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ADDENDUM NO. 03

PROJECT: Newburgh Enlarged City School District
2019 Capital Improvements Project – Phase 3

CPL PROJECT NO. 13940.18

SED PROJECT NO. Heritage Middle School SED # 44-16-00-01-0-039-011

DATE: October 1, 2021

Include this Addendum as part of the Contract Documents. It supplements portions of the original specifications and drawings, the extent of which shall remain, except as revised herein:

CLARIFICATIONS

1.1 Pump P-2 is for standby, pumps shall be alternating operation weekly.

1.2 Hatch in the A/100 series represent extents of ceiling work.

1.3 For soffits shown on drawings HMS A602C and HMS A602D, bidder to refer to detail 6/A802 for construction."

1.4 Abbreviation A.F.F= Above Finish Floor

CHANGES TO THE PROJECT MANUAL:

2.1 Section 0001100, Division 09 - Finishes: Remove section "095114 -ACOUSTICAL FABRICATED PANEL CEILINGS."

2.2 Section 000550: Replace the construction schedule with the attached revised construction schedule

2.3 Section 004010: Replace with the attached revised Section 004010

2.4 Section 004020: Replace with the attached revised Section 004020.

50 Front Street, Suite 202
Newburgh, NY 12550
cplteam.com
845.567.6700 TEL
845.567.9614 FAX

2.5 Section 004040: Replace with the attached revised Section 004040.

2.6 Section 011200:

2.6.1 Part 1.5.B: Revise Section to Read:

"d) General Contractor. New Addition, site work and renovations. Day and Night shift mandatory. See schedule

e) Electrical Contractor - New Addition, site work and renovations. Main service upgrade and Mechanical connections. Day and Night shift mandatory See schedule

f) Mechanical and plumbing will be combined to the Mechanical Contract. New Addition, site work and renovations. New mechanical units throughout building. Day and Night shift mandatory See schedule."

2.6.2 Part 1.6.D: Add the following:

" i) The Palombo Group will provide Labor to assist the mechanical contractor in removing and reinstalling the ceiling tile for the purpose of the mechanical contractors above ceiling work during the planned night shift hours only. Ceiling removal and reinstallation work performed during the regular daytime hours will be the responsibility of the contractor performing the work when no other trade has work in that area."

2.6.3 Part 1.7.G: Add the following:

"dd) Work at the interior of the existing building will take place on a night shift from start of interior work by contractor until start of summer of 2022. See schedule for dates that may change based on situation and materials."

"ii) All fine cleaning at the end of each night shift will be the responsibility Prime contractor performing the work. A $500 fine will be assessed for each night this is not successfully performed."

2.6.4 Part 1.8.B.d: Add the following:

"3) Add filters on the cafeteria fresh air intake louver (s) to control dust and odors from penetrating the active system.

4) Relocate fresh air intake louvers at cafeteria to location shown on the plans, temporarily tie back into existing system until new unit and duct work is installed. See schedule for dates"

2.6.5 Part 1.8.B.e: Add the following:
"22) Work at the interior of the existing building will take place on a night shift from start of work by contractor until the start of summer 2022. See schedule for dates that may change based on situation and materials."

2.6.6 Part 1.9.A.g: Revise section to read: "Day shift work is mandatory 6 days a week. Existing Interior work will take place during the night shift until start of summer 2022. Summer of 2022 will be day shift only unless progress is behind schedule and switch gear install. "

2.6.7 Part 1.9.A.h: Revise section to read: "In conjunction to night shift listed above, a mandatory night and day shift will be required to remove old and install the new switch gear. Include 2 weeks of additional Night shift work (including Saturdays) unless work is not complete as per the schedule. Include a 100KW Generator to power building during the switch over. EC to pay for fuel and manpower to operate the generator 24hrs a day for a two-week period. Any additional time required to install new gear and power the building will be at the cost of the EC. "

2.6.8 Part 1.9.A: Add the following: " i) Theatrical lighting and rigging is a part of this scope of work. "

2.6.9 Part 1.13.C: Revise section to read: "Day shift work is mandatory 6 days a week. Existing Interior work will take place during the night shift until start of summer 2022. From Summer of 2022 forward, will be day shift only unless progress is behind schedule."

2.6.10 Part 1.13: Add the following:
"D. June 30, 2022 will be the power shutdown of the old switch gear and entire building. Generator and temp power will be in place prior to shut down."

2.7 Section 012300:

2.7.1 Part 3.01.A: Add the following:

"8. Alternate No. GC-10: OCP Policy

a. Description: Provide an Owner's Contractor's Protective Policy per the limits listed below:

Fully completed New York Construction Certificate of Liability Insurance Addendum (ACORD 855 2014/15) must be included with the certificates of Insurance. For any "yes" answered on Items G through L on this form – additional details must be provided in writing

[JM1] Owners Contractors Protective:

Coverage	Limits
For projects less than or equal to $1,000,000 and work on 1 story (10 feet) only;	[JM2] $1,000,000 per occurrence/$2,000,000 aggregate with the District/BOCES as the Named Insured
For projects greater than $1,000,000 and work over 1 story (10 feet)	$2 million per occurrence, $4 million aggregate with the District/BOCES as the Named Insured
For all projects where General Liability, Auto and Umbrella/Excess Coverage is with non-licensed and non-admitted carriers in New York State	$2 million per occurrence, $4 million aggregate with the District/BOCES as the named Insured.

The District/BOCES will be the Named Insured on OCP Policies. There will be no Additional Insureds on any OCP Policies"

2.7.2 Part 3.01. B, revise to read:

"8. Alternate No. MC-4: OCP Policy

a. Description: Provide an Owner's Contractor's Protective Policy per the limits listed below:

Fully completed New York Construction Certificate of Liability Insurance Addendum (ACORD 855 2014/15) must be included with the certificates of Insurance. For any "yes" answered on Items G through L on this form – additional details must be provided in writing

[JM3] Owners Contractors Protective:

Coverage	Limits
For projects less than or equal to $1,000,000 and work on 1 story (10 feet) only;	[JM4] $1,000,000 per occurrence/$2,000,000 aggregate with the District/BOCES as the Named Insured
For projects greater than $1,000,000 and work over 1 story (10 feet)	$2 million per occurrence, $4 million aggregate with the District/BOCES as the Named Insured

For all projects where General Liability, Auto and Umbrella/Excess Coverage is with non-licensed and non-admitted carriers in New York State	$2 million per occurrence, $4 million aggregate with the District/BOCES as the named Insured.

The District/BOCES will be the Named Insured on OCP Policies. There will be no Additional Insureds on any OCP Policies"

2.7.3 Part 3.01.C: Add the following:

"6. Alternate No. EC-7: OCP Policy

a. Description: Provide an Owner's Contractor's Protective Policy per the limits listed below:

Fully completed New York Construction Certificate of Liability Insurance Addendum (ACORD 855 2014/15) must be included with the certificates of Insurance. For any "yes" answered on Items G through L on this form – additional details must be provided in writing

[JM5] Owners Contractors Protective:

Coverage	**Limits**
For projects less than or equal to $1,000,000 and work on 1 story (10 feet) only;	[JM6] $1,000,000 per occurrence/$2,000,000 aggregate with the District/BOCES as the Named Insured
For projects greater than $1,000,000 and work over 1 story (10 feet)	$2 million per occurrence, $4 million aggregate with the District/BOCES as the Named Insured
For all projects where General Liability, Auto and Umbrella/Excess Coverage is with non-licensed and non-admitted carriers in New York State	$2 million per occurrence, $4 million aggregate with the District/BOCES as the named Insured.

The District/BOCES will be the Named Insured on OCP Policies. There will be no Additional Insureds on any OCP Policies"

2.8 Section 015001: At the end of the Section, add the attached sketch AD03 SK-A03, AD03 SK-

H01, & AD03 SK-H02.

2.9 After Section 072100, Add the attached new Section: 072413 - PB Insulation and Finish System

2.10 Section 230130 3.4.A.1.a: Revise "Return-air ducts…", to read, "Clean all existing to remaining outdoor air ductwork to all new air handling units."

2.11 Section 238223 1.9.A.2: Revise Warranty period to read, "One year from substantial completion."

2.12 After Section 233300, Add the attached new Section: 233423-POWER VENTILATORS.

2.13 After Section 2333713, Add the attached new Section: 236313-CONDENSING UNITS.

2.14 Section 237413: Replace with the attached revised section 237413

2.15 After Section 237413, Add the attached new Section: 237414-ROOFTOP UNITS.

2.16 Section 233113 3.9: Add the following:

H. Liner
a. Supply Air Ducts: Flexible elastomeric, 1 inch thick.
b. Return Air Ducts: Flexible elastomeric, 1 inch thick.

CHANGES TO THE DRAWINGS:

3.1 Drawing HMS C201, Detail C201/A, revise scale to read 1"=40'

3.2 Drawing HMS S801; Cold Formed Metal Framing Notes: Add note 17 to read, "Exterior steel studs for both bearing, and non-bearing walls shall have a minimum base-metal thickness of 0.0428-inches. Steel tracks shall have a base-metal thickness to match the steel studs."

3.3 Drawing HMS A601C: Remove keynote 1 from room "Conference Room #136 & Attendance Office #132."

3.2 Drawing HMS A600B: Revise ceiling height at classroom Music 434 that reads 14'-0", to read, "13'-10""

3.3 Drawing HMS P202: Revise all reference to, "ALT PC-1" to read "ALT MC-5"

3.4 Drawing HMS H103C: Revise all references to, "ALT MC-4" to read "ALT-MC-3"

3.5 Drawing HMS E001: Replace with the attached revised E001.

3.6 Drawing HMS E100B: Replace with the attached revised E100B.

3.7 Drawing HMS E200B: Replace with the attached revised E200B

3.8 Drawing HMS E900: Replace with the attached revised E900.

3.9 Drawing HMS H900:

3.9.1 Revise Roof Top Unit schedule, remark 2, to read, "FACTORY MOUNTED AND WIRED DISCONNECT. 2" PREFILTER, 4" MERV 13 FILTER."

3.9.2 Revise Fin Tube Schedule, Remark 2, to read, "Provide Sterling model VB-ARM, pedestal mounted with floor mounted brackets, 14GA thickness, color standard white."

RFI QUESTIONS AND RESPONSES:

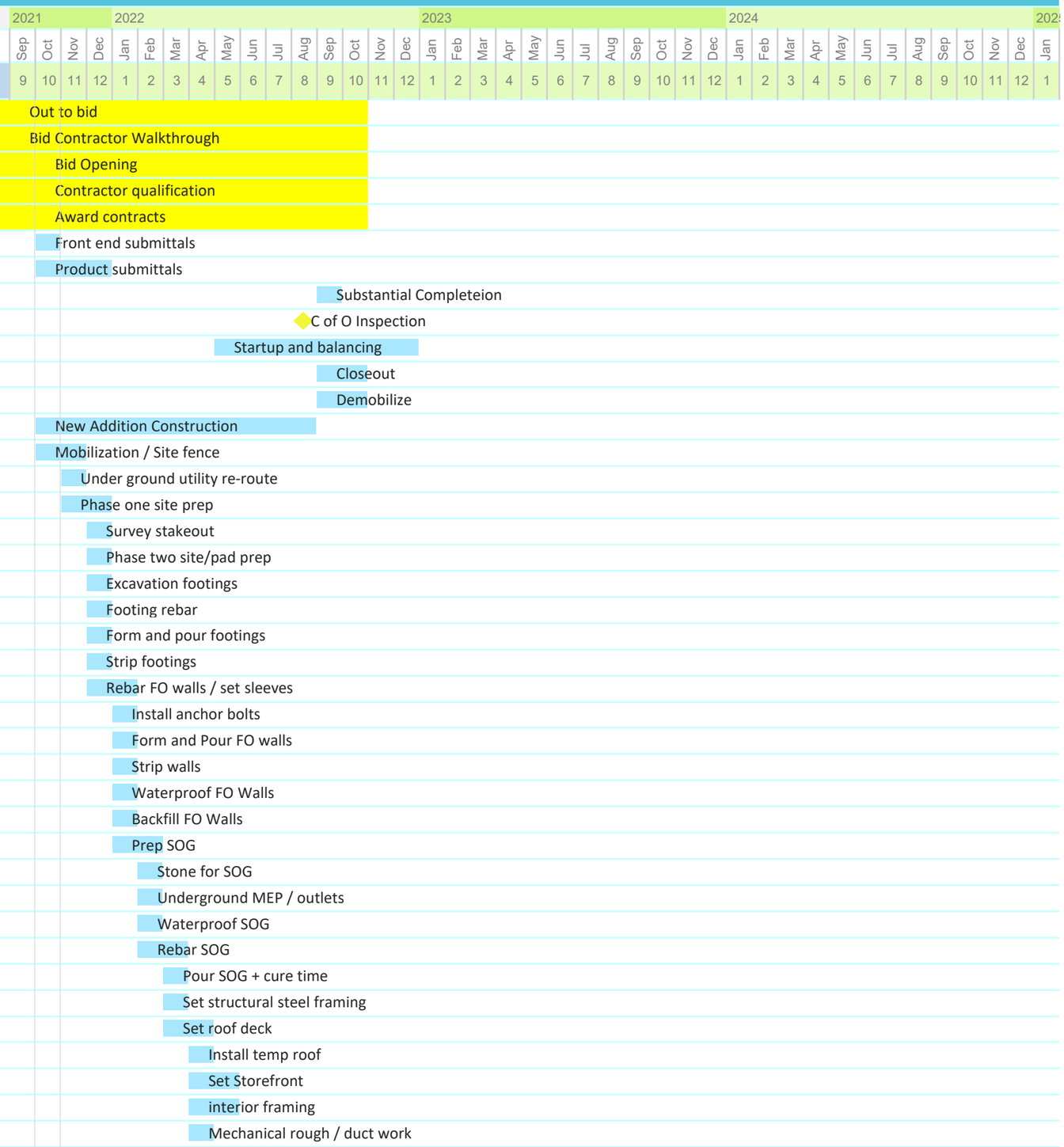
1) QUESTION: Please clarify the material and gauge required for the sheet metal secondary drain pans specified for installation under the Suspended Cooling Equipment?
   a) RESPONSE: Secondary drain pan thickness shall be 26 gauge. The over flow alarm shall be mount in the primary drain pan.

END OF ADDENDUM NO. 03

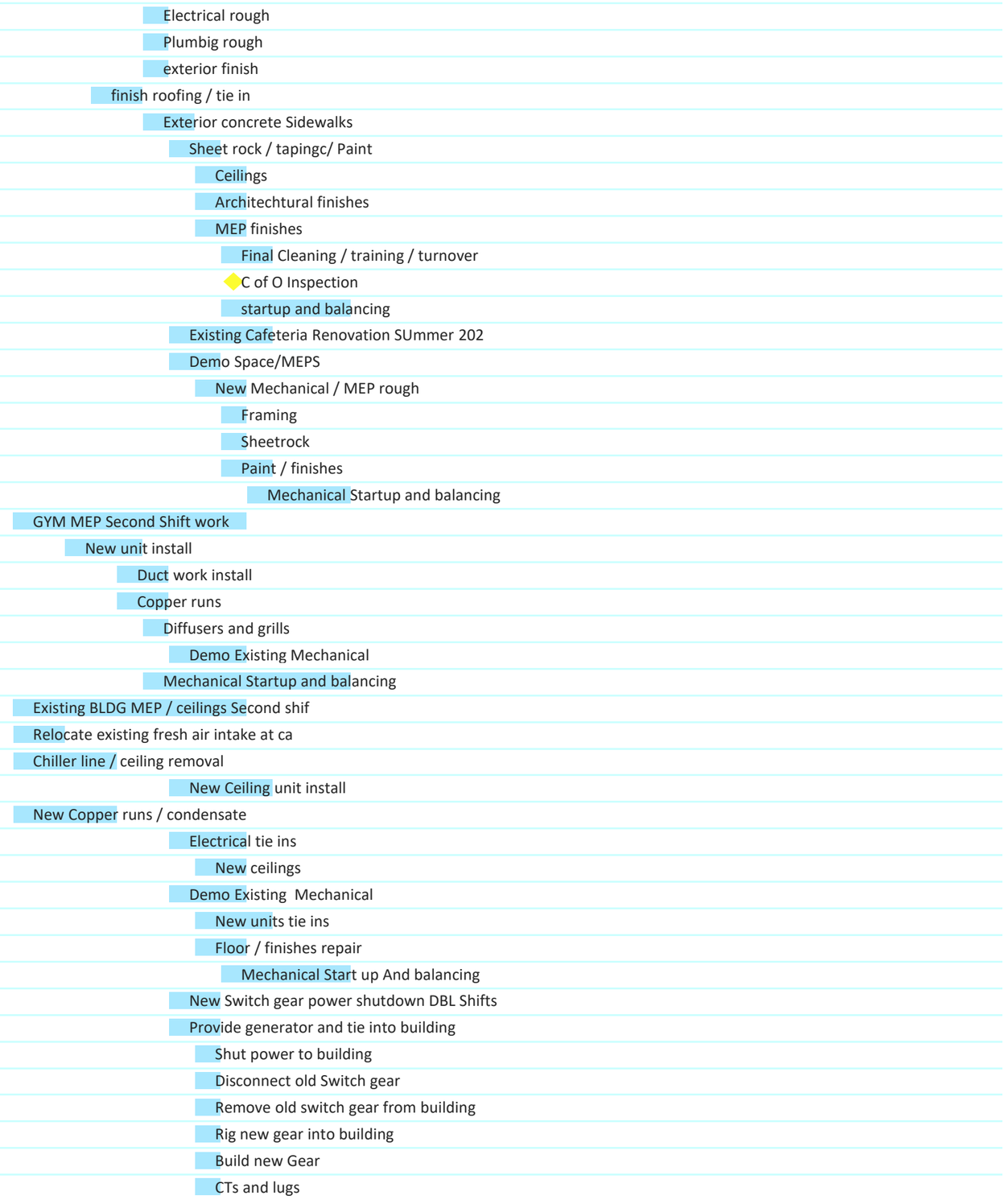
Heritage

Project Lead: TPG

WBS	Task Name	Start	Finish	Duration	RESPONSIBILTY	LOCATION
1	Out to bid	Mon 06-Sep-21	Tue 05-Oct-21	22		
2	Bid Contractor Walkthrough	Wed 22-Sep-21	Wed 22-Sep-21	1		
3	Bid Opening	Tue 05-Oct-21	Tue 05-Oct-21	1		
4	Contractor qualification	Thu 07-Oct-21	Mon 11-Oct-21	3		
5	Award contracts	Tue 12-Oct-21	Wed 13-Oct-21	2		
6	Front end submittals	Thu 14-Oct-21	Fri 29-Oct-21	12		
7	Product submittals	Thu 14-Oct-21	Wed 15-Dec-21	45		
8	Substantial Completeion	Thu 01-Sep-22	Thu 01-Sep-22	1		
9	C of O Inspection	Tue 23-Aug-22	Tue 23-Aug-22	1		
10	Startup and balancing	Tue 24-May-22	Mon 05-Dec-22	140		
11	Closeout	Tue 06-Sep-22	Mon 10-Oct-22	25		
12	Demobilize	Tue 06-Sep-22	Mon 10-Oct-22	25		
13	**New Addition Construction**	Thu 14-Oct-21	Mon 15-Aug-22	218		
14	Mobilization / Site fence	Thu 14-Oct-21	Wed 03-Nov-21	15		
15	Under ground utility re-route	Thu 04-Nov-21	Wed 24-Nov-21	15		
16	Phase one site prep	Thu 25-Nov-21	Wed 01-Dec-21	5		
17	Survey stakeout	Thu 02-Dec-21	Thu 02-Dec-21	1		
18	Phase two site/pad prep	Fri 03-Dec-21	Mon 06-Dec-21	2		
19	Excavation footings	Tue 07-Dec-21	Thu 09-Dec-21	3		
20	Footing rebar	Fri 10-Dec-21	Tue 21-Dec-21	8		
21	Form and pour footings	Wed 22-Dec-21	Tue 28-Dec-21	5		
22	Strip footings	Wed 29-Dec-21	Thu 30-Dec-21	2		
23	Rebar FO walls / set sleeves	Fri 31-Dec-21	Mon 10-Jan-22	7		
24	Install anchor bolts	Tue 11-Jan-22	Tue 11-Jan-22	1		
25	Form and Pour FO walls	Wed 12-Jan-22	Wed 19-Jan-22	6		
26	Strip walls	Thu 20-Jan-22	Fri 21-Jan-22	2		
27	Waterproof FO Walls	Mon 24-Jan-22	Tue 25-Jan-22	2		
28	Backfill FO Walls	Wed 26-Jan-22	Fri 28-Jan-22	3		
29	Prep SOG	Mon 31-Jan-22	Thu 03-Feb-22	4		
30	Stone for SOG	Fri 04-Feb-22	Wed 09-Feb-22	4		
31	Underground MEP / outlets	Thu 10-Feb-22	Wed 16-Feb-22	5		
32	Waterproof SOG	Thu 17-Feb-22	Mon 21-Feb-22	3		
33	Rebar SOG	Tue 22-Feb-22	Tue 01-Mar-22	6		
34	Pour SOG + cure time	Wed 02-Mar-22	Tue 15-Mar-22	10		
35	Set structural steel framing	Wed 16-Mar-22	Tue 29-Mar-22	10		
36	Set roof deck	Wed 30-Mar-22	Tue 12-Apr-22	10		
37	Install temp roof	Wed 13-Apr-22	Tue 26-Apr-22	10		
38	Set Storefront	Wed 20-Apr-22	Tue 03-May-22	10		
39	interior framing	Wed 20-Apr-22	Tue 10-May-22	15		
40	Mechanical rough / duct work	Thu 07-Apr-22	Wed 27-Apr-22	15		

