

THE SCHOOL DISTRICT OF PHILADELPHIA  
SCHOOL REFORM COMMISSION  
Office of Capital Programs  
440 North Broad Street, 3<sup>rd</sup> Floor – Suite 371  
Philadelphia, PA 19130

TELEPHONE: (215) 400-4730

Addendum No. 001

**Subject:** G.W. Carver Commons  
General Construction, Electrical  
SDP Contract No. B-070C, B-071C of 2018/19

**Location:** G.W. Carver High School  
1600 W. Norris Street  
Philadelphia, Pennsylvania 19121

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This Addendum, dated April 25, 2019, shall modify and become part of the Contract Documents for the work of this project. Any items not mentioned herein, or affected by, shall be performed strictly in accordance with the original documents.

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Revise as indicated below or by attachment

**1.1 Instructions to Bidders- Section 16 Alternative Bid Process**

**1.1.1 DELETE** Current provisions and **INSERT** the follow:

"16. **ALTERNATIVE BIDS PROCESS**

This project includes Alternates to the base bid, which if selected will be added to or deducted from the Base Bid

Alternates will be considered in the order presented and bidders must submit a price for all alternates presented; otherwise, a bid may be rejected as unresponsive.

An award, if one is made, will be made to the lowest responsive and responsible bidder for the total amount of the Base Bid AND any alternates selected for award.

See the Bid Proposal Form and the Drawings and Specifications for descriptions of the alternates."

**1.2 REVISED** Bid Proposal Forms to be used by bidders

**1.3 Specifications**

**1.3.1 ADD** Specification sections 095116 Acoustical Board Ceilings Panels and 055000 Metal Fabrications.

**2.1 Drawings**

**2.1.1 Reference Architectural Drawings:**

- **AA-300 PARTITIONS DOOR & INTERIOR DETAILS, & SCHEDULES:**
  - Updated door frame material in door schedule to be Hollow Metal.
- **AA-610 ADD ALT. #1- PLANS:**
  - Updated door frame material in door schedule to be Aluminum.
- **AA-620 ADD ALT. #2- PLANS, ELEVATIONS, & DETAILS:**
  - Updated door frame material in door schedule to be Hollow Metal and finish to be painted.

- The length of the built-in media unit is to be 18'-2"

### 2.1.2 Electrical Drawings:

- **E-101 FIRST FLOOR ELECTRICAL DEMOLITION PLANS:**
  - Included electrical scope of work for relocations of existing PA speakers located in walls scheduled for base bid demolition work.
  - Added keynote 27D.4 regarding PA speakers scope of work.
- **E-201 FIRST FLOOR LIGHTING NEW WORK REFLECTED CEILING PLAN:**
  - Edited callout box section to graphically indicate Add Alternate 1 scope of work area more precisely.
- **E-301 FIRST FLOOR POWER & SYSTEMS NEW WORK FLOOR PLANS:**
  - Included electrical scope of work for relocations of existing PA speakers in the new work scope of work.
  - Added keynote 27.10 regarding PA speakers scope of work.
  - Edited callout box section to graphically indicate Add Alternate 1 scope of work area more precisely.
  - Edited callout box section to graphically indicate Add Alternate 2 scope of work area more precisely.
- **E-411 FIRST FLOOR ELECTRICAL ADD ALTERNATE 1 PLANS:**
  - Added "New Construction Notes – Add Alternates" General note to sheet.
  - Graphically edited devices and fixtures that are only part of base bid to be halftone for all plan views.
  - Added keynote 1.26.6 to indicate base bid scope of work reference.
- **E-412 FIRST FLOOR ELECTRICAL ADD ALTERNATE 2 PLANS:**
  - Added "New Construction Notes – Add Alternates" General note to sheet.
  - Graphically edited devices and fixtures that are only part of base bid to be halftone for all plan views.
  - Edited text note "Audio/video cable feed behind millwork" in Bookcase TV Display Detail

### 3.1 Contractor questions:

1. Drawing AA-300 - The door schedule material, for the frame, states AL... the detail H1 & J1 are showing HM?  
**RESPONSE:** Frame Material is to be HM.
2. Drawing AA-610 - Are these HM or AL frames.... Material states HM, Finish states AL- Clear?  
**RESPONSE:** Material is to be Aluminum.
3. Drawing AA-620 - Schedule states Wood frames... Detail shows HM??  
**RESPONSE:** Frames are to be HM.
4. I do not see anything about fire rated doors???  
**RESPONSE:** There are no fire rated doors.
5. Drawings show several different bids per add alternates. Bid forms show a Base Bid only. Should we bid the add alternate work?  
**RESPONSE:** Yes, add alternate work is to be included. Bid proposal forms have been updated.

**END OF ADDENDUM #001**

**REVISED BID PROPOSAL FORM  
FOR COMMONS RENOVATION PROJECT  
G.W.CARVER HIGH SCHOOL FOR  
ENGINEERING AND SCIENCE**

**Contract No. B-070C of 2018/19 General Construction**

**TO:** The School District of Philadelphia  
Board of Education

**OWNER**

Office of Capital Programs  
The School District of Philadelphia  
440 North Broad Street  
Third Floor - Suite 371  
Philadelphia, PA 19130-4015

**ADDRESS**

**FROM:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CONTRACTOR  
ADDRESS**

**CITY/STATE  
CONTACT NAME  
PHONE NO.**

**BASE CONTRACT PROPOSAL:**

1. Having become completely familiar with the local conditions affecting the cost of Work at the place where Work is to be executed, and having carefully examined the site conditions as they currently exist, and having carefully examined the Bidding and Contract Documents prepared for this project, together with any Addenda to such Bidding and Contract Documents as listed hereinafter, the Undersigned hereby proposes and agrees to provide all labor, materials, plant, equipment, transportation and other facilities as necessary and/or required to execute all of the Work described by the Contract Documents for: **Contract No. B-070C of 2018/19 General Construction**

for the lump sum consideration of: \_\_\_\_\_ Dollars (\$\_\_\_\_\_), said amount being hereinafter referred to as the Base Proposal Amount. Base Proposal Amount does not include Alternates

## BID ALTERNATES

Bidder must include an amount to be added to the Base Bid for each of the Alternates listed below; otherwise, the bid may be deemed unresponsive. That amount shall include all costs of labor, material equipment, transportation, overhead and profit for the work included in the Alternate.

Alternates, if awarded, will be awarded in the order presented without deviation.

**THE AWARD, IF ONE IS MADE, WILL MADE TO THE RESPONSIBLE BIDDER WHICH SUBMITS THE LOWEST REDPONSIVE BID FOR THE BASE BID, PLUS THE AMOUNT OF ANY ALTERNATES THAT ARE AWARDED.**

### ADD ALTERNATE #1:

(a) Addition of (4) 7'-6"H study rooms with storefront windows and doors. Each room is to have power run for monitors and additional outlets as well as wall mounted magnetic white boards:

(b) As shown or specified in the following drawings and specifications:

- AA-610: ADD ALT #1- PLANS
  - Construction plan, finish plan, door schedule, plan details, partition schedule
- AA-611: ADD ALT #1- ELEVATIONS & DETAILS
  - Elevations and sections/ details
- Spec Sections: 081113, 088000, 092600

(c) Includes other drawings and specifications as needed to complete the alternate scope of work.

ADD to the Base Bid the Amount of \$ \_\_\_\_\_

\_\_\_\_\_ (\$ \_\_\_\_\_)

### ADD ALTERNATE #2:

(a) Addition of media casework along wall separating the Learning Commons and the adjacent Symposium; Addition of a set of double doors connecting the Learning Commons and adjacent Symposium; Addition of acoustical wall panels and manual blackout roller shades in the Symposium.

(b) As shown or specified in the following drawings and specifications:

- AA-620: ADD ALT #2- PLANS, ELEVATIONS, & DETAILS
  - Demolition plan, construction plan, elevations, millwork sections, door schedule and door details

- Specific Specs Sections: 064100, 082100, 088000, 122413
- As included or shown in the following drawings and specifications:
- (c) Includes other drawings and specifications as needed to complete the scope of the work for the alternate.

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ADD to the Base Bid the Amount of \$ \_\_\_\_\_  
 \_\_\_\_\_ (\$ \_\_\_\_\_)

**ADD ALTERNATE #3**

(a) Addition of ceiling mounted acoustical baffles.

(b) As shown or specified in the following drawings and specifications:

- AA-200 and is identified as a call out on 1/AA-200 that brings you to the ADD ALT #3 plan and notes (2/AA-200). Additional information is included in the finish legend on sheet ID-000
- Spec Section: 095116 Acoustical Board Ceiling

(c) Includes other drawings and specifications as needed to complete the alternate scope of work.

ADD to the Base Bid the Amount of \$ \_\_\_\_\_  
 \_\_\_\_\_ (\$ \_\_\_\_\_)

**UNIT PRICES: NOT APPLICABLE TO THIS CONTRACT**

**ACKNOWLEDGEMENT OF RECEIPT OF ADDENDA:**

2. The Undersigned acknowledges receipt of the following Addenda (list by number and date appearing on Addenda):

<u>Addendum No.</u>	<u>Date</u>	<u>Addendum No.</u>	<u>Date</u>
_____	_____	_____	_____

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**TIME OF COMPLETION:**

3. The Undersigned agrees to Substantially Complete all Work under this Contract within the time periods specified in Division 1, General Requirements, Section 00 1300 entitled "Time of Completion, Milestones and Phasing or Sequencing Requirements".

**INSURANCE:**

4. All Bidders are instructed to refer to Article GC-11 of the General Conditions. All Contractors or Subcontractors bidding Work on the Project shall include in their bids the costs of Workers Compensation and Employer's Liability Insurance, Commercial General Liability Insurance, Automobile Liability Insurance, Excess Umbrella Liability Insurance (Commercial Umbrella Liability Insurance) and any other types of insurance identified in Division 1- General Requirements, Section 01200 (or 01 1200) entitled "Special Insurance Requirements".

**LIQUIDATED DAMAGES:**

5. Upon failure by the Contractor to achieve Substantial Completion within the time specified in Article GC-8 of the General Conditions from the Date of Commencement as set forth in the Notice to Proceed, the Contractor shall pay to the School District, as liquidated damages and not as a penalty, the sum of One Thousand Dollars (\$1,000.00) per day for each consecutive calendar day of delay until such time as Substantial Completion of the Work is achieved.

6. In addition, the Contractor shall be responsible for and pay for the cost of completion of construction of the Work, as well as for any and all additional charges of the School District, Architect/Engineer, other Project Contractors, and any other Consultants to the School District relating to the Contractor's failure to achieve Substantial Completion on a timely basis, including, but not limited to, delay damages, disruption damages, acceleration costs or expenses, investigative expenses, consulting fees, experts' fees, and attorneys' fees.

7. The Contractor and the School District agree that the amounts so fixed herein as liquidated damages are reasonable forecasts of just compensation for the harm that will be caused to the School District by the Contractor's breach.

**GENERAL STATEMENT:**

8. The Undersigned declares that the person or persons signing this Proposal is/are fully authorized to sign on behalf of the firm listed and to fully bind the firm listed to all the Proposal's conditions and provisions thereof.

9. It is agreed that the Undersigned has complied or will comply with all requirements of local, state, and federal laws, and that no legal requirement has been or will be violated in making or accepting this Proposal, in awarding the Contract to it and/or in prosecution of the Work.

10. Bid Security in the amount of ten percent (10%) of the Base Bid, plus all additive Alternates Proposal amounts, is attached hereto and made a part hereof, without endorsement, in the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_), which shall become the property of the School District in the event the Contract and Performance Bond and Labor and Materialmen's Bond are not executed within the time set forth, as liquidated damages.

