunciator with reset and silence switches |
| 5880 | LED I/O module |
| RPS-1000 | Intelligent Distributed Power Module |
| 5495 | Remote Power Supply 6.0 Amp |
| 5496 | Remote Addressable Power Supply 6.0 Amp |
| 5499 | Remote Power Supply 9.0 Amp |

6.2 Each node shall support the operation of 159 detectors and 159 addressable module total devices per SLC loop without regard to device type. The following devices shall be supported:

| | |
|---------------|---|
| IDP-Photo | Addressable Photoelectric Smoke detector |
| IDP-Photo-T | Addressable Photoelectric Smoke detector with Thermal |
| IDP-Ion | Addressable Ionization Sensor |
| IDP-Heat | Addressable Heat Sensor |
| IDP-Heat-ROR | Addressable Heat with Rate of Rise |
| IDP-Heat-Ht | Addressable Heat High temp 190° |
| IDP-Acclimate | Addressable Multi Criteria Smoke detector with thermal |
| IDP-6AB | 6" detector base |
| SSDNR | Addressable Photoelectric duct Detector does not include head |
| SSD2 | Addressable Photoelectric duct Detector with Head |
| SSDCOIL | required on D2 and DNR if a remote test |
| IDP-Relay | Addressable Relay Module |
| IDP-Relay-6 | Addressable Multi Relay Module |
| IDP-Monitor | Addressable Input Module (Class A or B) |
| IDP-Minimon | Mini Input Module |
| IDP-Monitor-2 | Addressable Dual Input Module |

| | |
|----------------|--|
| IDP-Monitor-10 | Addressable Multi Input Module (10) |
| IDP-Control | Addressable Notification Module |
| IDP-Control-6 | Addressable Notification Multi Module (6) |
| IDP-Zone | Two Wire Smoke Detector Module |
| IDP-Zone-6 | 6 Multi Smoke Detector Module |
| IDP-Iso | Isolation Module |
| IDP-Beam | Addressable Beam Detector |
| IDP-Beam-T | Addressable Beam Detector with Test feature |
| SSB224RB | Detector Relay Base |
| SSB501BHT | Detector Sounder Base |
| SSRTS451KEY | Remote Test Switch For Photoelectric Duct Detector |
| IDP-Pull-SA | Addressable Single Action Pull Station |
| IDP-Pull-DA | Addressable Dual Action Pull Station |

The FACP shall support these other Silent Knight devices via addressable input, addressable Notification, or Addressable Output Modules.

PS-DATK Dual action Manual Pull Station – Key Reset

6.3 MANUAL FIRE ALARM STATIONS

- A. Manual Fire Alarm Stations shall be non-coded, double action type, with a key operated test-reset lock in order that they may be tested, and so designed that after actual emergency operation, they cannot be restored to normal except by use of a key. The reset key shall be so designed that it will reset manual station and open FACP without use of another key. An operated station shall automatically condition itself so as to be visually detected, as operated, at a minimum distance of fifty feet, front or side. Manual stations shall be constructed of die cast metal with clearly visible operating instructions on the front of the stations in raised letters. Stations shall be suitable for surface mounting on matching backbox, or semi-flush mounting on a standard single-gang box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) dependent on manual station accessibility or per local requirements. Manual stations shall be Model IDP-Pull. If using conventional pull stations they must be installed in conjunction with an Addressable Input Module (IDP-Monitor) or Mini Input Module (IDP-Minimon) used with the manual stations. Shall be Silent Knight Model PS-DATK, PS-SATK, PS-DA or PS-SA and Underwriters Laboratories listed when used with addressable modules.

6.4 REMOTE POWER SUPPLIES

- A. The Remote Power Supplies for Notification appliances shall be the Silent Knight Model RPS-1000. The Model RPS-1000 Intelligent Power Supply shall hang on the main S-Bus and be programmed through the IFP-2000VIP control. It will support 6 amps of 24 volt DC power, with 6 Flexput circuits, rated at 3 amps each. Two additional 5815XL SLC loop expanders shall be capable to be installed in the cabinet. The power supply will also regenerate the S-Bus for an additional 6000’.
- B. The remote power supply model 5499 or 5495 may also be used on the system. These power supplies are activated by the IDP-Control module and support 24VDC power, with 4 notification circuits, rated at 3 amps each. The total power on a 5495 is 6 amps. The total power on a 5499 is 9 amps. These power boosters may also be activated from another notification circuit from either the fire alarm control, a distributed power supply (RPS-1000).

6.5 NOTIFICATION DEVICES

- A. The visual and audio/visual signaling devices shall be compatible with the IFP-2000VIP, as stated in the installation manuals and be Listed with Underwriters Laboratories Inc. per UL 1971 and/or 1638. Each indicating appliance circuit shall be electrically supervised for opens, grounds and short circuit faults, on the circuit wiring, and shall be so arranged that a fault condition on any indicating appliance circuit or group of circuits will not cause an alarm to sound. The occurrence of any fault will light the trouble LED and sound the system trouble sounder, but will not interfere with the proper operation of any circuit which does not have a fault condition. The notification appliance (combination audio/visual units only) shall produce a peak sound output of 90dba or greater as measured in an anechoic chamber. The appliance shall be capable of meeting the candela requirements of the blueprints presented by the Engineer and ADA. The appliance shall be polarized to allow for electrical supervision of the system wiring. The unit shall be provided with terminals with barriers for input/output wiring and be able to mount a single gang or double gang box or double workbox with the use of an adapter plate. The unit shall have an input voltage range of 19-30 volts.

6.6 SMOKE DETECTORS

- A. Smoke detectors shall be Silent Knight model IDP-Photo ceiling mounted, Analog/Addressable photoelectric smoke detectors. The combination detector head and twist lock base shall be U.L. listed compatible with the Silent Knight IFP-2000 fire alarm control panel.
- B. The base shall permit direct interchange with Silent Knight's IDP-Ion ionization smoke detector or the IDP-Heat detector. The base shall be the appropriate twist lock base IDP-6AB
- C. The smoke detector shall have a flashing status LED for visual supervision. When the detector is actuated, the flashing LED will latch on steady at full brilliance. The detector may be reset by actuating the control panel's reset switch. The sensitivity of the detector shall be capable of being selected and measured by the control panel without the need for external test equipment.
- D. The vandal security-locking feature shall be used in those areas as indicated on the drawing. The locking feature shall be field selectable when required. It shall be possible to perform a sensitivity test of the detector without the need of generating smoke. The test method shall simulate the effects of products of combustion in the chamber to ensure testing of the detector circuits.
- E. Detectors shall have completely closed back to restrict entry of dust and air turbulence and have a 30 mesh insect screen. Electronics of the unit shall be shielded to protect against false alarms from E.M.I. and R.F.I.

6.7 HEAT DETECTORS

- A. Furnish and install analog/addressable heat detectors, Silent Knight model IDP-Heat. The combination heat detector and twist lock base shall be U.L. listed compatible with the Silent Knight IFP-2000 fire alarm control panel.
- B. The base shall permit direct interchange with the Silent Knight IDP- Ionization smoke detector and the IDP-Photo photoelectric smoke detector. The base shall be appropriate twist lock base IDP-6AB.

- C. The heat detector shall have a flashing status LED for visual supervision. When the detector is actuated, the flashing LED will latch on steady at full brilliance. The detector may be reset by actuating the control panel's reset switch. The vandal security-locking feature shall be used in those areas as indicated on the drawings. Electronics of the unit shall be shielded to protect against false alarms from E.M.I. and R.F.I.

6.8 DUCT DETECTORS

- A. Duct Detector shall be Silent Knight SSDNR with an IDP-Photo smoke head.

PART 7 – WIRING

7.1 INSTALLER'S RESPONSIBILITIES

- A. The installer shall coordinate the installation of the fire alarm equipment.
- B. All conductors and wiring shall be installed according to the manufacturer's
- C. It shall be the installer's responsibility to coordinate with the supplier, regarding the correct wiring procedures before installing any conduits or conductors.

7.2 INSTALLATION OF SYSTEM COMPONENTS

- A. System components shall be installed in accordance with the latest revisions of the appropriate NFPA pamphlets, the requirements contained herein, National Electrical Code, local and state regulations, the requirements of the fire department and other applicable authorities having jurisdiction (AHJ).

- 7.3 All wire used on the fire alarm system shall be U.L. Listed as fire alarm protection signaling circuit cable per National Electrical Code, Articles 760.

PART 8 – WARRANTY AND FINAL TEST

8.1 GENERAL

- A. The electrical contractor shall warrant all equipment and wiring free from inherent mechanical and electrical defects for one year (365 days) from the date of final acceptance.
- B. Spare Equipment
 - 1. The Electrical Contractor shall furnish up to five (5) in any combination of fire alarm devices selected by the Owner, including but not limited to smoke, heat, duct, monitor module, control monitor module, or audio/visual devices for Owner spare.
- C. In addition to the equipment shown on the project drawings, include twenty-five (25) additional peripheral devices of any type (i.e. smoke detector, duct smoke detector, heat detector, pull station. Monitor module, relay module, control module, horn/strobe, speaker/strobe, strobe, etc.).

These devices may be installed at the discretion of the local Fire Marshal, the project engineer, or the licensed fire alarm company, upon review and/or testing performed by all.

If necessary, these devices, along with the required panel additions, wiring, labor, etc., shall be furnished and installed at no additional cost to the owner. If, at the end of the project, they are not required to be installed, they shall be given to the owner for their use.

- D. Concurrent with the warranty period, the licensed fire alarm contractor shall provide (2) semi-annual inspections of the completed fire alarm system in accordance with the State of Delaware Fire Prevention Regulations. All costs shall be included in the contract amount. No additional fees will be paid by the owner for this service.

8.2 FINAL TEST

Before the installation shall be considered completed and acceptable by the awarding authority, a test of the system shall be performed as follows:

- A. The contractor's job foreman, the fire alarm distributor's assigned technician, a representative of the owner, and a representative of the Fire Marshal's Office.
- B. The contractor's job foreman, in the presence of a representative of the owner, and the fire marshal's office shall operate every building fire alarm device to ensure proper operation and correct annunciation at each remote annunciator and control panel.
- C. One half (1/2) of all tests shall be performed on battery standby power.
- D. Where application of heat would destroy any detector, it may be manually activated.
- E. When the testing has been completed to the satisfaction of both the contractor's job foremen and the representatives of the manufacturer and owner, a State of Delaware "Fire Alarm Signaling System Certificate of Installation" shall be completed and signed by the necessary personnel.
- F. The contractor shall leave the fire alarm system in proper working order, and without additional expense to the owner, shall replace any defective materials or equipment provided by him under this contract within one (1) year (365 days) from the date of final acceptance by the awarding authority. Warranty work shall be completed during normal business hours, a maximum of 24 hours after notification of the service request.
- G. Provide service response within (1) hour during a "false alarm" condition.

8.3 AS-BUILT DRAWINGS, TESTING, AND MAINTENANCE INSTRUCTIONS

- A. As Built Drawings
 - 1. A complete set of reproducible "as-built" drawings showing installed wiring, product addresses, and specific interconnections between all equipment, shall be delivered to the owner upon completion of system.

B. Operating and Instruction Manuals

Three (3) complete sets of operating and instruction manuals, each placed in a 3-ring binder, shall be delivered to the owner upon completion. Each manual shall contain a copy of the as-built fire alarm system drawings. The instruction period for the owner or its representatives shall be 4 hours, performed during normal business hours.

C. Testing Frequency Instructions

1. Complete, accurate, step-by-step testing instructions giving recommended and required testing frequency of all equipment, methods for testing each individual piece of equipment, and a complete trouble-shooting manual explaining how to test the primary internal parts of each piece of equipment shall be delivered to the owner upon completion of the system.
2. Maintenance instructions shall be complete, easy to read, understandable, and shall provide the following information:
 - Instruction on replacing any components of the system, including internal parts.
 - Instructions on periodic cleaning and adjustment of equipment with a schedule of these functions.

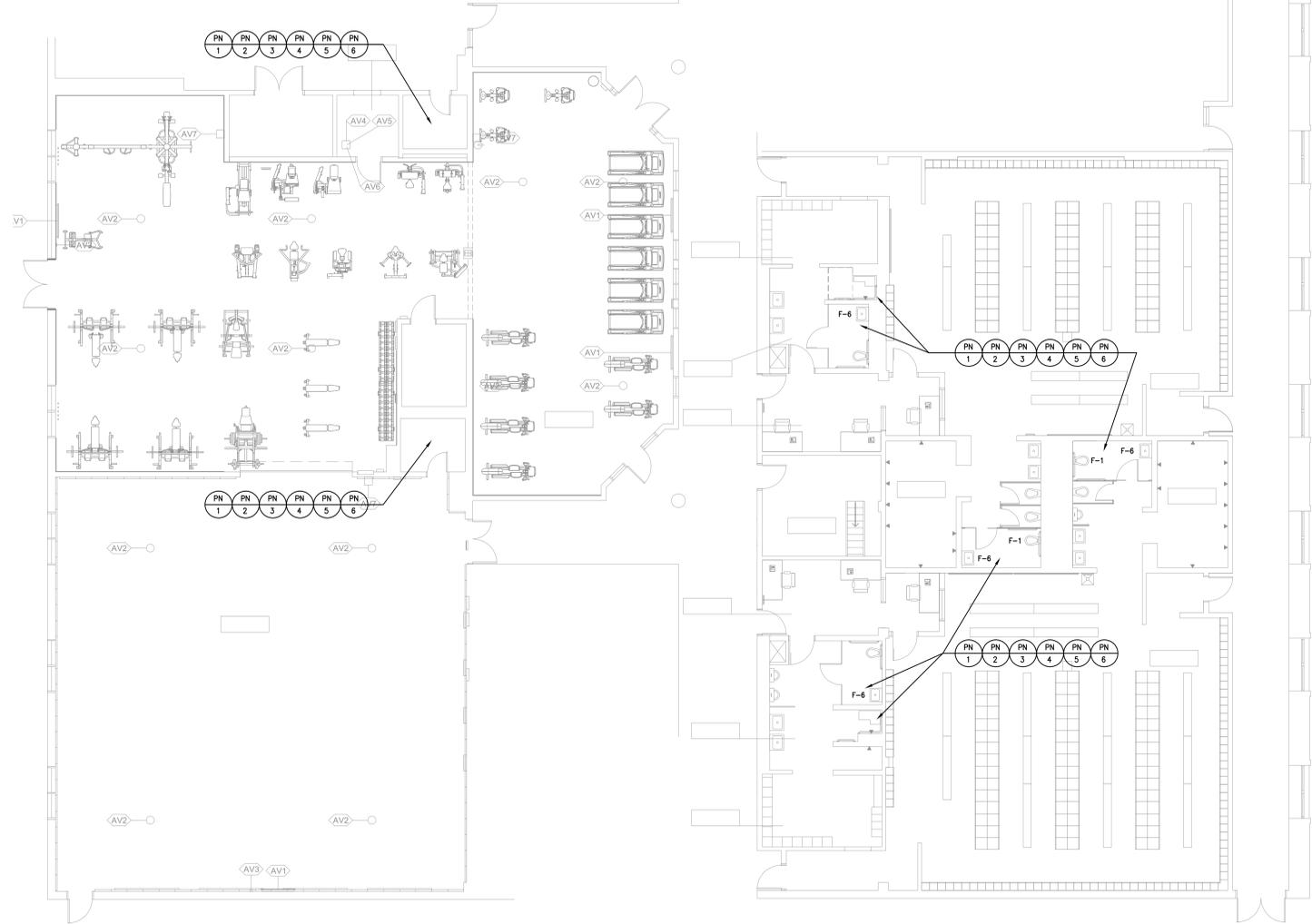
A complete list of all equipment and components with information as to the address and phone number of both the manufacturer and local supplier of each item.

3. User operating instructions shall be provided, and prominently displayed on the cabinet front or on a separate sheet located next to the fire alarm control unit, in accordance with UL Standard #864.