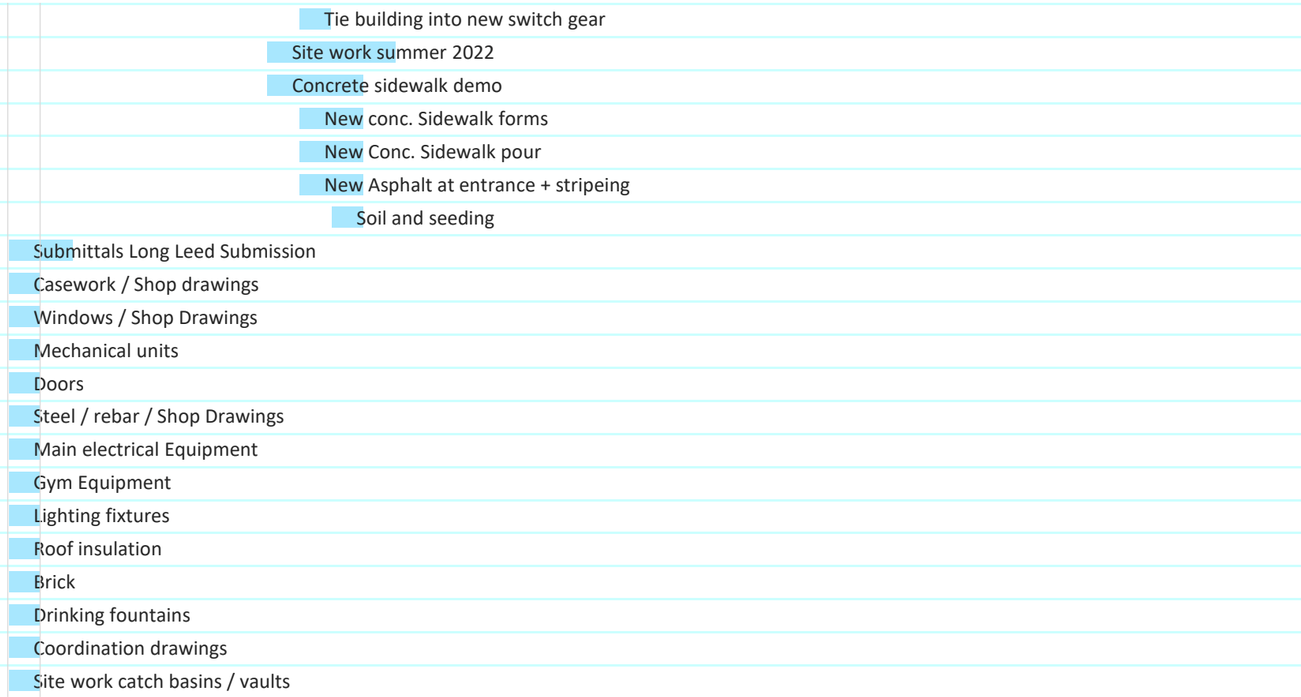


41	Electrical rough	Wed 11-May-22	Tue 31-May-22	15	
42	Plumbig rough	Wed 11-May-22	Mon 30-May-22	14	
43	exterior finish	Wed 04-May-22	Tue 31-May-22	20	
44	finish roofing / tie in	Wed 30-Mar-22	Tue 26-Apr-22	20	
45	Exterior concrete Sidewalks	Sat 28-May-22	Fri 24-Jun-22	20	
46	Sheet rock / tapingc/ Paint	Tue 07-Jun-22	Mon 18-Jul-22	30	
47	Ceilings	Tue 19-Jul-22	Mon 08-Aug-22	15	
48	Architechtural finishes	Tue 19-Jul-22	Mon 08-Aug-22	15	
49	MEP finishes	Tue 19-Jul-22	Mon 15-Aug-22	20	
50	Final Cleaning / training / turnover	Tue 16-Aug-22	Mon 05-Sep-22	15	
51	C of O Inspection	Tue 23-Aug-22	Tue 23-Aug-22	1	
52	startup and balancing	Tue 16-Aug-22	Mon 05-Dec-22	80	
53	**Existing Cafeteria Renovation**	Tue 28-Jun-22	Tue 06-Sep-22	51	
54	Demo Space/MEPS	Tue 28-Jun-22	Thu 07-Jul-22	8	
55	New Mechanical / MEP rough	Fri 08-Jul-22	Thu 04-Aug-22	20	
56	Framing	Fri 05-Aug-22	Tue 16-Aug-22	8	
57	Sheetrock	Fri 12-Aug-22	Mon 29-Aug-22	12	
58	Paint / finishes	Tue 30-Aug-22	Tue 06-Sep-22	6	
59	Mechanical Startup and balancing	Wed 07-Sep-22	Fri 09-Dec-22	68	
60	**GYM MEP Second Shift work**	Thu 16-Dec-21	Mon 15-Aug-22	173	
61	New unit install	Tue 01-Feb-22	Mon 04-Apr-22	45	
62	Duct work install	Tue 05-Apr-22	Mon 09-May-22	25	
63	Copper runs	Tue 05-Apr-22	Mon 09-May-22	25	
64	Diffusers and grills	Tue 10-May-22	Mon 23-May-22	10	
65	Demo Existing Mechanical	Tue 28-Jun-22	Mon 29-Aug-22	45	
66	Mechanical Startup and balancing	Tue 24-May-22	Fri 09-Dec-22	144	
67	**Existing BLDG MEP / ceilings Second**	Thu 16-Dec-21	Mon 15-Aug-22	173	
68	Relocate existing fresh air intake at	Mon 27-Dec-21	Fri 07-Jan-22	10	
69	Chiller line / ceiling removal	Thu 16-Dec-21	Wed 23-Mar-22	70	
70	New Ceiling unit install	Tue 28-Jun-22	Mon 19-Sep-22	60	
71	New Copper runs / condensate	Thu 16-Dec-21	Wed 23-Mar-22	70	
72	Electrical tie ins	Tue 28-Jun-22	Mon 29-Aug-22	45	
73	New ceilings	Tue 12-Jul-22	Mon 29-Aug-22	35	
74	Demo Existing Mechanical	Tue 28-Jun-22	Mon 08-Aug-22	30	
75	New units tie ins	Mon 04-Jul-22	Thu 01-Sep-22	44	
76	Floor / finishes repair	Tue 05-Jul-22	Mon 15-Aug-22	30	
77	Mechanical Start up And balancing	Tue 16-Aug-22	Fri 09-Dec-22	84	
78	**New Switch gear power shutdown**	Thu 30-Jun-22	Wed 13-Jul-22	10	
79	Provide generator and tie into	Thu 30-Jun-22	Fri 01-Jul-22	2	
80	Shut power to building	Mon 04-Jul-22	Mon 04-Jul-22	1	
81	Disconnect old Switch gear	Tue 05-Jul-22	Tue 05-Jul-22	1	
82	Remove old switch gear from	Wed 06-Jul-22	Wed 06-Jul-22	1	
83	Rig new gear into building	Thu 07-Jul-22	Thu 07-Jul-22	1	
84	Build new Gear	Fri 08-Jul-22	Fri 08-Jul-22	1	
85	CTs and lugs	Mon 11-Jul-22	Mon 11-Jul-22	1	



86	Tie building into new switch gear	Tue 12-Jul-22	Wed 13-Jul-22	2	
87	**Site work summer 2022**	Tue 28-Jun-22	Thu 01-Sep-22	48	
88	Concrete sidewalk demo	Tue 28-Jun-22	Mon 22-Aug-22	40	
89	New conc. Sidewalk forms	Tue 05-Jul-22	Mon 08-Aug-22	25	
90	New Conc. Sidewalk pour	Tue 19-Jul-22	Mon 29-Aug-22	30	
91	New Asphalt at entrance + stripeing	Tue 05-Jul-22	Wed 03-Aug-22	22	
92	Soil and seeding	Thu 04-Aug-22	Wed 24-Aug-22	15	
93	**Submittals Long Leed Submission**	Thu 14-Oct-21	Wed 10-Nov-21	20	
94	Casework / Shop drawings	Thu 14-Oct-21	Wed 27-Oct-21	10	
95	Windows / Shop Drawings	Thu 14-Oct-21	Wed 27-Oct-21	10	
96	Mechanical units	Thu 14-Oct-21	Wed 27-Oct-21	10	
97	Doors	Thu 14-Oct-21	Wed 27-Oct-21	10	
98	Steel / rebar / Shop Drawings	Thu 14-Oct-21	Wed 27-Oct-21	10	
99	Main electrical Equipment	Thu 14-Oct-21	Wed 27-Oct-21	10	
100	Gym Equipment	Thu 14-Oct-21	Wed 27-Oct-21	10	
101	Lighting fixtures	Thu 14-Oct-21	Wed 27-Oct-21	10	
102	Roof insulation	Thu 14-Oct-21	Wed 27-Oct-21	10	
103	Brick	Thu 14-Oct-21	Wed 27-Oct-21	10	
104	Drinking fountains	Thu 14-Oct-21	Wed 27-Oct-21	10	
105	Coordination drawings	Thu 14-Oct-21	Wed 27-Oct-21	10	
106	Site work catch basins / vaults	Thu 14-Oct-21	Wed 27-Oct-21	10	

Type here to add a new task



SECTION 004010

FORM OF PROPOSAL GENERAL CONSTRUCTION

PART 1 GENERAL

01. SUMMARY

Fill in information:

Date:
TO:
Newburgh Enlarged City School District:
124 Grand Street
Newburgh, New York 12550
FROM:
BIDDER NAME & ADDRESS

02. GENERAL

Pursuant to, and in compliance with, the Procurement and Contracting Requirements, Conditions of the Contract, relative thereto and all of the Contract Documents, including any Addenda issued by the Architect and mailed or delivered to the undersigned prior to the opening of Bids, whether received by the undersigned or not, we,_____

1) having visited the site and being familiar with all conditions and requirements of the Work, hereby propose to furnish all plant, labor, supplies, materials and equipment incidental to GENERAL CONSTRUCTION WORK as required by and in strict accord with the applicable provisions of the Drawings and Specifications entitled (Insert project title Here)all to the satisfaction and approval of the Architect and the Owner in accordance with the terms and conditions of the Contract Documents for the following sum:

DOLLARS
($)
BASE BID

03. BID GUARANTEE

The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within [10] days after a written Notice of Award, if offered within 45 days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid.

1) In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

04. TIME OF COMPLETION

It is agreed by the undersigned that after receipt of a Notice of Award and a consummation of a Contract Agreement in accord with the terms of the Contract Documents, he will start work within 10 (or Insert number) consecutive calendar days of this notice to

proceed and fully complete the work.as indicated in the project schedule.

05. ALLOWANCES (REFERENCE SPECIFICATION SECTION 012100)

Specified Allowance as indicated in Specification Section 012100. This amount is to be included in the Base Bid above.

1) Allowance Amount:

$ 50,000

06. UNIT PRICES (REFERENCE SPECIFICATION SECTION 012700)

Enter in unit prices from spec section 012700. (Unit prices are used in anticipation that there will be additional quantities of materials and labor not expressly indicated on the contract documents.)

1) Unit Price No. GC-1: (Ceiling Replacement)

$ per

07. ALTERNATES (REFERENCE SPECIFICATION SECTION 012300)

Enter a whole dollar amount, even if it is zero ($ 0), for each Alternate. Circle "ADD" or "DEDUCT" for each Alternate Bid. If neither is circled, "DEDUCT" will be assumed. Do not leave any Alternate amount blank. If any amount is blank, it will be assumed the Bidder will provide that Alternate for no change, neither increase nor decrease, in Contract Price.

1) Alternate No. GC-1;General Construction work associated with Roof Top Unit Replacement:

ADD/DEDUCT ($)
DOLLARS

2) Alternate No. GC-2; General Construction work associated with Fan Coil Unit:

ADD/DEDUCT ($)
DOLLARS

3) Alternate No. GC-3; General Construction work associated with Unit Ventilator Replacement:

ADD/DEDUCT ($)
DOLLARS

4) Alternate No. GC-4; General Construction work associated with Condensing Unit Removal:

ADD/DEDUCT ($)
DOLLARS

5) Alternate No. GC-5; General Construction work associated with Cafeteria Stage Removal:

ADD/DEDUCT ($)
DOLLARS

6) Alternate No. GC-6;General Construction work associated with Gymnasium Stage Floor:

ADD/DEDUCT ($)
DOLLARS

7) Alternate No. GC-7; General Construction work associated with Floor Material:

ADD/DEDUCT ($)

	DOLLARS

8) Alternate No. GC-8; Motorized Window Shades:

ADD/DEDUCT	($)
	DOLLARS

9) Alternate No. GC-9; Painting walls at mechanical equipment removals:

ADD/DEDUCT	($)
	DOLLARS

10) Alternate No. GC-10; OCP Policy Provide an Owner's Contractor's Protective Policy:

ADD/DEDUCT	($)
	DOLLARS

08. BID SECURITY

Bid Security in the form of a Certified or Cashier's Check or a Bid Bond in the form required by the Contract Documents is attached to and made a part of this Proposal.

09. IRAN DIVESTMENT ACT CERTIFICATION

Contractor to submit with the bid, Iran Divestment Act Certification which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

10. REPRESENTATIONS

By submitting this Proposal the Bidder represents and certifies to the Owner and the Architect that

1) It has examined the Contract Documents, the site of the proposed Work, is familiar with the local conditions at the place where the Work is to be performed and fully comprehends the requirements and intent of the plans and specifications for this Project in accordance with the drawings, specifications and other Contract Documents prepared by CPL the Owners Consultant, for this Project.
2) It has examined and reviewed, where applicable, all information and data in the Contract Documents related to existing underground facilities at or contiguous to the site. Bidder shall require of the Owner or Architect no further investigations, explorations, tests or reports with respect to such underground facilities in order for the Bidder to perform the Work of the Proposal within the Contract Time and in accordance with the Contract Documents.
3) It has given notice to the Architect, as required by the Contract Documents of any and all discrepancies it has discovered and accepts the resolution of those discrepancies offered by the Architect.
4) Pursuant to New York State General Municipal Law section 103-d, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:
   a) The prices in this bid have been arrived at independently without collusion, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
   b) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not be

knowingly disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or competitor; and

c) No attempt has been made or will be made by bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

d) The proposal is based upon the materials, equipment and systems required by the Contract Documents, without exception, unless otherwise set forth in this Proposal in detail.

11. CHANGE ORDERS

We propose and agree that the above lump sum shall be adjusted for changes in the Contract Work not included in unit prices by addition of the following costs:

1) Profit and overhead as permitted in the General Conditions.

12. NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:

1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

13. ACCEPTANCE

When this Proposal is accepted, the undersigned agrees to enter into a Contract with the Owner as provided in the Form of Agreement.

14. AFFIRMS

The undersigned affirms and agrees that this Proposal is a firm one which remains in effect and will be irrevocable for a period of forty-five (45) days after opening of Bids.

15. TYPE OF BUSINESS

The undersigned hereby represents that it is a (select with circle):

1) Corporation, Partnership, Individual.

2) If a Corporation, then the undersigned further represents that it is duly qualified as a Corporation under the laws of New York State and it is authorized to do business in this State.

16. PLACE OF BUSINESS

The following is the name and address of the person to whom all notices required in connection with this Proposal may be telephoned, mailed, or delivered.

Name of Contact Person:	
Name of Business or Firm:	
Address:	
Address:	
Telephone:	Fax

Email Address:
FEIN: Federal Employer Identification No.:

17. EXECUTION OF CONTRACT

When written Notice of Acceptance of the Proposal is mailed or delivered to the undersigned within forty-five (45) days after the opening of Bids, or anytime thereafter should the Proposal not be withdrawn, the undersigned, within ten (10) days, will execute the Form of Agreement with the Owner.

18. ADDENDA

Any addenda issued by the Architect and mailed or delivered to the undersigned prior to the Bid opening date shall become part of the Contract Documents. The Bidder shall enter on this list any addenda issued after this Form of Proposal has been received and shall fill in the addenda number and date.

Addendum #	Dated:
Addendum #	Dated:
Addendum #	Dated:
Addendum #	Dated:

19. ASBESTOS

The bidder certifies that no asbestos or asbestos-containing materials will be incorporated into the Work of this Contract.

20. AUTHORIZED SIGNATURES FOR PROPOSALS

Individual or Legal Name of Firm or Corporation:
Signature of Representative of Firm or Corporation:
Printed Name and Title:
Date:
If Corporation – provide Seal:

21. IRAN DIVESTMENT ACT CERTIFICATION

By submission of this bid, (DL & AV Equip 1315), or by assuming the responsibility of a Contract awarded hereunder, each bidder and each person signing on behalf of any bidders, certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief:

1) That each bidder/contractor/assignee is not on the “Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012” list created pursuant to paragraph (b) subdivision 3 of

section 165-a of the New York State Finance Law and posted on the OGS website at http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, Bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended. (See Article in the Instructions to Bidders.)

Individual or Legal Name of Firm or Corporation:
Mailing Address:
Signature of Representative of Firm or Corporation:
Printed Name and Title:
Date:
SWORN to before me this date:
Notary Public Signature and Stamp:

22. SEXUAL HARASSMENT POLICY/TRAINING AFFIRMATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all its employees.

Name of Contractor:	
Name of Business or Firm:	
Address:	
Telephone:	Fax
Email Address:	
Signature and Title of Contractor:	
Date:	

END OF SECTION 004010 004010

SECTION 004020
FORM OF PROPOSAL MECHANICAL CONSTRUCTION

PART 1 GENERAL

1.01 SUMMARY

A. Fill in information:

Date:
TO:
Newburgh Enlarged City School District
124 Grand Street
Newburgh, New York 12550
FROM:
BIDDER NAME & ADDRESS

1.02 GENERAL

A. Pursuant to, and in compliance with, the Procurement and Contracting Requirements, Conditions of the Contract, relative thereto and all of the Contract Documents, including any Addenda issued by the Architect and mailed or delivered to the undersigned prior to the opening of Bids, whether received by the undersigned or not,
we,_____

1. having visited the site and being familiar with all conditions and requirements of the Work, hereby propose to furnish all plant, labor, supplies, materials and equipment incidental to MECHANICAL CONSTRUCTION WORK as required by and in strict accord with the applicable provisions of the Drawings and Specifications entitled (Insert project title Here)all to the satisfaction and approval of the Architect and the Owner in accordance with the terms and conditions of the Contract Documents for the following sum:

	DOLLARS
($	)
BASE BID	

1.03 BID GUARANTEE

A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within 10 days after a written Notice of Award, if offered within [45] days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid.

1. In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.04 TIME OF COMPLETION

A. It is agreed by the undersigned that after receipt of a Notice of Award and a consummation of a Contract Agreement in accord with the terms of the Contract Documents, he will start work within 10 consecutive calendar days of this notice to proceed and fully complete the work [as indicated in the project schedule.]

1.05 ALLOWANCES (REFERENCE SPECIFICATION SECTION 012100)

A. Specified Allowance as indicated in Specification Section 012100. This amount is to be included in the Base Bid above.

1. Allowance Amount:

$	(Insert Amount)

1.06 ALTERNATES (REFERENCE SPECIFICATION SECTION 012300.)

A. Enter a whole dollar amount, even if it is zero ($ 0), for each Alternate. Circle "ADD" or "DEDUCT" for each Alternate Bid. If neither is circled, "DEDUCT" will be assumed. Do not leave any Alternate amount blank. If any amount is blank, it will be assumed the Bidder will provide that Alternate for no change, neither increase nor decrease, in Contract Price.

1. Alternate No. MC-1; Roof Top Unit Replacement:

ADD/DEDUCT ($	)
	DOLLARS

2. Alternate No. MC-2; Fan Coil Unit:

ADD/DEDUCT ($	)
	DOLLARS

3. Alternate No. MC-3; Unit Ventilator Replacement:

ADD/DEDUCT ($	)
	DOLLARS

4. Alternate No. MC-4; OCP Policy; Provide an Owner’s Contractor’s Protective Policy:

ADD/DEDUCT ($	)
	DOLLARS

5. Alternate No. MC-5; Dust Collector Replacement:

ADD/DEDUCT ($	)
	DOLLARS

1.07 BID SECURITY

A. Bid Security in the form of a Certified or Cashier's Check or a Bid Bond in the form required by the Contract Documents is attached to and made a part of this Proposal.

1.08 IRAN DIVESTMENT ACT CERTIFICATION

A. Contractor to submit with the bid, Iran Divestment Act Certification which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

1.09 REPRESENTATIONS

A. By submitting this Proposal the Bidder represents and certifies to the Owner and the Architect that

1. It has examined the Contract Documents, the site of the proposed Work, is familiar with the local conditions at the place where the Work is to be performed and fully comprehends the requirements and intent of the plans and specifications for this Project in accordance with the drawings, specifications and other Contract Documents prepared by CPL the Owners Consultant, for this Project.
2. It has examined and reviewed, where applicable, all information and data in the Contract Documents related to existing underground facilities at or contiguous to the site. Bidder shall require of the Owner or Architect no further investigations, explorations, tests or reports with respect to such underground facilities in order for the Bidder to perform the Work of the Proposal within the Contract Time and in accordance with the Contract Documents.
3. It has given notice to the Architect, as required by the Contract Documents of any and all discrepancies it has discovered and accepts the resolution of those discrepancies offered by the Architect.
4. Pursuant to New York State General Municipal Law section 103-d, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:
   a. The prices in this bid have been arrived at independently without collusion, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

b. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not be knowingly disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or competitor; and
c. No attempt has been made or will be made by bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
d. The proposal is based upon the materials, equipment and systems required by the Contract Documents, without exception, unless otherwise set forth in this Proposal in detail.

1.10 CHANGE ORDERS

A. We propose and agree that the above lump sum shall be adjusted for changes in the Contract Work not included in unit prices by addition of the following costs:
1. Profit and overhead as permitted in the General Conditions.

1.11 NON-COLLUSIVE BIDDING CERTIFICATION

A. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:
1. The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
2. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and
3. No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

1.12 ACCEPTANCE

A. When this Proposal is accepted, the undersigned agrees to enter into a Contract with the Owner as provided in the Form of Agreement.

1.13 AFFIRMS

A. The undersigned affirms and agrees that this Proposal is a firm one which remains in effect and will be irrevocable for a period of forty-five (45) days after opening of Bids.

1.14 TYPE OF BUSINESS

A. The undersigned hereby represents that it is a (select with circle):
1. Corporation, Partnership, Individual.
2. If a Corporation, then the undersigned further represents that it is duly qualified as a Corporation under the laws of New York State and it is authorized to do business in this State.

1.15 PLACE OF BUSINESS

A. The following is the name and address of the person to whom all notices required in connection with this Proposal may be telephoned, mailed, or delivered.

Name of Contact Person:	
Name of Business or Firm:	
Address:	
Address:	
Telephone:	Fax
Email Address:	
FEIN: Federal Employer Identification No.:	

1.16 EXECUTION OF CONTRACT

A. When written Notice of Acceptance of the Proposal is mailed or delivered to the undersigned within forty-five (45) days after the opening of Bids, or anytime thereafter should the Proposal not be withdrawn, the undersigned, within ten (10) days, will execute the Form of Agreement with the Owner.

1.17 ADDENDA

A. Any addenda issued by the Architect and mailed or delivered to the undersigned prior to the Bid opening date shall become part of the Contract Documents. The Bidder shall enter on this list any addenda issued after this Form of Proposal has been received and shall fill in the addenda number and date.

Addendum #	Dated:
Addendum #	Dated:
Addendum #	Dated:
Addendum #	Dated:

1.18 ASBESTOS

A. The bidder certifies that no asbestos or asbestos-containing materials will be incorporated into the Work of this Contract.

1.19 AUTHORIZED SIGNATURES FOR PROPOSALS

Individual or Legal Name of Firm or Corporation:
Signature of Representative of Firm or Corporation:
Printed Name and Title:
Date:
If Corporation – provide Seal:

1.20 IRAN DIVESTMENT ACT CERTIFICATION

A. By submission of this bid, (DL & AV Equip 1315), or by assuming the responsibility of a Contract awarded hereunder, each bidder and each person signing on behalf of any bidders, certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief:

1. That each bidder/contractor/assignee is not on the “Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012” list created pursuant to paragraph (b) subdivision 3 of section 165-a of the New York State Finance Law and posted on the OGS website at http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, Bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended. (See Article in the Instructions to Bidders.)

Individual or Legal Name of Firm or Corporation:

Mailing Address:
Signature of Representative of Firm or Corporation:
Printed Name and Title:
Date:
SWORN to before me this date:
Notary Public Signature and Stamp:

1.21 SEXUAL HARASSMENT POLICY/TRAINING AFFIRMATION

A. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all its employees.

Name of Contractor:	
Name of Business or Firm:	
Address:	
Telephone:	Fax
Email Address:	
Signature and Title of Contractor:	
Date:	

END OF SECTION 004020

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SECTION 004040
FORM OF PROPOSAL ELECTRICAL CONSTRUCTION

PART 1 GENERAL

1.01 SUMMARY

A. Fill in information:

Date:
TO:
Newburgh Enlarged City School District
124 Grand Street
Newburgh, New York
FROM:
BIDDER NAME & ADDRESS

1.02 GENERAL

A. Pursuant to, and in compliance with, the Procurement and Contracting Requirements, Conditions of the Contract, relative thereto and all of the Contract Documents, including any Addenda issued by the Architect and mailed or delivered to the undersigned prior to the opening of Bids, whether received by the undersigned or not,
we,_____

1. having visited the site and being familiar with all conditions and requirements of the Work, hereby propose to furnish all plant, labor, supplies, materials and equipment incidental to ELECTRICAL CONSTRUCTION WORK as required by and in strict accord with the applicable provisions of the Drawings and Specifications entitled (Insert project title Here)all to the satisfaction and approval of the Architect and the Owner in accordance with the terms and conditions of the Contract Documents for the following sum:

	DOLLARS
($	)
BASE BID	

1.03 BID GUARANTEE

A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within 10 days after a written Notice of Award, if offered within 45 days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid.

1. In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.04 TIME OF COMPLETION

A. It is agreed by the undersigned that after receipt of a Notice of Award and a consummation of a Contract Agreement in accord with the terms of the Contract Documents, he will start work within 10 consecutive calendar days of this notice to proceed and fully complete the work as indicated in the project schedule.

1.05 ALLOWANCES (REFERENCE SPECIFICATION SECTION 012100)

A. Specified Allowance as indicated in Specification Section 012100. This amount is to be included in the Base Bid above.

1. Allowance Amount:

$	(Insert Amount)

1.06 ALTERNATES (REFERENCE SPECIFICATION SECTION 012300.)

A. Enter a whole dollar amount, even if it is zero ($ 0), for each Alternate. Circle "ADD" or "DEDUCT" for each Alternate Bid. If neither is circled, "DEDUCT" will be assumed. Do not leave any Alternate amount blank. If any amount is blank, it will be assumed the Bidder will provide that Alternate for no change, neither increase nor decrease, in Contract Price.