11. The Undersigned further agrees within five (5) calendar days from date of Notice of Acceptance of this Proposal or Contract award, to sign and deliver to the School District, all required copies of the School District/Contractor Agreement, the Performance Bond, the Labor and Materialmen's Bond, and the Maintenance Bond, in the forms included in the Bidding Documents, and the policies of insurance or insurance certificates as required by the General Conditions. In case the undersigned fails or neglects to deliver within the specified time the School District/Contractor Agreement, the Performance Bond, the Labor and Materialmen's Bond, and the Maintenance Bond, and the insurance policies or certificates, all as aforesaid, the undersigned shall be considered as having abandoned the Contract, and the Bid Bond accompanying this Proposal shall be forfeited to the School District by reason of such failure on the part of the undersigned, as liquidated damages and not as a penalty.

12. The Undersigned further agrees that the Bid Security may be retained by the School District and shall remain with the School District until the School District/Contractor Agreement has been signed and delivered to the School District and the Performance Bond, the Labor and Materialmen's Bond, and the Maintenance Bond, and insurance policies or certificates have been made and delivered to the School District.

Respectfully submitted this \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_.

***Individual Proprietorship or Partnership***

If Contractor is an individual proprietorship or is a partnership, sign here:

\_\_\_\_\_  
(Trade Name of Firm)

By: \_\_\_\_\_ By: \_\_\_\_\_ (SEAL)  
(Witness) (Owner or Partner)

**Corporation**

If Contractor is a corporation, sign here:

\_\_\_\_\_  
(Name of Corporation)

ATTEST:

By: \_\_\_\_\_ By: \_\_\_\_\_ (SEAL)  
(Secretary or Treasurer) (President or Vice President)

(CORPORATE SEAL)

Signature by anyone other than the President or Vice President and the Secretary or Treasurer of the Corporation must be accompanied by a power of attorney, executed by the proper corporate officers under the corporate seal indicating authority to execute



**REVISED BID PROPOSAL FORM  
FOR COMMONS RENOVATION PROJECT  
G.W.CARVER HIGH SCHOOL FOR  
ENGINEERING AND SCIENCE**

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for the lump sum consideration of: \_\_\_\_\_ Dollars (\$\_\_\_\_\_), said amount being hereinafter referred to as the Base Proposal Amount. Base Proposal Amount does not include Alternates

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 \_\_\_\_\_ (\$ \_\_\_\_\_)

ADD ALTERNATE #3 (NOT APPLICABLE TO THIS CONTRACT)

**UNIT PRICES: NOT APPLICABLE TO THIS CONTRACT**

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_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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in their bids the costs of Workers Compensation and Employer's Liability Insurance, Commercial General Liability Insurance, Automobile Liability Insurance, Excess Umbrella Liability Insurance (Commercial Umbrella Liability Insurance) and any other types of insurance identified in Division 1- General Requirements, Section 01200 (or 01 1200) entitled "Special Insurance Requirements".

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6. In addition, the Contractor shall be responsible for and pay for the cost of completion of construction of the Work, as well as for any and all additional charges of the School District, Architect/Engineer, other Project Contractors, and any other Consultants to the School District relating to the Contractor's failure to achieve Substantial Completion on a timely basis, including, but not limited to, delay damages, disruption damages, acceleration costs or expenses, investigative expenses, consulting fees, experts' fees, and attorneys' fees.

7. The Contractor and the School District agree that the amounts so fixed herein as liquidated damages are reasonable forecasts of just compensation for the harm that will be caused to the School District by the Contractor's breach.

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11. The Undersigned further agrees within five (5) calendar days from date of Notice of Acceptance of this Proposal or Contract award, to sign and deliver to the School District, all required copies of the School District/Contractor Agreement, the Performance Bond, the Labor and Materialmen's Bond, and the Maintenance Bond, in the forms included in the Bidding Documents, and the policies of insurance or insurance certificates as required by the General Conditions. In case the undersigned fails or neglects to deliver within the specified time the School District/Contractor Agreement, the Performance Bond, the Labor and Materialmen's Bond, and the Maintenance Bond, and the insurance policies or certificates, all as aforesaid, the undersigned shall be considered as having abandoned the Contract, and the Bid Bond accompanying this Proposal shall be forfeited to the School District by reason of such failure on the part of the undersigned, as liquidated damages and not as a penalty.

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Respectfully submitted this \_\_\_\_ day of \_\_\_\_\_, 201\_.

***Individual Proprietorship or Partnership***

If Contractor is an individual proprietorship or is a partnership, sign here:

\_\_\_\_\_  
(Trade Name of Firm)

By: \_\_\_\_\_ By: \_\_\_\_\_ (SEAL)  
(Witness) (Owner or Partner)

***Corporation***

If Contractor is a corporation, sign here:

\_\_\_\_\_  
(Name of Corporation)

ATTEST:

By: \_\_\_\_\_ By: \_\_\_\_\_ (SEAL)  
(Secretary or Treasurer) (President or Vice President)

(CORPORATE SEAL)

Signature by anyone other than the President or Vice President and the Secretary or Treasurer of the Corporation must be accompanied by a power of attorney, executed by the proper corporate officers under the corporate seal indicating authority to execute

## **SECTION 095116 - ACOUSTIC BOARD CEILING PANELS**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. This Section includes Tectum acoustical board panels installed as follows:
  - 1. Mounted in exposed suspension systems
- B. Related Sections include the following:
  - 1. Unistrut framing system for Tectum panels and concealed suspension system is specified in Division 05 Section "Metal Fabrications."
  - 2. Exposed suspension systems for Tectum panels are specified in Division 09 Section "Acoustical Panel Ceilings"
  - 3. Field painting of Tectum panels is specified in Division 09 Section "Painting."

#### **1.2 ACTION SUBMITTALS**

- A. Product data for each type of product specified. Include data on physical characteristics, material densities, fastening and attachment methods, acoustical performance data, and flame resistance characteristics.
- B. Coordination Drawings: Reflected ceiling plans drawn to scale and coordinating penetrations and ceiling-mounted items. Show the following:
  - 1. Ceiling suspension members.
  - 2. Method of attaching hangers to building structure.
  - 3. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
  - 4. Minimum Drawing Scale: 1:100

#### **1.3 INFORMATIONAL SUBMITTALS**

- A. Product certificates signed by acoustic board manufacturer certifying materials furnished comply with specified requirements.
- B. Certified test reports showing compliance with requirements for fire performance characteristics and physical properties.
- C. Maintenance Data: For finishes to include in maintenance manuals.

#### **1.4 QUALITY ASSURANCE**

- A. Fire Performance Characteristics: Provide acoustic boards with the following surface burning characteristics as determined by testing identical products per ASTM E 84 by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify acoustic boards with appropriate markings of applicable testing and inspecting organization.
  - 1. Flame Spread: 25 or less.
  - 2. Smoke Developed: 450 or less.
- B. Installer Qualifications: Arrange for installation of acoustic boards by a firm that can demonstrate successful experience in installing similar in type and quality to those required for this Project.
- C. Source Limitations: Obtain each type of acoustical board and supporting suspension system through one source from a single manufacturer.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect units during transit, delivery, storage, and handling to prevent damage, soilage, and deterioration.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

#### 1.6 PROJECT CONDITIONS

- A. Maintain a constant temperature not less than 70EF in installation areas for at least ten (10) days before and ten (10) days after installation.
- B. Field Measurements: Where units are indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements; show recorded measurements on final shop drawings. Coordinate manufacturing schedule with construction progress to avoid delay of Work.

#### 1.7 COORDINATION

- A. Coordinate layout and installation of acoustical board panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

#### 1.8 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Acoustical Ceiling Components: 5% of each type of board installed.



## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS:

- A. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide acoustic board and suspension systems manufactured by Armstrong World Industries or an approved equivalent.

### 2.2 ACOUSTIC BOARDS:

- A. Acoustic Board Ceiling Panels (ACP-1 through 3): Aspen wood fibers bonded with inorganic hydraulic cement. Product shall comply with the following:
  - 1. Size: 20" x 36" as scheduled on Drawings.
  - 2. Thickness: 1 1/2".
  - 3. Surface Burning/Flame Spread Characteristics: Class A.
  - 4. Edges: Square Edge; Beveled bottom edge
  - 5. Noise Absorbance: 0.41 Sabins/SF
  - 6. Color: Natural, for field painting as scheduled on Drawings.
  - 7. Mounting Method: For mounting to suspended concealed drywall ceiling grid.
  - 8. Warranty: 30 years.
  - 9. Basis of Design Product: "Tectum Baffle" by Armstrong World Industries, or approved equivalent

### 2.3 MOUNTING SYSTEMS AND MATERIALS

- A. Exposed Suspension Systems for Tectum Panels: Armstrong World Industries, Inc.; Prelude 15/16" wide suspension system; refer to Division 09 Section "Acoustical Panel Ceilings" for specifications. Provide all required hangars and all other components as specified in this section.
- B. Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that fit acoustical panel edge details and suspension systems indicated; formed from sheet metal of same material, finish and color as that used for exposed flanges of suspension system runners.
- C. Fasteners: Provided by or approved by manufacturer for installation conditions indicated.
- D. Adhesive: Manufacturer's standard low odor, VOC compliant, non-flammable latex based adhesive recommended for use and substrate.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and structural framing to which acoustical board ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage, and other conditions affecting performance of acoustical panel ceilings.
- B. Proceed with installation only after unsatisfactory conditions have been corrected

### 3.2 PREPARATION

- A. For direct application, clean substrates of projections and substances detrimental to application of panels. Follow manufacturer's printed instructions for surface preparation.
- B. Acclimate acoustic boards to room temperature for 48 hours prior to installation.
- C. Coordination: Furnish layouts for cast-in-place anchors, clips, and other ceiling anchors whose installation is specified in other Sections.
- D. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.
- E. E. Field paint Tectum panels prior to installation.
  - 1. Field painting is specified in Division 09 Section "Painting".

### 3.3 INSTALLATION

- A. Do not use materials that are unsound, warped, bowed or twisted.
- B. Install acoustic boards plumb, level, true, and aligned with adjacent materials.
  - 1. Scribe and cut acoustic boards to fit adjoining work.
  - 2. Install to tolerance of 1/32 inch in 8 feet for plumb and level.
  - 3. Coordinate with materials and systems that may be in or adjacent to acoustic boards. Provide cutouts for mechanical and electrical items that penetrate.
  - 4. Install in accordance with approved shop drawings.
- C. Exposed Suspension System Mounting of Tectum Panels: Install exposed suspension system as specified in Division 09 Section "Acoustical Panel Ceilings". Lay-in acoustic boards in framing system in accordance with manufacturer's written instructions.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels. Comply with manufacturer's written installation instructions.

3.4 ADJUSTING AND CLEANING

- A. Repair damaged or defective acoustic boards where possible to eliminate functional or visual defects. Where not possible to repair, replace acoustic boards.
- B. Remove excess adhesive at finished seams, perimeter edges, and adjacent surfaces.
- C. Use cleaning methods recommended by the acoustic board manufacturer.
- D. Replace acoustic boards that cannot be cleaned.

3.5 PROTECTION

- A. Provide final protection and maintain conditions that ensure acoustic boards are without damage or deterioration at time of Substantial Completion.

END OF SECTION 095116

## SECTION 055000 - METAL FABRICATIONS

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. This Section includes the following:

1. Steel framing and supports for ceiling hung sliding or folding doors and panels, ceiling hung equipment, ceiling hung curtains, and other items indicated on Drawings.
2. Steel framing and supports for mechanical and electrical equipment.
3. Steel framing and supports for part height partitions.
4. Steel framing and supports for applications where framing and supports are not specified in other Sections.

#### 1.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal stairs, handrails and railings, guardrails, and ladders.

#### 1.3 ACTION SUBMITTALS

A. Product Data: For all fabricated products including the following:

1. Paint products.
2. Grout.

B. Shop Drawings: Detail fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

#### 1.4 INFORMATIONAL SUBMITTALS

A. Welding Certificates: Copies of certificates for welding procedures and personnel.

B. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

## 1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm experienced in producing metal fabrications similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Welding: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1, "Structural Welding Code--Steel."
  - 2. AWS D1.2, "Structural Welding Code--Aluminum."
  - 3. AWS D1.6, "Structural Welding Code--Stainless Steel."
  - 4. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

## 1.6 PROJECT CONDITIONS

- A. Field Measurements: Where metal fabrications are indicated to fit walls and other construction, verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions. Allow for trimming and fitting.