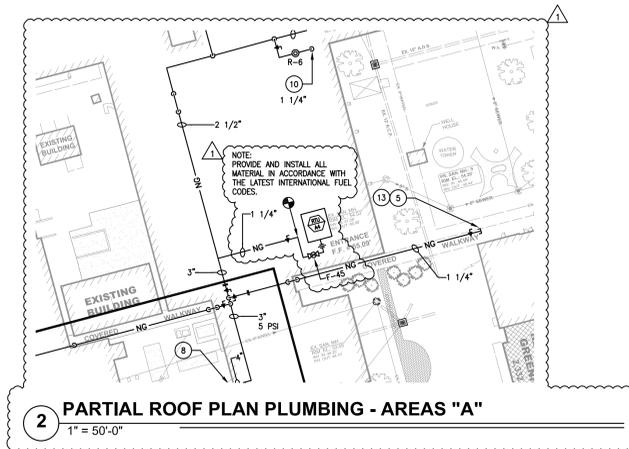
END OF SECTION 260721

PLUMBING NOTES

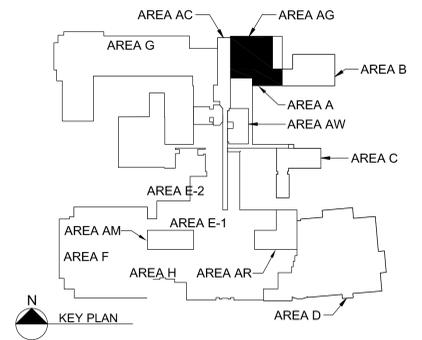
- PN 1 PLUMBING CONTRACTOR SHALL COORDINATE THE QUANTITY OF FIXTURES TO BE REPLACED WITH THE DEMOLITION DRAWING AND THE CONSTRUCTION MANAGER.
- PN 2 PLUMBING CONTRACTOR SHALL FIELD VERIFY LOCATION AND SIZES OF ALL OVERHEAD DOMESTIC WATER. REMOVE SUFFICIENT AMOUNT OF INSULATION FOR PURPOSE OF MAKING ALL TIE-INS.
- PN 3 PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL ALL DOMESTIC WATER TO, ALL NEW PLUMBING FIXTURES TO INCLUDE THE FOLLOWING: COPPER TUBING, VALVES, FITTINGS, SHOCK ABSORBERS, SUPPORTS AND INSULATION FOR A COMPLETE OPERATING FIXTURE.
- PN 4 PLUMBING CONTRACTOR SHALL FLUSH & STERILIZE THE DOMESTIC WATER SYSTEM. SEE SPECIFICATIONS.
- PN 5 PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY SANITARY DRAIN PIPING, FITTINGS, ADAPTERS AND SUPPORTS FOR A COMPLETE GREYSYSTEM.
- PN 6 PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL ALL NEW INSULATION AND LABELS. SEE SPECIFICATIONS.



1 FLOOR PLAN PLUMBING - AREAS "A" & "AG" - ALTERNATE
1/8" = 1'-0"



2 PARTIAL ROOF PLAN PLUMBING - AREAS "A"
1" = 50'-0"



KEY PLAN



| NO. | REVISION | DATE |
|-----|----------|----------|
| 1 | | 12/07/12 |

CR
Cabrera, Rohrbaugh & Associates
401 East Winding Hill Road
Mechanicstown, Pennsylvania 17055
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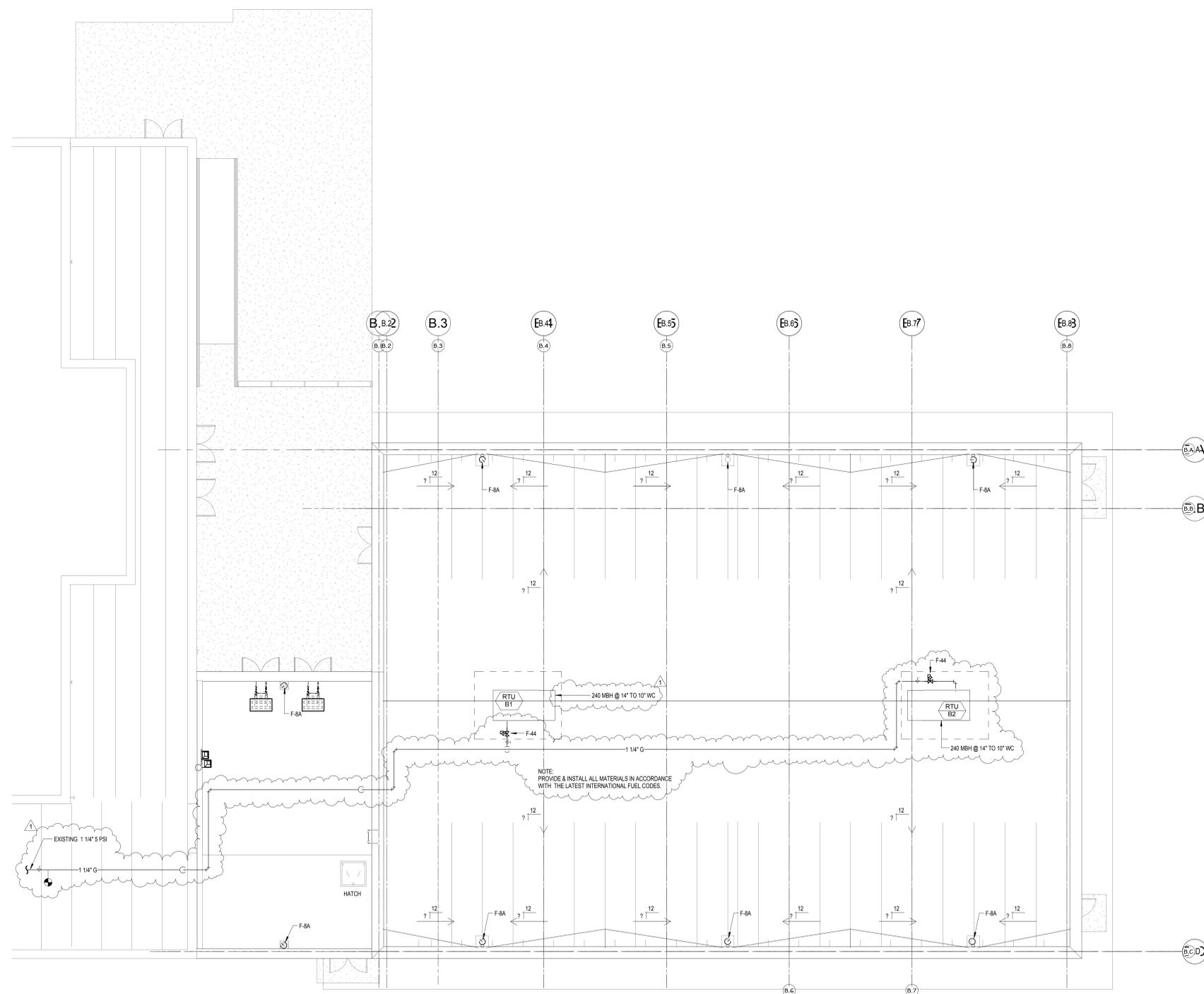
DELAWARE ARCHITECTS, LLC
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Office - 302-491-5847 Fax - 302-491-5048

POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

WEIGHT ROOM &
LOCKERS
PLUMBING

| | |
|-------------|----------------|
| SCALE: | 1/8" = 1'-0" |
| DESIGN BY: | M.P. |
| DRAWN BY: | M.P. |
| CHECKED BY: | SA |
| CALL FILE: | Project Number |
| DATE: | 08/15/2012 |

PA1.2



NOTE:
PROVIDE & INSTALL ALL MATERIALS IN ACCORDANCE
WITH THE LATEST INTERNATIONAL FUEL CODES.

1 PLUMBING ROOF PLAN - ALTERNATE
1/8" = 1'-0"



| NO. | REVISION | DATE |
|-----|-------------|----------|
| 1 | ADDENDUM #3 | 12/07/12 |

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**POLYTECH HIGH SCHOOL
RENOVATIONS AND ADDITIONS**
823 WALNUT SHADE ROAD WOODSIDE, DELAWARE

**PLUMBING ROOF
PLAN**

| | |
|-------------|--------------|
| SCALE: | 1/8" = 1'-0" |
| DESIGN BY: | Designer |
| DRAWN BY: | Author |
| CHECKED BY: | Checker |
| DWG FILE: | |
| DATE: | 06/15/2012 |

PB1.2

| | |
|----------|-------------|
| DATE | 12/07/12 |
| REVISION | ADDENDUM #3 |
| NO. | 1 |

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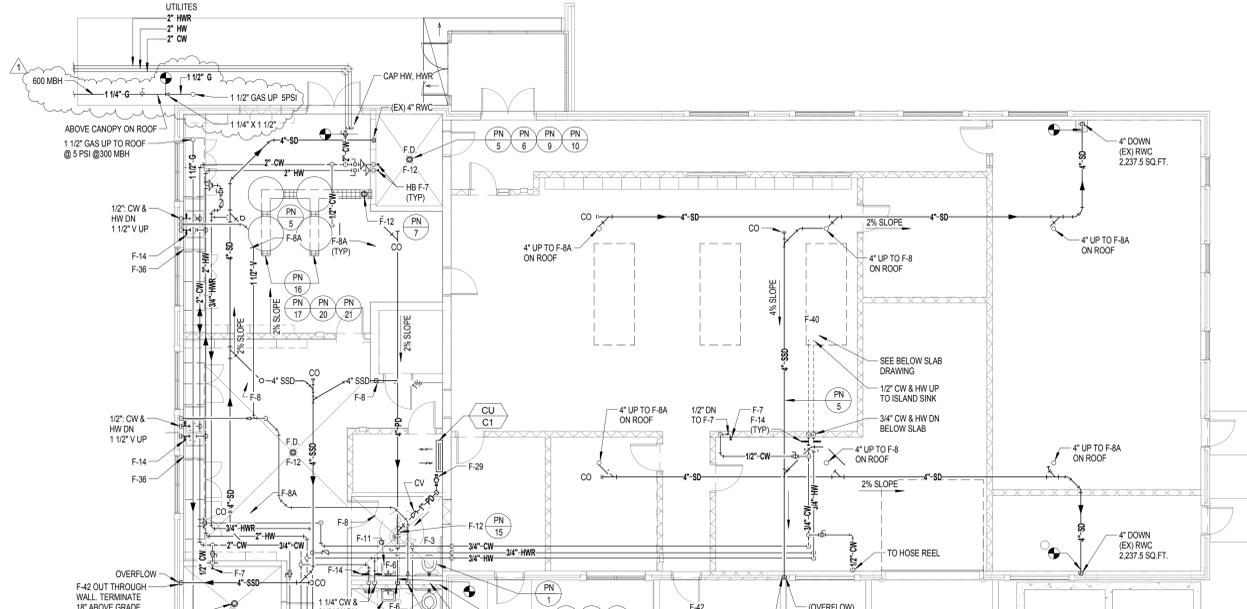
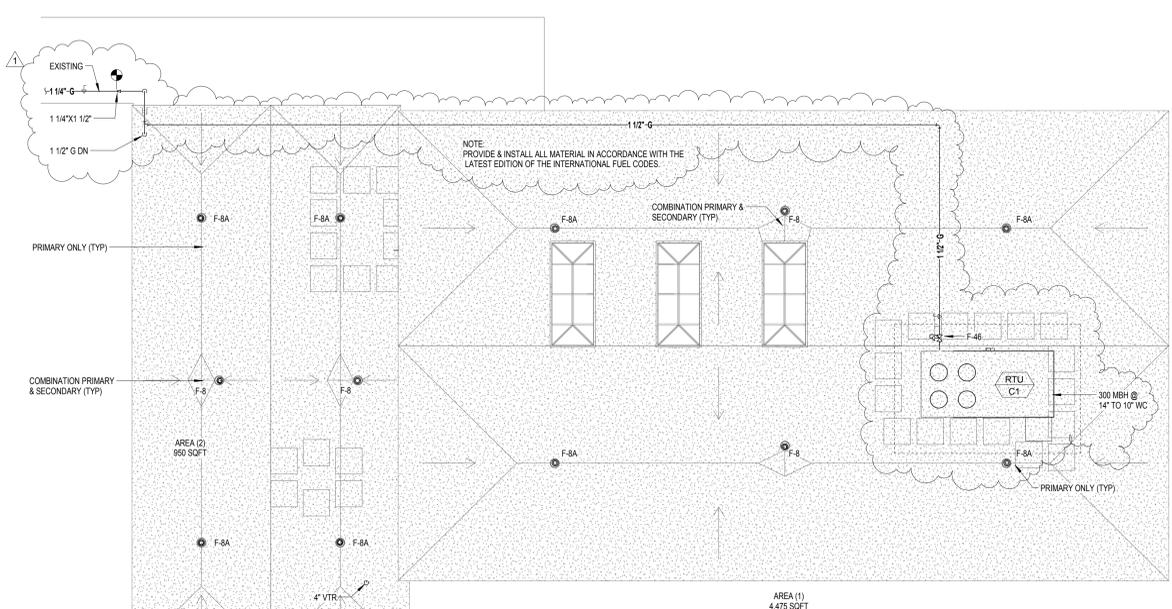
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**POLYTECH HIGH SCHOOL
RENOVATIONS AND ADDITIONS**
823 WALNUT SHADE ROAD WOODSIDE, DELAWARE

**FIRST FLOOR &
ROOF PLUMBING
PLAN**

| | |
|---------------|--------------|
| SCALE: | 1/8" = 1'-0" |
| DESIGN BY: | M.F.P. |
| DRAWN BY: | M.F.P. |
| CHECKED BY: | SAJ |
| DRAWING FILE: | |
| DATE: | 08/15/2012 |