1. Alternate No. EC-1;Electrical Work Associated with RTU-1 and RTU-2:

ADD/DEDUCT	($)
	DOLLARS

2. Alternate No. EC-2; Electrical Work Associated with the Fan Coil Unit:

ADD/DEDUCT	($)
	DOLLARS

3. Alternate No. EC-3;Electrical work associated with the Unit Ventilator Replacement:

ADD/DEDUCT	($)
	DOLLARS

4. Alternate No. EC-4;Electrical work associated with the Condensing Unit Removal:

ADD/DEDUCT	($)
	DOLLARS

5. Alternate No. EC-5;Electrical work associated with the Dust Collector Replacement:

ADD/DEDUCT	($)
	DOLLARS

6. Alternate No. EC-6;Cafeteria Stage Removal:

ADD/DEDUCT	($)
	DOLLARS

7. Alternate No. EC-7;OCP Policy;Provide an Owner’s Contractor’s Protective Policy:

ADD/DEDUCT	($)
	DOLLARS

1.07 BID SECURITY

A. Bid Security in the form of a Certified or Cashier's Check or a Bid Bond in the form required by the Contract Documents is attached to and made a part of this Proposal.

1.08 IRAN DIVESTMENT ACT CERTIFICATION

A. Contractor to submit with the bid, Iran Divestment Act Certification which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

1.09 REPRESENTATIONS

A. By submitting this Proposal the Bidder represents and certifies to the Owner and the Architect that

1. It has examined the Contract Documents, the site of the proposed Work, is familiar with the local conditions at the place where the Work is to be performed and fully comprehends the requirements and intent of the plans and specifications for this Project in accordance with the drawings, specifications and other Contract Documents prepared by CPL the Owners Consultant, for this Project.
2. It has examined and reviewed, where applicable, all information and data in the Contract Documents related to existing underground facilities at or contiguous to the site. Bidder shall require of the Owner or Architect no further investigations, explorations, tests or reports with respect to such underground facilities in order for the Bidder to perform the Work of the Proposal within the Contract Time and in accordance with the Contract Documents.
3. It has given notice to the Architect, as required by the Contract Documents of any and all discrepancies it has discovered and accepts the resolution of those discrepancies offered by the Architect.

4. Pursuant to New York State General Municipal Law section 103-d, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:
   a. The prices in this bid have been arrived at independently without collusion, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
   b. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not be knowingly disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or competitor; and
   c. No attempt has been made or will be made by bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
   d. The proposal is based upon the materials, equipment and systems required by the Contract Documents, without exception, unless otherwise set forth in this Proposal in detail.

1.10 NON-COLLUSIVE BIDDING CERTIFICATION

A. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:
   1. The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
   2. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and
   3. No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

1.11 ACCEPTANCE

A. When this Proposal is accepted, the undersigned agrees to enter into a Contract with the Owner as provided in the Form of Agreement.

1.12 AFFIRMS

A. The undersigned affirms and agrees that this Proposal is a firm one which remains in effect and will be irrevocable for a period of forty-five (45) days after opening of Bids.

1.13 TYPE OF BUSINESS

A. The undersigned hereby represents that it is a (select with circle):
   1. Corporation, Partnership, Individual.
   2. If a Corporation, then the undersigned further represents that it is duly qualified as a Corporation under the laws of New York State and it is authorized to do business in this State.

1.14 PLACE OF BUSINESS

A. The following is the name and address of the person to whom all notices required in connection with this Proposal may be telephoned, mailed, or delivered.

Name of Contact Person:	
Name of Business or Firm:	
Address:	
Address:	
Telephone:	Fax
Email Address:	
FEIN: Federal Employer Identification No.:	

1.15 EXECUTION OF CONTRACT

A. When written Notice of Acceptance of the Proposal is mailed or delivered to the undersigned within forty-five (45) days after the opening of Bids, or anytime thereafter should the Proposal not be withdrawn, the undersigned, within ten (10) days, will execute the Form of Agreement with the Owner.

1.16 ADDENDA

A. Any addenda issued by the Architect and mailed or delivered to the undersigned prior to the Bid opening date shall become part of the Contract Documents. The Bidder shall enter on this list any addenda issued after this Form of Proposal has been received and shall fill in the addenda number and date.

Addendum #	Dated:
Addendum #	Dated:
Addendum #	Dated:
Addendum #	Dated:

1.17 ASBESTOS

A. The bidder certifies that no asbestos or asbestos-containing materials will be incorporated into the Work of this Contract.

1.18 AUTHORIZED SIGNATURES FOR PROPOSALS

Individual or Legal Name of Firm or Corporation:
Signature of Representative of Firm or Corporation:
Printed Name and Title:
Date:
If Corporation – provide Seal:

1.19 IRAN DIVESTMENT ACT CERTIFICATION

A. By submission of this bid, (DL & AV Equip 1315), or by assuming the responsibility of a Contract awarded hereunder, each bidder and each person signing on behalf of any bidders, certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief:

1. That each bidder/contractor/assignee is not on the “Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012” list created pursuant to paragraph (b) subdivision 3 of section 165-a of the New York State Finance Law and posted on the OGS website at http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, Bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended. (See Article in the Instructions to Bidders.)

Individual or Legal Name of Firm or Corporation:
Mailing Address:

Signature of Representative of Firm or Corporation:
Printed Name and Title:
Date:
SWORN to before me this date:
Notary Public Signature and Stamp:

1.20 SEXUAL HARASSMENT POLICY/TRAINING AFFIRMATION

A. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all its employees.

Name of Contractor:	
Name of Business or Firm:	
Address:	
Telephone:	Fax
Email Address:	
Signature and Title of Contractor:	
Date:	

END OF SECTION 004040

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SECTION 072413 - POLYMER-BASED EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Exterior insulation and finish system (EIFS) applied over gypsum sheathing to patch existing EIFS

B. Related Sections:
1. Division 07 Section "Joint Sealants" for sealing joints between EIFS and adjacent materials.

1.2 SYSTEM DESCRIPTION

A. Class PB EIFS: A non-load-bearing, exterior wall cladding system that consists of an insulation board attached adhesively, mechanically, or both to the substrate; an integrally reinforced base coat; and a textured protective finish coat.

1.3 PERFORMANCE REQUIREMENTS

A. EIFS Performance: Comply with the following:
1. Bond Integrity: Free from bond failure within EIFS components or between system and supporting wall construction, resulting from exposure to fire, wind loads, weather, or other in-service conditions.
2. Weathertightness: Resistant to water penetration from exterior into EIFS and assemblies behind it or through them into interior of building that results in deterioration of thermal-insulating effectiveness or other degradation of EIFS and assemblies behind it, including substrates, supporting wall construction, and interior finish.

B. Class PB EIFS: Provide EIFS having physical properties and structural performance that comply with the following:
1. Abrasion Resistance: Sample consisting of 1-inch- thick EIFS mounted on 1/2-inch-thick gypsum board; cured for a minimum of 28 days; and showing no cracking, checking, or loss of film integrity after exposure to 528 quarts of sand when tested per ASTM D 968, Method A.
2. Absorption-Freeze Resistance: No visible deleterious effects and negligible weight loss after 60 cycles per EIMA 101.01.
3. Accelerated Weathering: Five samples per ICC-ES AC219 showing no cracking, checking, crazing, erosion, rusting, blistering, peeling, delamination, or other characteristics that might affect performance as a wall cladding after testing for 2000 hours when viewed under 5 times magnification per ASTM G 153 or ASTM G 155.
4. Freeze-Thaw: No surface changes, cracking, checking, crazing, erosion, rusting, blistering, peeling, or delamination, or indications of delamination between components when viewed under 5 times magnification after 10 cycles per ICC-ES AC219.
5. Mildew Resistance of Finish Coat: Sample applied to 2-by-2-inch clean glass substrate, cured for 28 days, and showing no growth when tested per ASTM D 3273 and evaluated according to ASTM D 3274.
6. Salt-Spray Resistance: No deleterious affects when tested according to ICC-ES AC219.

7. Tensile Adhesion: No failure in the EIFS, adhesive, base coat, or finish coat when tested per ICC-ES AC219.
8. Water Penetration: Sample consisting of 1-inch- thick EIFS mounted on 1/2-inch-thick gypsum board, cured for 28 days, and showing no water penetration into the plane of the base coat to expanded-polystyrene board interface of the test specimen after 15 minutes at 6.24 lbf/sq. ft. of air pressure difference or 20 percent of positive design wind pressure, whichever is greater, across the specimen during a test period when tested per EIMA 101.02.
9. Water Resistance: Three samples, each consisting of 1-inch- thick EIFS mounted on 1/2-inch- thick gypsum board; cured for 28 days; and showing no cracking, checking, crazing, erosion, rusting, blistering, peeling, or delamination after testing for 14 days per ASTM D 2247.
10. Wind-Driven-Rain Resistance: Resist wind-driven rain according to ICC-ES AC219.
11. Impact Resistance: Sample consisting of 1-inch- thick EIFS when constructed, conditioned, and tested per EIMA 101.86; and meeting or exceeding the following:
    a. Standard Impact Resistance: 25 to 49 inch-lb.
    b. Medium Impact Resistance: 50 to 89 inch-lb.
    c. High Impact Resistance: 90 to 150 inch-lb.
    d. Ultra-High Impact Resistance: More than 150 inch-lb.
12. Structural Performance Testing: EIFS assembly and components shall comply with ICC-ES AC219 when tested per ASTM E 330.

1.4 SUBMITTALS

A. Product Data: For each type and component of EIFS indicated.

B. Samples for Initial Selection: For each type of finish-coat color and texture indicated.
1. Include similar Samples of joint sealants and exposed accessories involving color selection.

C. Qualification Data: For Installer and testing agency.

D. Material or Product Certificates: For each insulation and joint sealant, from manufacturer.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each insulation, reinforcing mesh, joint sealant, and coating.

F. Compatibility and Adhesion Test Reports: For joint sealants from sealant manufacturer indicating the following:
1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

G. Field quality-control reports.

H. Maintenance Data: For EIFS to include in maintenance manuals.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An installer who is certified in writing by EIFS manufacturer as qualified to install manufacturer's system using trained workers.

B. Source Limitations: Obtain EIFS from single source from single EIFS manufacturer and from sources approved by EIFS manufacturer as compatible with system components.

C. Surface-Burning Characteristics: Provide insulation board, adhesives, base coats, and finish coats with flame-spread index of 25 or less and smoke-developed index of 450 or less, per ASTM E 84.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original, unopened packages with manufacturers' labels intact and clearly identifying products.

B. Store materials inside and under cover; keep them dry and protected from weather, direct sunlight, surface contamination, aging, corrosion, damaging temperatures, construction traffic, and other causes.
1. Stack insulation board flat and off the ground.
2. Protect plastic insulation against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

1.7 PROJECT CONDITIONS

A. Weather Limitations: Maintain ambient temperatures above 40 deg F for a minimum of 24 hours before, during, and after adhesives or coatings are applied. Do not apply EIFS adhesives or coatings during rainfall. Proceed with installation only when existing and forecasted weather conditions and ambient outdoor air, humidity, and substrate temperatures permit EIFS to be applied, dried, and cured according to manufacturers' written instructions and warranty requirements.

1.8 COORDINATION

A. Coordinate installation of EIFS with related Work specified in other Sections to ensure that wall assemblies, including sheathing, flashing, trim, joint sealants, windows, and doors, are protected against damage from the effects of weather, age, corrosion, moisture, and other causes. Do not allow water to penetrate behind flashing and barrier coating of EIFS.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Sto Corp.\
2. Approved equal.

2.2 MATERIALS

A. Compatibility: Provide adhesive, fasteners, board insulation, reinforcing meshes, base- and finish-coat systems, sealants, and accessories that are compatible with one another and with substrates and approved for use by EIFS manufacturer for Project.

B. Primer/Sealer: EIFS manufacturer's standard substrate conditioner designed to seal substrates from moisture penetration and to improve the bond between substrate of type indicated and adhesive used for application of insulation.

C. Flexible-Membrane Flashing: Cold-applied, fully self-adhering, self-healing, rubberized-asphalt and polyethylene-film composite sheet or tape and primer; EIFS manufacturer's standard or product recommended in writing by EIFS manufacturer.

D. Insulation Adhesive: EIFS manufacturer's standard formulation designed for indicated use; compatible with substrate; and complying with one of the following:
1. Factory-blended dry formulation of portland cement, dry polymer admixture, and fillers specified for base coat.
2. Factory-mixed noncementitious formulation designed for adhesive attachment of insulation to substrates of type indicated, as recommended by EIFS manufacturer.

E. Molded, Rigid Cellular Polystyrene Board Insulation: Comply with ASTM C 578, Type I; EIFS manufacturer's requirements; and EIMA's "EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board" for most stringent requirements for material performance and qualities of insulation, including dimensions and permissible variations, and the following:
1. Aging: Before cutting and shipping, age insulation in block form by air drying for not less than six weeks or by another method approved by EIMA that produces equivalent results.
2. Flame-Spread and Smoke-Developed Indexes: 25 and 450 or less, respectively, per ASTM E 84.
3. Dimensions: Provide insulation boards not more than 24 by 48 inches and in thickness indicated, but not more than 4 inches thick or less than thickness allowed by ASTM C 1397.
4. Foam Shapes: Provide with profiles and dimensions indicated on Drawings.

F. Reinforcing Mesh: Balanced, alkali-resistant, open-weave, glass-fiber mesh treated for compatibility with other EIFS materials, made from continuous multiend strands with retained mesh tensile strength of not less than 120 lbf/in. per ASTM E 2098; complying with ASTM D 578 and the following:
1. Standard-Impact Reinforcing Mesh: Not less than 4.0 oz./sq. yd.
2. Intermediate-Impact Reinforcing Mesh: Not less than 12.0 oz./sq. yd.
3. High-Impact Reinforcing Mesh: Not less than 15 oz./sq. yd..
4. Heavy-Duty Reinforcing Mesh: Not less than 20 oz./sq. yd.
5. Strip Reinforcing Mesh: Not less than 3.75 oz./sq. yd.
6. Detail Reinforcing Mesh: Not less than 4.0 oz./sq. yd.
7. Corner Reinforcing Mesh: Not less than 7.2 oz./sq. yd.

G. Base-Coat Materials: EIFS manufacturer's standard mixture complying with one of the following:
1. Factory-blended dry formulation of portland cement, dry polymer admixture, and inert fillers to which only water is added at Project site.
2. Factory-mixed noncementitious formulation of polymer-emulsion adhesive and inert fillers that is ready to use without adding other materials.

H. Waterproof Adhesive/Base-Coat Materials: EIFS manufacturer's standard waterproof formulation complying with one of the following:

1. Job-mixed formulation of portland cement complying with ASTM C 150, Type I, white or natural color; and manufacturer's standard polymer-emulsion adhesive designed for use with portland cement.
2. Job-combined formulation of manufacturer's standard polymer-emulsion adhesive and manufacturer's standard dry mix containing portland cement.

I. Primer: EIFS manufacturer's standard factory-mixed, elastomeric-polymer primer for preparing base-coat surface for application of finish coat.

J. Finish-Coat Materials: EIFS manufacturer's standard acrylic-based coating complying with the following:
1. Factory-mixed formulation of polymer-emulsion binder, colorfast mineral pigments, sound stone particles, and fillers.
2. Factory-mixed formulation of polymer-emulsion binder, colorfast mineral pigments, and fillers used with stone particles for embedding in finish coat to produce an applied-aggregate finish.
3. Colors: As selected by Architect from manufacturer's full range.

K. Water: Potable.

L. Mechanical Fasteners: EIFS manufacturer's standard corrosion-resistant fasteners consisting of thermal cap, standard washer and shaft attachments, and fastener indicated below; selected for properties of pullout, tensile, and shear strength required to resist design loads of application indicated; capable of pulling fastener head below surface of insulation board.

M. Trim Accessories: Type as designated or required to suit conditions indicated and to comply with EIFS manufacturer's written instructions; manufactured from UV-stabilized PVC; and complying with ASTM D 1784, manufacturer's standard Cell Class for use intended, and ASTM C 1063.
1. Casing Bead: Prefabricated, one-piece type for attachment behind insulation, of depth required to suit thickness of coating and insulation, with face leg perforated for bonding to coating and back leg.
2. Drip Screed/Track: Prefabricated, one-piece type for attachment behind insulation with face leg extended to form a drip, of depth required to suit thickness of coating and insulation, with face leg perforated for bonding to coating and back leg.
3. Expansion Joint: Prefabricated, one-piece V profile; designed to relieve stress of movement.
4. Window Sill Flashing: Prefabricated type for both flashing and sloping sill over framing beneath windows; with end and back dams; designed to direct water to exterior.
5. Parapet Cap Flashing: Type for both flashing and covering parapet top.

2.3 ELASTOMERIC SEALANTS

A. Elastomeric Sealant Products: Provide EIFS manufacturer's listed and recommended chemically curing, elastomeric sealant that is compatible with joint fillers, joint substrates, and other related materials, and complies with requirements for products and testing indicated in ASTM C 1481 and with requirements in Division 07 Section "Joint Sealants."

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

2.4 MIXING

A. General: Comply with EIFS manufacturer's requirements for combining and mixing materials. Do not introduce admixtures, water, or other materials except as recommended by EIFS

manufacturer. Mix materials in clean containers. Use materials within time period specified by EIFS manufacturer or discard.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of EIFS.

B. Examine roof edges, wall framing, flashings, openings, substrates, and junctures at other construction for suitable conditions where EIFS will be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.
   1. Begin coating application only after surfaces are dry.
   2. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Protect contiguous work from moisture deterioration and soiling caused by application of EIFS. Provide temporary covering and other protection needed to prevent spattering of exterior finish coats on other work.

B. Protect EIFS, substrates, and wall construction behind them from inclement weather during installation. Prevent penetration of moisture behind EIFS and deterioration of substrates.

C. Prepare and clean substrates to comply with EIFS manufacturer's written instructions to obtain optimum bond between substrate and adhesive for insulation.
   1. Concrete Substrates: Provide clean, dry, neutral-pH substrate for insulation installation. Verify suitability of substrate by performing bond and moisture tests recommended by EIFS manufacturer.

3.3 EIFS INSTALLATION, GENERAL

A. Comply with ASTM C 1397 and EIFS manufacturer's written instructions for installation of EIFS as applicable to each type of substrate indicated.

3.4 SUBSTRATE PROTECTION APPLICATION

A. Primer/Sealer: Apply over gypsum sheathing substrates to protect substrates from degradation and where required by EIFS manufacturer for improving adhesion of insulation to substrate.

B. Waterproof Adhesive/Base Coat: Apply over sloped surfaces, window sills, parapets, and where otherwise indicated on Drawings to protect substrates from degradation.

C. Flexible-Membrane Flashing: Install over weather-resistive barrier, applied and lapped to shed water; seal at openings, penetrations, terminations, and where indicated by EIFS manufacturer's written instructions to protect wall assembly from degradation. Prime substrates, if required, and install flashing to comply with EIFS manufacturer's written instructions and details.

3.5 TRIM INSTALLATION

A. Trim: Apply trim accessories at perimeter of EIFS, at expansion joints, at window sills, and elsewhere as indicated, according to EIFS manufacturer's written instructions. Coordinate with installation of insulation.

1. Drip Screed/Track: Use at bottom edges of EIFS unless otherwise indicated.
2. Window Sill Flashing: Use at windows unless otherwise indicated.
3. Expansion Joint: Use where indicated on Drawings.
4. Casing Bead: Use at other locations.
5. Parapet Cap Flashing: Use where indicated on Drawings.

3.6 INSULATION INSTALLATION

A. Board Insulation: Adhesively attach insulation to substrate in compliance with ASTM C 1397, EIFS manufacturer's written instructions, and the following:

1. Apply adhesive to insulation by notched-trowel method in a manner that results in coating the entire surface of sheathing with adhesive once insulation is adhered to sheathing unless EIFS manufacturer's written instructions specify using primer/sealer with ribbon-and-dab method. Apply adhesive to a thickness of not less than 1/4 inch for factory mixed and not less than 3/8 inch for field mixed, measured from surface of insulation before placement.
2. Press and slide insulation into place. Apply pressure over the entire surface of insulation to accomplish uniform contact, high initial grab, and overall level surface.
3. Allow adhered insulation to remain undisturbed for period recommended by EIFS manufacturer, but not less than 24 hours, before beginning rasping and sanding insulation, or applying base coat and reinforcing mesh.
4. Apply insulation over dry substrates in courses with long edges of boards oriented horizontally.
5. Begin first course of insulation from a level base line and work upward.
    a. Begin first course of insulation from screed/track and work upward where indicated. Work from perimeter casing beads toward interior of panels if possible.
6. Stagger vertical joints of insulation boards in successive courses to produce running bond pattern. Locate joints so no piece of insulation is less than 12 inches wide or 6 inches high. Offset joints not less than 6 inches from corners of window and door openings and not less than 4 inches from aesthetic reveals.
    a. Adhesive Attachment: Offset joints of insulation not less than 6 inches from horizontal and 4 inches from vertical joints in sheathing.
7. Interlock ends at internal and external corners.
8. Abut insulation tightly at joints within and between each course to produce flush, continuously even surfaces without gaps or raised edges between boards. If gaps greater than 1/16 inch occur, fill with insulation cut to fit gaps exactly; insert insulation without using adhesive or other material.
9. Cut insulation to fit openings, corners, and projections precisely and to produce edges and shapes complying with details indicated.
10. Rasp or sand flush entire surface of insulation to remove irregularities projecting more than 1/32 inch from surface of insulation and to remove yellowed areas due to sun exposure; do not create depressions deeper than 1/16 inch.

11. Cut aesthetic reveals in outside face of insulation with high-speed router and bit configured to produce grooves, rabbets, and other features that comply with profiles and locations indicated. Do not reduce insulation thickness at aesthetic reveals to less than 3/4 inch.
12. Install foam shapes and attach to substrate.
13. Interrupt insulation for expansion joints where indicated.
14. Form joints for sealant application by leaving gaps between adjoining insulation edges and between insulation edges and dissimilar adjoining surfaces. Make gaps wide enough to produce joint widths indicated after encapsulating joint substrates with base coat and reinforcing mesh.
    a. Where trim is indicated, form joints for sealant application with back-to-back casing beads for joints within EIFS and with perimeter casing beads at dissimilar adjoining surfaces. Make gaps between casing beads and between perimeter casing beads and adjoining surfaces of width indicated.
15. After installing insulation and before applying reinforcing mesh, fully wrap board edges with strip reinforcing mesh. Cover edges of board and extend encapsulating mesh not less than 2-1/2 inches over front and back face unless otherwise indicated on Drawings.
16. Treat exposed edges of insulation as follows:
    a. Except for edges forming substrates of sealant joints, encapsulate with base coat, reinforcing mesh, and finish coat.
    b. Encapsulate edges forming substrates of sealant joints within EIFS or between EIFS and other work with base coat and reinforcing mesh.
    c. At edges trimmed by accessories, extend base coat, reinforcing mesh, and finish coat over face leg of accessories.
17. Coordinate installation of flashing and insulation to produce wall assembly that does not allow water to penetrate behind flashing and EIFS protective-coating lamina.

B. Expansion Joints: Install at locations indicated, where required by EIFS manufacturer, and as follows:
1. At expansion joints in substrates behind EIFS.
2. Where EIFS adjoin dissimilar substrates, materials, and construction, including other EIFS.
3. At floor lines in multilevel wood-framed construction.
4. Where wall height or building shape changes.
5. Where EIFS manufacturer requires joints in long continuous elevations.

3.7 BASE-COAT INSTALLATION

A. Base Coat: Apply to exposed surfaces of insulation and foam shapes in minimum thickness recommended in writing by EIFS manufacturer, but not less than 1/16-inch dry-coat thickness.

B. Reinforcing Mesh: Embed type indicated below in wet base coat to produce wrinkle-free installation with mesh continuous at corners and overlapped not less than 2-1/2 inches or otherwise treated at joints to comply with ASTM C 1397 and EIFS manufacturer's written instructions. Do not lap reinforcing mesh within 8 inches of corners. Completely embed mesh, applying additional base-coat material if necessary, so reinforcing-mesh color and pattern are not visible.
1. Standard-impact reinforcing mesh unless otherwise indicated.
2. Intermediate-impact reinforcing mesh where indicated.
3. High-impact reinforcing mesh where indicated.