## 1.7 COORDINATION

- A. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

## PART 2 - PRODUCTS

### 2.1 METALS, GENERAL

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

### 2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Steel Pipe: ASTM A 53, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.

- C. Slotted Channel Framing: Cold-formed metal channels with flange edges returned toward web and with 9/16-inch- (14.3-mm-) wide slotted holes in webs at 2 inches (51 mm) o.c.
  - 1. Width of Channels: 1-5/8 inches (41 mm).
  - 2. Depth of Channels: As indicated.
  - 3. Metal and Thickness: Galvanized steel complying with ASTM A 653/A 653M, structural quality, Grade 33 (Grade 230), with G90 (Z275) coating; 0.108-inch (2.8-mm) nominal thickness.
  - 4. Finish: Unfinished.
- D. Malleable-Iron Castings: ASTM A 47, Grade 32510 (ASTM A 47M, Grade 22010).
- E. Gray-Iron Castings: ASTM A 48, Class 30 (ASTM A 48M, Class 200), unless another class is indicated or required by structural loads.
- F. Cast-in-Place Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials capable of sustaining, without failure, the load imposed within a safety factor of 4, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
  - 1. Threaded or wedge type; galvanized ferrous castings, either ASTM A 47 (ASTM A 47M) malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, hot-dip galvanized per ASTM A 153/A 153M.
- G. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

## 2.3 ALUMINUM

- A. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), alloy 6063-T6, 6036-T5, 6005-T5 or 6061-T6.
- B. Extruded Structural Pipe: ASTM B 429, Alloy 6063-T6.
  - 1. Provide Standard Weight (Schedule 40) pipe, unless otherwise indicated C.

Plate and Sheet: ASTM B 209 (ASTM B 209M), Alloy 6061-T6.

- D. Extruded Bars, Shapes and Mouldings: ASTM B 221 (ASTM B 221M), alloy 6063-T6 or 6063-T52.
- E. Castings: ASTM B 26, Almag 35.

## 2.4 PAINT

- A. Shop Primer for Interior Ferrous Metal: Modified oil-alkyd primer, Tnemec 88-559 or 101009, or equivalent. Primer shall be compatible with finish paint specified in Section 09900.

- B. Shop Primer for Galvanized Ferrous Metal: Polyamide epoxy primer, Tnemec F.C. Typoxy Series 27, or equivalent. Primer shall be compatible with finish paint specified in Section 09900.
- C. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
- D. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC-Paint 12, except containing no asbestos fibers, or cold-applied asphalt emulsion complying with ASTM D 1187.

## 2.5 FASTENERS

- A. General: Provide Type 304 or 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, where built into exterior walls, except as noted below. Select fasteners for type, grade, and class required.
- B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with hex nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.
- C. Anchor Bolts: ASTM F 1554, Grade 36.
- D. Machine Screws: ASME B18.6.3 (ASME B18.6.7M).
- E. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).
- F. Wood Screws: Flat head, carbon steel, ASME B18.6.1.
- G. Plain Washers: Round, carbon steel, ASME B18.22.1 (ASME B18.22M).
- H. Lock Washers: Helical, spring type, carbon steel, ASME B18.21.1 (ASME B18.21.2M).
- I. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
  - 1. Material: Carbon-steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
- J. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as needed.

## 2.6 GROUT

- A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior applications.

## 2.7 CONCRETE FILL

- A. Concrete Materials and Properties: Normal-weight, ready-mixed concrete with a minimum 28-day compressive strength of 3000 psi (20 MPa), unless higher strengths are indicated.

## 2.8 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Shear and punch metals cleanly and accurately. Remove burrs.
- C. Ease exposed edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Weld corners and seams continuously to comply with the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  2. Obtain fusion without undercut or overlap.
  3. Remove welding flux immediately.
  4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- E. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- F. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- G. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.
- H. Allow for thermal movement resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening up of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- I. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- J. Remove sharp or rough areas on exposed traffic surfaces.



- K. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

## 2.9 ROUGH HARDWARE

- A. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Division 6 sections.
- B. Fabricate items to sizes, shapes, and dimensions required. Furnish malleable-iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

## 2.10 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports that are not a part of structural-steel framework as necessary to complete the Work.
- B. Fabricate units from structural-steel shapes, plates, tubes, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items.
  - 1. Fabricate units from slotted channel framing where indicated.
  - 2. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors 1-1/4 inches (32 mm) wide by 1/4 inch (6 mm) thick by 8 inches (200 mm) long at 24 inches (600 mm) o.c., unless otherwise indicated.
  - 3. Furnish inserts if units must be installed after concrete is placed.
- C. Fabricate supports for ceiling hung gymnasium curtains from continuous steel beams of sizes indicated with attached bearing plates, anchors, and braces as indicated. Drill or punch bottom flanges of beams to receive partition track hanger rods; locate holes where indicated on Shop Drawings.
- D. Galvanize miscellaneous framing and supports where indicated, and in exterior locations.

## 2.11 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly.

## 2.12 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:

1. ASTM A 123, for galvanizing steel and iron products.
2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.

B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface-preparation specifications and environmental exposure conditions of installed metal fabrications:

1. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."

C. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes indicated as unpainted, and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Paint embedded steel that is partially exposed on exposed portions and initial 2 inches of embedded areas only.

1. Do not paint surfaces to be welded or high-strength bolted with friction-type connections.
2. Apply 2 coats of paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

## 2.13 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Powder Paint: Manufacturer's standard process.

## 2.14 STAINLESS-STEEL FINISHES

- A. Remove tool and die marks and stretch lines or blend into finish.
- B. Grind and polish surfaces to produce uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.
- C. Directional Satin Finish: No. 4.
- D. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- E. Field Welding: Comply with the following requirements:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

### 3.2 SETTING BEARING AND LEVELING PLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of plates.
- B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout.
  - 1. Use nonshrink grout, either metallic or nonmetallic, in concealed locations where not exposed to moisture; use nonshrink, nonmetallic grout in exposed locations, unless otherwise indicated.
  - 2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

### 3.3 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings, if any.
- B. Support steel girders on solid grouted masonry, concrete, or steel pipe columns. Secure girders with anchor bolts embedded in grouted masonry or concrete or with bolts through top plates of pipe columns.

1. Where grout space under bearing plates is indicated at girders supported on concrete or masonry, install as specified above for setting and grouting bearing and leveling plates.

### 3.4 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.

B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 9 Section "Painting."

C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 055000

LIGHTING DEMOLITION GENERAL NOTES

- LIGHTING FIXTURES MARKED FOR REMOVAL. REMOVE, CLEAN, RELAMP EXISTING LIGHT FIXTURES. NEW LAMP MUST MATCH EXISTING TYPE, WATTAGE, AND COLOR TEMPERATURE.
    - \* CONTRACTOR TO REMOVE EXISTING BALLAST AND REPLACE WITH NEW BALLAST TO MATCH EXISTING IN NUMBER OF LAMPS, BALLAST FACTOR, VOLTAGE, START METHOD AND THERMAL HARMONIC DISTORTION (THD). ACCEPTABLE MANUFACTURERS ARE OSRAM, FULHAM AND HALCO.
    - \* REPLACE CRACKED, BROKEN AND DISCOLORED LENSES AND REUSE EXISTING LIGHT FIXTURES.
    - \* REMOVE AND DISCONNECT LIGHT FIXTURES WHILE CEILING WORK IS TAKING PLACE AND RETAIN EXISTING CIRCUIT TO EXISTING PANEL.
    - \* AFTER REMOVING EXISTING LIGHT FIXTURE, CONTRACTOR SHALL SAFELY SECURE EXISTING CIRCUITS.
    - \* ONCE CEILING WORK HAS BEEN COMPLETED, CONTRACTOR TO INSTALL CLEANED AND RESTORED LIGHTING FIXTURES AND RECONNECT TO EXISTING CIRCUIT AND NEW LOCATION. ELECTRICAL CONTRACTOR SHALL PROVIDE AN ALLOWANCE FOR ANY ADDITIONAL JUNCTION BOXES, CONDUIT, AND WIRING REQUIRED IN ORDER TO PROVIDE THE FINAL CONNECTIONS TO THE LIGHT FIXTURE.
    - \* LUMINAIRES RECESSED OR SURFACE MOUNTED TO GRID CEILING SHALL BE SUPPORTED INDEPENDENT OF THE CEILING SYSTEM. LUMINAIRES SHALL BE SUPPORTED AS FOLLOWS:
      - A. PROVIDE MINIMUM OF TWO SUPPORT RODS OR WIRES. MINIMUM 12 GAUGE WIRE FOR EACH LUMINAIRE. WIRES SHALL BE LOCATED NO FURTHER THAN 1" FROM LUMINAIRE CORNERS. WIRES SHALL BE INSTALLED SUCH THAT THE LUMINAIRE IS SUPPORTED FROM THE BUILDING STRUCTURE AND NOT THE CEILING GRID.
      - B. PROVIDE "T" BAR SUPPORT CLIPS AS REQUIRED TO FASTEN LUMINAIRES TO CEILING GRID IN ADDITION TO SUPPORTING THE LUMINAIRES FROM THE BUILDING STRUCTURE.
  - ALL LIGHTING FIXTURES THAT ARE NOT TO BE REUSED SHALL BE TURNED OVER TO OWNER.
- PROVIDE AND INSTALL NEW FIXTURES REFERRING TO LIGHTING SCHEDULE ON DWG E-502 FOR MANUFACTURER OR APPROVED EQUAL. RETAIN EXISTING CIRCUIT AND PANEL AS REQUIRED.

FIRE ALARM DEMOLITION GENERAL NOTES

- FOR FIRE ALARM DEVICES IN THE SCOPE OF WORK THE ELECTRICAL CONTRACTOR SHALL PERFORM THE FOLLOWING DUTIES:
  - \* CONTRACTOR TO REMOVE AND REINSTALL ONE DUCT SMOKE DETECTORS (IMC GENERAL STORAGE 149) AND ONE DUCT SMOKE DETECTORS (MEDIA CENTER OFFICE 144). DECOMMISSION ON SIMPLEX 4100 SYSTEM.
  - \* CONTRACTOR TO REMOVE AND REINSTALL 1 HORN STROBES (IMC 145). DECOMMISSION ON SIMPLEX 4100 SYSTEM.
  - \* CONTRACTOR TO REMOVE 1 SMOKE DETECTOR (MEDIA CENTER WORK/COPY 143). DECOMMISSION ON SIMPLEX 4100 SYSTEM.
  - \* WHILE NOTIFICATION AND MITIGATION DEVICES HAVE BEEN DISCONNECTED, CONTRACTOR TO ENSURE THAT WIRING CONTINUITY WILL REMAIN. NO EXCEPTIONS.
  - \* DUCT SMOKE DETECTOR TO BE PARTIALLY DISABLED. ONCE CEILING WORK HAS BEEN COMPLETED, CONTRACTOR TO CONNECT AND COMMISSION SMOKE DETECTOR. CONTRACTOR TO PERFORM AN ACCEPTANCE TEST AS DICTATED ON NFPA 72:2013 14.4.2
  - \* HORN STROBE DEVICES TO BE REINSTALLED AFTER NEW WORK HAS COMPLETED THE NEW WALL INSTALLATIONS. CONTRACTOR TO CONNECT AND COMMISSION HORN STROBE DEVICES. CONTRACTOR TO PERFORM AN ACCEPTANCE TEST AS DICTATED ON NFPA 72:2013 14.4.2
- ALL DEVICES THAT ARE NOT TO BE REUSED SHALL BE TURNED OVER TO OWNER.