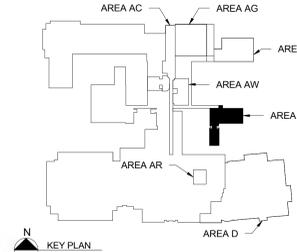
PC1.1



- PLUMBING NOTES**
- PN 1 PROVIDE AND INSTALL NEW FIXTURES; (2) LAVATORIES AND (2) WATER CLOSETS.
 - PN 2 PROVIDE AND INSTALL ELECTRIC WATER HEATER. SEE DRAWINGS P1.1 & P1.2.
 - PN 3 PROVIDE AND INSTALL NEW DOMESTIC WATER SANITARY DRAINS AND VENTS. TIE INTO EXISTING VENTS. FIELD VERIFY LOCATION OF SOIL RISER WHEN THE EXISTING CHASE IS REMOVED.
 - PN 4 PROVIDE AND INSTALL WALL CLEANOUT, SHOCK ABSORBERS, SENSOR OPERATED FAUCETS AND FLUSH VALVES.
 - PN 5 SEE DRAWING DPC1.1 FOR ALL DEMOLITION AND SLAB CUTTING.
 - PN 6 PROVIDE AND INSTALL FLOOR DRAINS, 1/2" COPPER TUBING AND SANITARY EXTENSIONS TO THE BELOW SLAB MAIN. TO INCLUDE TRAP PRIMER VALVES AND DISTRIBUTION BLOCK. ACCESS PANEL IN CHASE WALL AND DEEP SEAL TRAP FLOOR DRAINS.
 - PN 7 PROVIDE AND INSTALL FLOOR DRAIN AT THE BOTTOM OF THE TRENCH DRAIN. TIE INTO THE EXISTING SANITARY.
 - PN 8 PROVIDE DOMESTIC WATER FROM OVERHEAD. PROVIDE AND INSTALL VENT. TIE INTO EXISTING VENT SYSTEM.
 - PN 9 ALL TANKS, AIR PUMPS, TUBING AND DRAIN PIPING SHALL BE PROVIDED BY POLYTECH SCHOOL.
 - PN 10 OBTAIN ALL EQUIPMENT DETAILS AND INSTALLATION INSTRUCTIONS PRIOR TO ALL NEW WORK.
 - PN 11 PROVIDE ALL SLAB CUTTING, TRENCHING, BACKFILL AND FINISH CONCRETE TRENCH. PROVIDE FRAMING AND RE-REINFORCED FIBERGLASS GRATING.
 - PN 12 REINSTALL FLOOR DRAINS AND CONNECT TO EXISTING DRAINAGE. FIELD VERIFY WIT DYE OUT TO MANHOLES TO DETERMINE IF DRAINS ARE SANITARY OR SOIL.
 - PN 13 PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL INCERTS AND DIRECTION OF FLOW. EXTEND NEW SANITARY DRAINS BELOW SLAB TO THE EXISTING SANITARY SYSTEM. TO INCLUDE NEW FLOOR MOUNTED TOILETS.
 - PN 14 PROVIDE DYE VERIFICATION THAT ALL SANITARY EXITS TO EXISTING SANITARY MANHOLES AND PROVIDE AS BUILT LOCATIONS AND INVERTS. PLUMBING CONTRACTOR SHALL PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS AND THE TRENCH DRAIN SYSTEM.
 - PN 15 PLUMBING CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL 1/2" COLD WATER FROM THE TRAP PRIMER VALVE TO THE FLOOR DRAIN TRAP PIPE CONNECTION AND UP ABOVE FLOOR MINIMUM 6" INCHES.
 - PN 16 PLUMBING CONTRACTOR SHALL PROVIDE PVC PIPE TO PROTECT ALL UTILITIES FROM THE AQUA FILTER ROOM OUT TO THE NEW TANKS. COORDINATE WITH THE TANK VENDOR AND FIELD VERIFY ALL PIPE SIZES ON EXISTING PUMPS. FILTER TANKS THAT WILL BE REUSED PRIOR TO SELECTING THE NEW CARRIER PIPE FOR BELOW GRADE. PROVIDE NEW PIPING FROM THE EXISTING AIR COMPRESSOR & FILTER PUMPS TO BE RELOCATED OUT TO THE TANKS.
 - PN 17 PLUMBING CONTRACTOR SHALL FIELD COORDINATE THE LOCATION OF ALL AQUA TANKS AND EQUIPMENT PRIOR TO SETTING TRENCH DRAINS AND ALL PIPING.
 - PN 18 PLUMBING CONTRACTOR SHALL CONNECT ALL NEW BELOW SLAB SANITARY TO THE EXISTING SYSTEM IN COMPLIANCE WITH THE INTERNATIONAL PLUMBING CODES AND ANY STATE OF DELAWARE OR COUNTY CODE REQUIREMENTS.
 - PN 19 PLUMBING CONTRACTOR SHALL PERFORM ALL FLUSHING AND TESTING PRIOR TO ANY BACKFILL OR FINAL CONCRETE WORK.
 - PN 20 PLUMBING CONTRACTOR SHALL PROVIDE 1/2" COPPER TUBING AIR PIPING IN TRENCH OUT TO THE AQUA TANKS. PROVIDE ALL NECESSARY PIPE FITTINGS, VALVES AND ADAPTERS NECESSARY FOR A COMPLETE OPERATING SYSTEM.
 - PN 21 PROVIDE 1/2" DOMESTIC WATER IN TRENCH OUT TO THE AQUA TANKS. PROVIDE ALL NECESSARY PIPE FITTINGS, VALVES AND ADAPTERS NECESSARY FOR A COMPLETE OPERATING SYSTEM.
 - PN 22 PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL INVERTS AND DIRECTION OF ALL EXISTING STORM DRAINAGE SYSTEMS SUCH AS ROOF DRAINS AND GREENHOUSE DRAINS. DYE CHECK TO CONFIRM ALL RAIN WATER EXTENDS TO STORM MANHOLES. COORDINATE ALL INFORMATION TO THE CIVIL ENGINEER FOR ASA BUILT DOCUMENTATION.

2 ROOF - PLUMBING PLAN
1/8" = 1'-0"

1 FIRST FLOOR PLUMBING PLAN
1/8" = 1'-0"



fa furrow associates
consulting engineers
1206 society drive · claymont, de 19703

| NO. | REVISION | DATE |
|-----|-------------|----------|
| 2 | ADDENDUM #3 | 12/07/12 |

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POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

PLUMBING ROOF
PLAN

| | |
|---------------|---------------|
| SCALE: | 3/32" = 1'-0" |
| DESIGN BY: | MLP |
| DRAWN BY: | MLP |
| CHECKED BY: | SAJ |
| DRAWING FILE: | |
| DATE: | 08/15/2012 |

PD2.1



1 PLUMBING ROOF PLAN
3/32" = 1'-0"

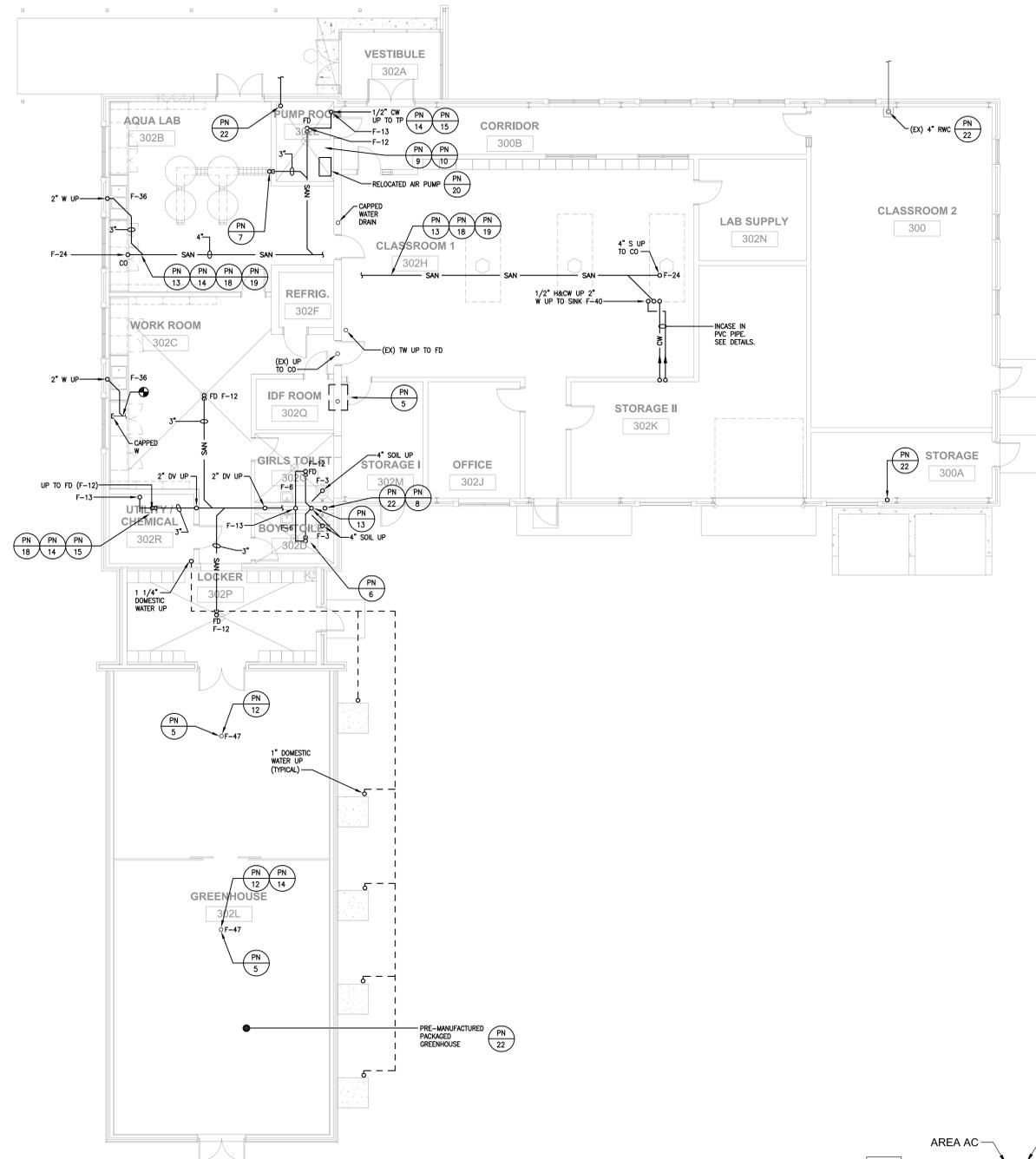
DRAWING NOTES: PIPING PLANS
1. SEE DRAWING P1.0 FOR ALL MISCELLANEOUS SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.



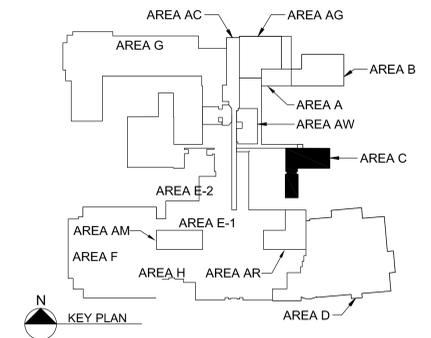
PLUMBING NOTES

- PN 1 PROVIDE AND INSTALL NEW FIXTURES; (2) LAVATORIES AND (2) WATER CLOSETS.
- PN 2 PROVIDE AND INSTALL ELECTRIC WATER HEATER SEE DRAWING P1.1 & P1.2
- PN 3 PROVIDE AND INSTALL NEW DOMESTIC WATER SANITARY DRAINS AND VENTS, TIE INTO EXISTING VENTS, FIELD VERIFY LOCATION OF SOIL RISER WHEN THE EXISTING CHASE IS REMOVED.
- PN 4 PROVIDE AND INSTALL WALL CLEANOUT, SHOCK ABSORBERS, SENSOR OPERATED FAUCETS, AND FLUSH VALVES.
- PN 5 SEE DRAWING DPC1.1 FOR ALL DEMOLITION AND SLAB CUTTING.
- PN 6 PROVIDE AND INSTALL FLOOR DRAINS, 3" COPPER TUBING AND SANITARY EXTENSIONS TO THE BELOW SLAB MAIN, TO INCLUDE TRAP PRIMER VALVES AND DISTRIBUTION BLOCK, ACCESS PANEL IN CHASE WALL AND DEEP SEAL TRAP FLOOR DRAINS.
- PN 7 PROVIDE AND INSTALL FLOOR DRAIN AT THE BOTTOM OF TRENCH DRAIN, TIE INTO THE EXISTING SANITARY.
- PN 8 PROVIDE DOMESTIC WATER FROM OVERHEAD. PROVIDE AND INSTALL VENT, TIEN TO EXISTING VENT SYSTEM.
- PN 9 ALL TANKS, AIR PUMPS, TUBING, AND DRAIN PIPING SHALL BE PROVIDED BY POLYTECH SCHOOL.
- PN 10 OBTAIN ALL EQUIPMENT DETAILS AND INSTALLATION INSTRUCTIONS PRIOR TO ALL NEW WORK.
- PN 11 PROVIDE ALL SLAB CUTTING, TRENCHING, BACKFILL, AND FINISH CONCRETE TRENCH. PROVIDE FRAMING AND RE-ENFORCED FIBERGLASS GRATING.
- PN 12 PROVIDE AND INSTALL NEW FLOOR DRAINS AND CONNECT TO EXISTING DRAINAGE. FIELD VERIFY WITH DYE OUT TO MANHOLES TO DETERMINE IF DRAINS ARE SANITARY OR STORM.
- PN 13 PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL INVERTS AND DIRECTION OF FLOW. EXTEND NEW SANITARY DRAINS BELOW SLAB TO THE EXISTING SANITARY SYSTEM, TO INCLUDE NEW FLOOR MOUNTED TOILETS.
- PN 14 PROVIDE DYE VERIFICATION THAT ALL SANITARY EXITS TO EXISTING SANITARY MANHOLES AND PROVIDE AS BUILT LOCATIONS AND INVERTS. PLUMBING CONTRACTOR SHALL PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS AND THE TRENCH DRAIN SYSTEM.
- PN 15 PLUMBING CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL 1/2" COLD WATER FROM THE TRAP PRIMER VALVE TO THE FLOOR DRAIN TRAP PIPE CONNECTION AND UP ABOVE FLOOR MINIMUM 6" HIGH.
- PN 16 PLUMBING CONTRACTOR SHALL PROVIDE PVC PIPE TO PROTECT ALL UTILITIES FROM THE AQUA LAB FILTER ROOM OUT TO THE NEW TANKS. COORDINATE WITH THE TANK VENDOR AND FIELD VERIFY ALL PIPE SIZES ON EXISTING PUMPS, FILTER TANKS THAT WILL BE REUSED PRIOR TO SELECTING THE NEW CARRIER PIPE FOR BELOW GRADE. PROVIDE NEW PIPING FROM THE EXISTING AIR COMPRESSOR & FILTER PUMPS TO BE RELOCATED OUT TO THE TANKS.
- PN 17 PLUMBING CONTRACTOR SHALL FIELD COORDINATE THE LOCATION OF ALL AQUA TANKS AND EQUIPMENT PRIOR TO SETTING TRENCH DRAINS AND ALL PIPING.
- PN 18 PLUMBING CONTRACTOR SHALL CONNECT ALL NEW BELOW SLAB SANITARY TO THE EXISTING SYSTEM IN COMPLIANCE WITH THE INTERNATIONAL PLUMBING CODES AND ANY STATE OF DELAWARE OR COUNTY CODE REQUIREMENTS.
- PN 19 PLUMBING CONTRACTOR SHALL PERFORM ALL FLUSHING AND TESTING PRIOR TO ANY BACKFILL OR FINAL CONCRETE WORK.
- PN 20 PLUMBING CONTRACTOR SHALL PROVIDE 1/2" COPPER TUBING AIR PIPING IN TRENCH OUT TO THE AQUA TANKS. PROVIDE ALL NECESSARY PIPE FITTINGS, VALVES AND ADAPTERS NECESSARY FOR A COMPLETE OPERATING SYSTEM.
- PN 21 PROVIDE 1/2" DOMESTIC WATER IN TRENCH OUT TO THE AQUA TANKS. PROVIDE ALL NECESSARY PIPE FITTINGS, VALVES AND ADAPTERS NECESSARY FOR A COMPLETE OPERATING SYSTEM.
- PN 22 PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL INVERTS AND DIRECTION OF ALL EXISTING STORM DRAINAGE SYSTEMS SUCH AS ROOF DRAINS AND GREENHOUSE DRAINS. DYE CHECK TO CONFIRM ALL RAIN WATER EXTENDS TO STORM MANHOLES. COORDINATE ALL INFORMATION TO THE CIVIL ENGINEER FOR AS BUILT DOCUMENTATION.

NOT ALL NOTES APPLY TO THIS DRAWING



1 BELOW SLAB PLUMBING - AREA "C"
1/8" = 1'-0"



| | |
|------------|----------|
| DATE | 12/07/12 |
| REVISION | |
| APPENDIX # | |
| NO. | A |

Crabtree, Rohrbaugh & Associates
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401 East Winding Hill Road
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Office - 302-491-5847 Fax - 302-491-5048

**POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL**

**ENVIRONMENTAL
SCIENCES
BELOW SLAB
PLUMBING**

| | |
|-------------|----------------|
| SCALE: | 1/8" = 1'-0" |
| DESIGN BY: | M.P. |
| DRAWN BY: | M.P. |
| CHECKED BY: | SA |
| CALLC FILE: | Project Number |
| DATE: | 08/15/2012 |