4. Heavy-duty reinforcing mesh where indicated.

C. Additional Reinforcing Mesh: Apply strip reinforcing mesh around openings extending 4 inches beyond perimeter. Apply additional 9-by-12-inch strip reinforcing mesh diagonally at corners of openings (re-entrant corners). Apply 8-inch- wide strip reinforcing mesh at both inside and outside corners unless base layer of mesh is lapped not less than 4 inches on each side of corners.
1. At aesthetic reveals, apply strip reinforcing mesh not less than 8 inches wide.
2. Embed strip reinforcing mesh in base coat before applying first layer of reinforcing mesh.

D. Foam Shapes: Fully embed reinforcing mesh in base coat.

E. Double Base-Coat Application: Where indicated, apply second base coat in same manner and thickness as first application except without reinforcing mesh. Do not apply until first base coat has cured.

3.8 FINISH-COAT INSTALLATION

A. Primer: Apply over dry base coat according to EIFS manufacturer's written instructions.

B. Finish Coat: Apply over dry primed base coat, maintaining a wet edge at all times for uniform appearance, in thickness required by EIFS manufacturer to produce a uniform finish of color and texture matching approved sample and free of cold joints, shadow lines, and texture variations.
1. Texture: As selected by Architect from manufacturer's full range.

3.9 INSTALLATION OF JOINT SEALANTS

A. Prepare joints and apply sealants, of type and at locations indicated, to comply with applicable requirements in Division 07 Section "Joint Sealants" and in ASTM C 1481.
1. Apply joint sealants after base coat has cured but before applying finish coat.
2. Clean surfaces to receive sealants to comply with indicated requirements and EIFS manufacturer's written instructions.
3. Apply primer recommended in writing by sealant manufacturer for surfaces to be sealed.
4. Install sealant backing to control depth and configuration of sealant joint and to prevent sealant from adhering to back of joint.
5. Apply masking tape to protect areas adjacent to sealant joints. Remove tape immediately after tooling joints, without disturbing joint seal.

3.10 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform special inspections according to ICC-ES AC24.

B. Remove and replace EIFS where test results indicate that EIFS do not comply with specified requirements.

C. Prepare test and inspection reports.

3.11 CLEANING AND PROTECTION

A. Remove temporary covering and protection of other work. Promptly remove coating materials from window and door frames and other surfaces outside areas indicated to receive EIFS coatings.

END OF SECTION 072413

SECTION 233423 - HVAC POWER VENTILATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
1. Utility set fans.
2. Centrifugal roof ventilators.
3. In-line centrifugal fans.

1.3 PERFORMANCE REQUIREMENTS

A. Project Altitude: Base fan-performance ratings on actual Project site elevations.

B. Operating Limits: Classify according to AMCA 99.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. Also include the following:
1. Certified fan performance curves with system operating conditions indicated.
2. Certified fan sound-power ratings.
3. Motor ratings and electrical characteristics, plus motor and electrical accessories.
4. Material thickness and finishes, including color charts.
5. Dampers, including housings, linkages, and operators.
6. Roof curbs.
7. Fan speed controllers.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
2. Wiring Diagrams: For power, signal, and control wiring.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from Installers of the items involved:

1. Roof framing and support members relative to duct penetrations.
2. Ceiling suspension assembly members.
3. Size and location of initial access modules for acoustical tile.
4. Ceiling-mounted items including light fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.

B. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For power ventilators to include in emergency, operation, and maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Belts: One set for each belt-driven unit.

1.8 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. AMCA Compliance: Fans shall have AMCA-Certified performance ratings and shall bear the AMCA-Certified Ratings Seal.

C. UL Standards: Power ventilators shall comply with UL 705.

1.9 COORDINATION

A. Coordinate size and location of structural-steel support members.

B. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

PART 2 - PRODUCTS

2.1 UTILITY SET FANS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Carnes Company.
   2. Hartzell Fan Incorporated.
   3. Loren Cook Company.
   4. Twin City Fans.

B. Housing: Fabricated of steel with side sheets fastened with a deep lock seam or welded to scroll sheets.
   1. Housing Discharge Arrangement: Adjustable to eight standard positions.

C. Fan Wheels: Single-width, single inlet; welded to cast-iron or cast-steel hub and spun-steel inlet cone, with hub keyed to shaft.

   1. Blade Materials: Aluminum.
   2. Blade Type: Backward inclined.

D. Fan Shaft: Turned, ground, and polished steel; keyed to wheel hub.

E. Coating: Steel fan components shall have an 2 mil thick electrostatically applied, baked polyester powder coating. Paint must exceed 1,000 hour salt spray under ASTM B117 test method.

F. Shaft Bearings: Prelubricated and sealed, self-aligning, pillow-block-type ball bearings with ABMA 9, L_{50} of 200,000 hours.
   1. Extend grease fitting to accessible location outside of unit.

G. Belt Drives:
1. Factory mounted, with final alignment and belt adjustment made after installation
2. Service Factor Based on Fan Motor Size: 1.5.
3. Motor Pulleys: Adjustable pitch for use with motors through 5 hp; fixed pitch for use with larger motors. Select pulley so pitch adjustment is at the middle of adjustment range at fan design conditions.
4. Belts: Oil resistant, nonsparking, and nonstatic; matched sets for multiple belt drives.
5. Belt Guards: Fabricate of steel for motors mounted on outside of fan cabinet.

H. Accessories:
1. Inlet and Outlet: Flanged.
2. Access Door: Gasketed door in scroll with latch-type handles.
3. Inlet Screens: Removable wire mesh.
4. Drain Connections: NPS 3/4 threaded coupling drain connection installed at lowest point of housing.
5. Weather Hoods: Weather resistant with stamped vents over motor and drive compartment.
6. Discharge Dampers: Assembly with parallel blades constructed of two plates formed around and to shaft, channel frame, sealed ball bearings, with blades linked outside of airstream to single control lever of same material as housing.

2.2 CENTRIFUGAL ROOF VENTILATORS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Breidert Air Products.
2. Carnes Company.
3. Greenheck Fan Corporation.
4. Hartzell Fan Incorporated.
5. Loren Cook Company.
6. Twin City Fans.

B. Housing: Removable, spun-aluminum, dome top and outlet baffle; square, one-piece, aluminum base with venturi inlet cone.
1. Hinged Subbase: Galvanized-steel hinged arrangement permitting service and maintenance.

C. Fan Wheels: Aluminum hub and wheel with backward-inclined blades.

D. Belt Drives:
1. Resiliently mounted to housing.
2. Fan Shaft: Turned, ground, and polished steel; keyed to wheel hub.
3. Shaft Bearings: Permanently lubricated, permanently sealed, self-aligning ball bearings.
4. Pulleys: Cast-iron, adjustable-pitch motor pulley.
5. Fan and motor isolated from exhaust airstream.

E. Accessories:
1. Disconnect Switch: Nonfusible type, with thermal-overload protection mounted inside fan housing, factory wired through an internal aluminum conduit.
2. Bird Screens: Removable, 1/2-inch mesh, aluminum or brass wire.
3. Dampers: Counterbalanced, parallel-blade, backdraft dampers mounted in curb base; factory set to close when fan stops.
4. Motorized Dampers: Parallel-blade dampers mounted in curb base with electric actuator; wired to close when fan stops.

F. Roof Curbs: Galvanized steel; mitered and welded corners; 1-1/2-inch- thick, rigid, fiberglass insulation adhered to inside walls; and 1-1/2-inch wood nailer. Size as required to suit roof opening and fan base.
   1. Configuration: Built-in cant and mounting flange.
   2. Overall Height: 16 inches
   3. Sound Curb: Curb with sound-absorbing insulation.
   4. Pitch Mounting: Manufacture curb for roof slope.
   5. Metal Liner: Galvanized steel.
   6. Mounting Pedestal: Galvanized steel with removable access panel.
   7. Vented Curb: Unlined with louvered vents in vertical sides.

2.3 IN-LINE CENTRIFUGAL FANS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Breidert Air Products.
   2. Carnes Company.
   3. Greenheck Fan Corporation.
   4. Hartzell Fan Incorporated.
   5. Loren Cook Company.
   6. Twin City Fans.

B. Housing: Split, spun aluminum with aluminum straightening vanes, inlet and outlet flanges, and support bracket adaptable to floor, side wall, or ceiling mounting.

C. Belt-Driven Units: Motor mounted on adjustable base, with adjustable sheaves, enclosure around belts within fan housing, and lubricating tubes from fan bearings extended to outside of fan housing.

D. Fan Wheels: Aluminum, airfoil blades welded to aluminum hub.

E. Accessories:
   1. Companion Flanges: For inlet and outlet duct connections.
   2. Fan Guards: 1/2- by 1-inch mesh of galvanized steel in removable frame. Provide guard for inlet or outlet for units not connected to ductwork.
   3. Motor and Drive Cover (Belt Guard): Epoxy-coated steel.

2.4 MOTORS

A. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified in Section 230513 "Common Motor Requirements for HVAC Equipment."
   1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.

B. Enclosure Type: Totally enclosed, fan cooled.

2.5 SOURCE QUALITY CONTROL

A. Certify sound-power level ratings according to AMCA 301, "Methods for Calculating Fan Sound Ratings from Laboratory Test Data." Factory test fans according to AMCA 300, "Reverberant Room Method for Sound Testing of Fans." Label fans with the AMCA-Certified Ratings Seal.

B. Certify fan performance ratings, including flow rate, pressure, power, air density, speed of rotation, and efficiency by factory tests according to AMCA 210, "Laboratory Methods of

Testing Fans for Aerodynamic Performance Rating." Label fans with the AMCA-Certified Ratings Seal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install power ventilators level and plumb.

B. Secure roof-mounted fans to roof curbs with cadmium-plated hardware. See Section 077200 "Roof Accessories" for installation of roof curbs.

C. Ceiling Units: Suspend units from structure; use steel wire or metal straps.

D. Support suspended units from structure using threaded steel rods and spring hangers with vertical-limit stops having a static deflection of 1 inch.

E. Install units with clearances for service and maintenance.

F. Label units according to requirements specified in Section 230553 "Identification for HVAC Piping and Equipment."

3.2 CONNECTIONS

A. Drawings indicate general arrangement of ducts and duct accessories. Make final duct connections with flexible connectors. Flexible connectors are specified in Section 233300 "Air Duct Accessories."

B. Install ducts adjacent to power ventilators to allow service and maintenance.

3.3 FIELD QUALITY CONTROL

A. Perform tests and inspections.
   1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

B. Tests and Inspections:
   1. Verify that shipping, blocking, and bracing are removed.
   2. Verify that unit is secure on mountings and supporting devices, and that connections to ducts and electrical components are complete. Verify that proper thermal-overload protection is installed in motors, starters, and disconnect switches.
   3. Verify that cleaning and adjusting are complete.
   4. Disconnect fan drive from motor, verify proper motor rotation direction, and verify fan wheel free rotation and smooth bearing operation. Reconnect fan drive system, align and adjust belts, and install belt guards.
   5. Adjust belt tension.
   6. Adjust damper linkages for proper damper operation.
   7. Verify lubrication for bearings and other moving parts.
   8. Verify that manual and automatic volume control and fire and smoke dampers in connected ductwork systems are in fully open position.
   9. Disable automatic temperature-control operators, energize motor and adjust fan to indicated rpm, and measure and record motor voltage and amperage.
   10. Shut unit down and reconnect automatic temperature-control operators.
   11. Remove and replace malfunctioning units and retest as specified above.

C. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Prepare test and inspection reports.

3.4 ADJUSTING

A. Adjust damper linkages for proper damper operation.

B. Adjust belt tension.

C. Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC" for testing, adjusting, and balancing procedures.

D. Replace fan and motor pulleys as required to achieve design airflow.

E. Lubricate bearings.

END OF SECTION 233423

SECTION 236313- AIR COOLED CONSENSORS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

General Description

A. This section includes the design, controls and installation requirements for air-cooled condensers / condensing units.

1.2 QUALITY ASSURANCE

A. Unit shall be certified in accordance with UL Standard 1995/CSA C22.2 No. 236, Safety Standard for Heating and Cooling Equipment.

B. Unit and refrigeration system shall comply with ASHRAE 15, Safety Standard for Mechanical Refrigeration.

C. Energy Efficiency Ratio (EER) shall be equal to or greater than prescribed by ASHRAE 90.1, Energy Efficient Design of New Buildings except Low-Rise Residential Buildings.

D. Unit shall be safety certified by ETL and be ETL US and ETL Canada listed. Unit nameplate shall include the ETL label.

1.3 SUBMITTALS

A. Product Data: Literature shall be provided that indicates dimensions, operating and shipping weights, capacities, ratings, factory supplied accessories, electrical characteristics, and connection requirements. Installation, Operation and Maintenance manual with startup requirements shall be provided.

B. Shop Drawings: Unit drawings shall be provided that indicate assembly, unit dimensions, clearances, and connection details. Wiring diagram shall be provided with details for both power and control systems and differentiate between factory installed and field installed wiring.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Unit shall be shipped on a wooden pallet with skeleton crating prior to shipment with doors bolted shut to prevent damage during transport and thereafter while in storage awaiting installation.

B. Follow Installation, Operation and Maintenance manual instructions for rigging, moving, and unloading the unit at its final location.

C. Unit shall be stored in a clean, dry place protected from construction traffic in accordance with the Installation, Operation and Maintenance manual.

1.5 WARRANTY

A. Manufacturer shall provide a limited “parts only” warranty for a period of 12 months from the date of equipment startup or 18 months from the date of original equipment shipment from the factory, whichever is less. Warranty shall cover

material and workmanship that prove defective, within the specified warranty period, provided manufacturer's written instructions for installation, operation and maintenance have been followed. Warranty excludes parts associated with routine maintenance and refrigerant.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. Products shall be provided by the following manufacturers:

1. AAON
2. Substitute equipment may be considered for approval that includes at a minimum:
   a. R-410A refrigerant
   b. Hinged access doors with lockable handles
   c. Variable capacity compressor with 10-100% capacity
   d. 2,500 hour salt spray tested exterior corrosion protection
   e. Designed, engineered, and manufactured in the United States of America
   f. All other provisions of the specifications must be satisfactorily addressed

2.2 CONDENSING UNITS

A. General Description

1. Air-Cooled condensing unit shall include compressors, air-cooled condenser coils, condenser fans, filter driers, and suction and liquid connection valves.
2. Unit shall be factory assembled and tested including leak testing of the coil and run testing of the completed unit. Run test report shall be supplied with the unit in the control compartment.
3. Unit shall have decals and tags to indicate lifting and rigging, service areas and caution areas for safety and to assist service personnel.
4. Unit components shall be labeled, including pipe stub outs, refrigeration system components and electrical and controls components.
5. Installation, Operation and Maintenance manual shall be supplied within the unit.
6. Laminated color-coded wiring diagram shall match factory installed wiring and shall be affixed to the interior of the control compartment's access door.
7. Unit nameplate shall be provided in two locations on the unit, affixed to the

exterior of the unit and affixed to the interior of the control compartment's access door.

B. Construction

1. Unit shall be completely factory assembled, piped, and wired and shipped in one section.

2. All cabinet walls, access doors, and roof shall be fabricated of G90 galvanized steel panels.

3. Unit shall be specifically designed for outdoor application.

4. **Access to compressors and control components shall be through hinged access** doors with quarter turn, lockable handles.

5. Access to condenser coils and fans is through removable access panels.

6. Exterior paint finish shall be capable of withstanding at least 2,500 hours, with no visible corrosive effects, when tested in a salt spray and fog atmosphere in accordance with ASTM B 117-95 test procedure.

7. Unit shall include lifting lugs.

8. Unit shall include forklift slots.

C. Electrical

1. Unit shall be provided with standard power block for connecting power to the unit.

2. Control circuit transformer and wiring shall provide 24 VAC control voltage from the line voltage provided to the unit.

3. Unit shall have a 5kAIC SCCR.

D. Refrigeration System

1. Unit shall be provided with two independently circuited R-410A scroll compressors with thermal overload protection. Lead compressor shall be a variable capacity scroll capable of modulation from 10-100% of its capacity.

2. Each compressor shall be furnished with a crankcase heater.

3. Compressors shall be mounted in an isolated service compartment which can be accessed without affecting unit operation. Lockable hinged access doors shall provide access to the compressors.

4. Compressors shall be isolated from the base pan with the compressor manufacturer's recommended rubber vibration isolators and mounted on an elevated compressor deck, to reduce any transmission of noise from the

compressors into the building area.

5. Each refrigeration circuit shall be equipped with automatic reset low pressure and manual reset high pressure refrigerant safety controls, Schrader type service fittings on both the high pressure and low pressure sides, and service valves for liquid and suction connections. Liquid line filter driers shall be factory provided and installed. Field installed refrigerant circuits shall include the low side cooling components, refrigerant, thermal expansion valve, liquid line and insulated suction line.

6. Unit shall include a factory holding charge of R-410A refrigerant and oil. Adjusting the charge of the system will be required during installation.

7. The unit shall be capable of stable cooling operation to a minimum of 55°F outdoor temperature.

8. Each capacity stage shall be equipped with a 5 minute off delay timer to prevent compressor short cycling. Each additional capacity stage shall be equipped with an adjustable, 20 second delay timer to prevent multiple capacity stages from starting simultaneously.

E. Fans

1. Condenser fan shall be vertical discharge, axial flow, direct drive fans.

2. Fan motor shall be weather protected, single phase, direct drive, and semi-enlcosed air over with thermal overload protection.

F. Coils

1. Coils shall be designed for use with R-410A refrigerant and constructed of copper tubes with aluminum fins mechanically bonded to the tubes and aluminum end casings. Fin design shall be sine wave rippled.

2. Coils shall be designed for a minimum of 10°F of refrigerant sub-cooling.

3. Coils shall be hydrogen leak tested.

G. Controls

1. Unit shall be provided with a terminal block for field installation of controls. Option shall include factory installed isolation relays.

PART 3 – EXECUTION

3.1 INSTALLATION, OPERATION, AND MAINTENANCE

A. Installation, Operation and Maintenance manual shall be supplied with the unit.

B. Installing contractor shall install unit, including field installed components, in accordance with Installation, Operation and Maintenance manual instructions.

C. Start up and maintenance requirements shall be complied with to ensure safe and correct operation of the unit.

END OF SECTION 236313

SECTION 237413- ROOFTOP UNITS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

1.02 GENERAL DESCRIPTION

A. This section includes the design, controls and installation requirements for packaged rooftop units / outdoor air handling units.

1.03 QUALITY ASSURANCE

A. Packaged air-cooled condenser units shall be certified in accordance with ANSI/AHRI Standard 340/360 performance rating of commercial and industrial unitary air-conditioning and heat pump equipment.

B. Unit shall be certified in accordance with UL Standard 1995/CSA C22.2 No. 236, Safety Standard for Heating and Cooling Equipment.

C. Unit and refrigeration system shall comply with ASHRAE 15, Safety Standard for Mechanical Refrigeration.

D. Unit Energy Efficiency Ratio (EER) shall be equal to or greater that prescribed by ASHRAE 90.1, Energy Efficient Design of New Buildings except Low-Rise Residential Buildings.

E. Unit shall be safety certified by ETL and ETL US listed. Unit nameplate shall include the ETL/ETL Canada label.

1.04 SUBMITTALS

A. Product Data: Literature shall be provided that indicates dimensions, operating and shipping weights, capacities, ratings, fan performance, filter information, factory supplied accessories, electrical characteristics and connection requirements. Installation, Operation, and Maintenance manual with startup requirements shall be provided.

B. Shop Drawings: Unit drawings shall be provided that indicate assembly, unit dimensions, construction details, clearances and connection details. Computer generated fan curves for each fan shall be submitted with specific design operation point noted. Wiring diagram shall be provided with details for both power and control systems and differentiate between factory installed and field installed WIRING.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Unit shall be shipped with doors screwed shut and outside air hood closed to prevent damage during transport and thereafter while in storage awaiting

installation.

B. Follow Installation, Operation, and Maintenance manual instructions for rigging, moving, and unloading the unit at its final location.

C. Unit shall be stored in a clean, dry place protected from construction traffic in accordance with the Installation, Operation, and Maintenance manual.

1.06 WARRANTY

A. Manufacturer shall provide a limited "parts only" warranty for a period of 12 months from the date of equipment startup or 18 months from the date of original equipment shipment from the factory, whichever is less. Warranty shall cover material and workmanship that prove defective, within the specified warranty period, provided manufacturer's written instructions for Installation, Operation, and maintenance have been followed. Warranty excludes parts associated with routine maintenance, such as belts and filters.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Products shall be provided by the following manufacturers:

1. AAON

2. Substitute equipment may be considered for approval that includes at a minimum:

   a. R-410A refrigerant

   b. Variable capacity compressor with 10-100% capacity control

   c. Direct drive supply fans

   d. Double wall cabinet construction

   e. Insulation with a minimum R-value of 13

   f. Stainless steel drain pans

2.02 ROOFTOP UNITS

A. General Description

1. Packaged rooftop unit shall include compressors, evaporator coils, filters, supply fans, dampers, air-cooled condenser coils, condenser fans, exhaust fans, energy recovery wheels, and unit controls.

2. Unit shall be factory assembled and tested including leak testing of the DX coils, pressure testing of the refrigeration circuit, and run testing of the completed unit.

Run test report shall be supplied with the unit in the service compartment's literature pocket.

3. Unit shall have decals and tags to indicate lifting and rigging, service areas and caution areas for safety and to assist service personnel.

4. Unit components shall be labeled, including refrigeration system components, and electrical and controls components.

5. Estimated sound power levels (dB) shall be shown on the unit ratings sheet.

6. Installation, Operation, and Maintenance manual shall be supplied within the unit.

7. Laminated color-coded wiring diagram shall match factory installed wiring and shall be affixed to the interior of the control compartment's hinged access door.

8. Unit nameplate shall be provided in two locations on the unit, affixed to the exterior of the unit and affixed to the interior of the control compartment's hinged access door.

B. Construction

1. All cabinet walls, access doors, and roof shall be fabricated of double wall, impact resistant, rigid polyurethane foam panels.

2. Unit insulation shall have a minimum thermal resistance R-value of 13. Foam insulation shall have a minimum density of 2 pounds/cubic foot and shall be tested in accordance with ASTM D1929-11 for a minimum flash ignition temperature of 610°F.

3. Unit construction shall be double wall with G90 galvanized steel on both sides and a thermal break. Double wall construction with a thermal break prevents moisture accumulation on the insulation, provides a cleanable interior, reduces heat transfer through the panel, and prevents exterior condensation on the panel.

4. Unit shall be designed to reduce air leakage and infiltration through the cabinet. Cabinet leakage shall not exceed 1% of total airflow when tested at 3 times the minimum external static pressure provided in AHRI Standard 340/360. Panel deflection shall not exceed L/240 ratio at 125% of design static pressure, at a maximum 8 inches of positive or negative static pressure, to reduce air leakage. Deflection shall be measured at the midpoint of the panel height and width. Continuous sealing shall be included between panels and between access doors and openings to reduce air leakage. Piping and electrical conduit through cabinet panels shall include sealing to reduce air leakage.

5. Roof of the air tunnel shall be sloped to provide complete drainage. Cabinet shall have rain break overhangs above access doors.

6. Access to filters, dampers, cooling coils, energy recovery wheels, compressors, and electrical and controls components shall be through hinged access doors with quarter turn, zinc cast, lockable handles. Full length stainless steel piano hinges shall be included on the doors.

7. Exterior paint finish shall be capable of withstanding at least 2,500 hours, with no visible corrosive effects, when tested in a salt spray and fog atmosphere in accordance with ASTM B 117-95 test procedure.

8. Units with cooling coils shall include double sloped 304 stainless steel drain pans.

9. Unit shall be provided with base discharge and return air openings. All openings through the base pan of the unit shall have upturned flanges of at least 1/2 inch in height around the opening.

10. Unit shall be provided with horizontal discharge and horizontal return air openings. All openings through the base pan of the unit shall have upturned flanges of at least 1/2 inch in height around the opening.

11. Unit shall include lifting lugs on the top of the unit.

12. Unit base pan shall be provided with 1/2 inch thick foam insulation.

C. Electrical

1. Unit shall have a 5kAIC SCCR.

2. Unit shall be provided with factory installed and factory wired, non-fused disconnect switch.

3. Unit shall be provided with a factory installed and factory wired 115V, 12 amp GFI outlet disconnect switch in the unit control panel.