GENERAL NOTES

- ANY EXISTING WIRING SERVING DEVICES TO REMAIN IN SERVICE, AND WHICH IS INTERRUPTED BY WORK PERFORMED UNDER THIS CONTRACT, SHALL BE REROUTED TO MAINTAIN CIRCUIT CONTINUITY. CONTRACTOR SHALL ASSUME THE RISK OF MAINTAINING EXISTING SYSTEMS EXCEPT RELOCATION OF WIRING OF #2 AWG AND ABOVE SHALL BE CONSIDERED AN ADDITIONAL COST IF NOT SHOWN TO BE RELOCATED. IF SUCH WIRING IS FOUND THE CONTRACTOR SHALL NOTIFY THE OWNER OF WIRING LOCATION. REASON IT MUST BE REMOVED AND COST OF RELOCATION AND RECEIVE THE OWNER'S APPROVAL BEFORE PROCEEDING WITH THE WORK. PRIOR TO COMMENCING WITH DEMOLITION, IDENTIFY ALL POWER, LIGHTING, COMMUNICATION AND SIGNAL CIRCUITS PASSING THROUGH THE DEMOLITION AREA OR EXTENDING BEYOND THE DEMOLITION AREA. COORDINATE WITH DEMOLITION WORK OF OTHER TRADES.
- PERMANENTLY REMOVE ABANDONED ELECTRICAL EQUIPMENT, LIGHTING FIXTURES, JUNCTION BOXES, ELECTRICAL DEVICES AND ASSOCIATED WIRE, RACEWAYS, AND/OR JUNCTION BOXES. THE REMOVAL OR RELOCATION OF EXISTING ELECTRICAL EQUIPMENT PRESENTLY CONCEALED IN EXISTING CONSTRUCTION SHALL BE COORDINATED WITH THE OWNER PRIOR TO REMOVAL OR RELOCATION. RACEWAYS AND CONDUITS SHALL BE REMOVED BACK TO THE SOURCE OR NEAREST REMAINING JUNCTION BOX OR DEVICE AS FAR AS PRACTICAL, OR WHERE COMPLETE REMOVAL NOT PRACTICAL, RECESSED PERMANENTLY SAFE.
- IN GWB WALLS, UNUSED FLUSH MOUNTED DEVICES, OUTLET AND OTHER BOXES IN FINISHED AREAS SHALL BE REMOVED FROM WALL AND THE REMAINING HOLE PATCHED TO MATCH ADJACENT FINISHED SURFACES.
- JUNCTION BOXES AND CONDUITS EMBEDDED IN CONCRETE OR CMU WALL MAY REMAIN. UNUSED FLOOR BOXES SHALL BE FILLED IN, CONDUIT MUST BE CUT AT WALL BOUNDARY AND SEALED. EXISTING RECESSED JUNCTION BOXES AND DEVICES SHALL BE COVERED WITH METAL COVER PLATES AND SHALL BE PAINTED TO MATCH ADJACENT FINISHED SURFACES.
- ANY EXISTING SYSTEM OUTAGES SHALL BE OF MINIMUM DURATION AND AT A TIME ACCEPTABLE TO THE OWNER.
- ELECTRICAL EQUIPMENT, FIXTURES, AND/OR DEVICES SCHEDULED TO REMAIN OR TO BE REUSED DURING DEMOLITION SHALL BE IDENTIFIED AND REPLACED WITH SIMILAR TYPE AS APPROVED BY THE OWNER, AT NO ADDITIONAL CHARGE TO THE OWNER.
- IN THE EVENT THAT DEMOLITION WORK AFFECTS THE STRUCTURAL SUPPORT OF EXISTING ELECTRICAL EQUIPMENT THAT IS TO REMAIN IN SERVICE, IT SHALL BE SUPPORTED WITH ALL APPLICABLE CODES. PROVIDE TEMPORARY SUPPORTS WHERE REQUIRED.
- PROVIDE TEMPORARY WIRING AND BRANCH CIRCUITING AS NECESSARY TO MAINTAIN OPERATION OF EXISTING CIRCUITS AND SYSTEMS EXTENDING BEYOND REMODEL AREA.
- UNUSED FLUSH MOUNTED DEVICES, OUTLETS AND OTHER BOXES IN FINISHED AREAS SHALL BE REMOVED FROM WALL AND THE REMAINING HOLE PATCHED TO MATCH ADJACENT WALL SURFACES. UNUSED RACEWAYS AND SLEEVES SHALL BE CUT FLUSH AT FLOOR, FLOOR OR WALL AND FILLED WITH GROUT OR REQUIRED FIRE SEALANT.
- PROVIDE SEALANT WHERE SPECIFIED ELSEWHERE IN DOCUMENTS. UNUSED RACEWAYS ABOVE ACCESSIBLE CEILING SHALL BE REMOVED.
- ELECTRICAL MATERIAL SCHEDULED FOR REMOVAL IS TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF AS PART OF THIS CONTRACT. ANY ELECTRICAL MATERIAL THE OWNER WISHES TO RETAIN TO BECOME THE PROPERTY OF THE OWNER AND TO BE REMOVED AND PLACED AT A LOCATION ON THE SITE AS DIRECTED BY THE OWNER.
- EXISTING PANEL DIRECTORIES AFFECTED BY THE ALTERATION WORK SHALL BE MODIFIED TO REFLECT THE BRANCH CIRCUIT WIRING CHANGES.

KEY NOTES

KEY NOTES ARE NUMBERED SEQUENTIALLY FROM 280.1/280.1 TO THE LAST KEY NOTE. THEY ARE SHEET SPECIFIC. THE KEY NOTES USED ON A SPECIFIC SHEET WILL BE LISTED ON THAT SHEET.

ELEC KEYNOTE LEGEND - OBJECT SPECIFIC

Key Value	Keynote Text
280.1	EC SHALL REMOVE ALL EXISTING ELECTRICAL DEVICES SUCH AS WALL, CEILING AND FURNITURE RECEPTACLES AND FLOOR BOXES. ALL WIRING, JUNCTION BOXES, CONDUITS ASSOCIATED WITH ELECTRICAL EQUIPMENT BACK TO THE ORIGINAL SOURCE LOCATED IN THE DEMOLITION SCOPE OF WORK AREA. INDICATE ALL REMOVED CIRCUITS AS SPARE IN THE CORRESPONDING PANEL SCHEDULES. REFER TO GENERAL NOTES ON THIS SHEET AND DWG E-002 FOR ALL CONTRACTOR REQUIRED ACTIONS. NO EXCEPTIONS.
280.2	EC TO RETAIN EXISTING PANELS LOCATED IN THE STORAGE ROOM.
280.3	EC SHALL REMOVE DESIGNATED ELECTRICAL EQUIPMENT. ALL WIRING, JUNCTION BOXES, CONDUITS ASSOCIATED WITH ELECTRICAL EQUIPMENT BACK TO THE ORIGINAL SOURCE. EC TO VERIFY IN FIELD THE EXACT AMOUNT AND LOCATION OF EQUIPMENT LOCATED IN THE SCOPE OF WORK. NO EXCEPTIONS.
280.4	EC SHALL REMOVE AND RETAIN INDICATED (ERL) LIGHTING FIXTURES AND ASSOCIATED LIGHT SWITCHES IN THE SCOPE OF WORK AND REMOVE ALL WIRING, REMOVE AND RETAIN BACK BOXES AND JUNCTION BOXES ASSOCIATED WITH THIS LIGHTING FIXTURE BACK TO THE ORIGINAL SOURCE. REFER TO NEW WORK PLANS ON DWG E-201 FOR FIXTURES THAT WILL BE REUSED AND TO LIGHTING DEMOLITION GENERAL NOTES ON THIS SHEET AND DWG E-002 FOR ALL CONTRACTOR REQUIRED ACTIONS.
280.5	UNLESS OTHERWISE NOTED, EC SHALL RETAIN LIGHTING FIXTURES MARKED IN THE DEMOLITION SCOPE OF WORK AREA. EC TO VERIFY IN FIELD THE EXACT AMOUNT AND LOCATION OF FIXTURES TO BE DEMOLISHED IN THE MARKED DEMOLITION SCOPE OF WORK. (TYPICAL FOR ALL FIXTURES)
280.7	RECEPTACLE TO REMAIN BUT EC SHALL DISCONNECT AND REMOVE EXISTING WIRING AND CONDUIT CONNECTED TO THE DEVICE. EC SHALL RETAIN EXISTING CIRCUIT. PREPARE AREA FOR NEW WORK. REFER TO DWG E-301 FOR MORE INFORMATION.
280.8	EXISTING OCCUPANCY SENSOR TO BE RELOCATED, DISCONNECT AND REMOVE EXISTING CONTROL WIRING AND RETAIN CONDUIT FOR REUSE AND PREPARE AREA FOR NEW WORK. REFER TO DWG E-201 FOR MORE INFORMATION.
280.9	DISCONNECT EXISTING THERMOSTAT AND REMOVE LOW VOLTAGE WIRING AND RETAIN CONDUIT FOR FUTURE RELOCATION. REFER TO DWG E-301 FOR NEW LOCATIONS.
27D.1	EC SHALL REMOVE AND RETAIN EXISTING WIRELESS ACCESS POINT EQUIPMENT FOR FUTURE RELOCATION. REMOVE ALL WIRING/CABLING AND RETAIN CONDUIT FOR REUSE. CONNECTION TO WIRELESS ACCESS POINT IS A WALL MOUNTED DIF RACK SERVING IMC SPACE LOCATED IN ROOM 149.
27D.2	EC SHALL REMOVE DATA/VOICE OUTLETS AND SHALL REMOVE ALL WIRING, CONDUIT AND BACKBOXES BACK TO SOURCE PANEL LOCATED IN TECHNOLOGY CLOSET 109.
27D.3	EC SHALL REMOVE AND RETAIN EXISTING CLOCK FOR FUTURE RELOCATION. EC SHALL ENSURE THAT ANY TYPE OF DISCONNECTION FROM THE SCHOOL'S MAIN CLOCK SYSTEM IS RECONFIGURED TO THE EXISTING SYSTEM BEFORE IT IS DEMOLISHED.
27D.4	EC SHALL REMOVE AND RETAIN EXISTING RECESSED WALL SPEAKER. REMOVE ALL WIRING/CABLING BACK TO THE MOST CONVENIENT JUNCTION BOX LOCATION, ENSURING INTEGRITY OF THE EXISTING CONNECTED PA-SPEAKER CIRCUIT.
280.1	REMOVE INDICATED EXISTING NOTIFICATION AND MITIGATION DEVICES (SMOKE DETECTORS, DUCTWORK MOUNTED SMOKE DETECTORS, HORN STROBES) AND ALL WIRING BACK TO FIRE ALARM PANEL OR TAG PANEL. REFER TO FIRE ALARM DEMOLITION GENERAL NOTES ON THIS SHEET AND DWG E-002 FOR ALL ELECTRICAL CONTRACTOR REQUIRED ACTIONS. NO EXCEPTIONS.
280.2	REMOVE ASSOCIATED CONTROL MODULE AND REMOVE TEST SWITCH FOR DUCT SMOKE DETECTORS BEING TAKEN DOWN AND DECOMMISSIONED. REMOVE ALL WIRING BACK TO SOURCE PANEL AND RETAIN EXISTING CONDUIT FOR REUSE IN NEW WORK DRAWING E-301.