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| DATE | 12/07/12 |
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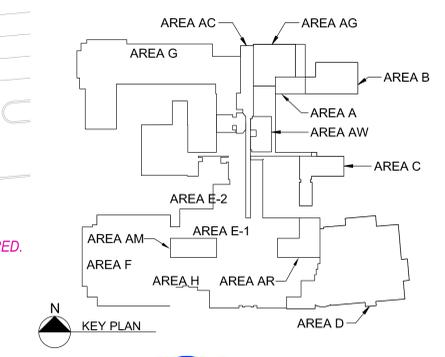
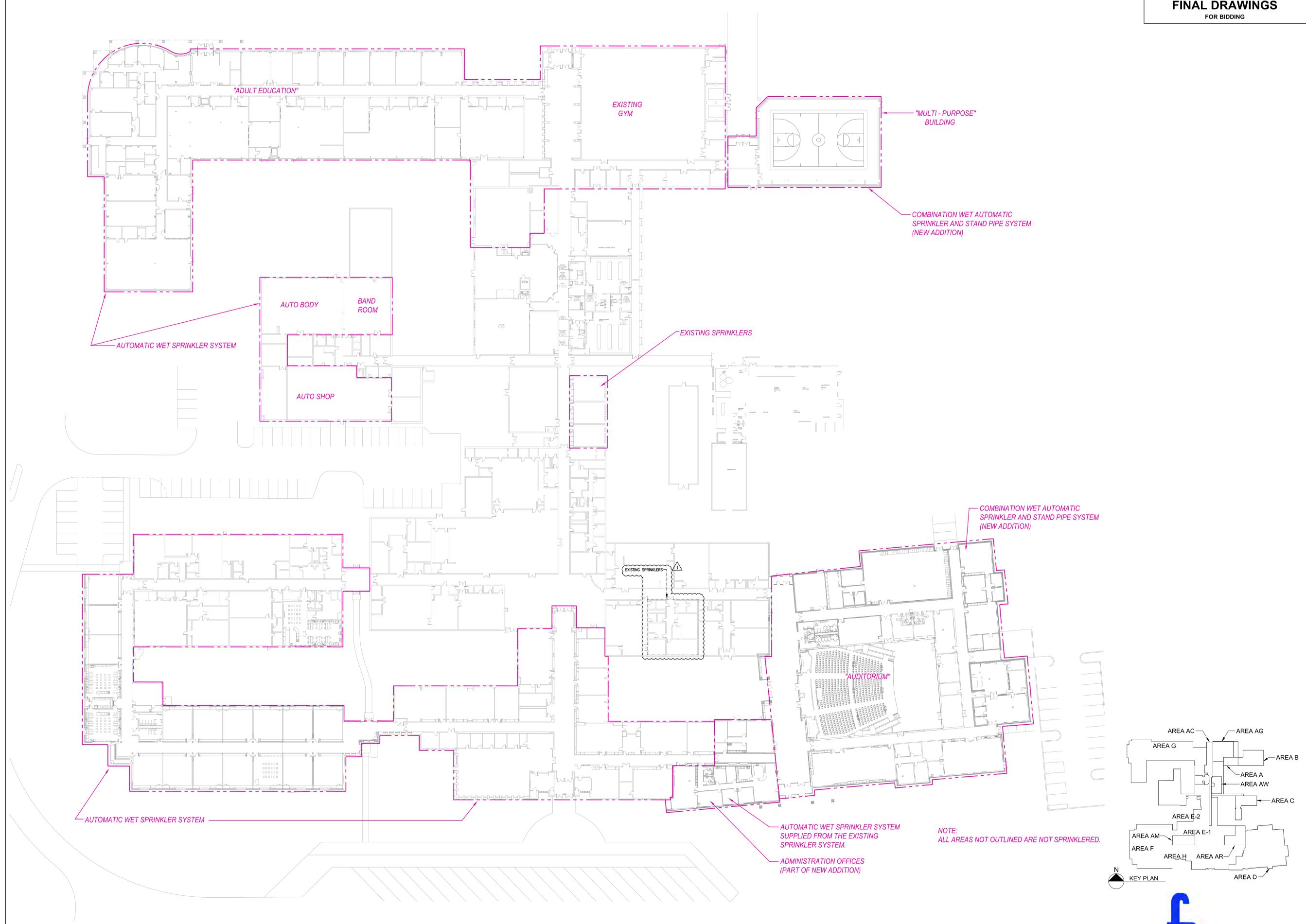
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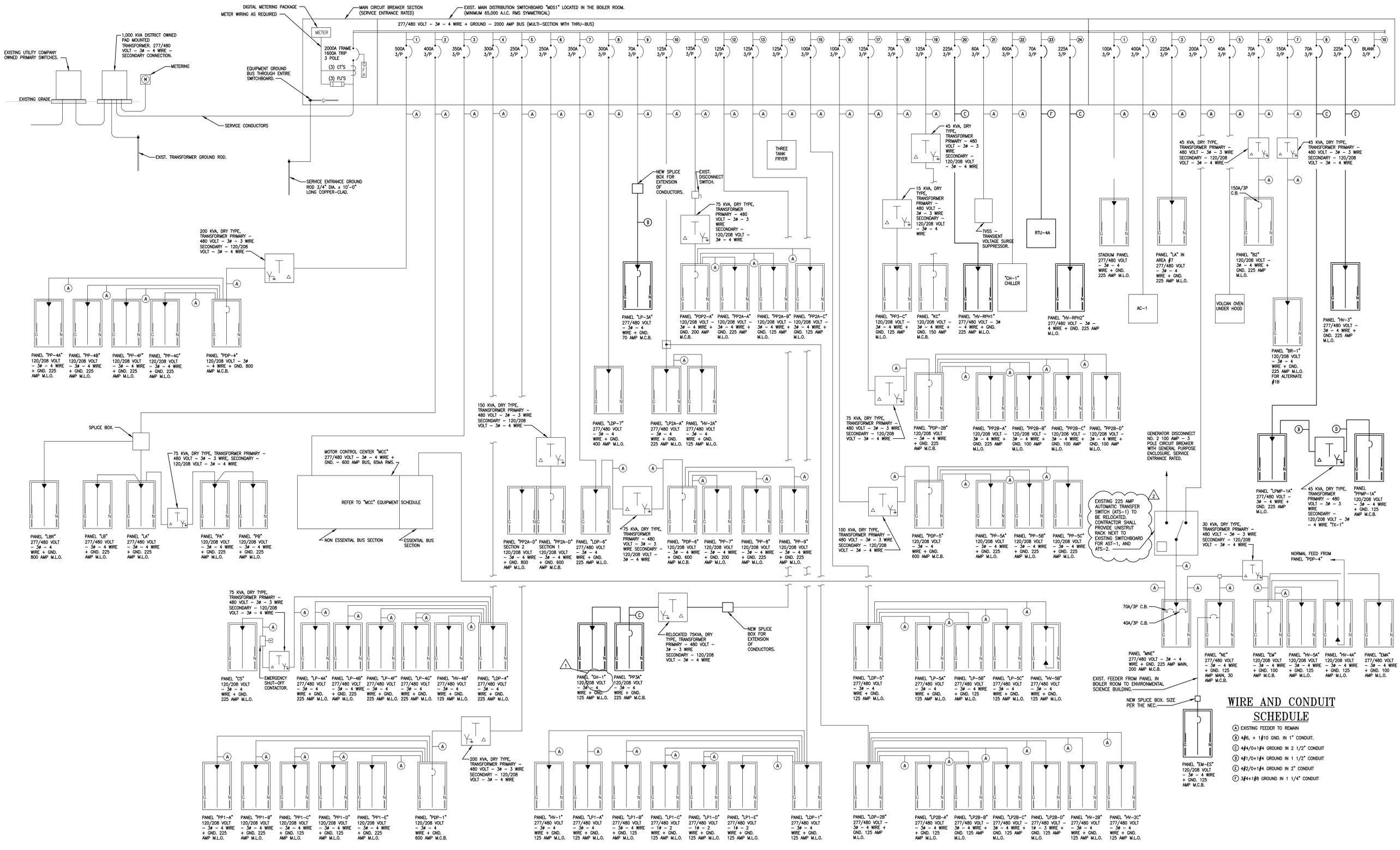
**POLYTECH SCHOOL DISTRICT
 ADDITIONS AND RENOVATIONS TO
 POLYTECH HIGH SCHOOL**

**EXIST. BLDG. AREA "A"
 ADDIT. B+D
 FIRE PROTECTION**

| | |
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| SCALE: | 1/32" = 1'-0" |
| DESIGN BY: | WJS |
| DRAWN BY: | WJS |
| CHECKED BY: | SAJ |
| CALL FILE: | Project Number |
| DATE: | 08/15/2012 |



NOTE:
ALL AREAS NOT OUTLINED ARE NOT SPRINKLERED.



EXISTING BUILDING SINGLE LINE DIAGRAM
N.T.S.

| | |
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| DATE | 11/28/12 |
| REVISION | |
| NO. | |

REVISION #1
ADDENDUM #3

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POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

SINGLE LINE DIAGRAM & LEGEND ELECTRICAL

WIRE AND CONDUIT SCHEDULE

- ① EXISTING FEEDER TO REMAIN
- ② #6, + #10 GND. IN 1" CONDUIT
- ③ #4/0+1#4 GROUND IN 2 1/2" CONDUIT
- ④ #1/0+1#4 GROUND IN 1 1/2" CONDUIT
- ⑤ #2/0+1#4 GROUND IN 2" CONDUIT
- ⑥ #4+1#6 GROUND IN 1 1/4" CONDUIT



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| SCALE | NONE |
| DESIGN BY | WJS |
| DRAWN BY | WJS |
| CHECKED BY | SAJ |
| DALL FILE | Project Number |
| DATE | 08/15/2012 |

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| DATE | 12/07/12 |
| REVISION | |
| ADDENDUM #3 | |
| NO. | Δ |

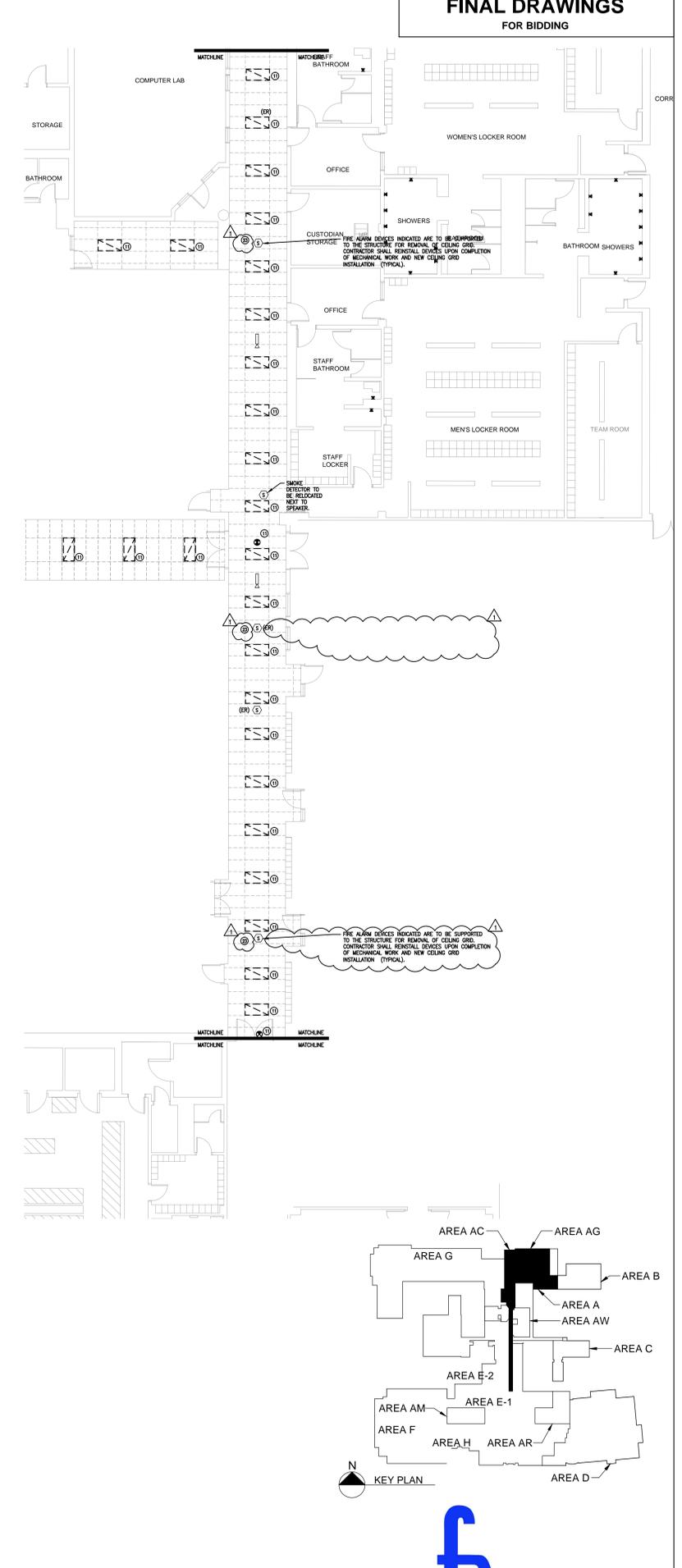
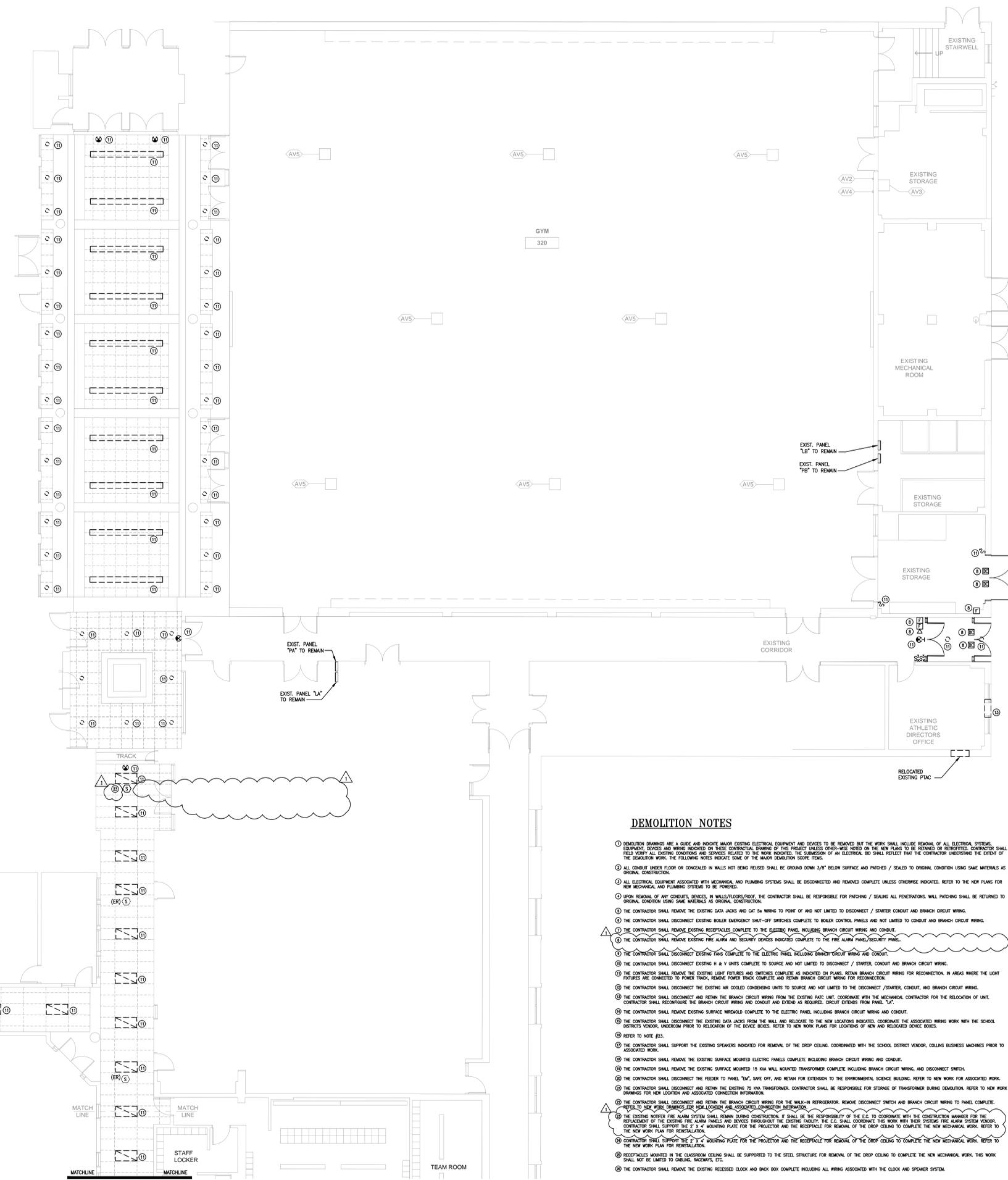
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POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