4. Unit shall be provided with phase and brown out protection which shuts down all motors in the unit if the electrical phases are more than 10% out of balance on voltage, the voltage is more than 10% under design voltage or on phase reversal.

D. Supply Fans

1. Unit shall include direct drive, unhoused, backward curved, plenum supply fans.

2. Blowers and motors shall be dynamically balance and mounted on rubber isolators.

3. Motors shall be premium efficiency ODP with ball bearings rated for 200,000 hours service with external lubrication points.

4. Variable frequency drives shall be factory wired and mounted in the unit. Fan

motors shall be premium efficiency.

E. Exhaust Fans

1. Exhaust dampers shall be sized for 100% relief.

2. Fans and motors shall be dynamically balanced.

3. Unit shall include barometric relief dampers.

4. Access to exhaust fans shall be through double wall, hinged access doors with quarter turn lockable handles.

F. Cooling Coils

1. Evaporator Coils

a. Coils shall be designed for use with R-410A refrigerant and constructed of copper tubes with aluminum fins mechanically bonded to the tubes and galvanized steel end casings. Fin design shall be sine wave rippled.

b. Coils shall be 6 row high capacity.

c. Coils shall have interlaced circuitry and shall be 6 row high capacity.

d. Coils shall be hydrogen or helium leak tested.

e. Coils shall be furnished with factory installed expansion valves.

G. Refrigeration System

1. Unit shall be factory charged with R-410A refrigerant.

2. Compressors shall be scroll type with thermal overload protection and carry a 5 year non-prorated warranty, from the date of original equipment shipment from the factory.

3. Compressors shall be mounted in an isolated service compartment which can be accessed without affecting unit operation. Lockable hinged compressor access doors shall be fabricated of double wall, rigid polyurethane foam injected panels to prevent the transmission of noise outside the cabinet.

4. Compressors shall be isolated from the base pan with the compressor manufacturer’s recommended rubber vibration isolators, to reduce any transmission of noise from the compressors into the building area.

5. Each refrigeration circuit shall be equipped with expansion valve type refrigerant flow control.

6. Each refrigeration circuit shall be equipped with automatic reset low pressure and manual reset high pressure refrigerant safety controls, Schrader type service

fittings on both the high pressure and low pressure sides and a factory installed liquid line filter driers.

7. Unit shall include a variable capacity scroll compressor on the refrigeration circuit which shall be capable of modulation from 10-100% of its capacity.

8. Unit shall include a variable capacity scroll compressor on the lead refrigeration circuit which shall be capable of modulation from 10-100% of its capacity.

9. Each refrigeration circuit shall be equipped with a liquid line sight glass.

10. Refrigeration circuit shall be equipped with suction and discharge compressor isolation valves.

11. Unit shall be provided with an adjustable compressor lockout.

12. Unit shall be provided with an adjustable compressor lockout for each compressor.

H. Condensers

1. Air-Cooled Condenser

a. Condenser fans shall be a vertical discharge, axial flow, direct drive fans.

b. Coils shall be designed for use with R-410A refrigerant. Coils shall be multi-pass and fabricated from aluminum microchannel tubes.

c. Coils shall be designed for a minimum of 10°F of refrigerant sub-cooling.

d. Coils shall be hydrogen or helium leak tested.

e. Condenser fans shall be high efficiency electrically commutated motor driven with factory installed head pressure control module. Condenser airflow shall continuously modulate based on head pressure and cooling operation shall be allowed down to 35°F with adjustable compressor lockout.

I. Filters

1. Unit shall include 4 inch thick, pleated panel filters with an ASHRAE MERV rating of 13, upstream of the cooling coil. Unit shall also include 2 inch thick, pleated panel pre filters with an ASHRAE MERV rating of 8, upstream of the 4 inch standard filters.

2. Unit shall include a clogged filter switch.

3. Unit shall include a Magnehelic gauge mounted in the controls compartment.

J. Outside Air/Economizer

1. Unit shall include 0-100% economizer consisting of a motor operated outside air

damper and return air damper assembly constructed of extruded aluminum, hollow core, airfoil blades with rubber edge seals and aluminum end seals. Damper blades shall be gear driven and designed to have no more than 20 cfm of leakage per sq ft. at 4 in. w.g. air pressure differential across the damper. Low leakage dampers shall be Class 2 AMCA certified, in accordance with AMCA Standard 511. Damper assembly shall be controlled by spring return DDC actuator. Unit shall include outside air opening bird screen, outside air hood, and relief dampers.

K. Energy Recovery

1. Unit shall contain a factory mounted and tested energy recovery wheel. The energy recovery wheel shall be mounted in a rigid frame containing the wheel drive motor, drive belt, wheel seals and bearings. Frame shall slide out for service and removal from the cabinet.

2. The energy recovery component shall incorporate a rotary wheel in an insulated cassette frame complete with seals, drive motor and drive belt.

3. The energy recovery cassette shall be an Underwriters Laboratories Recognized Component for electrical and fire safety. The wheel drive motor shall be an Underwriters Laboratory Recognized Component and shall be mounted in the cassette frame and supplied with a service connector or junction box. Thermal performance shall be certified by the manufacturer in accordance with ASHRAE Standard 84, Method of Testing Air-to-Air Heat Exchangers and AHRI Standard 1060, Rating Air-to-Air Energy Recovery Ventilation Equipment. Cassettes shall be listed in the AHRI Certified Products.

4. Unit shall include 2 inch thick, pleated panel outside air filters with an ASHRAE MERV rating of 8, upstream of the wheels.

5. Hinged service access doors shall allow access to the wheel.

   a. Polymer Energy Recovery Wheels

      1. Shall be provided with removable energy transfer matrix. Wheel frame construction shall be a welded hub, spoke and rim assembly of stainless, plated and/or coated steel and shall be self-supporting without matrix segments in place. Segments shall be removable without the use of tools to facilitate maintenance and cleaning. Wheel bearings shall be selected to provide an L-10 life in excess of 400,000 hours. Rim shall be continuous rolled stainless steel and the wheel shall be connected to the shaft by means of taper locks.

      2. All diameter and perimeter seals shall be provided as part of the cassette assembly and shall be factory set. Drive belts of stretch urethane shall be provided for wheel rim drive.

3. Polymer Energy recovery wheel cassette shall carry a 5 year non-prorated warranty, from the date of original equipment shipment from the factory. The first 12 months from the date of equipment startup, or 18 months from the date of original equipment shipment from the factory, whichever is less, shall be covered under the standard AAON limited parts warranty. The remaining period of the warranty shall be covered by Airxchange. The 5-year warranty applies to all parts and components of the cassette, with the exception of the motor, which shall carry an 18 month warranty. Warranty shall cover material and workmanship that prove defective, within the specified warranty period, provided the Airxchange written instructions for installation, operation and maintenance have been followed. Warranty excludes parts associated with routine maintenance, such as belts. Refer to the Airxchange Energy Recovery Cassette Limited Warranty Certificate.

4. [RTU-4] Total energy recovery wheels shall be coated with silica gel desiccant permanently bonded by a process without the use of binders or adhesives, which may degrade desiccant performance. The substrate shall be lightweight polymer and shall not degrade nor require additional coatings for application in marine or coastal environments. Coated segments shall be washable with detergent or alkaline coil cleaner and water. Desiccant shall not dissolve nor deliquesce in the presence of water or high humidity.

L. Controls

1. Field Installed DDC Controls by Others

a. Unit shall be provided with a terminal block for field installation of DDC controls.

M. Accessories

1. Unit shall be provided with a safety shutdown terminal block for field installation of a smoke detector which shuts off the unit's control circuit.

2. Unit shall be provided with a high condensate level switch that shuts down the unit when a high water level is detected in the drain pan.

2.03 CURBS

A. Curbs shall to be fully gasketed between the curb top and unit bottom with the curb providing full perimeter support, cross structure support and air seal for the unit. Curb gasket shall be furnished within the control compartment of the rooftop unit to be mounted on the curb immediately before mounting of the rooftop unit.

PART 3 - EXECUTION

3.01 INSTALLATION, OPERATION, AND MAINTENANCE

A. Installation, Operation, and Maintenance manual shall be supplied with the unit.

B. Installing contractor shall install unit, including field installed components, in accordance with Installation, Operation, and Maintenance manual instructions.

C. Start up and maintenance requirements shall be complied with to ensure safe and correct operation of the unit.

END OF SECTION 237413

SECTION 237414 – INDOOR AIR HANDLERS

PART 1 - GENERAL

1.02 GENERAL DESCRIPTION

A. This section includes the design, controls, and installation requirements for indoor air handling units.

1.03 QUALITY ASSURANCE

A. Unit shall be certified in accordance with UL Standard 1995/CSA C22.2 No. 236, Safety Standard for Heating and Cooling Equipment.

B. Unit and refrigeration system shall comply with ASHRAE 15, Safety Standard for Mechanical Refrigeration.

C. Unit shall be safety certified by ETL and be ETL US and ETL Canada listed. Unit nameplate shall include the ETL label.

1.04 SUBMITTALS

A. Product Data: Literature shall be provided that indicates dimensions, operating and shipping weights, capacities, ratings, fan performance, filter information, factory supplied accessories, electrical characteristics, and connection requirements. Installation, Operation and Maintenance manual with startup requirements shall be provided. Run test report shall be supplied with the unit in the control compartment's literature packet, and also available electronically after the unit ships.

B. Shop Drawings: Unit drawings shall be provided that indicate assembly, unit dimensions, clearances, and connection details. Computer generated fan curves for each fan shall be submitted with specific design operation point noted. Wiring diagram shall be provided with detail for power and control systems and differentiate between factory installed and field installed wiring.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Unit shall be on a wooden pallet with skeleton crating prior to shipment to prevent damage during transport and thereafter while in storage awaiting installation.

B. Follow Installation, Operation and Maintenance manual instructions for rigging, moving, and unloading the unit at its final location.

C. Unit shall be handled carefully to avoid damage to components, enclosures and finish.

D. Unit shall be stored in a clean, dry place protected from weather and construction traffic in accordance with Installation, Operation and Maintenance manual instructions.

1.06 WARRANTY

A. Manufacturer shall provide a limited "parts only" warranty for a period of 12 months from the date of equipment start up or 18 months from the date of original equipment shipment from the factory, whichever is less. Warranty shall cover material and workmanship that prove defective, within the specified warranty period, provided manufacturer's written instructions for installation, operation, and maintenance have been followed. Warranty excludes parts associated with routine maintenance, such as belts and air filters.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Products shall be provided by the following manufacturers:

1. AAON
2. Substitute equipment may be considered for approval that includes at a minimum:
    a. R-410A refrigerant
    b. ECM driven direct drive backward curved plenum supply fans
    c. Double wall cabinet construction
    d. Insulation with a minimum R-value of 6.25
    e. Double-sloped stainless steel drain pans
    f. Hinged access doors with lockable handles
    g. LED service lights in the control panel
    h. Designed, engineered, and manufactured in the United States of America
    i. All other provisions of the specifications must be satisfactorily addressed

2.02 AIR HANDLING UNITS

A. General Description

1. Indoor air handling units shall include filters, supply fans, and the following:
    a. DX evaporator coil
    b. hot water coil
    c. mixing box
    d. low voltage terminal block for field installed controls by others
2. Unit shall have a draw-through supply fan configuration and discharge air

horizontally.

3. Unit shall be factory assembled and tested including leak testing of the coils and run testing of the supply fans and factory wired system. Run test report shall be supplied with the unit in the control compartment's literature packet, and also available electronically after the unit ships.

4. Unit shall have decals and tags to indicate lifting and rigging, service areas and caution areas for safety and to assist service personnel.

5. Unit components shall be labeled, including pipe stub outs, refrigeration system components and electrical and controls components.

6. Installation, Operation and Maintenance manual shall be supplied within the unit.

7. Laminated color-coded wiring diagram shall match factory installed wiring and shall be affixed to the interior of the control compartment's hinged access door.

8. Unit nameplate shall be provided in two locations on the unit, affixed to the exterior of the unit and affixed to the interior of the control compartment's hinged access door.

B. Construction

1. All cabinet walls, access doors, and roof shall be fabricated of double wall, impact resistant, rigid polyurethane foam panels.

2. Unit insulation shall have a minimum thermal resistance R-value of 6.25. Foam insulation shall have a minimum density of 2 pounds/cubic foot and shall be tested in accordance with ASTM D1929-11 for a minimum flash ignition temperature of 610°F.

3. Unit construction shall be double wall with G90 galvanized steel on both sides and a thermal break. Double wall construction with a thermal break prevents moisture accumulation on the insulation, provides a cleanable interior, reduces heat transfer through the panel and prevents exterior condensation on the panel.

4. Unit shall be designed to reduce air leakage and infiltration through the cabinet. Sealing shall be included between panels and between access doors and openings to reduce air leakage. Piping and electrical conduit through cabinet panels shall include sealing to reduce air leakage.

5. Access doors shall be flush mounted to cabinetry.

6. Units shall include double-sloped 304 stainless steel drain pan. Drain pan connection shall be on the right hand side of unit with a 1" MPT fitting.

7. Cooling coil shall be mechanically supported above the drain pan by multiple

supports that allow drain pan cleaning and coil removal.

8. Unit shall be provided with a high condensate level switch that shuts down the unit when a high water level is detected in the drain pan.

9. Unit shall include factory wired control panel compartment LED service lights.

10. Unit shall include exterior corrosion protection which shall be capable of withstanding at least 2,500 hours, with no visible corrosive effects, when tested in a salt spray and fog atmosphere in accordance with ASTM B 117-95 test procedure.

C. Electrical

1. Unit shall be provided with an internal control panel with separated low and high voltage control wiring. Access to internal control panel shall be through service access door with removable pin hinges and lockable quarter turn handle.

2. Unit shall be provided with standard power block for connecting power to the unit.

3. Unit shall include a factory installed 24V control circuit transformer.

4. Unit shall have a 5kAIC SCCR.

5. Unit shall be provided with phase and brown out protection which shuts down all motors in the unit if the electrical phases are more than 10% out of balance on voltage, the voltage is more than 10% under design voltage or on phase reversal.

6. Unit shall be provided with remote safety shutdown terminals for wiring to a field installed smoke detector, firestat, or building safety automatic shutdown system.

D. Supply Fans

1. Unit shall include direct drive, unhoused, backward curved, plenum supply fans.

2. Blower and motor assembly shall be dynamically balanced.

3. Motor shall be a high efficiency electronically commutated motor (ECM).

4. Blower and motor assembly shall utilize neoprene gasket.

5. ECM driven supply fan shall include a factory installed potentiometer within the control compartment for cfm setpoint. The factory provided terminal block shall include a jumper wire that can be removed when wired to field provided 0-10 VDC control signal.

6. Access to supply fan shall be through removable bolted access panels on the top

and bottom of the unit.

7. Removable access panels and supply duct flanges shall be interchangeable.

E. Cooling Coil

1. Access to cooling coil shall be through hinged access door with lockable quarter turn handles.

2. Evaporator Coil

a. Coil shall be designed for use with R-410A refrigerant and constructed of copper tubes with aluminum fins mechanically bonded to the tubes and aluminum end casings. Fin design shall be sine wave rippled.

b. Coil shall two circuits and interlaced circuitry.

c. Coil shall be 6 row high capacity and 12 fins per inch.

d. Coil shall be hydrogen leak tested.

e. Coil shall be furnished with factory installed thermostatic expansion valves. The sensing bulbs shall be field installed on the suction line immediately outside the cabinet.

f. Coil shall have right hand external piping connections. Liquid and suction connections shall be sweat connection. Coil connections shall be labeled, extend beyond the unit casing, and be factory sealed on both the interior and exterior of the unit casing to minimize air leakage.

F. Refrigeration System

1. Air handling unit and matching condensing unit shall be capable of operation as an R-410A split system air conditioner.

2. Each refrigeration circuit shall be equipped with thermostatic expansion valve type refrigerant flow control.

G. Heating Coil

1. Access to heating coil shall be through hinged access door with lockable quarter turn handles.

2. Hot Water Heating Coil

a. Coil shall be certified in accordance with AHRI Standard 410 and be hydrogen leak tested.

b. Coil shall be designed and constructed of copper tubes with aluminum fins mechanically bonded to the tubes and aluminum end casings. Fin design shall be sine wave rippled.

c. Coil shall have single serpentine circuitry, 2 row and 12 fins per inch.

d. Coil shall have right hand external piping connections. Supply and return connections shall be sweat connection. Coil connections shall be labeled, extend beyond the unit casing, and be factory sealed on both the interior and exterior of the unit casing to minimize air leakage.

e. Control valves shall be field supplied and field installed.

f. Coils shall be located in the preheat position upstream of the cooling coil.

H. Filters

1. Unit filter access shall be through service access door with piano hinges and quarter turn button fasteners.

2. Unit shall include 4 inch thick, pleated panel filters with a MERV rating of 13, upstream of the cooling coil. Unit shall also include 2 inch thick, pleated panel pre filters with MERV rating of 8, upstream of the 4 inch standard filters.

3. Unit shall include a clogged filter switch that senses the pressure drop across the unit filter bank and cooling coil.

4. Unit shall include factory installed magnehelic gauge measuring the pressure drop across the filter rack and cooling coil.

I. Mixing Box

1. Damper access shall be through service access door with removable pin hinges and lockable quarter turn handle.

2. Unit shall contain a mixing box with front return air opening and right outside air opening.

3. Unit shall contain a mixing box with front return air opening and top outside air opening.

4. Unit shall include 0-100% economizer consisting of a motor operated outside air damper and return air damper assembly constructed of extruded aluminum, hollow core, airfoil blades with rubber edge seals and aluminum end seals. Damper blades shall be gear driven and designed to have no more than 20 cfm of leakage per sq ft. at 4 in. w.g. air pressure differential across the damper.

5. Low leakage dampers shall be Class 2 AMCA certified, in accordance with AMCA Standard 511. Dampers shall be controlled by a fully modulating actuator.

J. Controls

1. Unit shall be provided with a proof of airflow switch. When airflow is not

detected, the supply fans will shut down.

2. Unit shall be provided with an internal control panel with separated low and high voltage control wiring.

3. Access to internal control panel shall be through an access door with removable pin hinges and lockable quarter turn handles.

4. Field Installed DDC Controls by Others

   a. Controls shall be field provided and field installed by others. Unit shall be provided with a terminal block and a supply air setpoint potentiometer.

PART 3 – EXECUTION

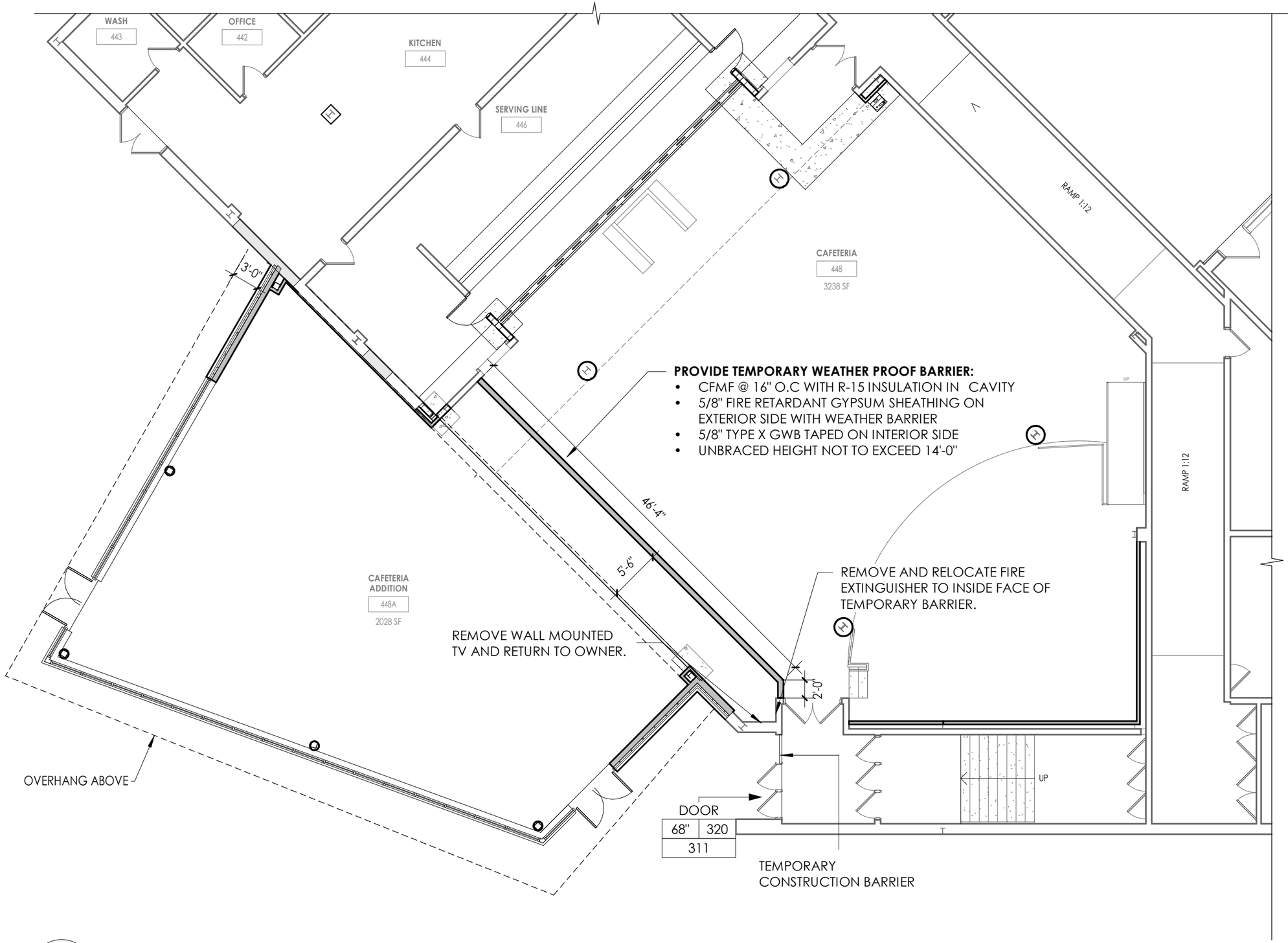
3.01 INSTALLATION, OPERATION AND MAINTENANCE

A. Installation, Operation and Maintenance manual shall be supplied with the unit.

B. Installing contractor shall install unit, including field installed components, in accordance with Installation, Operation and Maintenance manual instructions.