ISSUE FOR BID  
APRIL 12th, 2019

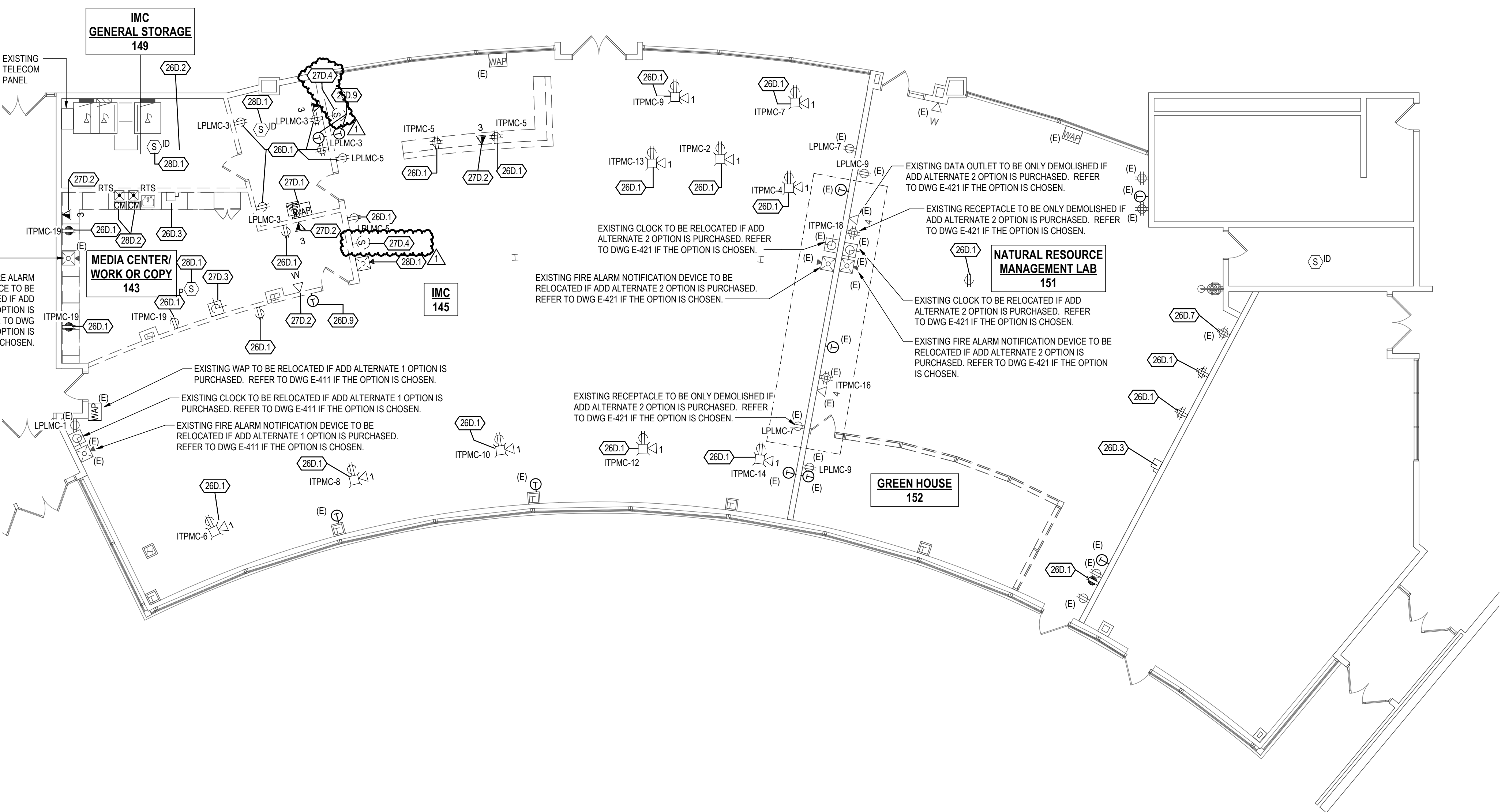
SCHOOL & LOCATION  
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PROJECT TITLE  
GW Carver High School Commons

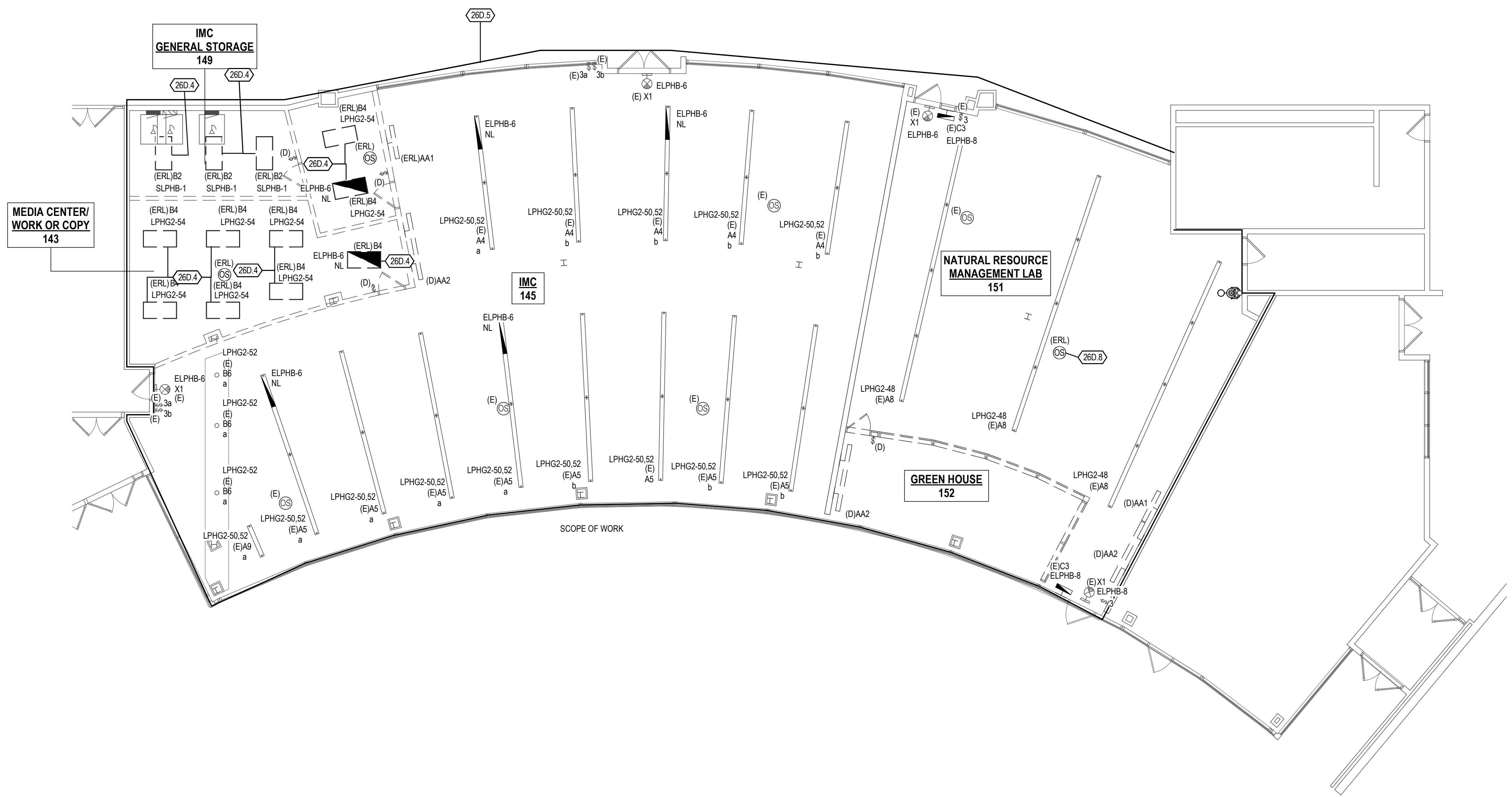
DRAWING TITLE  
FIRST FLOOR ELECTRICAL DEMOLITION PLANS

LOCATION NO.	FILE NO.
DRAWN BY Author	177902528 Checked by Checker
B-070C OF	2018 / 19
B-071C OF	2018 / 19

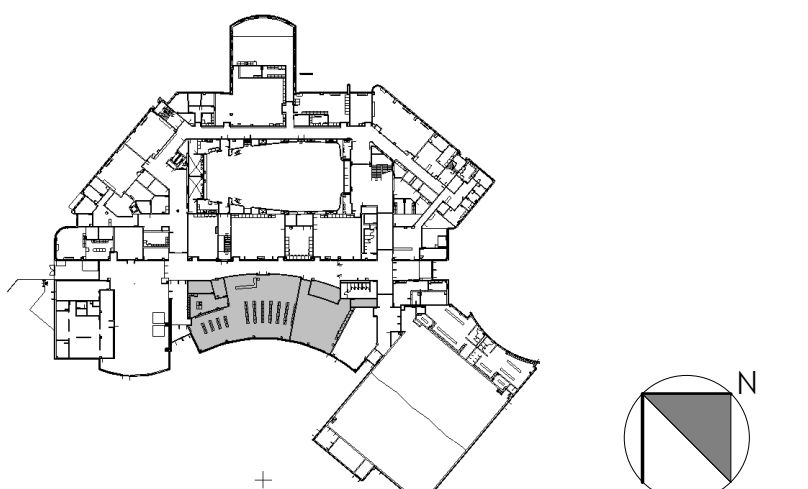
DRAWING NO.  
E-101



1 FIRST FLOOR ELECTRICAL DEMOLITION PLAN  
E-101 1/8" = 1'-0"



2 FIRST FLOOR LIGHTING DEMOLITION PLAN  
E-101 1/8" = 1'-0"





GENERAL NOTES

- REFER TO DRAWING E-001 FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS. ALL NOTES ON DRAWING E-001 APPLY TO THIS DRAWING.
- WHERE GFCI TYPE RECEPTACLES SHARE A CIRCUIT WITH NON-GFCI TYPE RECEPTACLES, THE GFCI TYPE(S) SHALL BE CIRCUITED DOWNSTREAM OF NOTED NON-GFCI TYPE(S).
- PROVIDE FIRE STOPPING OF PENETRATIONS, PROVIDE FIRE-RATED PUTTY PAD IN FIRE-RATED WALLS FOR ALL JUNCTION BOXES AND BACKBOXES SERVING DATA, TELEPHONE, AND POWER OUTLETS WHERE THE DEGREE OF SEPERATION FROM ONE DEVICE TO THE NEXT IS LESS THAN 24".
- CONTRACTOR SHALL GROUND ALL NON-CURRENT CARRYING CONDUCTIVE SURFACES OF FIXED ELECTRICAL EQUIPMENT LIKELY TO BECOME ENERGIZED THAT ARE SUBJECT TO PERSONAL CONTACT, OPERATING AT OVER 100V IN ACCORDANCE WITH NEC 517.

KEY NOTES

KEY NOTES ARE NUMBERED SEQUENTIALLY FROM 26P 1 TO THE LAST KEY NOTE. THEY ARE SHEET SPECIFIC. THE KEY NOTES USED ON A SPECIFIC SHEET WILL BE LISTED ON THAT SHEET.