CORRIDOR
DEMOLITION
ELECTRICAL

SCALE: 1/8" = 1'-0"
DESIGN BY: WJS
DRAWN BY: WJS
CHECKED BY: SAJ
DATE: 08/15/2012
Project Number
DEA1.1



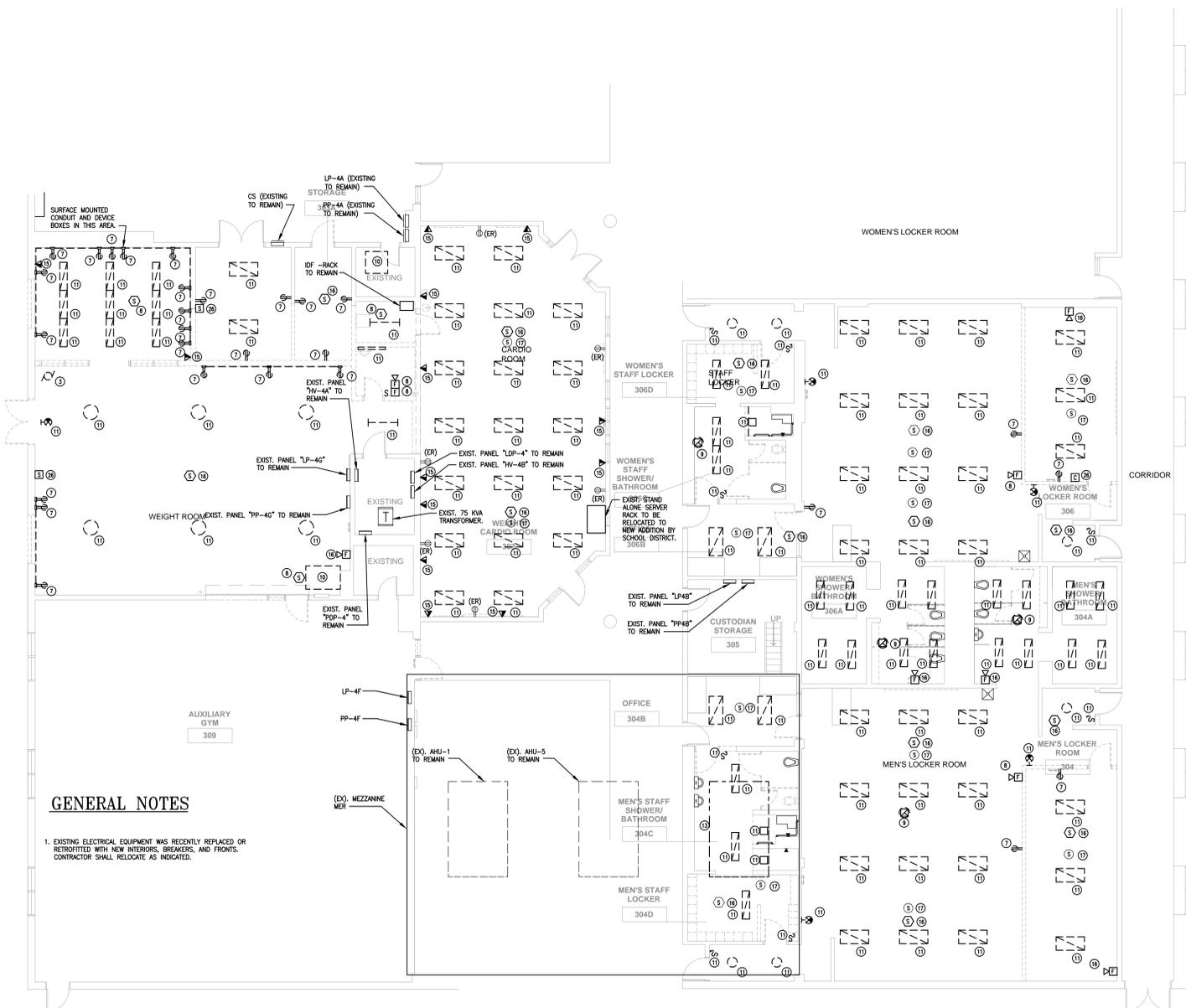
DEMOLITION NOTES

1. DEMOLITION DRAWINGS ARE A GUIDE AND INDICATE MAJOR EXISTING ELECTRICAL EQUIPMENT AND DEVICES TO BE REMOVED BUT THE WORK SHALL INCLUDE REMOVAL OF ALL ELECTRICAL SYSTEMS, EQUIPMENT, DEVICES AND WIRING INDICATED ON THESE CONTRACTUAL DRAWINGS OF THIS PROJECT UNLESS OTHERWISE NOTED ON THE NEW PLANS TO BE REMOVED OR REIDENTIFIED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND SERVICES RELATED TO THE WORK INDICATED. THE SUBMISSION OF AN ELECTRICAL BID SHALL REFLECT THAT THE CONTRACTOR UNDERSTANDS THE EXTENT OF THE DEMOLITION WORK. THE FOLLOWING NOTES INDICATE SOME OF THE MAJOR DEMOLITION SCOPE ITEMS.
2. ALL CONDUIT UNDER FLOOR OR CONCEALED IN WALLS NOT BEING REUSED SHALL BE GROUND DOWN 3/8" BELOW SURFACE AND PATCHED / SEALED TO ORIGINAL CONDITION USING SAME MATERIALS AS ORIGINAL CONSTRUCTION.
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6. THE CONTRACTOR SHALL DISCONNECT EXISTING BOILER EMERGENCY SHUT-OFF SWITCHES COMPLETE TO BOILER CONTROL PANELS AND NOT LIMITED TO CONDUIT AND BRANCH CIRCUIT WIRING.
7. THE CONTRACTOR SHALL REMOVE EXISTING RECEPTACLES COMPLETE TO THE ELECTRIC PANEL INCLUDING BRANCH CIRCUIT WIRING AND CONDUIT.
8. THE CONTRACTOR SHALL REMOVE EXISTING FIRE ALARM AND SECURITY DEVICES INDICATED COMPLETE TO THE FIRE ALARM PANEL/SECURITY PANEL.
9. THE CONTRACTOR SHALL DISCONNECT EXISTING FANS COMPLETE TO THE ELECTRIC PANEL INCLUDING BRANCH CIRCUIT WIRING AND CONDUIT.
10. THE CONTRACTOR SHALL DISCONNECT EXISTING H & V UNITS COMPLETE TO SOURCE AND NOT LIMITED TO DISCONNECT / STARTER, CONDUIT AND BRANCH CIRCUIT WIRING.
11. THE CONTRACTOR SHALL REMOVE THE EXISTING LIGHT FIXTURES AND SWITCHES COMPLETE AS INDICATED ON PLANS. RETAIN BRANCH CIRCUIT WIRING FOR RECONNECTION. IN AREAS WHERE THE LIGHT FIXTURES ARE CONNECTED TO POWER TRACK, REMOVE POWER TRACK COMPLETE AND RETAIN BRANCH CIRCUIT WIRING FOR RECONNECTION.
12. THE CONTRACTOR SHALL DISCONNECT THE EXISTING AIR COOLED CONDENSING UNITS TO SOURCE AND NOT LIMITED TO THE DISCONNECT /STARTER, CONDUIT, AND BRANCH CIRCUIT WIRING.
13. THE CONTRACTOR SHALL DISCONNECT AND RETAIN THE BRANCH CIRCUIT WIRING FROM THE EXISTING PTAC UNIT. COORDINATE WITH THE MECHANICAL CONTRACTOR FOR THE RELOCATION OF UNIT. CONTRACTOR SHALL RECONFIGURE THE BRANCH CIRCUIT WIRING AND CONDUIT AND EXTEND AS REQUIRED. CIRCUIT EXTENDS FROM PANEL "LA".
14. THE CONTRACTOR SHALL REMOVE EXISTING SURFACE WIRING/RECORD COMPLETE TO THE ELECTRIC PANEL INCLUDING BRANCH CIRCUIT WIRING AND CONDUIT.
15. THE CONTRACTOR SHALL DISCONNECT THE EXISTING DATA JACKS FROM THE WALL AND RELOCATE TO THE NEW LOCATIONS INDICATED. COORDINATE THE ASSOCIATED WIRING WORK WITH THE SCHOOL DISTRICT VENDOR. UNDERSTAND PRIOR TO RELOCATION OF THE DEVICE BOXES. REFER TO NEW WORK PLANS FOR LOCATIONS OF NEW AND RELOCATED DEVICE BOXES.
16. REFER TO NOTE #23.
17. THE CONTRACTOR SHALL SUPPORT THE EXISTING SPEAKERS INDICATED FOR REMOVAL OF THE DROP CEILING, COORDINATED WITH THE SCHOOL DISTRICT VENDOR, COLLINS BUSINESS MACHINES PRIOR TO ASSOCIATED WORK.
18. THE CONTRACTOR SHALL REMOVE THE EXISTING SURFACE MOUNTED ELECTRIC PANELS COMPLETE INCLUDING BRANCH CIRCUIT WIRING AND CONDUIT.
19. THE CONTRACTOR SHALL REMOVE THE EXISTING SURFACE MOUNTED 15 KVA WALL MOUNTED TRANSFORMER COMPLETE INCLUDING BRANCH CIRCUIT WIRING, AND DISCONNECT SWITCH.
20. THE CONTRACTOR SHALL DISCONNECT THE FEEDER TO PANEL "TA", SAFE OFF, AND RETAIN FOR EXTENSION TO THE ENVIRONMENTAL SCIENCE BUILDING. REFER TO NEW WORK FOR ASSOCIATED WORK.
21. THE CONTRACTOR SHALL DISCONNECT AND RETAIN THE EXISTING 75 KVA TRANSFORMER. CONTRACTOR SHALL BE RESPONSIBLE FOR STORAGE OF TRANSFORMER DURING DEMOLITION. REFER TO NEW WORK DRAWINGS FOR NEW LOCATION AND ASSOCIATED CONNECTION INFORMATION.
22. THE CONTRACTOR SHALL DISCONNECT AND RETAIN THE BRANCH CIRCUIT WIRING FOR THE WALK-IN REFRIGERATOR. REMOVE DISCONNECT SWITCH AND BRANCH CIRCUIT WIRING TO PANEL COMPLETE. REFER TO NEW WORK DRAWINGS FOR NEW LOCATION AND ASSOCIATED CONNECTION INFORMATION.
23. THE EXISTING NOTIFIER FIRE ALARM SYSTEM SHALL REMAIN DURING CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE E.C. TO COORDINATE WITH THE CONSTRUCTION MANAGER FOR THE REPLACEMENT OF THE EXISTING FIRE ALARM PANELS AND DEVICES THROUGHOUT THE EXISTING FACILITY. THE E.C. SHALL COORDINATE THIS WORK WITH THEIR SYSTEMS FIRE ALARM SYSTEM VENDOR. CONTRACTOR SHALL SUPPORT THE 2" X 4" MOUNTING PLATE FOR THE PROJECTOR AND THE RECEPTACLE FOR REMOVAL OF THE DROP CEILING TO COMPLETE THE NEW MECHANICAL WORK. REFER TO THE NEW WORK PLAN FOR REINSTALLATION.
24. CONTRACTOR SHALL SUPPORT THE 2" X 4" MOUNTING PLATE FOR THE PROJECTOR AND THE RECEPTACLE FOR REMOVAL OF THE DROP CEILING TO COMPLETE THE NEW MECHANICAL WORK. REFER TO THE NEW WORK PLAN FOR REINSTALLATION.
25. RECEPTACLES MOUNTED IN THE CLASSROOM CEILING SHALL BE SUPPORTED TO THE STEEL STRUCTURE FOR REMOVAL OF THE DROP CEILING TO COMPLETE THE NEW MECHANICAL WORK. THIS WORK SHALL NOT BE LIMITED TO CABLING, RACKWAYS, ETC.
26. THE CONTRACTOR SHALL REMOVE THE EXISTING RECESSED CLOCK AND BACK BOX COMPLETE INCLUDING ALL WIRING ASSOCIATED WITH THE CLOCK AND SPEAKER SYSTEM.

1 FLOOR PLAN ELECTRICAL - DEMOLITION - AREAS "A", "AC" & "AG" - ALTERNATE
1/8" = 1'-0"



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| DATE | 12/07/12 |
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| ADDENDUM #3 | |
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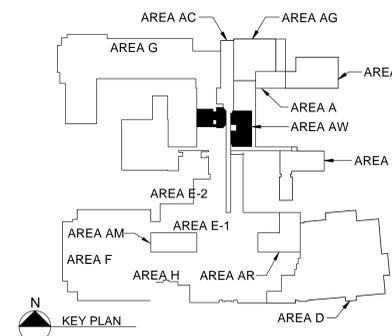
GENERAL NOTES

1. EXISTING ELECTRICAL EQUIPMENT WAS RECENTLY REPLACED OR RETROFITTED WITH NEW INTERIORS, BREAKERS, AND FRONTS. CONTRACTOR SHALL RELOCATE AS INDICATED.

DEMOLITION NOTES

- ① DEMOLITION DRAWINGS ARE A GUIDE AND INDICATE MAJOR EXISTING ELECTRICAL EQUIPMENT AND DEVICES TO BE REMOVED BUT THE WORK SHALL INCLUDE REMOVAL OF ALL ELECTRICAL SYSTEMS, EQUIPMENT, DEVICES AND WIRING INDICATED ON THESE CONTRACTUAL DRAWING OF THIS PROJECT UNLESS OTHERWISE NOTED ON THE NEW PLANS TO BE RETAINED OR RETROFITTED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND SERVICES RELATED TO THE WORK INDICATED. THE SUBMISSION OF AN ELECTRICAL BID SHALL REFLECT THAT THE CONTRACTOR UNDERSTANDS THE EXTENT OF THE DEMOLITION WORK. THE FOLLOWING NOTES INDICATE SOME OF THE MAJOR DEMOLITION SCOPE ITEMS.
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- ④ UPON REMOVAL OF ANY CONDUITS, DEVICES, IN WALLS/FLOORS/ROOF, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING / SEALING ALL PENETRATIONS. WALL PATCHING SHALL BE RETURNED TO ORIGINAL CONDITION USING SAME MATERIALS AS ORIGINAL CONSTRUCTION.
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- ⑦ THE CONTRACTOR SHALL REMOVE EXISTING RECEPTACLES COMPLETE TO THE ELECTRIC PANEL INCLUDING BRANCH CIRCUIT WIRING AND CONDUIT.
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- ㉑ THE CONTRACTOR SHALL DISCONNECT AND RETAIN THE EXISTING 75 KVA TRANSFORMER. CONTRACTOR SHALL BE RESPONSIBLE FOR STORAGE OF TRANSFORMER DURING DEMOLITION. REFER TO NEW WORK DRAWINGS FOR NEW LOCATION AND ASSOCIATED CONNECTION INFORMATION.
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1 FLOOR PLAN ELECTRICAL - DEMOLITION - AREA "AW" - ALTERNATE
1/8" = 1'-0"



POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

WEIGHT ROOM
& LOCKERS
DEMOLITION
ELECTRICAL

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| SCALE | 1/8" = 1'-0" |
| DESIGN BY | WJS |
| DRAWN BY | WJS |
| CHECKED BY | SAJ |
| DALL FILE | Project Number |
| DATE | 08/15/2012 |

DEA1.2



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20. THE CONTRACTOR SHALL DISCONNECT THE FEEDER TO PANEL "EM", SAFE OFF, AND RETAIN FOR EXTENSION TO THE ENVIRONMENTAL SCIENCE BUILDING. REFER TO NEW WORK FOR ASSOCIATED WORK.
21. THE CONTRACTOR SHALL DISCONNECT AND RETAIN THE EXISTING 75 KVA TRANSFORMER. CONTRACTOR SHALL BE RESPONSIBLE FOR STORAGE OF TRANSFORMER DURING DEMOLITION. REFER TO NEW WORK DRAWINGS FOR NEW LOCATION AND ASSOCIATED CONNECTION INFORMATION.
22. THE CONTRACTOR SHALL DISCONNECT AND RETAIN THE BRANCH CIRCUIT WIRING FOR THE WALK-IN REFRIGERATOR. REMOVE DISCONNECT SWITCH AND BRANCH CIRCUIT WIRING TO PANEL COMPLETE. REFER TO NEW WORK DRAWINGS FOR NEW LOCATION AND ASSOCIATED CONNECTION INFORMATION.
23. THE EXISTING WIRELESS FIRE ALARM SYSTEM SHALL REMAIN DURING CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE E.C. TO COORDINATE WITH THE CONSTRUCTION MANAGER FOR THE REPLACEMENT OF THE EXISTING FIRE ALARM PANELS AND DEVICES THROUGHOUT THE EXISTING FACILITY. THE E.C. SHALL COORDINATE THIS WORK WITH THEIR SYSTEMS FIRE ALARM SYSTEM VENDOR. CONTRACTOR SHALL SUPPORT THE 2' X 4' MOUNTING PLATE FOR THE PROJECTOR AND THE RECEPTACLE FOR REMOVAL OF THE DROP CEILING TO COMPLETE THE NEW MECHANICAL WORK. REFER TO THE NEW WORK PLAN FOR REINSTALLATION.
24. CONTRACTOR SHALL SUPPORT THE 2' X 4' MOUNTING PLATE FOR THE PROJECTOR AND THE RECEPTACLE FOR REMOVAL OF THE DROP CEILING TO COMPLETE THE NEW MECHANICAL WORK. REFER TO THE NEW WORK PLAN FOR REINSTALLATION.
25. RECEPTACLES MOUNTED IN THE CLASSROOM CEILING SHALL BE SUPPORTED TO THE STEEL STRUCTURE FOR REMOVAL OF THE DROP CEILING TO COMPLETE THE NEW MECHANICAL WORK. THIS WORK SHALL NOT BE LIMITED TO CABLING, RACEWAYS, ETC.
26. THE CONTRACTOR SHALL REMOVE THE EXISTING RECESSED CLOCK AND BACK BOX COMPLETE INCLUDING ALL WIRING ASSOCIATED WITH THE CLOCK AND SPEAKER SYSTEM.