C. Start up and maintenance requirements shall be complied with to ensure safe and correct operation of the unit.

END OF SECTION 237414



1
SK-A03

GROUND FLOOR AREA B- TEMP. CONSTRUCTION

3/32" = 1'-0"

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PROJECT INFORMATION

Project Number
13940.18

Client Name
NEWBURGH ENLARGED CITY SCHOOL DISTRICT

Project Name
PHASE 3: HERITAGE MIDDLE SCHOOL 2019 CAPITAL IMPROVEMENT PROJECT

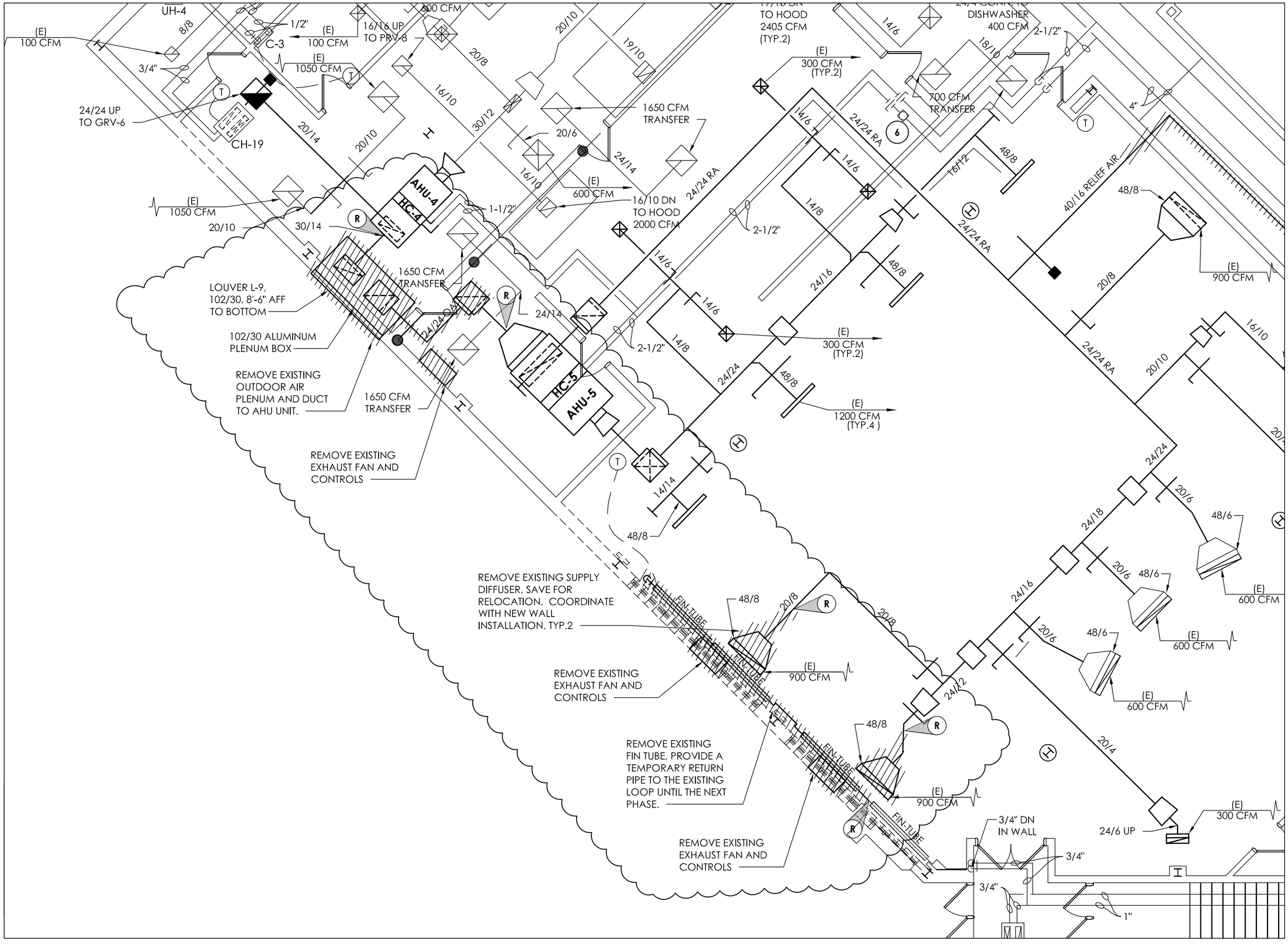
Project Address
405 Union Avenue, New Windsor, NY 12553

SHEET INFORMATION

Issue Date
10/01/21

Drawing Title
GROUND FLOOR AREA B- TEMPORARY CONSTRUCTION PLAN

AD 03
SK-A03



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NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION

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PHASE 3: HERITAGE MIDDLE SCHOOL 2019 CAPITAL IMPROVEMENT PROJECT

Project Address

405 UNION AVENUE, NEW WINDSOR, NY 12553

SHEET INFORMATION

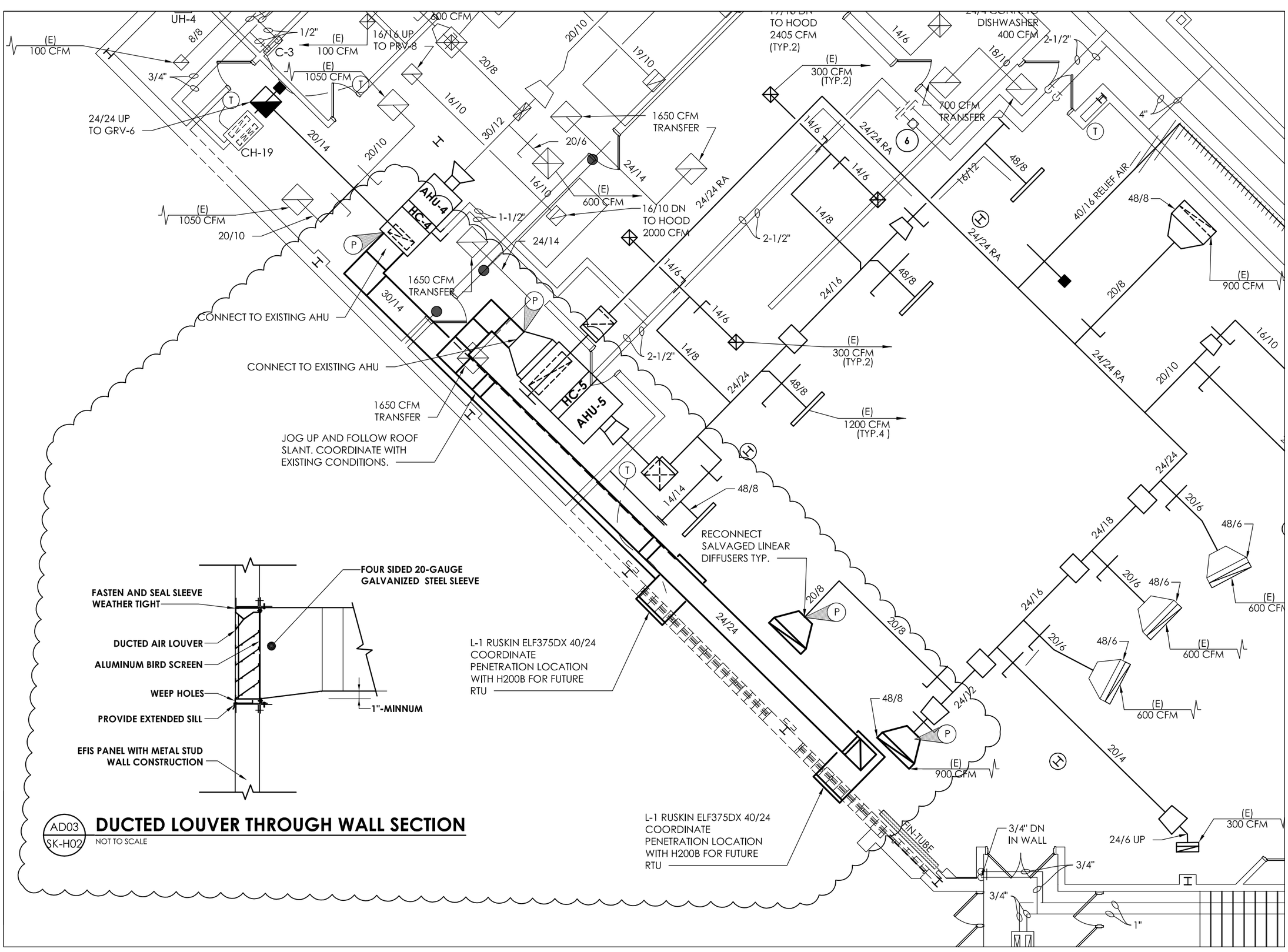
Issue Date

10/01/2021

Drawing Title

GROUND FLOOR AREA B PHASING TEMPORARY CONSTRUCTION - DEMOLITION

AD03
SK-H01



AD03
SK-H02

DUCTED LOUVER THROUGH WALL SECTION

NOT TO SCALE

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PROJECT INFORMATION

Project Number

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Client Name

NEWBURGH ENLARGED CITY SCHOOL DISTRICT

Project Name

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Project Address

405 UNION AVENUE, NEW WINDSOR, NY 12553

SHEET INFORMATION

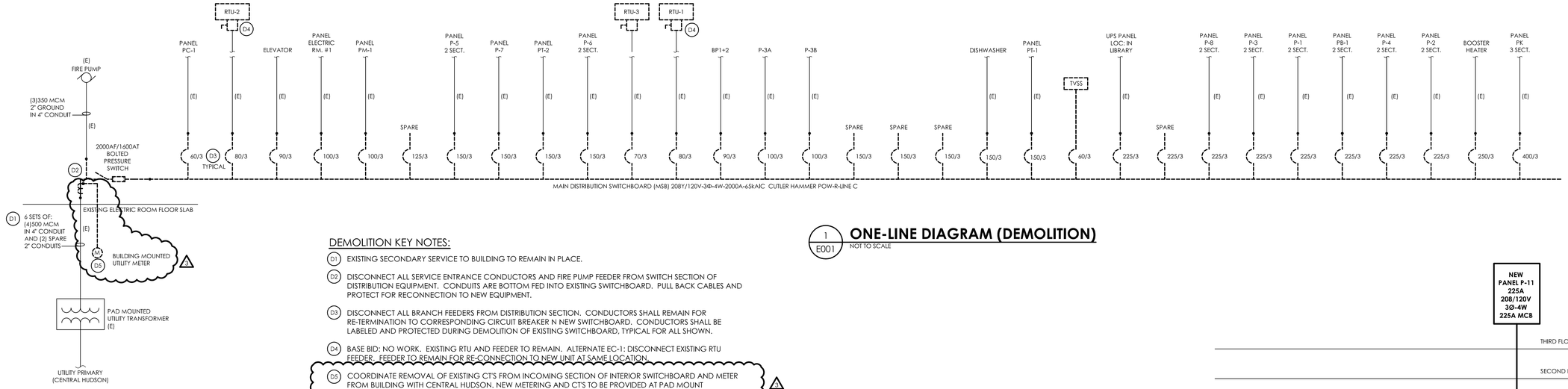
Issue Date

10/01/2021

Drawing Title

GROUND FLOOR AREA B PHASING TEMPORARY CONSTRUCTION - NEW WORK

AD03
SK-H02



1 E001 **ONE-LINE DIAGRAM (DEMOLITION)**
NOT TO SCALE

DEMOLITION KEY NOTES:

D1 EXISTING SECONDARY SERVICE TO BUILDING TO REMAIN IN PLACE.

D2 DISCONNECT ALL SERVICE ENTRANCE CONDUCTORS AND FIRE PUMP FEEDER FROM SWITCH SECTION OF DISTRIBUTION EQUIPMENT. CONDUITS ARE BOTTOM FED INTO EXISTING SWITCHBOARD. PULL BACK CABLES AND PROTECT FOR RECONNECTION TO NEW EQUIPMENT.

D3 DISCONNECT ALL BRANCH FEEDERS FROM DISTRIBUTION SECTION. CONDUCTORS SHALL REMAIN FOR RE-TERMINATION TO CORRESPONDING CIRCUIT BREAKER N NEW SWITCHBOARD. CONDUCTORS SHALL BE LABELED AND PROTECTED DURING DEMOLITION OF EXISTING SWITCHBOARD, TYPICAL FOR ALL SHOWN.

D4 BASE BID: NO WORK. EXISTING RTU AND FEEDER TO REMAIN. ALTERNATE EC-1: DISCONNECT EXISTING RTU FEEDER. FEEDER TO REMAIN FOR RE-CONNECTION TO NEW UNIT AT SAME LOCATION.

D5 COORDINATE REMOVAL OF EXISTING CT'S FROM INCOMING SECTION OF INTERIOR SWITCHBOARD AND METER FROM BUILDING WITH CENTRAL HUDSON. NEW METERING AND CT'S TO BE PROVIDED AT PAD MOUNT TRANSFORMER LOCATION. 1

GENERAL NOTES:

A. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE ALL WORK ASSOCIATED WITH THE SERVICE ENTRANCE WITH CENTRAL HUDSON GAS & ELECTRIC CORPORATION. ALL UTILITY COMPANY FEES RELATED TO THIS WORK WILL BE PAID BY THE ELECTRICAL CONTRACTOR. CONTACT UTILITY REPRESENTATIVE, NATHAN JACKSON @845-563-4538 (njackson@cenhud.com).

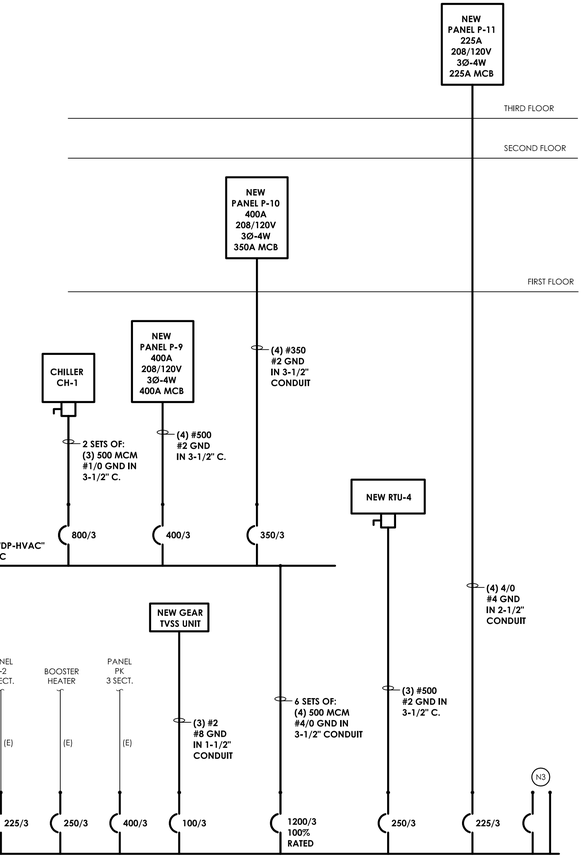
B. EXISTING EQUIPMENT/FEEDERS SHOWN WITH (E) DESIGNATION ARE EXISTING TO REMAIN. ALL ASSOCIATED ELECTRICAL DOWNSTREAM EQUIPMENT AND/OR CONDUCTORS AND CONDUIT TO REMAIN UNLESS OTHERWISE NOTED.

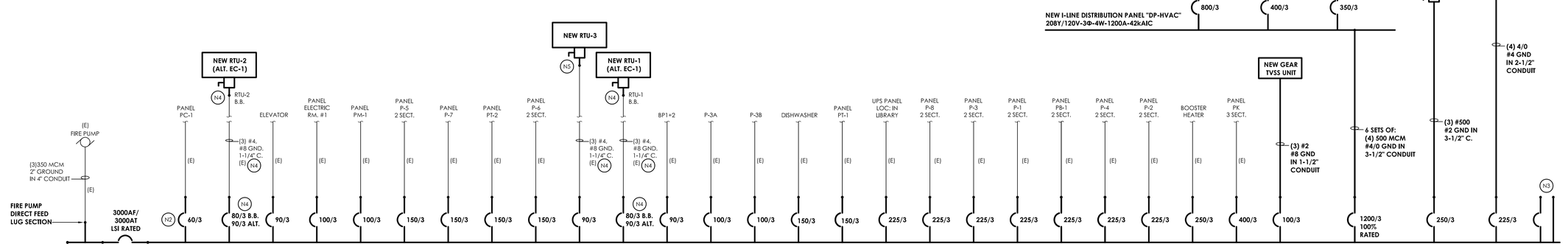
C. PROVIDE ENERGY REDUCTION MAINTENANCE FEATURE ON ALL CIRCUIT BREAKERS 1200A AND LARGER.

D. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL ASSOCIATED SHUTDOWN AND EQUIPMENT OUTAGES WITH THE OWNER PRIOR TO CONSTRUCTION AND WILL BE RESPONSIBLE TO PROVIDE AND INSTALL TEMPORARY GENERATOR POWER DURING THE ENTIRE SHUT DOWN PERIOD. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A MINIMUM OF (2) WEEKS NOTICE PRIOR TO SHUT DOWN OF EQUIPMENT.

E. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE PHASING OF CONSTRUCTION PRIOR TO START OF WORK. COORDINATE ANY DOOR/WALL REMOVALS AND REPLACEMENT REQUIRED WITH THE GENERAL CONTRACTOR TO FACILITATE THE DEMOLITION, REMOVAL AND INSTALLATION OF NEW SWITCHBOARD.

F. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR DISASSEMBLY AND ASSEMBLY OF NEW SWITCHBOARD SECTIONS AS REQUIRED TO ACCOMMODATE MOVING OF NEW EQUIPMENT INTO EXISTING SPACE. CONTRACTOR SHALL FIELD VERIFY EQUIPMENT DISASSEMBLY AND ASSEMBLY OF SECTIONS WITH FACTORY FIELD SERVICES REPRESENTATIVE.





NEW WORK KEY NOTES:

N1 INSTALL ADDITIONAL MATCHING SIZE CONDUCTOR SETS TO MAIN SWITCH AS NOTED. INSTALL IN EXISTING SPARE 4" CONDUITS STUBBED UP INTO ELECTRICAL ROOM GEAR.

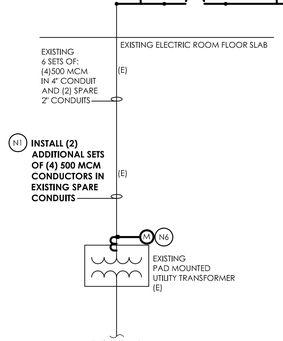
N2 RE-TERMINATE EXISTING BRANCH CIRCUIT FEEDERS TO ASSOCIATED NEW CIRCUIT BREAKERS IN NEW EQUIPMENT. CONTRACTOR SHALL SPLICE AND EXTEND CONDUCTORS OF EQUAL SIZE AS REQUIRED TO ACCOMMODATE NEW BREAKER LUG CONNECTIONS. TYPICAL FOR ALL EXISTING FEEDERS.

N3 SWITCHBOARD SHALL CONTAIN (2) 225/3 AND (3) 100/3 SPARE BREAKERS AND (1) 400A FRAME SPACE.

N4 BASE BID: NO WORK TO EXISTING RTU OR FEEDER. PROVIDE NEW BREAKER IN NEW MSB AS NOTED. ALTERNATE EC-1: EXISTING FEED WILL REMAIN TO SERVE NEW ROOFTOP UNIT. PROVIDE NEW BREAKER IN NEW MSB AS NOTED.

N5 EXISTING FEED FROM DEMOLISHED RTU-3 TO BE RE-USED FOR NEW RTU-3.

N6 PROVIDE NEW METERING AT EXISTING PAD MOUNT TRANSFORMER. COORDINATE WITH CENTRAL HUDSON METERING DEPT.



2 E001 **ONE-LINE DIAGRAM (NEW WORK)**
NOT TO SCALE

INSTALLATION, PHASING AND TEMPORARY POWER NOTES:

A. THE ELECTRICAL CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE THE TIMING OF SERVICE SHUT DOWN WITH THE UTILITY COMPANY AND THE CONSTRUCTION MANAGER. ENTIRE SHUT DOWN OF UTILITY SERVICE TO THE BUILDING TO ACCOMMODATE SERVICE SWITCHBOARD REPLACEMENT SHALL BE NO MORE THAN 2 WEEKS. DURING UTILITY SHUT DOWN, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY POWER TO ALL BUILDING TRADES. PROVIDE A MINIMUM OF 100 KW DIESEL MOBILE GENERATOR AND ASSOCIATED DISTRIBUTION EQUIPMENT TO SERVE BUILDING NECESSARY LOADS. LOADS INCLUDE SERVER ROOMS, FIRE ALARM SYSTEM INCLUDING FIELD REMOTELY LOCATED NAC PANELS, AND LIGHTING & GENERAL POWER REQUIRED FOR CONSTRUCTION TO TAKE PLACE THROUGHOUT THE BUILDING.

B. ELECTRICAL CONTRACTOR SHALL PROVIDE MANPOWER TO COMPLETE MAIN SWITCHBOARD REPLACEMENT WITHIN 2 WEEKS (1ST AND 2ND SHIFTS, 6 DAYS/WEEK). WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:
- MAKING CONNECTIONS BETWEEN THE PORTABLE GENERATOR TO EXISTING FEEDERS. WORK WOULD INCLUDE THE INSTALLATION OF TEMPORARY BRANCH PANELBOARD(S) WITHIN THE BUILDING AS REQUIRED.
- SCHEDULING CENTRAL HUDSON GAS AND ELECTRIC TO BE ON SITE FOR UTILITY SHUT DOWN OF TRANSFORMER ON SCHEDULED SHUT DOWN DATE.
- DISASSEMBLY AND REMOVAL OF EXISTING INTERIOR SWITCHBOARD IN ELECTRIC ROOM AS INDICATED ON DRAWINGS
- RIGGING OF NEW SWITCHBOARD SECTIONS INTO EXISTING ELECTRICAL SPACE.
- CONTRACTOR SHALL INCLUDE THE COST OF (2) SWITCHBOARD MANUFACTURER FIELD SERVICE TECHS TO BE ON SITE FOR THE DISASSEMBLY OF NEW SWITCHBOARD SECTIONS TO ACCOMMODATE MOVING INTO ELECTRICAL ROOM AND REASSEMBLY ONCE GEAR IS SET AT FINAL LOCATION IN ELECTRICAL ROOM.
- INSTALLATION OF NEW SWITCHBOARD SECTIONS AND ADDITIONAL SERVICE ENTRANCE CONDUCTORS AS INDICATED ON DRAWINGS.
- RECONNECTION OF ALL EXISTING ACTIVE BRANCH FEEDERS AS INDICATED ON DRAWINGS.
- SCHEDULING OF CENTRAL HUDSON GAS AND ELECTRIC TO BE ON SITE FOR RE-ENERGIZING OF SERVICE AFTER NEW SWITCHBOARD INSTALLATION.
- REMOVAL OF ALL TEMPORARY POWER AT COMPLETION OF INSTALLATION.

C. THE ELECTRICAL CONTRACTOR WILL BE RESPONSIBLE FOR ALL TEMPORARY GENERATOR RENTAL AND ASSOCIATED FUEL COSTS. ELECTRICAL CONTRACTOR SHALL CHECK FUEL LEVELS DAILY TO ENSURE THAT BUILDING IS NOT LEFT WITHOUT POWER.

D. COORDINATE LOCATION OF GENERATOR AND DISTRIBUTION SECTION WITH OWNER PRIOR TO ANY EQUIPMENT BEING BROUGHT ON SITE.

E. PROVIDE CONSTRUCTION MANAGER WITH TIMELY REPORTS AS TO STATUS OF EQUIPMENT ARRIVALS SO THAT SCHEDULES MAY BE REVISED IF NECESSARY.

LEGEND:
- DEMOLITION
- EXISTING
- NEW WORK

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PROJECT INFORMATION
Project Number: 13940.18
Client Name: **NEWBURGH ENLARGED CITY SCHOOL DISTRICT**
Project Name: **PHASE 3: HERITAGE MIDDLE SCHOOL 2019 CAPITAL IMPROVEMENT PROJECT**
Project Address: 405 Union Avenue, New Windsor, NY 12553
SED Number: 44-16-00-01-0-039-011

REVISION SCHEDULE

No.	Date	Description
1	10/01/21	BID ADDENDUM #3

SHEET INFORMATION
Issued: 09/06/2021 CONSTRUCTION DOCUMENTS
Drawn By: RJD Checked By: ARM
Drawing Title: ELECTRICAL ONE-LINE DIAGRAMS
Drawing Number: HMS E001

Plotted By: Robin DeRuje
Date last plotted: 10/1/2021 8:01 AM
Date last accessed: 10/1/2021 7:45 AM
Sheet size: 30x42
Drawing Name: S:\Projects\Newburgh ECSD\Heritage MS Addtn & Reno\D Design\06 CAD\AutoCAD\ELEC\E0\E001 Electrical Riser Diagram.dwg

1 E100B **GROUND FLOOR ELECTRICAL DEMOLTION PLAN - AREA B**

1/8" = 1'-0"

GENERAL NOTES:

A. E - EXISTING TO REMAIN. ANY DEVICE, AS WELL AS ITS ASSOCIATED CIRCUITING AND CONDUIT, LABELED "(E)" SHALL REMAIN, UNLESS OTHERWISE NOTED.

B. ALL OTHER DEVICES, FIXTURES, ELECTRICAL CONNECTIONS, ETC., SHOWN AS DASHED ARE TO BE REMOVED. UNLESS SPECIFICALLY CALLED OUT TO BE REMOVED AND SALVAGED, CONTRACTOR WILL BE RESPONSIBLE FOR DISPOSAL (OR TURN OVER TO OWNER AS INDICATED BELOW).

C. WHERE DEVICES, FIXTURES, ETC. ARE INDICATED TO BE REMOVED, THEY AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE PANELBOARD UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING, TO FEED THROUGH TO THESE REMAINING ITEMS. RELOCATE ANY CIRCUITS THAT REMAIN, TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.

D. THE CONTRACTOR SHALL REMOVE THE EXISTING ELECTRIC IN AREAS OF NEW RENOVATIONS TO ACCOMMODATE NEW CONSTRUCTION. REROUTING OF EXISTING MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR INTERFERENCE WITH OTHER NEW WORK AS NOTED IN THE FOLLOWING NOTES.