ELEC KEYNOTE LEGEND - OBJECT SPECIFIC

Key Value	Keynote Text
26P.1	EC TO ROUGH IN RECEPTACLE OUTLETS INTO UNDERCABINET. COORDINATE WITH GC AND MILLWORK CONTRACTOR FOR FINAL LOCATION.
26P.2	EC TO PROVIDE HARDWIRED CONNECTION TO NEW CASEWORK. PROVIDE UL LISTED AND FIRE RATED MULTI-SERVICE WIREWELD OR APPROVED EQUAL. PROVIDE WATER PROOF FIRE-STOP FOR FLOOR PENETRATIONS. INCLUDE FOR POWER AND DATA/VOICE. ELECTRICAL CONTRACTOR TO EXTEND CONDUIT AND WIRING FROM PANEL AS INDICATED ON DRAWINGS TO CEILING TOWARD THE COLUMN INDICATED ON PLANS AND DOWN TO FLOOR SLAB. TERMINATE WIRING CONNECTION IN A JUNCTION BOX AT THE HORIZONTAL APRON OF THE PERIMETER IN THE CASEWORK. PRIOR TO ANY CONNECTION, EC MUST COORDINATE SLAB CUTOUT ROUTE WITH EXACT CONDUIT QUANTITIES AND FINAL LOCATIONS WITH THE GC. NO EXCEPTIONS.
26P.3	REINSTALL THERMOSTAT CONTROL TO EXISTING SYSTEM. EC SHALL PROVIDE NEW CONTROL WIRING AND AN ALLOWANCE FOR ANY ADDITIONAL JUNCTION BOXES AND CONDUIT REQUIRED IN ORDER TO PROVIDE THE FINAL CONNECTIONS.
26P.4	INTERCEPT EXISTING CONDUIT IN THE CEILING AT THE MOST CONVENIENT LOCATION AND EXTEND EXISTING CIRCUIT TO RECONNECT EXISTING RECEPTACLE.
26P.5	INSTALL LOCAL JUNCTION BOX AND INTERCEPT CONDUIT IN THE CEILING AT MOST CONVENIENT LOCATION AND BOX AT CEILING LEVEL AND TERMINATE CIRCUIT WIRING. JUNCTION BOX AND CIRCUIT SHALL BE RESERVED FOR ADD ALTERNATE #1 CIRCUITING.
27.1	FOR WIRELESS ACCESS POINT. EC TO COORDINATE TO PROVIDE AND EXTEND TWO CATEGORY 6A CABLES TERMINATED ABOVE THE CEILING TO THE RELOCATED WIRELESS ACCESS POINT LOCATION. TERMINATE, TEST, AND LABEL CABLING. MOUNT ON WALL 96" A.F.F. EC SHALL PROVIDE AN ALLOWANCE FOR ANY ADDITIONAL JUNCTION BOXES CONDUIT, AND CABLING REQUIRED IN ORDER TO PROVIDE THE FINAL CONNECTIONS TO THE RELOCATED WIRELESS ACCESS POINT.
27.3	COORDINATE FINAL MOUNTING LOCATION OF RELOCATED CLOCKS WITH GEORGE WASHINGTON CARVER SCHOOL ADMINISTRATION.
27.5	EC SHALL PROVIDE DATA/VOICE WIRING AND CONDUIT FOR INFORMATION DESK.
27.7	EC SHALL INSTALL RELOCATED DATA/VOICE OUTLET AND EXTEND EXISTING CONDUIT AND WIRING TO NEW LOCATION TO THE FURTHEST EXTENT POSSIBLE. EC SHALL PROVIDE AN ALLOWANCE FOR ANY ADDITIONAL JUNCTION BOXES CONDUIT, AND WIRING REQUIRED IN ORDER TO PROVIDE THE FINAL CONNECTIONS TO RELOCATED OUTLETS.
27.8	SYMPOSIUM ROOM AUDIOVISUAL PLUG SHALL MOUNT 54" A.F.F. BEHIND PANEL DISPLAY AND PROVIDE A CONNECTION TO ANOTHER PLUG MOUNTED IN ANOTHER LOCATION MARKED IN THE DWS IN FEMALE TO FEMALE ENDED CONNECTION.
27.9	EC SHALL PROVIDE DATA OUTLET FOR PRINTER. REFER TO MANUFACTURER.
27.10	EC SHALL INSTALL RELOCATED SPEAKERS AND EXTEND EXISTING CONDUIT AND WIRING/CABLING TO NEW LOCATION TO THE FURTHEST EXTENT POSSIBLE. EC SHALL PROVIDE AN ALLOWANCE FOR ANY ADDITIONAL JUNCTION BOXES CONDUIT, AND WIRING/CABLING REQUIRED IN ORDER TO PROVIDE THE FINAL CONNECTIONS TO RELOCATED SPEAKERS. TESTING OF SPEAKERS WITH ENTIRE SPEAKER SYSTEM SHALL BE PERFORMED TO ENSURE A FULLY FUNCTIONING SYSTEM.
28.1	INDICATED IN THE DRAWING, EC SHALL PROVIDE NEW WIRING AND REUSE CONDUIT TO FURTHEST EXTENT POSSIBLE. EC SHALL PROVIDE AN ALLOWANCE FOR ANY ADDITIONAL JUNCTION BOXES AND CONDUIT REQUIRED IN ORDER TO PROVIDE THE FINAL CONNECTIONS TO CONNECT THE DEVICE TO THE EXISTING FIRE ALARM DEVICES LOOP FOR THE ASSOCIATED FLOOR AND SECTION OF THE BUILDING.
28.2	REINSTALL CONTROL MODULE AND REMOTE TEST SWITCH FOR ACTIVATION OF DUCT DETECTOR IN SUPPLY OR RETURN DUCT THAT WILL SIGNAL AIR HANDLER FAN SHUTDOWN AND PROVIDE NEW WIRING FOR ALL RECONNECTIONS AS NECESSARY.

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NO.	DATE	REVISION

SCHOOL & LOCATION

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PROJECT TITLE

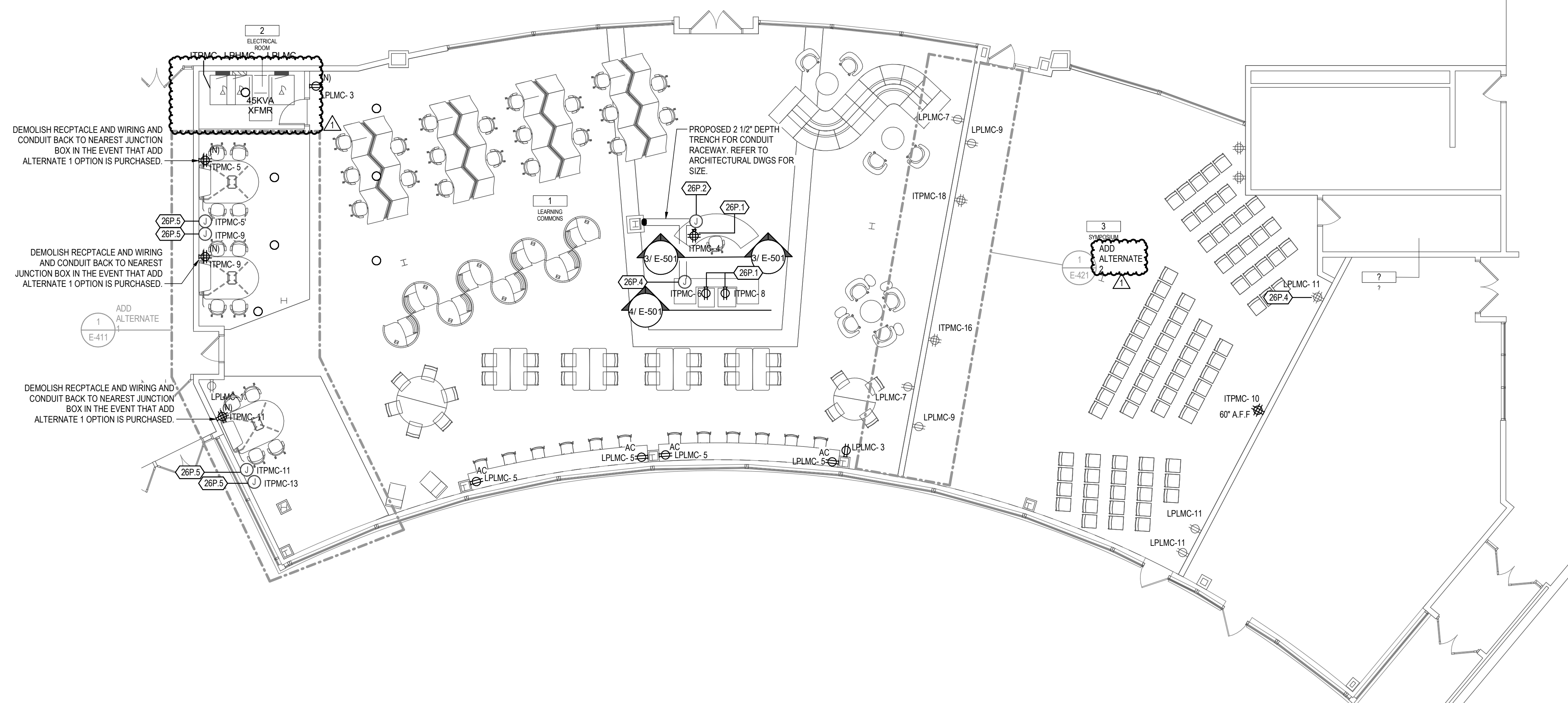
GW Carver High School  
Commons

DRAWING TITLE

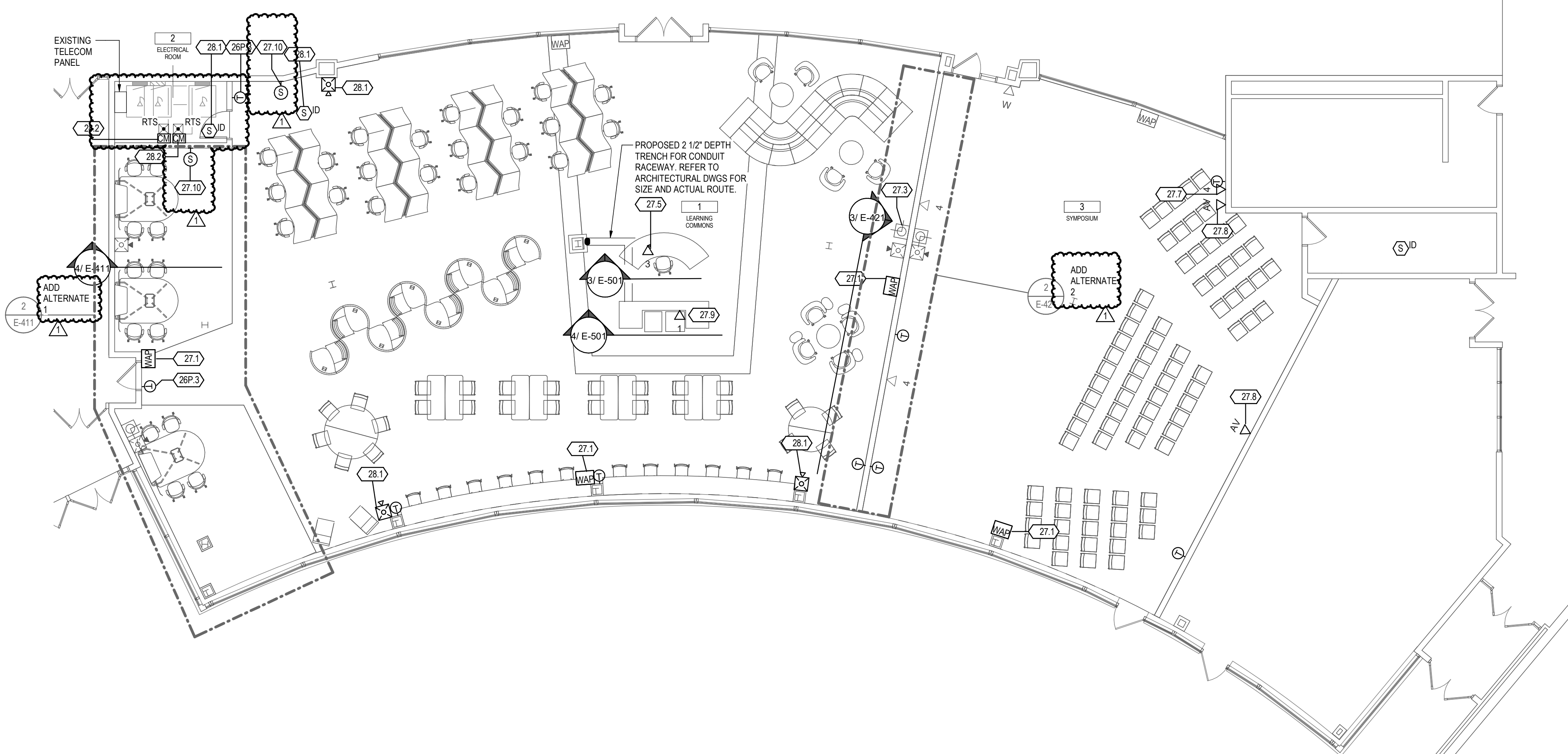
FIRST FLOOR POWER & SYSTEMS  
NEW WORK FLOOR PLANS

LOCATION NO.	FILE NO.
	177902528
DRAWN BY	CHECKED BY
Author	Checker
B-070C	OF 2018 / 19
B-071C	OF 2018 / 19