| NO. | REVISION | DATE |
|-----|-------------|----------|
| | ADDENDUM #2 | 12/04/12 |
| | ADDENDUM #3 | 12/07/12 |

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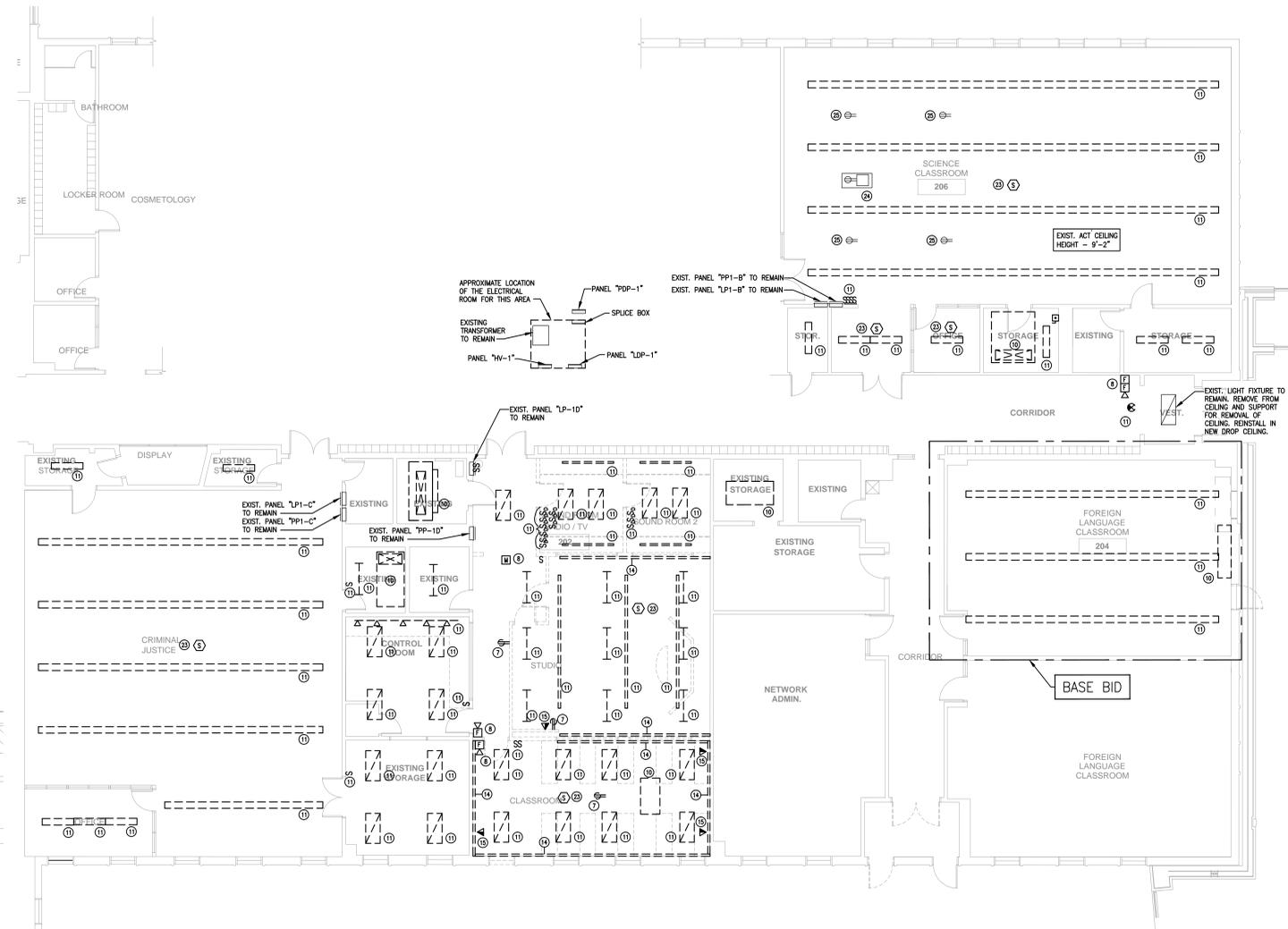
POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

RADIO / TV
& **MEDICAL**
DEMOLITION
ELECTRICAL

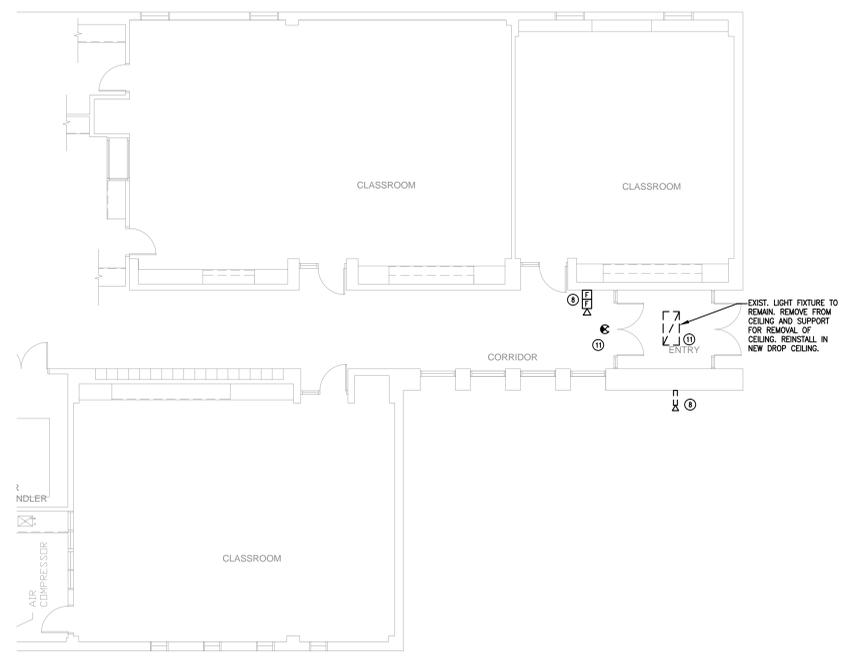
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| DESIGN BY: | WJS |
| DRAWN BY: | WJS |
| CHECKED BY: | SAJ |
| DWG FILE: | Project Number |
| DATE: | 08/15/2012 |

DEA1.3

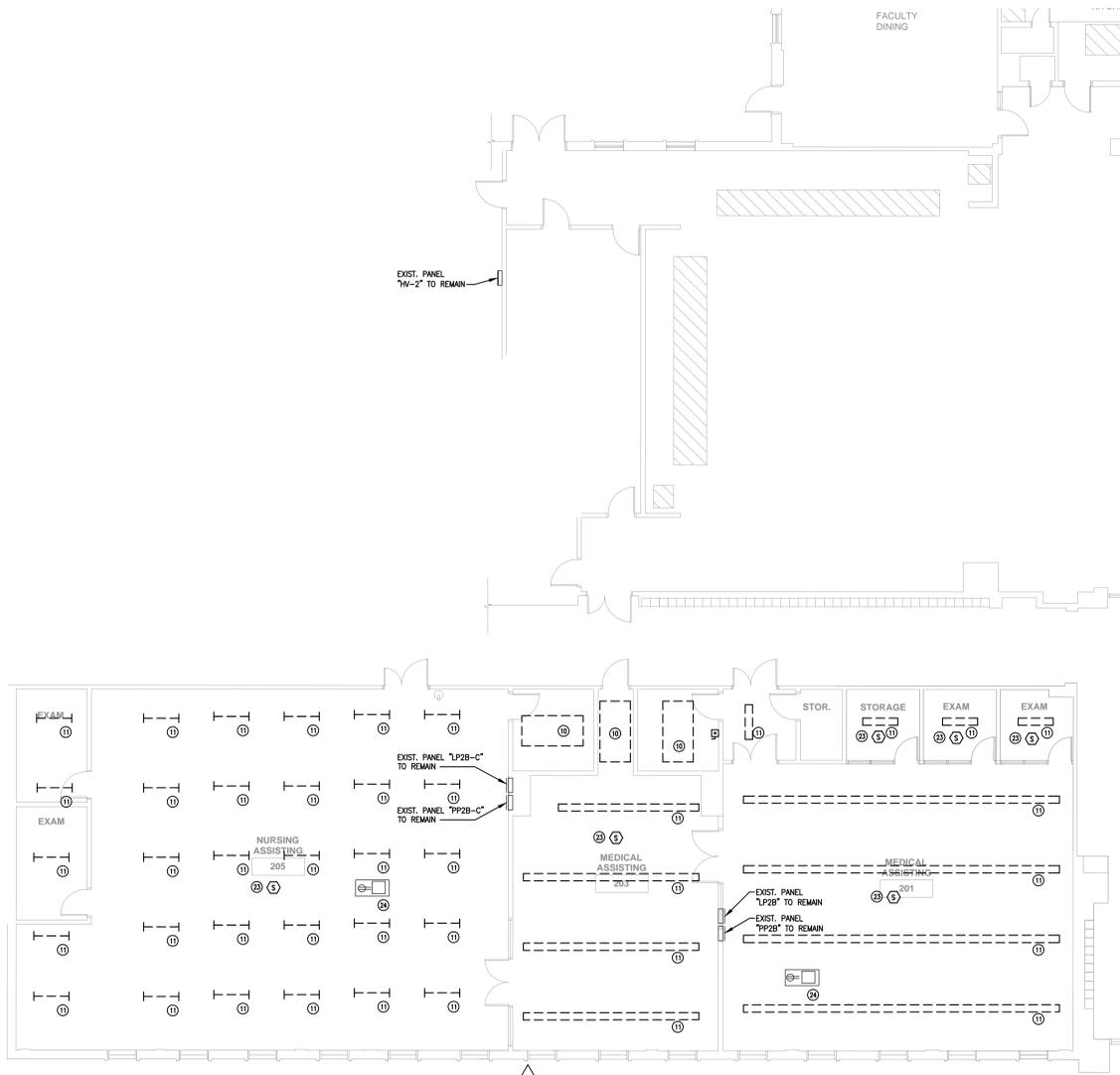
fa **furrow associates**
consulting engineers
1206 society drive • claymont, de 19703



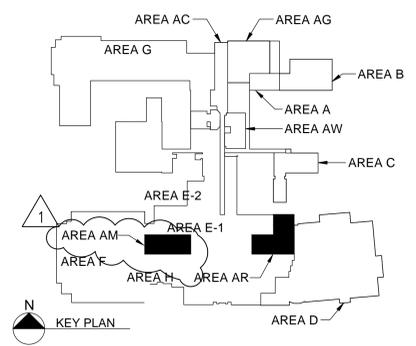
1 FLOOR PLAN ELECTRICAL - DEMOLITION - AREA "AR" - ALTERNATE
1/8" = 1'-0"

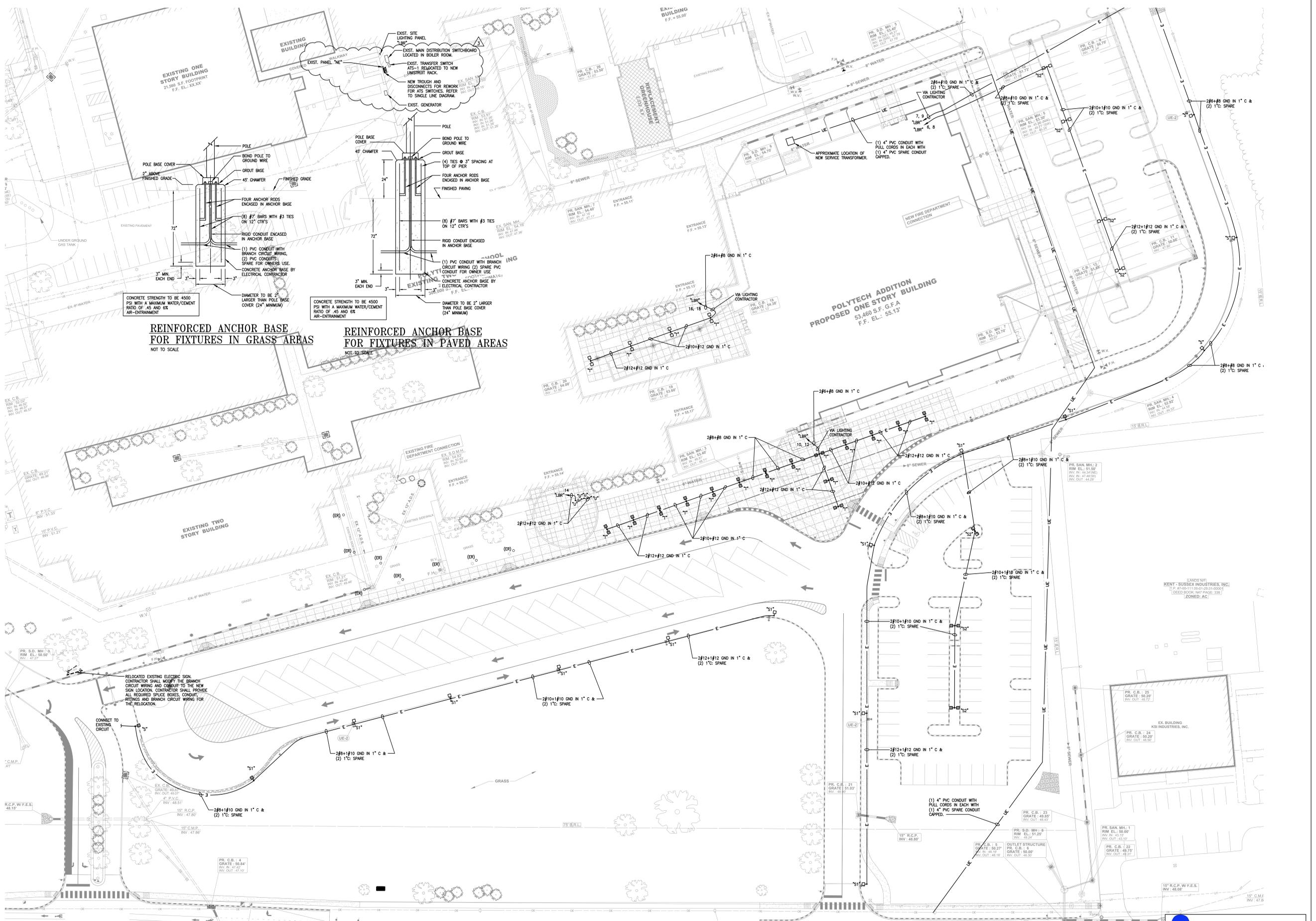


3 FLOOR PLAN ELECTRICAL - DEMOLITION - AREA "AR" BASE BID
1/8" = 1'-0"



2 FLOOR PLAN ELECTRICAL - DEMOLITION - AREA "AM" ALTERNATE
1/8" = 1'-0"





REINFORCED ANCHOR BASE FOR FIXTURES IN GRASS AREAS
NOT TO SCALE

REINFORCED ANCHOR BASE FOR FIXTURES IN PAVED AREAS
NOT TO SCALE

| | |
|-------------|----------|
| DATE | 11/28/12 |
| ADDENDUM #1 | 12/04/12 |
| ADDENDUM #2 | 12/07/12 |
| ADDENDUM #3 | |
| NO. | 3 |

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POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

SITE UTILITY PLAN
ELECTRICAL

fa **furlow associates**
consulting engineers
1206 society drive · claymont, de 19703

| | |
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| SCALE | 1"=30' |
| DESIGN BY | WJS |
| DRAWN BY | WJS |
| CHECKED BY | SAJ |
| DWG FILE | Project Number |
| DATE | 08-08-12 |

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| NO. | REVISION | DATE |
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| 1 | | 11/28/12 |
| 2 | | 12/07/12 |

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DELAWARE
POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