E. DRAWINGS INDICATE SPECIFIC ITEMS TO BE REMOVED AND/OR RELOCATED IN ORDER TO INDICATE GENERAL SCOPE. ADDITIONAL ITEMS NOT INDICATED, BUT NECESSARY FOR PROJECT RENOVATIONS, SHALL BE REMOVED, RELOCATED AND/OR REROUTED.

F. COORDINATE DEMOLITION OF EQUIPMENT, DEVICES, ETC. WITH OTHER DISCIPLINES AS APPLICABLE. REFER TO ARCHITECTURAL AND MECHANICAL DEMOLITION DRAWINGS AND NOTES FOR COORDINATION.

G. DRAWINGS ARE GRAPHICAL REPRESENTATIONS OF APPROXIMATE EQUIPMENT AND DEVICE LOCATIONS. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXACT EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATION AND EXISTING BUILDING DOCUMENTS. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE CONTRACTOR IS RESPONSIBLE.

H. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL ITEMS, EQUIPMENT, PANELS, LIGHT FIXTURES, ETC. BEING REMOVED AS PART OF THIS PROJECT. THE OWNER SHALL HAVE THE RIGHT OF RETAINING ANY ITEMS BEING REMOVED.

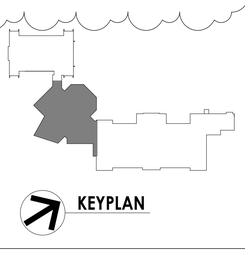
I. CONTRACTOR SHALL REMOVE AND RE-INSTALL EXISTING CEILING TILES AS REQUIRED TO ACCOMMODATE SCOPE OF WORK. TILES SHALL BE VACUUMED PRIOR TO REMOVAL TO MINIMIZE DUST AND DEBRIS. REPLACE DAMAGED TILES AS REQUIRED.

J. CONTRACTOR SHALL PROVIDE NEW COVERPLATES ON ALL BOXES OF UNUSED AND/OR REMOVED FLUSH MOUNT DEVICES UPON COMPLETION OF PROJECT.

K. FIREPROOFING AND/OR FIRE STOP MATERIALS REMOVED FROM FIRE RATED WALLS AND CEILINGS AS A RESULT OF DEMOLITION SHALL BE RE-INSTALLED USING AN APPROVED METHOD AS DESCRIBED IN ASSOCIATED PROJECT SPECIFICATIONS.

KEY NOTES:

1. REMOVE AND SALVAGE EXISTING SECURITY CAMERA. CABLING TO REMAIN AND BE PROTECTED FOR RECONNECTION.
2. DISCONNECT BRANCH CIRCUIT WIRING FROM MOTORIZED PROJECTION SCREEN. CIRCUIT TO REMAIN IN SPACE FOR CONNECTION TO NEW SCREEN.
3. IN DESIGNATED AREA OF CEILING DEMOLITION, REMOVE AND SALVAGE EXISTING LIGHT FIXTURES AND ELECTRICAL CEILING DEVICES. BRANCH CIRCUIT WIRING AND SYSTEM CABLING TO REMAIN FOR RECONNECTION.
4. REMOVE AND DISPOSE OF EXISTING WALL MOUNTED EXIT SIGN. BACK BOX AND BRANCH CIRCUIT TO REMAIN FOR CONNECTION TO NEW UNIT.
5. REMOVE DEVICES SHOWN. SYSTEM CABLING AND BRANCH CIRCUIT WIRING TO REMAIN FOR RE-WORK IN NEW FURRED-OUT WALL AT SAME LOCATION.
6. EXISTING LIGHT FIXTURES, CONTROLS, SYSTEM AND POWER DEVICES SHOWN IN THIS AREA THAT ARE NOT SHOWN AS BEING DEMOLISHED (DASHED, HATCHED, OR OTHERWISE NOTED) ARE SHOWN FOR REFERENCE PURPOSES ONLY. CEILING TILE MAY NEED TO BE REMOVED IN THIS AREA FOR MECHANICAL WORK. EXISTING CEILING T-BAR GRID WILL REMAIN IN PLACE. LIGHT FIXTURES TO REMAIN IN GRID. SHOULD AN ELECTRICAL DEVICE NEED TO BE TEMPORARILY SUSPENDED OR REMOVED AND REINSTALLED DURING DEMOLITION OR NEW WORK PHASES, IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
7. EXISTING BRANCH CIRCUIT AND OCP AT PANEL TO REMAIN FOR CONNECTION TO NEW HVAC UNIT IN ROOM.
8. EXISTING DISCONNECT/STARTER, ANSUL STATION DEVICE, CONTACTOR/ENCLOSURE, SYSTEMS PANEL, NETWORK CONNECTION,AND ASSOCIATED BRANCH CIRCUITS TO BE REMOVED AND SALVAGED FOR REINSTALLATION. COORDINATE WORK WITH WALL REMOVAL BY GENERAL CONTRACTOR. PROTECT ALL BRANCH CIRCUITS AND SYSTEM CABLING FROM DAMAGE DURING DEMOLITION BY OTHERS.
9. REMOVE PLUG MOLD AND ASSOCIATED RACEWAY BACK TO RECEPTACLE.
10. REMOVE EXISTING EXHAUST FAN SWITCHES AND ASSOCIATED RACEWAY.
11. REMOVE AND SALVAGE EXISTING LIGHT FIXTURES AND HEAT DETECTOR. BRANCH CIRCUIT WIRING AND SYSTEM CABLING TO REMAIN FOR RECONNECTION.
12. REMOVE AND SALVAGE EXISTING WIRELESS ACCESS EQUIPMENT. CABLING TO REMAIN AND BE PROTECTED FOR RECONNECTION.
13. DEMOLISH DEVICE/EQUIPMENT AS SHOWN. BRANCH CIRCUIT WIRING TO REMAIN IN AREA FOR CONNECTION TO NEW ELECTRICAL DEVICES.
14. REMOVE EXISTING LIGHT FIXTURES AS SHOWN AS DEMOLISHED/DASHED. BRANCH CIRCUITS TO REMAIN IN AREA FOR CONNECTION TO NEW LIGHTING.
15. REMOVE AND SALVAGE EXISTING PA SPEAKER. SYSTEM CABLING TO REMAIN IN AREA FOR RECONNECTION.
16. BASE BID: REMOVE AND DISPOSE OF OLD RECEPTACLE AND FACEPLATE. WIRING TO REMAIN FOR CONNECTION TO NEW DEVICE IN SAME BOX.
    ALTERNATE EC-6: STAGE DEMOLITION - REMOVE DEVICE. REMOVE BRANCH CIRCUIT WIRING BACK TO A POINT FOR RE-USE FOR NEW RECEPTACLES AT LOCATION OF EXISTING RAMP.
17. REMOVE AND DISPOSE OF OLD RECEPTACLE AND FACEPLATE. WIRING TO REMAIN FOR CONNECTION TO NEW DEVICE.
18. PRIOR TO DEMOLITION, A TEMPORARY FULL HEIGHT WALL WILL BE INSTALLED BY GENERAL CONTRACTOR. ALL DEVICES AND FIXTURES BUBBLED AND KEY NOTED SHALL BE TEMPORARILY RELOCATED TO THE EXISTING CAFETERIA SIDE OF WALL. REWORK EXISTING CABLING AND BRANCH CIRCUIT WIRING TO NEW TEMPORARY LOCATION SHOWN PRIOR TO WALL BEING CONSTRUCTED.



KEYPLAN

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PROJECT INFORMATION

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PHASE 3: HERITAGE MIDDLE SCHOOL 2019 CAPITAL IMPROVEMENT PROJECT

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405 Union Avenue, New Windsor, NY 12553

SED Number

PROJECT ISSUE SCHEDULE

No.	Date	Description
3	10/01/21	BID ADDENDUM #3

SHEET INFORMATION

Issued	Scale
09/06/2021	As indicated

Project Status
CONSTRUCTION DOCUMENTS

Drawn By	Checked By
RJD	ARM

Drawing Title
GROUND FLOOR ELECTRICAL DEMOLITION PLAN - AREA B

Drawing Number
HMS
E100B

1 E200B **GROUND FLOOR POWER AND SYSTEMS PLAN - AREA B**

1/8" = 1'-0"

KEY NOTES:

1. REINSTALL SALVAGED SECURITY CAMERA. RECONNECT CABLING LEFT FROM DEMOLITION.
2. SPLICE AND EXTEND EXISTING PROJECTION SCREEN BRANCH CIRCUIT WITH (2) #12, #12 GND IN 1/2" CONDUIT TO TERMINATION POINT OF NEW UNIT.
3. MOUNT NEW PROJECTION EQUIPMENT ON BOTTOM OF SOFFIT. PROVIDE RECESSED, FLUSH MOUNT RECEPTACLE, DATA, AND HDMI CABLING AS REQUIRED FOR DISTRICT EQUIPMENT.
4. REINSTALL SALVAGED WIRELESS ACCESS EQUIPMENT. RECONNECT CABLING LEFT FROM DEMOLITION.
5. REINSTALL SALVAGED CEILING MOUNTED SYSTEM DEVICE. RECONNECT SYSTEM CABLING LEFT FROM DEMOLITION.
6. ELECTRICAL CONTROL BOX AT SKYFOLD PARTITION AND SWITCH CONTROL DEVICES TO BE PROVIDED BY GENERAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL SINGLE GANG BACK BOXES FOR 15V SWITCHES AND CONTROL WIRING BETWEEN SWITCHES AND SKYFOLD CONTROL PANEL. WIRE WITH (5) #18 AWG IN CONDUIT. COORDINATE LOCATION AND FINAL REQUIREMENTS WITH PARTITION MANUFACTURER. DOOR CONTROL OPERATOR SWITCHES SHALL BE LOCATED AT OPPOSITE ENDS AND OPPOSITE SIDES OF, AND IN VIEW OF PARTION. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRARED SAFETY SYSTEM AND WIRE TO DRY CONTACTS IN SKYFOLD CONTROL PANEL.
7. ELECTRICAL CONTRACTOR TO PROVIDE POWER AND CONTROL WIRING FOR MOTORIZED WINDOW SHADES. 15 CHANNEL DIGITAL WALL SWITCH WILL BE PROVIDED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR TO INSTALL SWITCHES AND WIRE ALL UNITS. LOCATIONS OF SHADE MOTORS AND CONNECTIONS SHALL BE VERIFIED IN THE FIELD DURING CONSTRUCTION.
8. DUPLEX DEVICES ALONG WINDOW WALL TO BE CENTERED BETWEEN TOP OF FIN-TUBE RADIATION ENCLOSURE AND BOTTOM OF WINDOW FRAME. MOUNT DEVICES HORIZONTALLY.
9. INSTALL NEW DEVICES IN FURRED-OUT WALL. RE-WORK EXISTING BRANCH CIRCUIT WIRING AND SYSTEM CABLING TO REACH TERMINATION POINT OF DEVICES IN NEW WALL. SPLICE AND EXTEND EXISTING BRANCH CIRCUIT IF REQUIRED FOR CONNECTION.
10. EXISTING CEILING MOUNTED SYSTEM AND POWER DEVICES SHOWN IN THIS AREA ARE SHOWN FOR REFERENCE PURPOSES ONLY. SHOULD CEILING TILE BE REQUIRED TO BE REMOVED AS NOTED IN DEMOLITION DRAWING KEY NOTES, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO TEMPORARILY SUPPORT OR REMOVE/REINSTALL THE EQUIPMENT.
11. REINSTALL SALVAGED DEVICES REMOVED FOR WALL DEMOLITION. RECONNECT ALL BRANCH CIRCUITS AND SYSTEM WIRING CONNECTIONS.
12. WIRE NEW COUNTER HEIGHT RECEPTACLES TO EXISTING ROOM BRANCH CIRCUIT FROM DEMOLISHED PLUGMOLD.
13. CONDUIT TO BE INSTALLED UNDERSLAB AND UP INTO WALL. PROVIDE FLUSH FLOOR BOXES WITH COVERS AS SPECIFIED.
14. CONNECT NEW DEVICE CIRCUIT TO EXISTING BRANCH CIRCUIT LEFT FROM DEMOLITION. SPLICE AND EXTEND EXISTING CIRCUIT WITH (2) #12, #12 GND IN 1/2" CONDUIT.
15. REINSTALL SALVAGED PA SPEAKER. RECONNECT SPEAKER CABLING LEFT FROM DEMOLITION.
16. PROVIDE DUCT SMOKE DETECTOR AND FIRE ALARM RELAY TO SIGNAL MECHANICAL SMOKE DAMPER. PROVIDE 120V BRANCH CIRCUIT TO DAMPER ACTUATOR FROM NEAREST 120V RECEPTACLE CIRCUIT. WIRE WITH (2) #12, #12 GND. IN 1/2" CONDUIT.
17. BASE BID: INSTALL NEW RECEPTACLE AND FACEPLATE IN FRONT OF STAGE WALL. RECONNECT WIRING LEFT FROM DEVICE REMOVAL.
18. ALTERNATE EC-6: FOLLOWING REMOVAL OF STAGE FLOOR AND RAMP, INSTALL NEW RECEPTACLE. CONNECT NEW DEVICE TO EXISTING BRANCH CIRCUIT LEFT IN THE AREA FROM DEMOLITION OF DEVICES FROM FRONT OF STAGE WALL. SPLICE AND EXTEND EXISTING CIRCUIT WITH (2) #12, #12 GND IN 3/4" CONDUIT.
19. INSTALL NEW RECEPTACLE AND FACEPLATE IN EXISTING BACKBOX. RECONNECT WIRING LEFT FROM DEMOLITION.
20. PROGRAM FIRE ALARM PANEL TO RELEASE FIRE SHUTTER UPON ACTIVATION OF DEVICE. PROVIDE FIRE ALARM RELAY AND CONNECTIONS AT SHUTTER IF NOT EXISTING.
21. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL A SINGLE SIDED DIGITAL CLOCK. COORDINATE WITH DISTRICT FOR MANUFACTURER AND TYPE TO BE PROVIDED. CONNECT TO EXISTING CLOCK SYSTEM IN BUILDING. FOR BID PRICING ALLOW $500 PER CLOCK.
22. IN NEW WALL, INSTALL RECESSED DOUBLE GANG BOX WITH CONDUIT TO ABOVE CEILING. INSTALL HDMI CABLING BETWEEN BOX AND PROJECTOR WITH 10' ADDITIONAL LENGTH OF CABLE. INSTALL NEW DATA DROP IN BOX AND A NEW DATA DROP AT PROJECTOR, BOTH WIRED BACK TO NEAREST DATA RACK. ALL CABLING SHALL BE ROUTED IN WALL OR ABOVE CEILING. PROJECTOR WILL BE PROVIDED BY DISTRICT. E.C. IS RESPONSIBLE FOR DATA, POWER, AND HDMI CABLING AND END DEVICES.

GENERAL NOTES:

A. FIXTURES, DEVICES, AND EQUIPMENT LABELED AS "(E)" ARE EXISTING AND ARE SHOWN FOR REFERENCE ONLY. ALL OF THESE DEVICES SHALL REMAIN OPERATIONAL FOLLOWING CONSTRUCTION.

B. EQUIPMENT DESIGNATED WITH A NUMBER INSIDE OF A HEXAGON ARE SCHEDULED ON DRAWING E900. REFER TO EQUIPMENT WIRING SCHEDULE FOR BREAKER AND CIRCUITING INFORMATION.

C. DISCONNECT SWITCHES AND STARTER DEVICES ASSOCIATED WITH HVAC EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR, AND WIRED BY THE ELECTRICAL CONTRACTOR. INCLUDE AN ADDITIONAL 10' OF CIRCUITING IN PRICING FOR INSTANCES WHERE A DISCONNECT MAY NOT BE MOUNTED DIRECTLY ON UNIT. E.C. IS RSPONSIBLE TO WIRE BOTH LINE AND LOAD SIDES OF DISCONNECT.

D. UPDATE PANELBOARD DIRECTORIES TO REFLECT CHANGES MADE TO CIRCUITS WITH LOAD(S) AND ROOM(S) SERVED. LABEL ANY UNUSED BREAKER AS SPARE AND TURN TO OFF POSITION.

E. FIRE ALARM SCOPE OF THIS PROJECT INCLUDES INSTALLING A NEW SIMPLEX 4100ES PANEL TO SERVE NEW AND RENOVATED AREAS WHILE MAINTAINING EXISTING SIMPLEX 4020 PANEL. ALL EXISTING DEVICES REMOVED IN THE DEMOLITION PHASE OF THE PROJECT SHALL BE REMOVED FROM THE SYSTEM PROGRAMMING OF THE 4020 PANEL. NEW INITIATION AND NOTIFICATION DEVICES SHOWN SHALL BE CONNECTED TO AND COMPATIBLE WITH THE NEW SIMPLEX 4100ES FIRE ALARM CONTROL PANEL LOCAITED IN CUSTODIAN ROOM 50. PROVIDE NEW NOTIFICATION APPLIANCE CIRCUIT PANELS (WITH SMOKE DETECTOR WITHIN 5') WITH BATTERIES WHERE REQUIRED TO ACCOMMODATE NEW NOTIFICATION DEVICES. LOCATE SAID NAC PANEL IN A STORAGE OR ELEC/MECH ROOM, AND WIRE TO NEAREST AVAILABLE PANELBOARD WITH (2)#12, #12 GND. IN 3/4" CONDUIT. FOR PRICING PURPOSES, ASSUME 150' PER CIRCUIT. PROVIDE 20/1 CIRCUIT BREAKER AS REQUIRED.

F. FIRE ALARM SPACING SHALL COMPLY WITH NFPA 72 REQUIREMENTS. ALL FIRE ALARM INITATION DEVICES SHOWN SHALL NOT BE LOCATED IN DIRECT AIRFLOW PATH OR CLOSER THAN 3' OF AN AIR SUPPLY DIFFUSER OR RETURN AIR OPENING.

G. THE OPERABLE PART OF PULL STATIONS SHALL BE MOUNTED MORE THAN 3'-6" BUT LESS THAN 4'-0" ABOVE FINISHED FLOOR.

H. FOR PUBLIC MODE, WALL MOUNTED VISUALS AND AUDIBLE/VISUALS SHALL BE MOUNTED SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80" AND NOT GREATER THAN 96" ABOVE FINISHED FLOOR.

I. THE MINIMUM REQUIRED CANDELA LEVEL IS INDICATED ADJACENT TO NEW VISUAL DEVICES. IF NOT INDICATED, MINIMUM ALLOWABLE SETTING IS 15 CANDELA.

J. ACTIVATION OF BUILDING FIRE ALARM SYSTEM SHALL AUTOMATICALLY SHUT DOWN ALL FANS ASSOCIATED WITH HVAC UNITS IN THE BUILDING AS REQUIRED BY LOCAL, STATE, AND NATIONAL CODES. PROVIDE FIRE ALARM SHUT DOWN RELAYS IN EACH UNIT.

K. FINAL TESTING OF FIRE ALARM SYSTEM SHALL COMPLY WITH ALL NFPA 72 REQUIREMENTS. ANY ALTERED CIRCUIT(S) SHALL HAVE ALL FIRE ALARM INITIATION DEVICES TESTED IN THEIR ENTIRETY AND 10% OF NEIGHBORING ZONE/LOOP DEVICES.

L. PROVIDE 8" ROUND, FLUSH MOUNTED, WHITE CEILING SPEAKERS WHERE SHOWN. NEW SPEAKERS SHALL BE CONNECTED TO AND COMPATIBLE WITH EXISTING BUILDING PUBLIC ADDRESS SYSTEM, EXPAND EXISTING SYSTEM WITH ADDITIONAL AMPLIFIERS AS REQUIRED AT HEAD END LOCATION FOR A COMPLETE OPERATIONAL SYSTEM. COORDINATE EXACT REQUIREMENTS WITH OWNER.

M. ALL CABLING ABOVE ACCESSIBLE CEILINGS SHALL BE SUPPORTED VIA J-HOOK. J-HOOKS SHALL NOT EXCEED 5'-0" SPACING. ALL CABLING ABOVE INACCESSIBLE SPACES AND CEILINGS OPEN TO STRUCTURE SHALL BE IN CONDUIT.