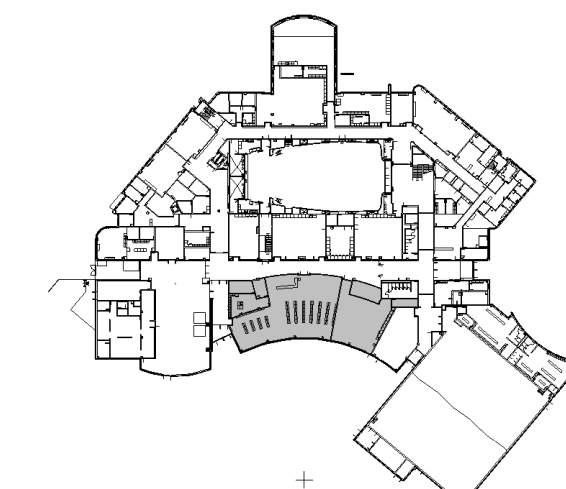
DRAWING NO.  
E-301



1 FIRST FLOOR POWER NEW WORK PLAN  
E-301 1/8" = 1'-0"



2 FIRST FLOOR SYSTEMS NEW WORK PLAN  
E-301 1/8" = 1'-0"



ARCHITECTURE

STANTEC  
1500 SPRING GARDEN ST  
SUITE 1100  
PHILADELPHIA, PA, 19130  
PHONE: 215-665-7026  
MOBILE: 215-490-7303  
EMAIL: JENNIFER.GRAFTON@STANTEC.COM  
ATTN: JEN GRAFTON

MEP

STANTEC  
1500 SPRING GARDEN ST  
SUITE 1100  
PHILADELPHIA, PA, 19130  
PHONE: 215-665-7059  
CELL: 215-360-2690

ELECTRICAL  
EMAIL: RUBEN.SANDOVAL@STANTEC.COM  
ATTN: RUBEN SANDOVAL  
P: 215-665-7063

GENERAL NOTES

- REFER TO DRAWING E-001 FOR SYMBOLS, AND ABBREVIATIONS AND E-002 FOR GENERAL NOTES. ALL NOTES ON DRAWING E-002 APPLY TO THIS DRAWING.
- WHERE GFCI TYPE RECEPTACLES SHARE A CIRCUIT WITH NON-GFCI TYPE RECEPTACLES, THE GFCI TYPE(S) SHALL BE CIRCUITED DOWNSTREAM OF NOTED NON-GFCI TYPE(S).
- PROVIDE FIRE STOPPING OF PENETRATIONS. PROVIDE FIRE-RATED PUTTY PAD IN FIRE-RATED WALLS FOR ALL JUNCTION BOXES AND BACKBOXES SERVING DATA, TELEPHONE, AND POWER OUTLETS WHERE THE DEGREE OF SEPARATION FROM ONE DEVICE TO THE NEXT IS LESS THAN 24".
- CONTRACTOR SHALL GROUND ALL NON-CURRENT CARRYING CONDUCTIVE SURFACES OF FIXED ELECTRICAL EQUIPMENT LIKELY TO BECOME ENERGIZED THAT ARE SUBJECT TO PERSONAL CONTACT, OPERATING AT OVER 100V IN ACCORDANCE WITH NEC 517.

NEW CONSTRUCTION NOTES - ADD ALTERNATES

- INFORMATION SHOWN IS IN ADDITION TO THE BASE BID SCOPE UNLESS OTHERWISE NOTED.

KEY NOTES

KEY NOTES ARE NUMBERED SEQUENTIALLY FROM 26P.1 TO THE LAST KEY NOTE. THEY ARE SHEET SPECIFIC. THE KEY NOTES USED ON A SPECIFIC SHEET WILL BE LISTED ON THAT SHEET.

ELEC KEYNOTE LEGEND - OBJECT SPECIFIC

Key Value	Keynote Text
1.26.1	INSTALL POWER POLE FROM CEILING LEVEL ALONG CMU WALL INTO NEW WALL PARTITION. POWER POLE SHALL SERVE AS FACEWAY TO EXTEND CIRCUITS AND WIRING FROM RESERVED JUNCTION BOX FOR ADD ALTERNATE #1 POWER TO THE RECEPTACLES IN THE CIRCUIT ASSOCIATED COLLABORATION ROOMS CIRCUITING. POWER POLE SHALL BE MOUNTED SECURELY TO WALL.
1.26.2	EC SHALL REMOVE SWITCH CONTROLS CONNECTION AND REWIRE TO NEW SWITCH IN THE NEW COLLABORATION ROOM.
1.26.3	EC SHALL PROVIDE NEW CEILING MOUNTED OCCUPANCY SENSOR. SENSOR SHALL MATCH EXISTING SENSOR MANUFACTURER AND THE UTILIZED SETTING CRITERIA AND SHALL BE CONNECTED TO EXISTING LIGHTING CONTROLS WITH NEW WIRING FOR THE ROOM THEY ARE INSTALLED IN.
1.26.4	NEW LUMINAIRE TO BE MOUNTED FROM CEILING STRUCTURE AND TO MATCH EXISTING SUSPENSION HEIGHT AND CHARACTERISTICS AS EXISTING LUMINAIRES. EXTEND EXISTING CIRCUIT AND LIGHTING CONTROLS WITH NEW WIRING TO THE NEW LUMINAIRE AS INDICATED. EC SHALL PROVIDE AN ALLOWANCE FOR ANY ADDITIONAL JUNCTION BOXES, CONDUIT, AND NEW WIRING REQUIRED IN ORDER TO PROVIDE THE FINAL CONNECTIONS. FOR EACH FIXTURE NEW LUMINAIRE, EC SHALL USE EQUIVALENT MANUFACTURER TO MATCH EXISTING LUMINAIRES. REFER TO LIGHTING SCHEDULE ON DWG E-502.
1.26.5	EC TO PROVIDE RECEPTACLE FOR WALL MOUNTED PANEL BOARD. MOUNTING
1.26.6	REFER TO SHEET E-201 AND E-301 FOR BASE BID NEW CONSTRUCTION PLAN FOR WIRELESS ACCESS POINTS TO COORDINATE TO PROVIDE AN EXTENDED TWO CATEGORY 6A CABLES TERMINATED ABOVE THE CEILING TO THE RELOCATED WIRELESS ACCESS POINT LOCATION. TERMINATE, TEST, AND LABEL CABLING. MOUNT ON WALL 9" A.F.F. EC SHALL PROVIDE AN ALLOWANCE FOR ANY ADDITIONAL JUNCTION BOXES CONDUIT, AND CABLING REQUIRED IN ORDER TO PROVIDE THE FINAL CONNECTIONS TO THE RELOCATED WIRELESS ACCESS POINT.
1.27.3	COORDINATE FINAL MOUNTING LOCATION OF RELOCATED CLOCKS WITH GEORGE WASHINGTON CARVER SCHOOL ADMINISTRATION.
1.28.1	REINSTALL NOTIFICATION AND INITIATION DEVICES IN RELOCATED PLACES AS INDICATED IN THE DRAWING. EC SHALL PROVIDE NEW WIRING AND REUSE CONDUIT TO FURTHEST EXTENT POSSIBLE. EC SHALL PROVIDE AN ALLOWANCE FOR ANY ADDITIONAL JUNCTION BOXES AND CONDUIT REQUIRED IN ORDER TO PROVIDE THE FINAL CONNECTIONS TO CONNECT THE DEVICE TO THE EXISTING FIRE ALARM DEVICES LOOP FOR THE ASSOCIATED FLOOR AND SECTION OF THE BUILDING.
27D.1	EC SHALL REMOVE AND RETAIN EXISTING WIRELESS ACCESS POINT EQUIPMENT FOR FUTURE RELOCATION. REMOVE ALL WIRING/CABLING AND RETAIN CONDUIT FOR REUSE. CONNECTION TO WIRELESS ACCESS POINT IS A WALL MOUNTED IDF RACK SERVING IMC SPACE LOCATED IN ROOM 149.
27D.3	EC SHALL REMOVE AND RETAIN EXISTING CLOCK FOR FUTURE RELOCATION. EC SHALL ENSURE THAT ANY TYPE OF DISCONNECTION FROM THE SCHOOL'S MAIN CLOCK SYSTEM IS RECONFIGURED TO THE EXISTING SYSTEM BEFORE IT IS RE-INSTALLED IN THE NEW WORK PLAN ON DWG E-301.
28D.1	REMOVE INDICATED EXISTING NOTIFICATION AND INITIATION DEVICES (SMOKE DETECTORS, DUCTWORK MOUNTED SMOKE DETECTORS, HORN STROBES) AND ALL WIRING BACK TO FIRE ALARM PANEL OR NAC PANEL. REFER TO FIRE ALARM DEMOLITION GENERAL NOTES ON THIS SHEET AND DWG E-002 FOR ALL ELECTRICAL CONTRACTOR REQUIRED ACTIONS. NO EXCEPTIONS.

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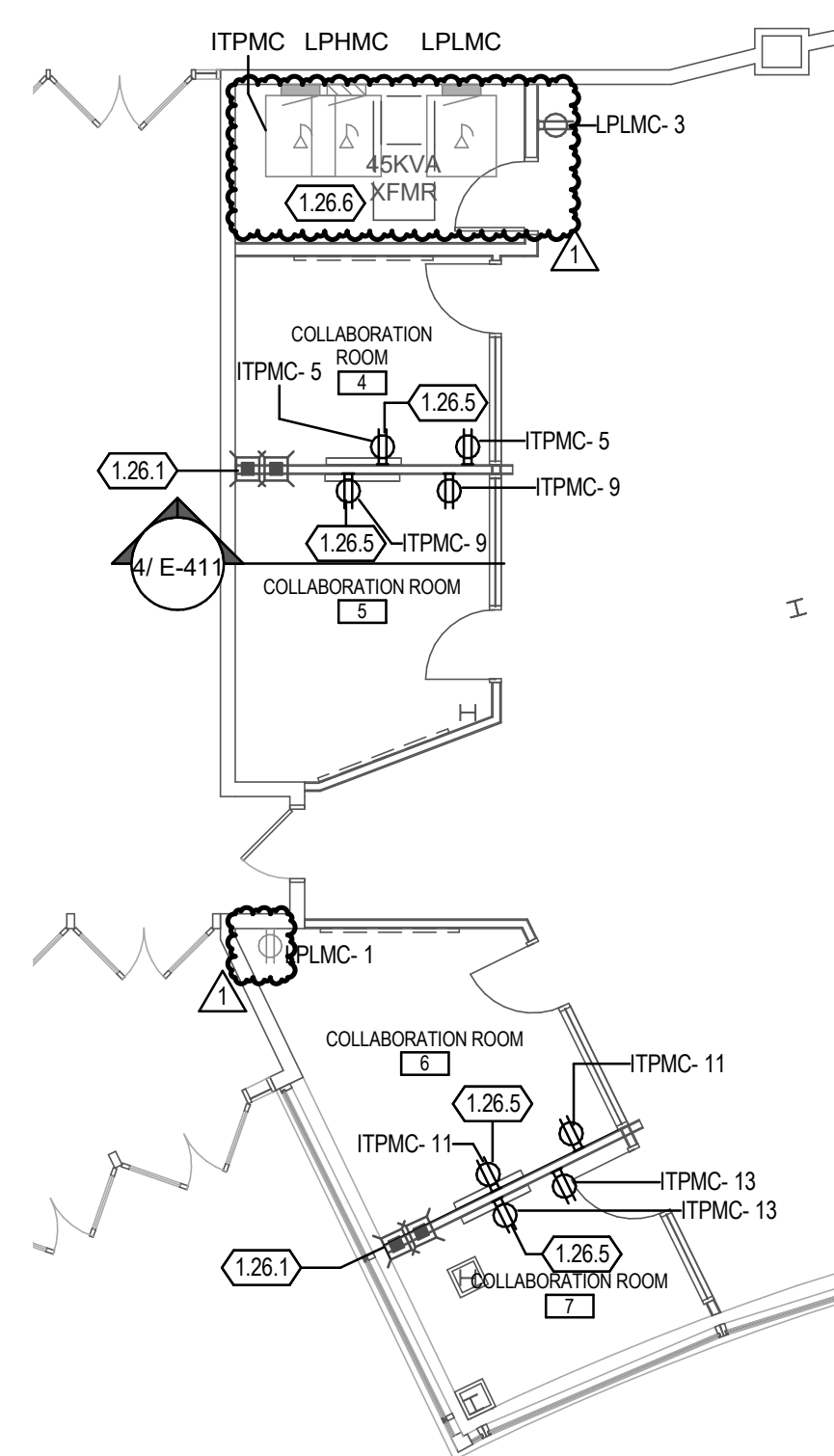
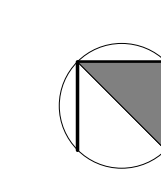
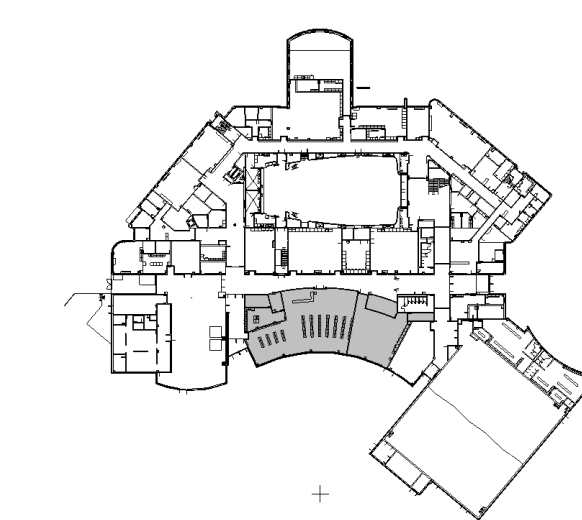
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FIRST FLOOR ELECTRICAL ADD ALTERNATE 1 PLANS