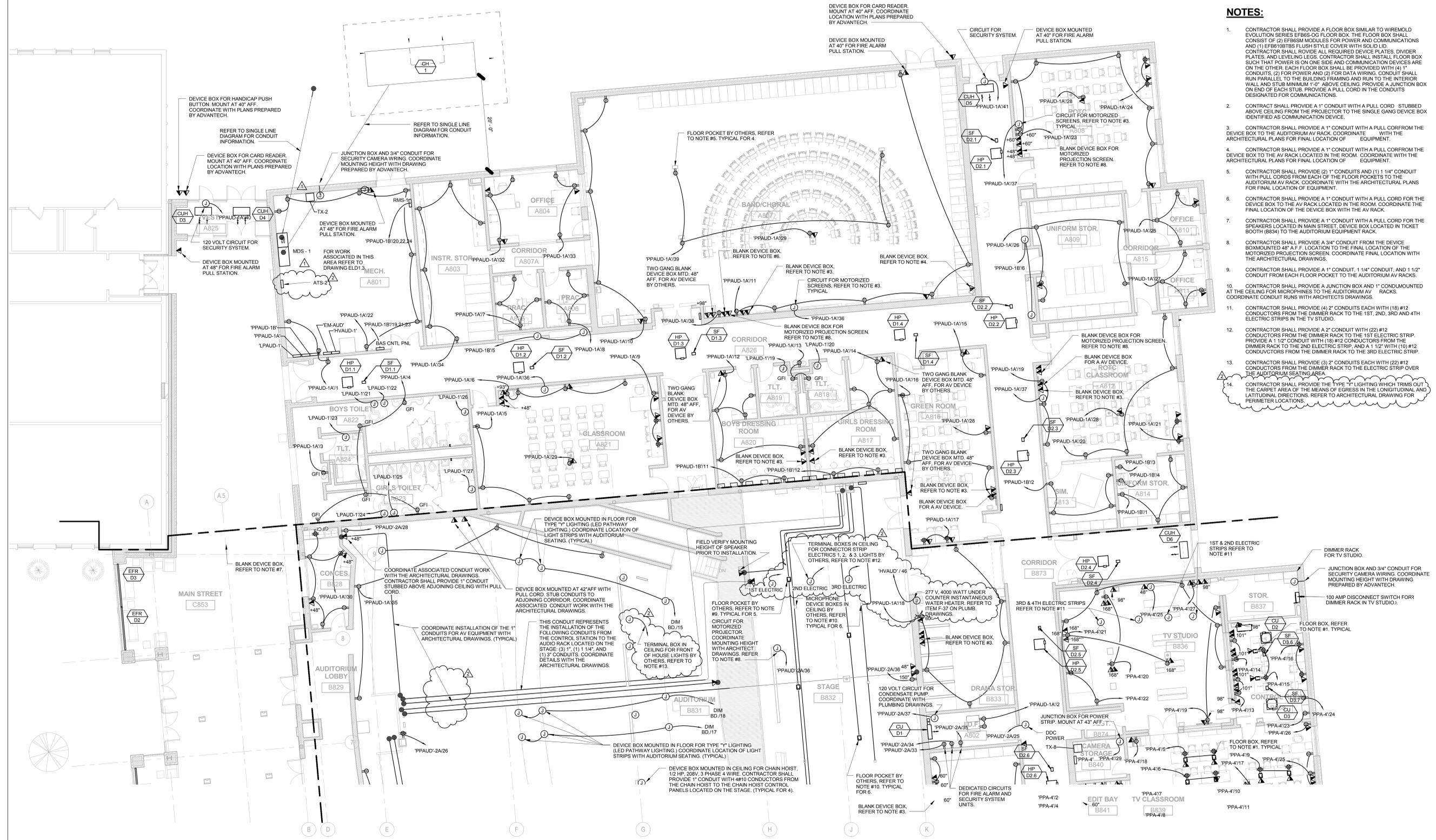
POWER PLAN
AREA 'A'

SCALE: 1/8" = 1'-0"
DESIGN BY: WJS
DRAWN BY: WJS
CHECKED BY: SAJ
DATE: 08/15/2012

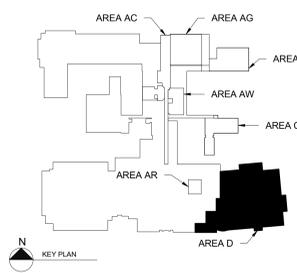
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NOTES:

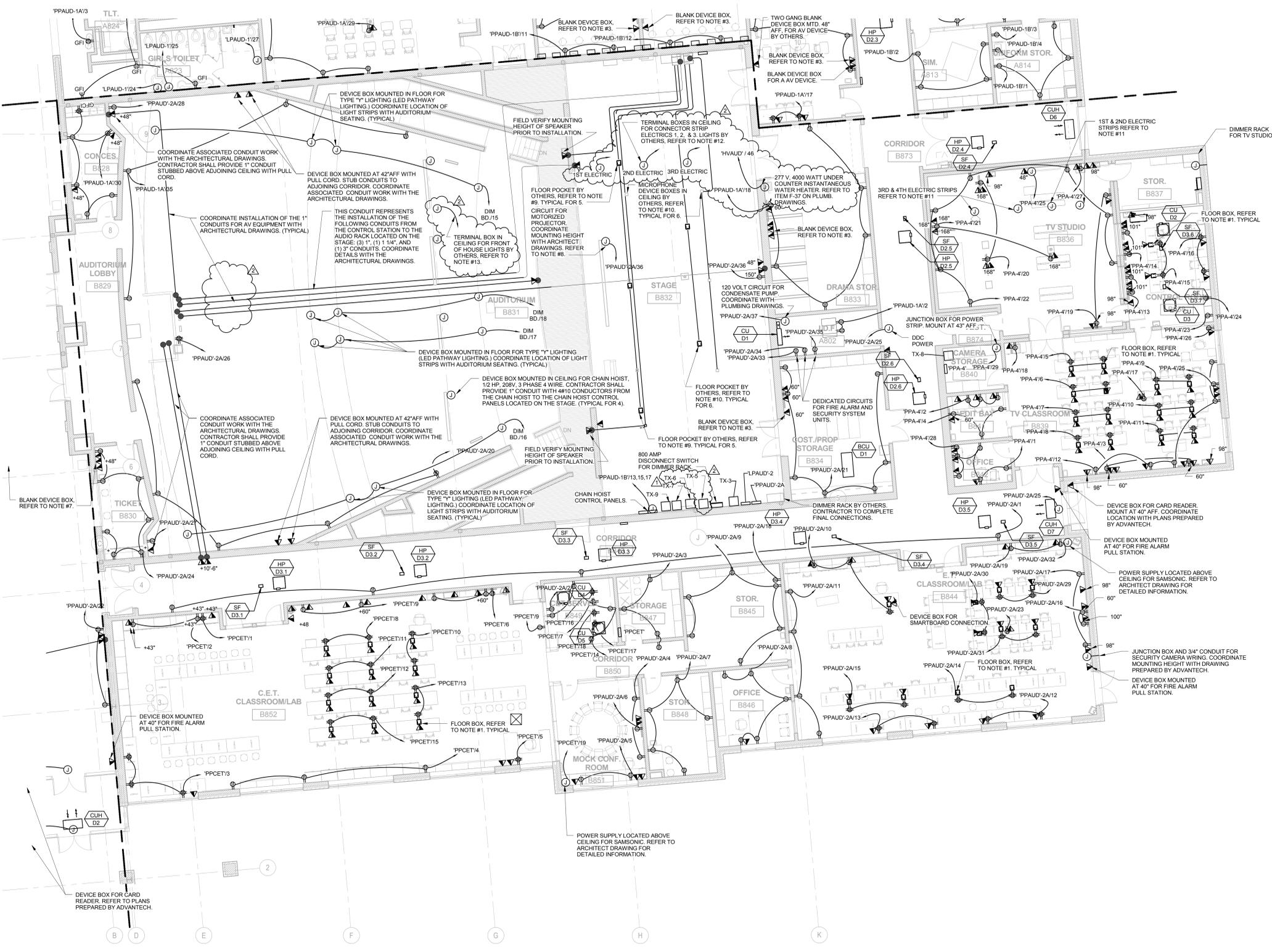
- CONTRACTOR SHALL PROVIDE A FLOOR BOX SIMILAR TO WIREMOLD EVOLUTION SERIES EFB85-03 FLOOR BOX. THE FLOOR BOX SHALL CONSIST OF (2) EFB85M MODULES FOR POWER AND COMMUNICATIONS AND (1) EFB85TBS FLUSH STYLE COVER WITH SOLID LID. CONTRACTOR SHALL PROVIDE ALL REQUIRED DEVICE PLATES, DIVIDER PLATES, AND LEVELING LEGS. CONTRACTOR SHALL INSTALL FLOOR BOX SUCH THAT POWER IS ON ONE SIDE AND COMMUNICATION DEVICES ARE ON THE OTHER. EACH FLOOR BOX SHALL BE PROVIDED WITH (4) 1" CONDUITS, (2) FOR POWER AND (2) FOR DATA WIRING. CONDUIT SHALL RUN PARALLEL TO THE BUILDING FRAMING AND RUN TO THE INTERIOR WALL AND STUB MINIMUM 1'-0" ABOVE CEILING. PROVIDE A JUNCTION BOX ON END OF EACH STUB. PROVIDE A PULL CORD IN THE CONDUITS DESIGNATED FOR COMMUNICATIONS.
- CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD. STUBBED ABOVE CEILING FROM THE PROJECTOR TO THE SINGLE GANG DEVICE BOX IDENTIFIED AS COMMUNICATION DEVICE.
- CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FROM THE DEVICE BOX TO THE AUDITORIUM AV RACK. COORDINATE WITH THE ARCHITECTURAL PLANS FOR FINAL LOCATION OF EQUIPMENT.
- CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FROM THE DEVICE BOX TO THE AV RACK LOCATED IN THE ROOM. COORDINATE WITH THE ARCHITECTURAL PLANS FOR FINAL LOCATION OF EQUIPMENT.
- CONTRACTOR SHALL PROVIDE (2) 1" CONDUITS AND (1) 1 1/4" CONDUIT WITH PULL CORDS FROM EACH OF THE FLOOR POCKETS TO THE AUDITORIUM AV RACK. COORDINATE WITH THE ARCHITECTURAL PLANS FOR FINAL LOCATION OF EQUIPMENT.
- CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FOR THE SPEAKERS LOCATED IN MAIN STREET. DEVICE BOX LOCATED IN TICKET BOOTH (B834) TO THE AUDITORIUM EQUIPMENT RACK.
- CONTRACTOR SHALL PROVIDE A 3/4" CONDUIT FROM THE DEVICE BOX MOUNTED 48" A.F.F. LOCATION TO THE FINAL LOCATION OF THE MOTORIZED PROJECTION SCREEN. COORDINATE FINAL LOCATION WITH THE ARCHITECTURAL DRAWINGS.
- CONTRACTOR SHALL PROVIDE A 1" CONDUIT, 1 1/4" CONDUIT, AND 1 1/2" CONDUIT FROM EACH FLOOR POCKET TO THE AUDITORIUM AV RACKS.
- CONTRACTOR SHALL PROVIDE A JUNCTION BOX AND 1" CONDUIT MOUNTED AT THE CEILING FOR MICROPHONES TO THE AUDITORIUM AV RACKS. COORDINATE CONDUIT RUNS WITH ARCHITECTS DRAWINGS.
- CONTRACTOR SHALL PROVIDE (4) 2" CONDUITS EACH WITH (18) #12 CONDUCTORS FROM THE DIMMER RACK TO THE 1ST, 2ND, 3RD AND 4TH ELECTRIC STRIPS IN THE TV STUDIO.
- CONTRACTOR SHALL PROVIDE A 2" CONDUIT WITH (22) #12 CONDUCTORS FROM THE DIMMER RACK TO THE 1ST ELECTRIC STRIP. PROVIDE A 1 1/2" CONDUIT WITH (18) #12 CONDUCTORS FROM THE DIMMER RACK TO THE 2ND ELECTRIC STRIP, AND A 1 1/2" WITH (10) #12 CONDUCTORS FROM THE DIMMER RACK TO THE 3RD ELECTRIC STRIP.
- CONTRACTOR SHALL PROVIDE (3) 2" CONDUITS EACH WITH (12) #12 CONDUCTORS FROM THE DIMMER RACK TO THE ELECTRIC STRIP OVER THE AUDITORIUM SEATING AREA.
- CONTRACTOR SHALL PROVIDE THE TYPE "Y" LIGHTING WHICH TRIMS OUT THE CARPET AREA OF THE MEANS OF EGRESS IN THE LONGITUDINAL AND LATERAL DIRECTIONS. REFER TO ARCHITECTURAL DRAWING FOR PERIMETER LOCATIONS.



1 POWER PLAN AREA 'A'
1/8" = 1'-0"

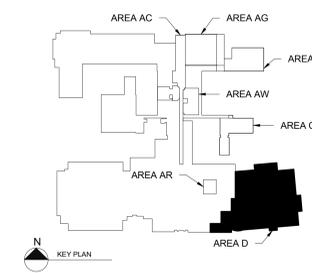


KEY PLAN



- NOTES:**
- CONTRACTOR SHALL PROVIDE A FLOOR BOX SIMILAR TO WIREMOLD EVOLUTION SERIES EPB85-05 FLOOR BOX. THE FLOOR BOX SHALL CONSIST OF (2) EPB85M MODULES FOR POWER AND COMMUNICATIONS AND (1) EPB85F5 FLUSH STYLE COVER WITH SOLID LID. CONTRACTOR SHALL PROVIDE ALL REQUIRED DEVICE PLATES, DIVIDER PLATES, AND LEVELING LEGS. CONTRACTOR SHALL INSTALL FLOOR BOX SUCH THAT POWER IS ON ONE SIDE AND COMMUNICATION DEVICES ARE ON THE OTHER. EACH FLOOR BOX SHALL BE PROVIDED WITH (4) 1" CONDUITS, (2) FOR POWER AND (2) FOR DATA WIRING. CONDUIT SHALL RUN PARALLEL TO THE BUILDING FRAMING AND RUN TO THE INTERIOR WALL AND STUB MINIMUM 1'-0" ABOVE CEILING. PROVIDE A JUNCTION BOX ON END OF EACH STUB. PROVIDE A PULL CORD IN THE CONDUITS DESIGNATED FOR COMMUNICATIONS.
 - CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD STUBBED ABOVE CEILING FROM THE PROJECTOR TO THE SINGLE GANG DEVICE BOX IDENTIFIED AS COMMUNICATION DEVICE.
 - CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FROM THE DEVICE BOX TO THE AUDITORIUM AV RACK. COORDINATE WITH THE ARCHITECTURAL PLANS FOR FINAL LOCATION OF EQUIPMENT.
 - CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FROM THE DEVICE BOX TO THE AV RACK LOCATED IN THE ROOM. COORDINATE WITH THE ARCHITECTURAL PLANS FOR FINAL LOCATION OF EQUIPMENT.
 - CONTRACTOR SHALL PROVIDE (2) 1" CONDUITS AND (1) 1 1/4" CONDUIT WITH PULL CORDS FROM EACH OF THE FLOOR POCKETS TO THE AUDITORIUM AV RACK. COORDINATE WITH THE ARCHITECTURAL PLANS FOR FINAL LOCATION OF EQUIPMENT.
 - CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FOR THE DEVICE BOX TO THE AV RACK LOCATED IN THE ROOM. COORDINATE THE FINAL LOCATION OF THE DEVICE BOX WITH THE AV RACK.
 - CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FOR THE SPEAKERS LOCATED IN MAIN REELET. DEVICE BOX LOCATED IN TICKET BOOTH (B834) TO THE AUDITORIUM EQUIPMENT RACK.
 - CONTRACTOR SHALL PROVIDE A 3/4" CONDUIT FROM THE DEVICE BOX MOUNTED 48" A.F.F. LOCATION TO THE FINAL LOCATION OF THE MOTORIZED PROJECTION SCREEN. COORDINATE FINAL LOCATION WITH THE ARCHITECTURAL DRAWINGS.
 - CONTRACTOR SHALL PROVIDE A 1" CONDUIT, 1 1/4" CONDUIT, AND 1 1/2" CONDUIT FROM EACH FLOOR POCKET TO THE AUDITORIUM AV RACKS.
 - CONTRACTOR SHALL PROVIDE A JUNCTION BOX AND 1" CONDUIT MOUNTED AT THE CEILING FOR MICROPHONES TO THE AUDITORIUM AV RACKS. COORDINATE CONDUIT RUNS WITH ARCHITECTS DRAWINGS.
 - CONTRACTOR SHALL PROVIDE (4) 2" CONDUITS EACH WITH (18) #12 CONDUCTORS FROM THE DIMMER RACK TO THE 1ST, 2ND, 3RD AND 4TH ELECTRIC STRIPS IN THE TV STUDIO.
 - CONTRACTOR SHALL PROVIDE 2" CONDUIT WITH (22) #12 CONDUCTORS FROM THE DIMMER RACK TO THE 1ST ELECTRIC STRIP. PROVIDE A 1 1/2" CONDUIT WITH (18) #12 CONDUCTORS FROM THE DIMMER RACK TO THE 2ND ELECTRIC STRIP, AND A 1 1/2" WITH (16) #12 CONDUCTORS FROM THE DIMMER RACK TO THE 3RD ELECTRIC STRIP.
 - CONTRACTOR SHALL PROVIDE (3) 2" CONDUITS EACH WITH (22) #12 CONDUCTORS FROM THE DIMMER RACK TO THE ELECTRIC STRIP OVER THE AUDITORIUM SEATING AREA.
 - CONTRACTOR SHALL PROVIDE THE TYPE "Y" LIGHTING WHICH TRIMS OUT THE CANOPY AREA OF THE MEANS OF EGRESS IN THE LONGITUDINAL AND LATTITUDINAL DIRECTIONS. REFER TO ARCHITECTURAL DRAWING FOR PERIMETER LOCATIONS.