N. ALL EXPOSED RACEWAY SHALL BE PAINTED TO MATCH CEILING/WALL FINISH. CONTRACTOR SHALL USE APPROVED PAINT COLOR/TYPE.

O. NEW CARBON MONOXIDE DETECTORS SHALL BE ADDRESSABLE AND BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM.

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PROJECT INFORMATION

Project Number
13940.18

Client Name
NEWBURGH ENLARGED CITY SCHOOL DISTRICT

Project Name
PHASE 3: HERITAGE MIDDLE SCHOOL 2019 CAPITAL IMPROVEMENT PROJECT

Project Address
405 Union Avenue, New Windsor, NY 12553

SED Number

PROJECT ISSUE SCHEDULE

No.	Date	Description
3	10/01/21	BID ADDENDUM #3

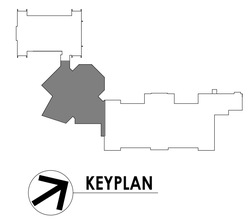
SHEET INFORMATION

Issued	Scale
09/06/2021	As indicated

Project Status
CONSTRUCTION DOCUMENTS

Drawn By	Checked By
RJD	ARM

Drawing Title
GROUND FLOOR POWER AND SYSTEMS PLAN - AREA B



Drawing Number
HMS
E200B

EQUIPMENT WIRING SCHEDULE

ITEM #	MARK	Room Location	VOLTS	PH	HP	FLA	WIRING/CONDUIT	BREAKER	PANEL	CIRCUIT	REMARKS
1	AHU-1	STORAGE 604	208 V	3		8.0 A	(3)#12, #12G IN 3/4"C	15/3	P-10	2,4,6	1
2	AHU-2	STORAGE 606	208 V	3		8.0 A	(3)#12, #12G IN 3/4"C	15/3	P-10	8,10,12	1
3	AHU-3	STORAGE 600A	208 V	3		8.0 A	(3)#10, #10G IN 3/4"C	15/3	P-9	8,10,12	1
4	AHU-4	STORAGE 600B	208 V	3		8.0 A	(3)#12, #12G IN 3/4"C	15/3	P-9	14,16,18	1
5	AHU-5	KITCHEN	208 V	3		8.0 A	(3)#12, #12G IN 3/4"C	15/3	PK-1	2,4,6	1, 5
6	AHU-6	STORAGE 435	208 V	3		8.0 A	(3)#12, #12G IN 3/4"C	15/3	PK-1	8,10,12	1, 6
7	SSI-9	SECURITY OFFICE	208 V	1		0.3 A	(2)#12, #12G IN 3/4"C	20/2	P-9	28,30	1, 7, 19
8	RTU-1	ROOF	208 V	3		54.0 A	(3)#4, #8G IN 1-1/4"C	90/3	MSB	-	1, 2, 5, 9
9	RTU-2	ROOF	208 V	3		54.0 A	(3)#4, #8G IN 1-1/4"C	90/3	MSB	-	1, 2, 5, 9
10	RTU-3	ROOF	208 V	3		54.0 A	(3)#4, #8G IN 1-1/4"C	90/3	MSB	-	1, 5, 9
11	PUMP P-1	PUMP ROOM 423	208 V	3	15 HP	48.3 A	(3)#4, #8G IN 1-1/4"C	90/3	P-9	1,3,5	1
12	PUMP P-2	PUMP ROOM 423	208 V	3	15 HP	48.3 A	(3)#4, #8G IN 1-1/4"C	90/3	P-9	7,9,11	1
13	FC-1	CUSTODIAN ROOM 159	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P3, SEC. 1	11	1, 5, 18
14	ACC-1	EXTERIOR AT GRADE	208 V	3		57.0 A	(3)#4, #8G IN 1-1/4"C	80/3	P-10	1,3,5	1
15	ACC-2	EXTERIOR AT GRADE	208 V	3		57.0 A	(3)#4, #8G IN 1-1/4"C	80/3	P-10	7,9,11	1
16	ACC-3	EXTERIOR AT GRADE	208 V	3		57.0 A	(3)#4, #8G IN 1-1/4"C	80/3	P-10	13,15,17	1
17	ACC-4	EXTERIOR AT GRADE	208 V	3		57.0 A	(3)#4, #8G IN 1-1/4"C	80/3	P-10	19,21,23	1
18	ACC-5	KITCHEN ROOF	208 V	3		38.0 A	(3)#8, #10G IN 1"C	50/3	P-9	19,21,23	1
19	ACC-6	KITCHEN ROOF	208 V	3		63.0 A	(3)#4, #8G IN 1-1/4"C	90/3	P-9	25,27,29	1
20	ACC-7	KITCHEN ROOF	208 V	3		70.0 A	(3)#4, #8G IN 1-1/4"C	90/3	P-9	31,33,35	1
21	EF-2	STORAGE 600B	120 V	1	1/4 HP	3.8 A	(3)#12, #12G IN 3/4"C	20/1	P-9	13	1
22	SSI-1	CAFETERIA 448	208 V	1		0.3 A	(2)#12, #12G IN 3/4"C	15/2	P-9	2,4	1, 7
23	SSI-2	CAFETERIA 448	208 V	1		0.3 A	(2)#12, #12G IN 3/4"C	15/2	P-9	2,4	1, 7
24	SSI-3	CAFETERIA 448	208 V	1		0.3 A	(2)#12, #12G IN 3/4"C	15/2	P-9	2,4	1, 7
25	SSI-4	CAFETERIA 448	208 V	1		0.3 A	(2)#12, #12G IN 3/4"C	15/2	P-9	2,4	1, 7
26	SSI-5	CAFETERIA 448	208 V	1		0.3 A	(2)#12, #12G IN 3/4"C	15/2	P-9	2,4	1, 7
27	SSI-6	CAFETERIA 448	208 V	1		0.3 A	(2)#12, #12G IN 3/4"C	15/2	P-9	2,4	1, 7
28	CH-1	EXTERIOR GRADE	208 V	3		560.0 A	2 SETS OF (3)#500, #1/0G IN 3-1/2"C	800/3	DP-HVAC	-	1, 17
29	EF-1	STORAGE 600A	120 V	1	1/4 HP	3.8 A	(2)#12, #12G IN 3/4"C	20/1	P-8	-	1, 5
30	EF-3	ROOF	208 V	1	1/2 HP	5.4 A	(2)#12, #12G IN 3/4"C	20/2	P-11	16,18	1
31	EF-4	ROOF	208 V	1	1/2 HP	5.4 A	(2)#12, #12G IN 3/4"C	20/2	P3, SEC. 2	38,40	1, 8
32	EF-5	ROOF	208 V	1	1/2 HP	4.9 A	(2)#12, #12G IN 3/4"C	20/2	P-11	16,18	1
33	EF-6	ROOF	208 V	1	2 HP	12.0 A	(2)#12, #12G IN 3/4"C	20/2	P-11	20,22	1
34	FC-2	GROUND FLOOR CORRIDOR	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P-1A	14	1, 2, 15, 18
35	UV-1	MUSIC 438	120 V	1		4.7 A	(2)#12, #12G IN 3/4"C	20/1	P-8	-	1, 5, 18
36	UV-2	ROOM 105	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P1, SEC. 1	32	1, 10, 18
37	UV-3	ROOM 105A	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P1, SEC. 1	32	1, 10, 18
38	UV-4	CORRIDOR - GROUND	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P1, SEC. 1	32	1, 10, 18
39	UV-5	ROOM 104	120 V	1		4.7 A	(2)#12, #12G IN 3/4"C	20/1	P1, SEC. 1	33	1, 2, 5, 18
40	UV-6	ROOM 101	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P1, SEC. 1	35	1, 2, 5, 18
41	UV-7	ROOM 114	120 V	1		4.7 A	(2)#12, #12G IN 3/4"C	20/1	P-2	-	1, 2, 5, 18
42	UV-8	ROOM 113A	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P2, SEC. 2	35	1, 10, 18
43	UV-9	ROOM 113B	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P2, SEC. 2	35	1, 10, 18
44	UV-10	ROOM 112	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P2, SEC. 2	35	1, 10, 18
45	UV-11	ROOM 109	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P2, SEC. 2	33	1,10, 18
46	UV-12	ROOM 110	120 V	1		4.7 A	(2)#12, #12G IN 3/4"C	20/1	P2, SEC. 2	33	1,10, 18
47	UV-13	ROOM 111	120 V	1		4.7 A	(2)#12, #12G IN 3/4"C	20/1	P2, SEC. 2	33	1, 10, 18
48	UV-14	ROOM 206	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P3, SEC. 1	35	1, 10, 18
49	UV-15	ROOM 204	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P3, SEC. 1	35	1, 10, 18
50	UV-16	ROOM 203	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P3, SEC. 1	35	1, 10, 18
51	UV-17	ROOM 202	120 V	1		4.7 A	(2)#12, #12G IN 3/4"C	20/1	P3, SEC. 1	20	1, 10, 18
53	UV-19	ROOM 209	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P4, SEC. 2	40	1, 8, 18
54	UV-20	ROOM 215	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P4, SEC. 2	9	1, 10, 18
55	UV-21	ROOM 214	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P4, SEC. 2	9	1, 10, 18
56	UV-22	ROOM 216	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P4, SEC. 2	9	1, 10, 18
57	UV-23	ROOM 212	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P4, SEC. 2	40	1, 8, 18
58	UV-24	ROOM 213	120 V	1		4.7 A	(2)#12, #12G IN 3/4"C	20/1	P4, SEC. 1	19	1, 11, 18
59	UV-25	ROOM 210	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P4, SEC. 2	40	1, 8, 18
60	UV-26	ROOM 306	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P5, SEC. 1	17	1,10, 18
61	UV-27	ROOM 305	120 V	1		3.7 A	(2)#12, #12G IN 3/4"C	20/1	P5, SEC. 1	17	1,10, 18
62	UV-28	ROOM 304	120 V	1		4.7 A	(2)#12, #12G IN 3/4"C	20/1	P5, SEC. 1	33	1,8, 18
63	UV-29	ROOM 309	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P5, SEC. 1	20	1, 10, 18
64	UV-30	ROOM 310	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P5, SEC. 1	20	1, 10, 18
65	UV-31	ROOM 303	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P5, SEC. 1	22	1,10, 18
66	UV-32	ROOM 302	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P5, SEC. 1	22	1, 10, 18
67	UV-33	ROOM 311	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P6, SEC. 2	18	1, 10, 18
68	UV-34	ROOM 312	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P6, SEC. 2	18	1,10, 18
69	UV-35	ROOM 301	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P5, SEC. 1	22	1, 10, 18
70	UV-36	ROOM 321	120 V	1		3.7 A	(2)#12, #12G IN 3/4"C	20/1	P6, SEC. 1	29	1, 11, 18
71	UV-37	ROOM 320	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P6, SEC. 2	18	1,10, 18
72	UV-38	ROOM 318	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P6, SEC. 1	27	1, 10, 18
73	UV-39	ROOM 317	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P6, SEC. 1	27	1, 10, 18
74	UV-40	ROOM 316	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P6, SEC. 1	27	1, 10, 18
75	UV-41	ROOM 313	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P-11	14	1, 18
76	UV-42	ROOM 314	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P-11	14	1, 18
77	UV-43	ROOM 315	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P-11	14	1, 18
78	UV-44	ROOM 307	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P5, SEC. 1	20	1, 10, 18
79	UV-45	ROOM 402	120 V	1		4.7 A	(2)#12, #12G IN 3/4"C	20/1	P7	29	1, 10, 18
80	UV-46	ROOM 404	120 V	1		4.7 A	(2)#12, #12G IN 3/4"C	20/1	P7	18	1, 10, 18
81	UV-47	ROOM 405	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P7	18	1, 10, 18
82	UV-48	ROOM 401	120 V	1		4.0 A	(2)#12, #12G IN 3/4"C	20/1	P7	29	1, 10, 18
83	FC-5	FIRST FLOOR CORRIDOR	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P4, SEC. 1	20	1, 2, 16, 18
84	SF-1	ATTIC	208 V	3	5 HP	16.7 A	(3)#8, #10G IN1"C	35/3	P-11	31,33,35	1
85	SF-2	ATTIC	208 V	3	1/2 HP	2.4 A	(3)#12, #12G IN 3/4"C	20/3	P-11	25,27,29	1
86	SF-3	ATTIC	208 V	3	5 HP	16.7 A	(3)#8, #10G IN 1"C	35/3	P-11	2,4,6	1
89	SF-6	ATTIC	208 V	3	2 HP	7.5 A	(3)#12, #12G IN 3/4"C	20/3	P-11	7,9,11	1
90	SF-7	ATTIC	208 V	3	3 HP	10.6 A	(3)#12, #12G IN 3/4"C	20/3	P-11	13,15,17	1
91	SF-8	ATTIC	208 V	3	5 HP	16.7 A	(3)#8, #10G IN 1"C	35/3	P-11	1,3,5	1
92	RF-1	ATTIC	208 V	3	7-1/2 HP	24.2 A	(3)#8, #10G IN 1"C	50/3	P-11	37,39,41	1
93	RF-2	ATTIC	208 V	3	1-1/2 HP	6.6 A	(3)#12, #12G IN 3/4"C	20/3	P-11	25,27,29	1
94	RF-3	ATTIC	208 V	3	1/2 HP	2.4 A	(3)#12, #12G IN 3/4"C	20/3	P-11	25,27,29	1
95	RF-4	ATTIC	208 V	3	1/3 HP	2.4 A	(3)#12, #12G IN 3/4"C	20/3	P-11	8,10,12	1
96	RF-5	ATTIC	208 V	3	1/4 HP	2.4 A	(3)#12, #12G IN 3/4"C	20/3	P-11	8,10,12	1
97	RF-6	ATTIC	208 V	3	2 HP	7.5 A	(3)#12, #12G IN 3/4"C	20/3	P-11	19,21,23	1
98	RF-7	ATTIC	208 V	3	1-1/2 HP	6.6 A	(3)#12, #12G IN 3/4"C	20/3	P-11	28,30,32	1
99	RF-8	ATTIC	208 V	3	3 HP	10.6 A	(3)#12, #12G IN 3/4"C	20/3	P-11	34,36,38	1
100	DC-1 FAN MOTOR	EXTERIOR AT GRADE	208 V	3	7.5 HP	25.3 A	(3)#8, #10G IN 1"C	50/3	PT-2	3,5,7	1, 2, 4, 8, 14
101	DC-1 SHAKER MOTOR	EXTERIOR AT GRADE	208 V	3	1/3 HP	2.5 A	(3)#12, #12G IN 3/4"C	20/3	PT-2	32,34,36	1, 2, 4, 8
102	EJECTOR PUMP EP-1	BOILER ROOM	120 V	1	1/3 HP	7.2 A	(2)#12, #12G IN 3/4"C	20/1	P1, SEC. 1	41	3, 8,12
103	EJECTOR PUMP EP-2	BOILER ROOM	120 V	1	1/3 HP	7.2 A				-	3, 13
104	GMP-1	PUMP ROOM	120 V	1	1/3 HP	7.2 A	(2)#12, #12G IN 3/4"C	20/1	P-9	6	1
105	RTU-4	CAFETERIA ROOF	208 V	3		195.0 A	(3)#500, #2G IN 3-1/2"C	250/3	MSB	-	1
106	SSI-7	CAFETERIA 448	208 V	1		0.3 A	(2)#12, #12G IN 3/4"C	15/2	P-9	2,4	1, 7
107	SSI-8	CAFETERIA 448	208 V	1		0.3 A	(2)#12, #12G IN 3/4"C	15/2	P-9	2,4	1, 7
108	SF-9	TECH ROOM 113B	208 V	1	1/2 HP	5.4 A	(2)#12, #12G IN 3/4"C	20/2	PT-2	38,40	1, 2, 8
109	FC-6	SECOND FLOOR CORRIDOR	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P5, SEC. 1	31	1, 2, 8
110	FC-7	SECOND FLOOR CORRIDOR	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P6, SEC. 1	25	1, 2, 16
111	FC-8	FIRST FLOOR CORRIDOR	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P-3A	22	1, 2, 15, 18
112	FC-9	THIRD FLOOR CORRIDOR	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P7	18	1, 2, 5, 18
113	FC-10	GROUND FLOOR CONF. ROOM	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P-1A	14	1, 15, 18
114	FC-11	THIRD FLOOR CORRIDOR	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P7	30	1, 2, 5, 18
115	FC-3	GROUND FLOOR CORRIDOR	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P2, SEC. 1	42	1, 2, 8, 18
116	FC-4	FIRST FLOOR CORRIDOR	120 V	1		1.0 A	(2)#12, #12G IN 3/4"C	20/1	P3, SEC. 1	24	1, 2, 10, 18
117	SSO-9	ROOF	208 V	1		9.8 A	(2)#12, #12G IN 3/4"C	20/2	P-9	28,30	1, 19

GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, PROVIDE NEW CIRCUIT BREAKER IN PANELBOARD FOR EQUIPMENT AS SCHEDULED. BREAKER SHALL BE U.L. LISTED AND LABELED FOR USE IN PANELBOARD. INTERRUPTING RATING OF BREAKER SHALL MATCH PANELBOARD.

B. REVISE PANELBOARD DIRECTORY WITH NEW CIRCUIT LOADS ADDED. REFER TO IDENTIFICATION SPECIFICATION SECTION.

REMARKS:

1. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE MOUNTING, AND LINE/LOAD SIDE CONNECTIONS OF DISCONNECT AND/OR STARTER DEVICE ASSOCIATED WITH UNIT. MEANS OF DISCONNECT AND/OR STARTER DEVICE ASSOCIATED WITH UNIT PROVIDED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL FINAL CONNECTIONS TO EQUIPMENT.
2. EQUIPMENT AND ASSOCIATED BREAKER AND BRANCH CIRCUIT WIRING ARE PART OF AN ALTERNATE. REFER TO AREA POWER AND SYSTEMS PLANS AND MECHANICAL NEW WORK PLANS.
3. PROVIDE 20A GFI RECEPTACLE FOR EQUIPMENT CORD CONNECTED PUMP AS SHOWN ON POWER AND SYSTEMS PLAN.
4. PROVIDE EXTERIOR SAFETY DISCONNECT AS SHOWN ON POWER PLAN.
5. WIRE TO EXISTING BRANCH CIRCUIT LEFT FROM DEMOLITION OF HVAC UNIT IN SAME LOCATION. SPLICE AND EXTEND EXISTING CIRCUIT WITH WIRING NOTED.
6. PROVIDE NEW BREAKER IN SPACE LEFT FROM DEMOLITION OF HVAC OCP. PANEL PK-1 IS A 400A CUTLER-HAMMER PRL1 PANEL.
7. PROVIDE 120V DUPLEX RECEPTACLE IN A J-BOX AT EACH SSI UNIT FOR CONNECTION TO UNIT REMOTE CONDENSATE PUMP. WIRE ALL (9) SSI PUMP RECEPTACLES TOGETHER WITH (2) #12, #12 GND IN 1/2" CONDUIT AND WIRE TO PANEL P-9, CIRCUIT 15. (5)
8. PROVIDE NEW BREAKER IN EXISTING PANELBOARD. PANEL IS A 208/120V CUTLER-HAMMER PRL1 PANEL.
9. EXISTING FEEDER WILL BE REUSED FOR NEW EQUIPMENT. BREAKER WILL BE REPLACED AS PART OF THE MSB REPLACEMENT.
10. WIRE TO SPARE 20/1 BREAKER IN PANEL LEFT FROM DEMOLITION OF UV'S.
11. WIRE TO EXISTING BRANCH CIRCUIT LEFT IN ROOM FROM DEMOLITION OF UV. NOTE THAT OTHER EXISTING TO REMAIN CEILING HEATERS WILL CONTINUE TO SHARE THIS CIRCUIT.
12. PROVIDE NEW GFI RECEPTACLE AND BRANCH CIRCUIT AS NOTED FOR NEW EP-1.
13. REMOVE EXISTING DUPLEX RECEPTACLE. INSTALL NEW GFI RECEPTACLE AND CONNECT TO EXISTING BRANCH CIRCUIT WIRING.
14. INSTALL NEW DUST COLLECTOR FAN MOTOR BREAKER IN SPACE LEFT FROM DEMOLITION OF OLD DUST COLLECTOR.
15. BREAKER NOTED IS AN EXISTING SPARE, UNUSED 20A/1P BREAKER IN PANEL.
16. EXISTING 20/1 BREAKER IN PANEL WITH SHARED CORRIDOR HVAC UNITS.
17. PROVIDE 20A, 120V CIRCUIT FOR HEAT TRACE ON EXTERIOR PIPING AND EVAPORATOR. WIRE TO PANEL P-9, CIRCUIT 17. MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL HEAT TRACE AND ELECTRICAL CONTRACTOR SHALL MAKE ALL WIRING TERMINATIONS. (3)
18. PROVIDE A DUPLEX RECEPTACLE FOR UNIT'S ASSOCIATED REMOTE CONDENSATE PUMP. WIRE TO BRANCH WIRING SERVING ASSOCIATED UV/FC HVAC UNIT. WIRE WITH (2) #12, #12 GND IN 1/2" CONDUIT.
19. OUTDOOR UNIT SSO-9 SHALL PROVIDE 208V SINGLE PHASE POWER TO INDOOR UNIT SSI-9 VIA #14 AWGx3 INTERCONNECT CABLE. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL CABLE.

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL	LOAD	COMMENTS
E1	UNIVERSAL MOUNT DIE-CAST ALUMINUM EXIT SIGN WITH WHITE FINISH, RED LETTERS, EMERGENCY BATTERY UNIT, AND SELF-DIAGNOSTICS	DUAL-LITE	SE-S-R-W-E-I	3 VA	7
L1	RECESSED 2X4 EDGE-LIT FLAT PANEL WITH 0-10V DIMMING, FROSTED LENS, AND SWITCHABLE LUMEN OUTPUT	COLUMBIA LIGHTING	CFP24-55/41/3440	40 VA	1, 3
L2	4' LONG, EXTERIOR WALL MOUNTED FIXTURE WITH 12" FIXED ARM MOUNTING, 2,000 LUMEN OUTPUT, ALUMINUM FINISH, INTEGRAL OCCUPANCY SENSOR WITH DAYLIGHT DIMMING CONTROL, AND BATTERY BACK UP EMERGENCY UNIT	ARCHITECTURAL AREA LIGHTING	RND-4-5-4K8-AS-DL-UNV-PSS-F12-NXOSW-EM	25 VA	9
L3	RECESSED 2X2 EDGE-LIT FLAT PANEL WITH 4072 LUMEN OUTPUT, 0-10V DIMMING, AND FROSTED LENS	COLUMBIA LIGHTING	CFP22-4040 (PLD10M-PLRTS)	40 VA	1, 2
L4-4'	4' LINEAR PENDANT WITH 3-9/16" DIAMETER ALUMINUM HOUSING, CABLE MOUNTING, SATINE LENS, 0-10V DIMMING, AND 1126 LUMENS PER FOOT	SELUX	PL9LR-1C45-940-SD-C-04'-WH-U-DIM (EMR)	44 VA	2, 4, 10
L4-8'	8' LINEAR PENDANT WITH 3-9/16" DIAMETER ALUMINUM HOUSING, CABLE MOUNTING, SATINE LENS, 0-10V DIMMING, AND 1126 LUMENS PER FOOT	SELUX	PL9LR-1C45-940-SD-C-08' RUN-WH-U-DIM (EMR)	89 VA	2, 4, 10
L4-12'	12' LINEAR PENDANT WITH 3-9/16" DIAMETER ALUMINUM HOUSING, CABLE MOUNTING, SATINE LENS, 0-10V DIMMING, AND 1126 LUMENS PER FOOT	SELUX	PL9LR-1C45-940-SD-C-12' RUN-WH-U-DIM	133 VA	4
L5	48" DIAMETER RING PENDANT WITH CUSTOM COLOR (BLUE) METAL OUTER BODY, MATTE WHITE ACRYLIC INNER DIFFUSER, DIRECT/INDIRECT DISTRIBUTION, 0-10V DIMMING, 7773 LUMEN OUTPUT, AND CABLE MOUNTING	CAMMAN LIGHTING	P2410-48-LH-40K-CLV-MV-WM-STBD-ACC (REM)	69 VA	2, 5
L6	18" DIAMETER PENDANT WITH MATTE WHITE METAL OUTER BAND, FLAT WHITE ACRYLIC BOTTOM LENS, 0-10V DIMMING, CABLE MOUNTING, AND 4027 LUMEN OUTPUT	CAMMAN LIGHTING	P1003-18-LH-40K-CLV-MV-WM-STBD-AC	63 VA	5
L7	4" WIDE RECESSED PERIMETER LUMINAIRE WITH 645 LUMEN/FOOT OUTPUT, 7W/FT, SATIN ACRYLIC REGRESSED LENS, GRID MOUNTING, AND 0-10V DIMMING	DAY-O-LITE	WPPL-4-SI-40-SO-XFT-G-W		6
L8	RECESSED 1X4 EDGE-LIT FLAT PANEL WITH 5500 LUMEN OUTPUT, 0-10V DIMMING, AND FROSTED LENS	COLUMBIA LIGHTING	CFP14-5540 (PLD10M-PLRTS)	50 VA	1, 2
S	EXISTING SALVAGED LUMINAIRE RE-INSTALLED			40 VA	8

COMMENTS:

1. FIXTURE SHALL BE DLC QUALIFIED WITH A MINIMUM 5 YEAR WARRANTY.
2. WHERE NOTED ON PLAN AS "/EM" OR "/NL", PROVIDE FIXTURE WITH EMERGENCY BATTERY BACK-UP UNIT TO PROVIDE A MINIMUM OF 90 MINUTES OF ILLUMINATION. PROVIDE ASSOCIATED REMOTE TEST SWITCH AND CHARGE INDICATOR MODULE. INSTALL IN SINGLE GANG RECESSED BOX ADJACENT TO FIXTURE.
3. SET INITIAL LUMEN OUTPUT OF SWITCHABLE FIXTURE TO 4100.
4. FINAL END CAP COLOR TO BE DETERMINED AT SUBMITTAL TIME.
5. PROVIDE FINISH COLOR SAMPLES FOR FINAL OUTER RING SELECTION. PROVIDE SAMPLES OF PAL (ALUMINUM), PMW (MATTE WHITE), PSG (SATIN GOLD), AND PBL (SIGNAL BLUE). INCLUDE COST OF A CUSTOM COLOR TO MATCH SCHOOL BLUE IN QUOTE.
6. PERIMETER FIXTURE SHALL BE WALL TO WALL BETWEEN ROOM CORNERS AND COLUMNS. CONTRACTOR SHALL VERIFY FINAL LENGTHS IN FIELD PRIOR TO FINAL ORDERING OF FIXTURES. COORDINATE WITH GENERAL CONTRACTOR DURING INSTALLATION.
7. PROVIDE EXIT SIGN FIXTURE WITH EMERGENCY BATTERY BACK-UP UNIT TO PROVIDE A MINIMUM OF 90 MINUTES OF ILLUMINATION.
8. FIXTURE TO BE RE-INSTALLED IN NEW CEILING GRID. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE ANY FIXTURE AND/OR LENS THAT WAS DAMAGED DURING REMOVAL/REINSTALLATION. FIXTURE AND/OR LENS SHALL BE OF MATCHING STYLE AS REMOVED EQUIPMENT.
9. FIXTURE FINISH SHALL MATCH NEW ALUMINUM WINDOW AND DOOR TRIM. PROVIDE COLOR SAMPLE WITH SUBMITTAL.
10. "EMR" INVERTER EMERGENCY UNITS WILL BE PROVIDED FOR FIXTURES NOTED. MOUNT ABOVE DROP CEILING AT FIXTURE.

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PROJECT INFORMATION

Project Number
13940.18

Client Name
NEWBURGH ENLARGED CITY SCHOOL DISTRICT

Project Name
PHASE 3: HERITAGE MIDDLE SCHOOL 2019 CAPITAL IMPROVEMENT PROJECT

Project Address
405 Union Avenue, New Windsor, NY 12553

SED Number

PROJECT ISSUE SCHEDULE

No.	Date	Description
1	9/17/21	BID ADDENDUM #1
3	10/01/21	BID ADDENDUM #3

SHEET INFORMATION

Issued: 09/06/2021
Scale: AS NOTED
Project Status: CONSTRUCTION DOCUMENTS
Drawn By: RJD
Checked By: ARM

Drawing Title
EQUIPMENT WIRING AND LUMINAIRE SCHEDULES

Drawing Number
HMS E900