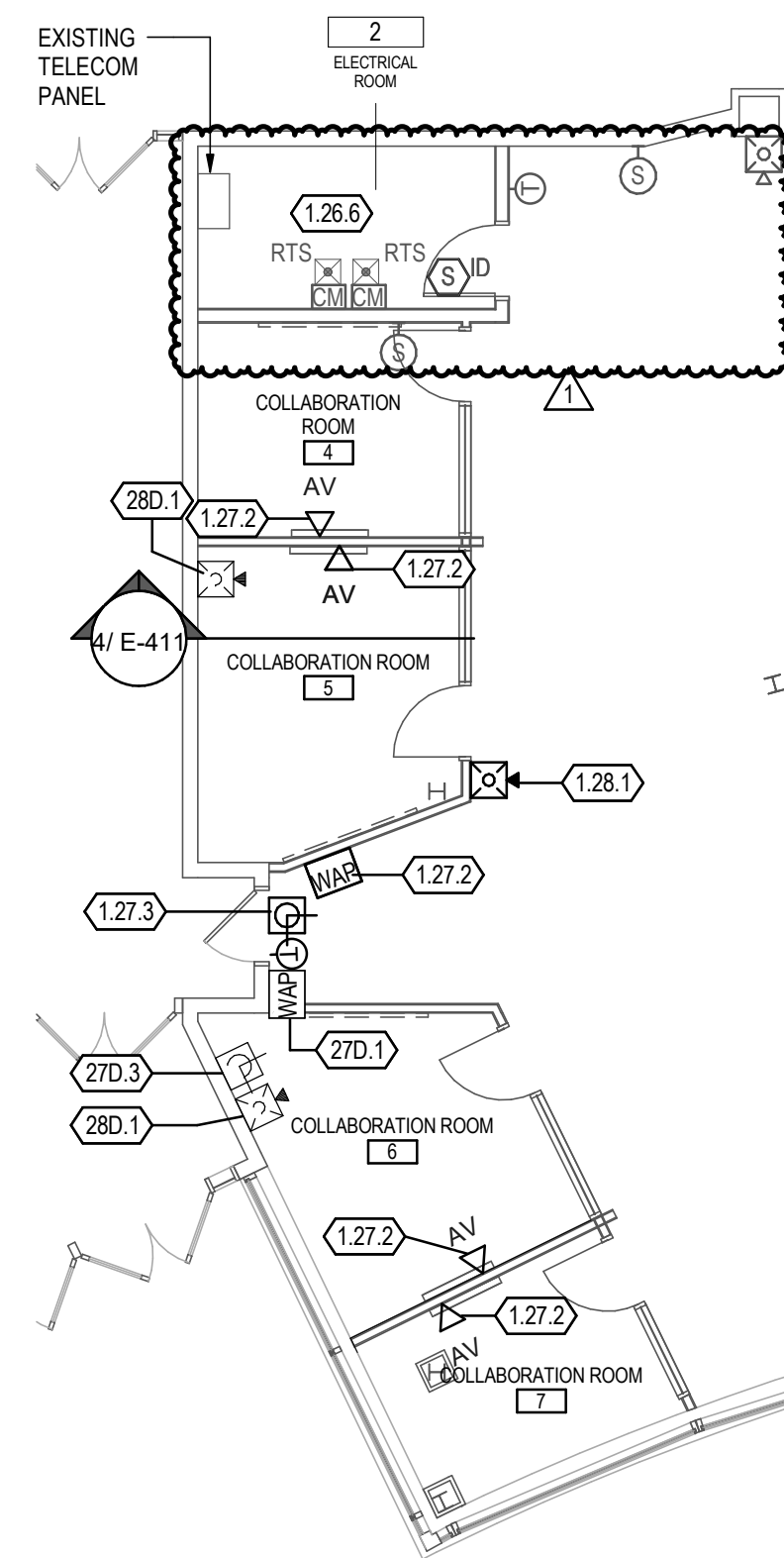
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DRAWN BY	CHECKED BY
Author	Checker
B-070C	OF 2018 / 19
B-071C	OF 2018 / 19

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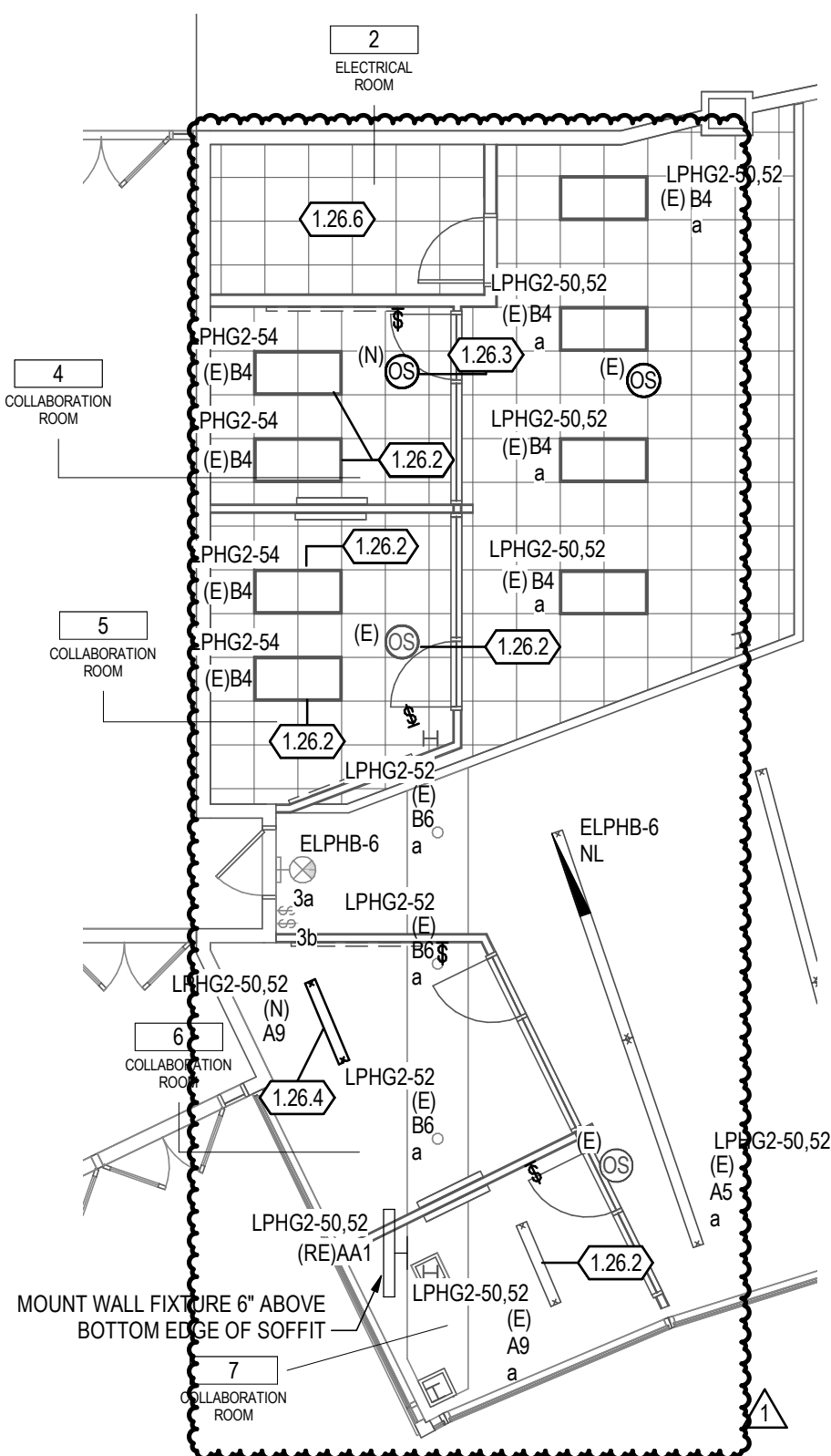
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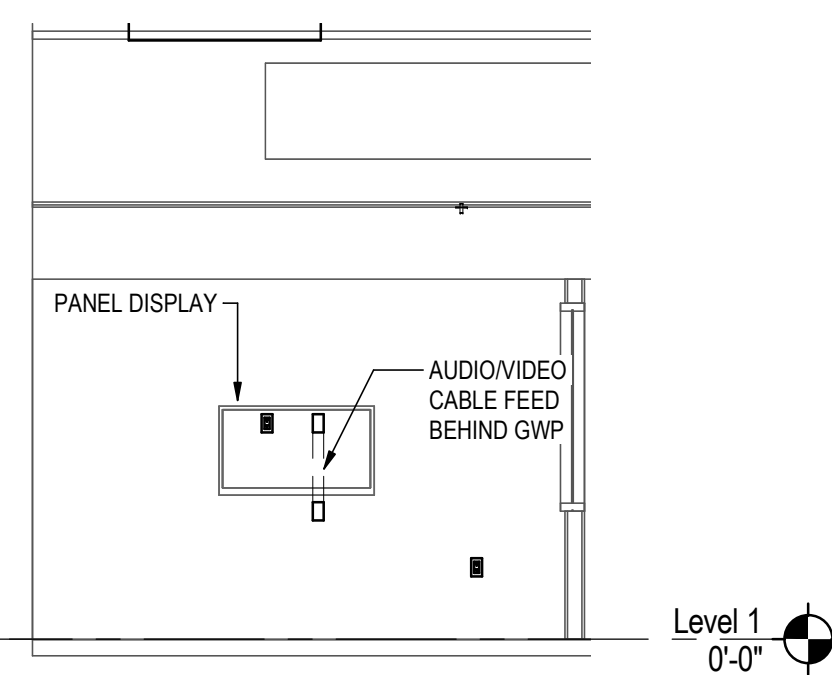
1 FIRST FLOOR POWER NEW WORK PLAN - ADD ALT 1  
1/8" = 1'-0"



2 FIRST FLOOR SYSTEMS NEW WORK PLAN - ADD ALT 1  
1/8" = 1'-0"



3 FIRST FLOOR LIGHTING NEW WORK PLAN - ADD ALTERNATE 1  
1/8" = 1'-0"



4 COLLABORATION ROOM DETAIL  
1/4" = 1'-0"