1 POWER PLAN AREA 'B'
1/8" = 1'-0"



| NO. | REVISION | DATE |
|-----|----------|----------|
| 1 | | 11/28/12 |
| 2 | | 12/07/12 |

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DELAWARE

POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

POWER PLAN
AREA 'B'

| | |
|---------------|--------------|
| SCALE: | 1/8" = 1'-0" |
| DESIGN BY: | WJS |
| DRAWN BY: | WJS |
| CHECKED BY: | SAJ |
| DRAWING FILE: | |
| DATE: | 08/15/2012 |



EPD1.2

| NO. | REVISION | DATE |
|-----|----------|----------|
| 1 | | 11/28/12 |
| 2 | | 12/07/12 |

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POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

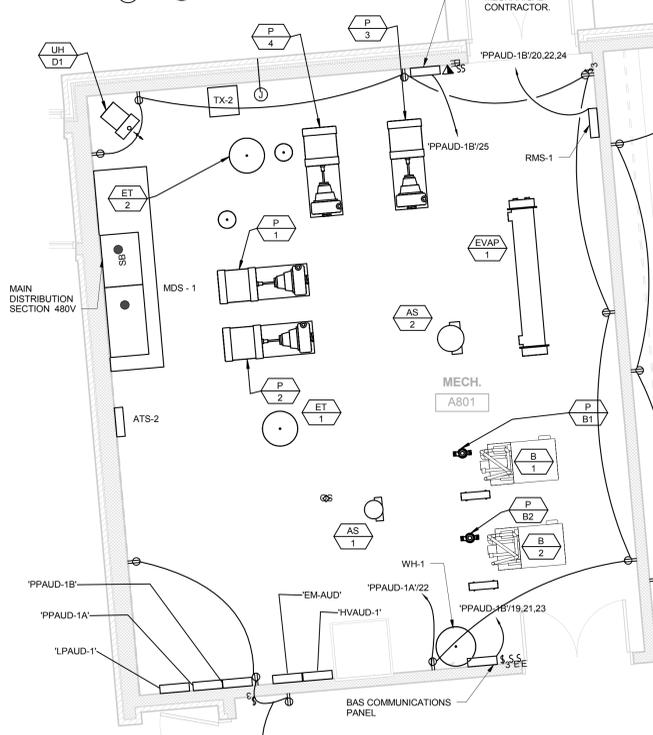
POWER PLAN
AREA 'C'

| | |
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| SCALE: | As indicated |
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| CHECKED BY: | SAJ |
| DRAWING FILE: | |
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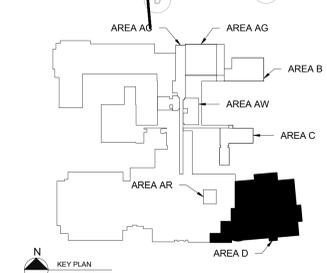
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NOTES:

- CONTRACTOR SHALL PROVIDE A FLOOR BOX SIMILAR TO WIREMOLD EVOLUTION SERIES EFRS-DG FLOOR BOX. THE FLOOR BOX SHALL CONSIST OF (2) EFB6SM MODULES FOR POWER AND COMMUNICATIONS AND (1) EFB610BTBS FLUSH STYLE COVER WITH SOLID LID. CONTRACTOR SHALL PROVIDE ALL REQUIRED DEVICE PLATES, DIVIDER PLATES, AND LEVELING LEGS. CONTRACTOR SHALL INSTALL FLOOR BOX SUCH THAT POWER IS ON ONE SIDE AND COMMUNICATION DEVICES ARE ON THE OTHER. EACH FLOOR BOX SHALL BE PROVIDED WITH (4) 1" CONDUITS, (2) FOR POWER AND (2) FOR DATA WIRING. CONDUIT SHALL RUN PARALLEL TO THE BUILDING FRAMING AND RUN TO THE INTERIOR WALL AND STUB MINIMUM 1'-0" ABOVE CEILING. PROVIDE A JUNCTION BOX ON END OF EACH STUB. PROVIDE A PULL CORD IN THE CONDUITS DESIGNATED FOR COMMUNICATIONS.
- CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD STUBBED ABOVE CEILING FROM THE PROJECTOR TO THE SINGLE GANG DEVICE BOX IDENTIFIED AS COMMUNICATION DEVICE.
- CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FROM THE DEVICE BOX TO THE AUDITORIUM AV RACK. COORDINATE WITH THE ARCHITECTURAL PLANS FOR FINAL LOCATION OF EQUIPMENT.
- CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FROM THE DEVICE BOX TO THE AV RACK LOCATED IN THE ROOM. COORDINATE WITH THE ARCHITECTURAL PLANS FOR FINAL LOCATION OF EQUIPMENT.
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- CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FOR THE FINAL LOCATION OF THE DEVICE BOX WITH THE AV RACK.
- CONTRACTOR SHALL PROVIDE A 1" CONDUIT WITH A PULL CORD FOR THE SPEAKERS LOCATED IN MAIN STREET DEVICE BOX LOCATED IN TICKET BOOTH (B834) TO THE AUDITORIUM EQUIPMENT RACK.
- CONTRACTOR SHALL PROVIDE A 3/4" CONDUIT FROM THE DEVICE BOX MOUNTED 48" A.F.F. LOCATION TO THE FINAL LOCATION OF THE MOTORIZED PROJECTION SCREEN. COORDINATE FINAL LOCATION WITH THE ARCHITECTURAL DRAWINGS.
- CONTRACTOR SHALL PROVIDE A 1" CONDUIT, 1 1/4" CONDUIT, AND 1 1/2" CONDUIT FROM EACH FLOOR POCKET TO THE AUDITORIUM AV RACKS.
- CONTRACTOR SHALL PROVIDE A JUNCTION BOX AND 1" CONDUIT MOUNTED AT THE CEILING FOR MICROPHONES TO THE AUDITORIUM AV RACKS. COORDINATE CONDUIT RUNS WITH ARCHITECTS DRAWINGS.
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- CONTRACTOR SHALL PROVIDE (3) 2" CONDUITS EACH WITH (22) #12 CONDUCTORS FROM THE DIMMER RACK TO THE ELECTRIC STRIP OVER THE AUDITORIUM SEATING AREA.
- CONTRACTOR SHALL PROVIDE THE TYPE "X" LIGHTING WHICH TRIMS OUT THE CARPET AREA OF THE MEANS OF EGRESS IN THE LONGITUDINAL AND LATITUDINAL DIRECTIONS. REFER TO ARCHITECTURAL DRAWING FOR PERIMETER LOCATIONS.



① POWER PLAN AREA 'C'
1/8" = 1'-0"



| | |
|------------|----------|
| DATE | 12/07/12 |
| REVISION | |
| ADDENDUM#3 | |
| NO. | 2 |

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POLYTECH SCHOOL DISTRICT
ADDITIONS AND RENOVATIONS TO
POLYTECH HIGH SCHOOL

LIGHTING PLAN
AREA 'B'

| | |
|---------------|--------------|
| SCALE: | 1/8" = 1'-0" |
| DESIGN BY: | WJS |
| DRAWN BY: | WJS |
| CHECKED BY: | SAJ |
| DRAWING FILE: | |
| DATE: | 06/15/2012 |

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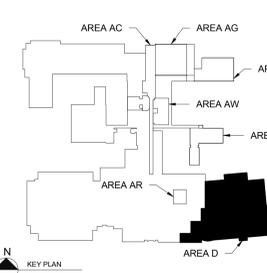


FIRE ALARM NOTES:

- THE ELECTRICAL CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED FIRE ALARM VENDOR IN THE STATE OF DELAWARE TO INDICATE THE REQUIRED ITEMS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM AS RECOGNIZED BY THE NFPA, STATE AND LOCAL CODES FOR THIS PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR'S SUB-CONTRACTOR/VENDOR AND THEIR FIRE PROTECTION ENGINEER TO PRODUCE A COMPLETE SET OF DRAWINGS INDICATING ALL REQUIRED EQUIPMENT, DEVICES, WIRING DIAGRAMS AND COMPONENTS NEEDED TO MEET AND FULFILL THE REQUIREMENTS OF THE NFPA, STATE OF DELAWARE'S OFFICE OF THE FIRE MARSHAL AND THE AUTHORITY HAVING JURISDICTION.
- THE FIRE ALARM DEVICES AND EQUIPMENT SHOWN ON THE FLOOR PLANS IS INDICATED STRICTLY TO SHOW INTENT AND COORDINATION WITH OTHER TRADES, AND SHALL NOT BE TAKEN TO INDICATE A COMPLETE FIRE ALARM AND DETECTION LAYOUT, MEETING ALL NFPA, STATE AND LOCAL CODES FOR THIS PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR'S SUB-CONTRACTOR/VENDOR AND THEIR FIRE PROTECTION ENGINEER TO PRODUCE A COMPLETE SET OF DRAWINGS INDICATING ALL REQUIRED EQUIPMENT, DEVICES, WIRING DIAGRAMS AND COMPONENTS NEEDED TO MEET AND FULFILL THE REQUIREMENTS OF THE NFPA, STATE OF DELAWARE'S OFFICE OF THE FIRE MARSHAL AND THE AUTHORITY HAVING JURISDICTION.
- THE SYSTEM SHALL INCLUDE ALL REQUIRED HARDWARE, RACEWAYS, INTERCONNECTING WIRING AND SOFTWARE TO ACCOMPLISH THE INTENT OF THE SPECIFICATION AND THE CONTRACT DRAWINGS, WHETHER OR NOT SPECIFICALLY ITEMIZED HEREIN.
- THE HVAC UNITS ARE TO BE SHUT DOWN BY SIGNAL FROM THE FIRE ALARM PANEL VIA THE DDC CONTROL SYSTEM. THE HVAC SYSTEM WILL INCLUDE A SMOKE MANAGEMENT CONTROL PANEL LOCATED IN THE MECHANICAL ROOM A801. THIS UNIT WILL PROVIDE MANUAL CONTROL OF THE HVAC SYSTEM RETURN/RELIEF FANS OR EXHAUST FANS. COORDINATE ASSOCIATED WORK WITH DIVISION 22 MECHANICAL.
- THE EXISTING FIRE ALARM PANELS ARE TO BE REPLACED THROUGHOUT THE FACILITY WITH NEW NETWORKED FIRE ALARM NODES AS SPECIFIED IN THE SPECIFICATIONS.
- FIRE ALARM NODE 1 IS TO FUNCTION AS THE DACT FOR THE ENTIRE SYSTEM. OWNER SHALL PROVIDE TELEPHONE SERVICE OR INTERNET SERVICE. IF IP COMMUNICATOR IS USED AT NODE 1, FOR NODES 2, 3, & 4 TRACE AND CONVERT EXISTING SILCS OR IDC'S TO SILCS ON THE FIRE ALARM NODE. REPLACE ALL EXISTING INITIATING DEVICES, MONITORING MODULES, CONTROL/RELAY MODULES WITH NEW ADDRESSABLE DEVICES AS SPECIFIED.
- THE CONTRACTOR SHALL TRACE AND CONVERT ALL EXISTING MAC'S TO NEW FIRE ALARM NODES. DETERMINE CURRENT DRAW AND LINE LOSS. IF NECESSARY INSTALL ADDITIONAL POWER SUPPLIES AND BATTERIES TO ENSURE PRIMARY AND SECONDARY POWER REQUIREMENTS ARE MET PER NFPA 72 AS CURRENTLY ADOPTED BY DSP/PR. REPLACE END-OF-LINE RESISTORS WITH MODEL COMPATIBLE WITH THE SPECIFIED FIRE ALARM NODE.
- THE CONTRACTOR SHALL VERIFY QUANTITY AND LOCATIONS OF ALL TAMPER, FLOW, AND EXTERIOR STROBE LIGHTS AT ALL THREE (3) FIRE DEPARTMENT CONNECTIONS WITH THE SPRINKLER CONTRACTOR. ONE (1) ADDRESSABLE MONITOR MODULE SHALL BE REQUIRED FOR EACH TAMPER AND FLOW SWITCH.
- THE CONTRACTOR SHALL PROVIDE A CEILING MOUNTED DUCT DETECTOR TEST SWITCH FOR EACH DUCT DETECTOR. LOCATIONS OF TEST SWITCHES SHALL BE COORDINATED IN FIELD DURING CONSTRUCTION.
- THE DRAWINGS AND SPECIFICATIONS INDICATE THE ARCHITECTURE OF THE FAHRENYT IFF-2000-VIP PRODUCT. REFER TO SPECIFICATIONS FOR DETAILED VENDORS THE SCHOOL DISTRICT HAS SELECTED TO PROVIDE THE SYSTEM.

EMERGENCY LIGHTING NOTES:

- THE ELECTRICAL CONTRACTOR SHALL HAVE A BOONIE GTD - GENERATOR TRANSFER DEVICE INSTALLED IN THE SHADED FIXTURES AND FIXTURES IDENTIFIED WITH -EM NEXT TO THE FIXTURE CALL OUT. THE CONTRACTOR SHALL PROVIDE A 277 VOLT CIRCUIT FROM THE LOCAL EMERGENCY PANEL TO THE BOONIE GTD DEVICE - GENERATOR TRANSFER DEVICE LOCATED IN THEIR FIXTURE INDICATED. ALL OTHER FIXTURES WITH THE SAME TAG SHALL BE CONNECTED TO THE NORMAL POWER CIRCUIT INDICATED.
- THE LIGHTING IN THE AUDITORIUM AND STAGE IS POWERED VIA THE DIMMER RACK LOCATED ON THE STAGE. THE DIMMER RACK IS POWERED VIA THE MAIN DISTRIBUTION SWITCHBOARD UNDER NORMAL SOURCE OPERATIONS OF THE FACILITY. DURING A NORMAL SOURCE POWER OUTAGE DESIGNATED CIRCUITS IN THE DIMMER RACK WILL BE POWERED VIA THE EXISTING GENERATOR THROUGH EMERGENCY TRANSFER PANELS. UPON RESTORATION OF NORMAL SOURCE THE LOADS SHALL BE RETURNED AUTOMATICALLY. REFER TO DRAWING E1.4 OF THIS DESIGN PACKAGE FOR DETAILED ELECTRIC CONNECTIONS AND EQUIPMENT.
- LIGHTING FOR THE STAGE IS DESIGNED AND PROVIDED BY OTHERS IN THE DESIGN PACKAGE. COORDINATION FOR THE REQUIRED POWER FROM THE DIMMER RACK TO FIXTURES SHALL BE COMPLETED BY THE ELECTRICAL CONTRACTOR. LIGHTING FOR THE AUDITORIUM IS INDICATED ON THESE PLANS AND SHALL BE COORDINATED WITH THE DIMMING SYSTEM VENDOR FOR FINAL CONNECTIONS TO THE DIMMER RACK.



1 LIGHTING PLAN AREA 'B'
1/8" = 1'-0"