

ADDENDUM

Bid Addendum #2

PROJECT: Johnston County Public Schools
Four Oaks Elementary School HVAC Renovation

CPL PROJECT NO.: R23.00325.00

DATE: March 24, 2025

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:

CONTRACTOR BID QUESTIONS:

1. **Do we need to reorder a new Bid Bond with updated date?**
Answer: Yes
2. **The drawings don't show a UDS on the hood system, just the Ansul system. Is it there intent not to have one?**
Answer: A new Ansul system is to be provided. The existing UDS shall remain, so a new UDS is not required.
3. **We are assuming JCPS will move any furniture needed for access to complete the work?**
Answer: Yes
4. **Will everything be cleaned off of the walls (pictures, posters, etc)?**
Answer: Yes
5. **Can we use press copper off of the mains to the mechanical rooms?**
Answer: This is ok for anything 2 inches or less.
6. **Will there be available storage on site for stored materials, ie for storage of equipment and materials in connex containers, etc.?**
Answer: There will be space on site for storage of equipment etc, as long as it is blocked off from student access by temporary fencing.
7. **Can Victaulic pipe be used instead of welded?**
Answer: No unless it's being used underground, then it needs to have fused joints.

TO THE SPECIFICATIONS:**SECTION 095100 – ACOUSTICAL CEILINGS**

- Revised type 1 ACT from Armstrong 1910 to Armstrong 1728

SECTION 236423 – OUTDOOR AIR-COOLED LIQUID CHILLER

- The following manufacturer may be added as an acceptable substitute to those listed in

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specifications. The contractor is responsible for ensuring the dimension don't adversely affect the installation and is responsible for providing a complete and operable equivalent system including, but not limited to the electrical, venting, combustion air, controls and minimum flow requirements.

- Daikin

TO THE DRAWINGS:

SHEET H900 – SCHEDULES

- Disregard any reference to an Appendix One regarding pre-purchase of equipment as it is covered on H900.

E900 - ELECTRICAL EQUIPMENT AND LUMINAIRE SCHEDULES

- REPLACE drawings in its entirety, with attached new drawing of same number and name.

E901 - ELECTRICAL PANEL SCHEDULES

- REPLACE drawings in its entirety, with attached new drawing of same number and name.

ATTACHMENTS:

Specification Sections: 095100 Acoustical Ceilings

Drawing Sheets: E900, E901

End of Bid Addendum 2

**SECTION 095100
ACOUSTICAL CEILINGS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

1.02 REFERENCE STANDARDS

- A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- B. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
- C. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- E. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2022.
- F. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on suspension system components and acoustical units.
- C. Samples: Submit two samples 6 by 6 inches in size illustrating material and finish of acoustical units.
- D. Samples: Submit two samples each, 6 inches long, of suspension system main runner, cross runner, and perimeter molding.
- E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.04 QUALITY ASSURANCE

- A. Conform to CISCA requirements.
- B. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years of documented experience.
- C. Installer: Company specializing in performing work of this section with minimum five years of documented experience.

1.05 FIELD CONDITIONS

- A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

1.06 EXTRA MATERIALS

- A. Furnish 100 sq. ft. of extra panels of each type and size of acoustical panel to Owner.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acoustic Tiles/Panels:
 - 1. Armstrong World Industries, Inc; ____: www.armstrongceilings.com/#sle.
 - 2. Certainteed Architectural; ____: www.certainteed.com/ceilings-and-walls/#sle.

3. USG Corporation; ____: www.usg.com/ceilings/#sle.
4. Substitutions: See Section 016000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Suspension System: Rigidly secure acoustic ceiling system including integral mechanical and electrical components with maximum deflection of 1:360.
- B. Seismic Performance: Ceiling systems designed to withstand the effects of earthquake motions determined according to ASCE 7 for Seismic Design Category D, E, or F and complying with the following:

2.03 ACOUSTICAL UNITS

- A. Acoustical Panels, Type 1: Armstrong, 1728A, with the following characteristics:
 1. Application(s): Existing Acoustic Ceiling Panels, in case of damage during construction, this spec section covers replacement tiles, as well as newly installed ACT Ceilings, see plans.
 2. Classification: Type A, Form A1.2, Pattern D, Fire Class A.
 3. Size: 24 by 24 inches.
 4. Thickness: 5/8 inch.
 5. Composition: Mineral Fiber.
 6. Light Reflectance: 0.82 percent, determined in accordance with ASTM E1264.
 7. NRC: 0.70, determined in accordance with ASTM E1264.
 8. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
 9. Panel Edge: Square.
 10. Surface Color: White.
 11. Surface Finish: Textured.
 12. Suspension System: Exposed grid.
- B. Acoustical Panels, Type 2: Armstrong, Health Zone Ultima (1935), with the following characteristics:
 1. Classification: ASTM E1264 Type IV, Form 2, Pattern E, Fire Class A.
 2. Size: 24 by 24 inches.
 3. Thickness: 3/4 inch.
 4. Composition: Mineral Fiber.
 5. Light Reflectance: 0.86 percent, determined in accordance with ASTM E1264.
 6. NRC Range: 0.70, determined in accordance with ASTM E1264.
 7. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
 8. Panel Edge: Square.
 9. Surface Color: White.
 10. Surface Finish: Light Texture
 11. Suspension System: Exposed grid.

2.04 SUSPENSION SYSTEM(S)

- A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
- B. Exposed Suspension System, Type 1:
 1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
 2. Basis of Design:
 - a. Manufacturer to be same as manufacturer of ceiling panel to be installed.
 3. Grid Materials: Commercial quality cold rolled steel with galvanized coating.
 4. Profile: Tee; 15/16 inch face width.
 5. Finish: Baked enamel.

6. Color: White.
7. Accessories: Stabilizer bars, clips, splices, and perimeter molderings required for suspended grid system.
8. Support Channels and Hangers: Primed steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
9. Perimeter Wall Angles:
 - a. 7/8 inch.

2.05 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
- C. Perimeter Moldings: Same metal and finish as grid.
- D. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

- A. Install after major above-ceiling work is complete.
- B. Coordinate the location of hangers with other work.

3.03 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Locate system on room axis according to reflected plan.
- D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 1. Use longest practical lengths.
- E. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- F. Seismic Suspension System, Seismic Design Categories D, E, F: Hang suspension system with grid ends attached to the perimeter molding on two adjacent walls; on opposite walls, maintain a 3/4 inch clearance between grid ends and wall.
- G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- I. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- J. Do not eccentrically load system or induce rotation of runners.

3.04 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.

- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- E. Cutting Acoustical Units:
 - 1. Make field cut edges of same profile as factory edges.

3.05 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.06 CLEANING

- A. See Section 017000 - Execution and Closeout Requirements for additional requirements.
- B. Protect installed work from damage and marring of finishes. Remove and replace components that become damaged.
- C. Clean surfaces.

END OF SECTION 095100

EQUIPMENT WIRING SCHEDULE											
MARK	LOCATION	VOLTS	PH	HF	FLA	WIRING/CONDUIT	BREAKER	PANEL	CCT	REMARKS	
1	AHU-1 SUPPLY	MECHANICAL 139	480 V	3	10	12 A	(3)#10, #10G IN 1" C	30/3	T	27,29.31	2
2A	AHU-2 SUPPLY	CHILLER 106	480 V	3	1.5	2 A	(3)#12, #12G IN 3/4" C	15/3	V	25,27.29	4
2B	AHU-2 RETURN	CHILLER 106	480 V	3	1	1.6 A	(3)#12, #12G IN 3/4" C	15/3	V	25,27.29	4
3A	AHU-3 SUPPLY	CHILLER 106	480 V	3	15	17.7 A	(3)#8, #10G IN 1" C	40/3	V	13.5	2
3B	AHU-3 RETURN	CHILLER 106	480 V	3	7.5	9.7 A	(3)#12, #12G IN 3/4" C	20/3	V	7.9,11	4
4A	AHU-4 SUPPLY	NEW MECHANICAL 128.1	480 V	3	15	17.7 A	(3)#8, #10G IN 1" C	40/3	T	26,28.30	2
4B	AHU-4 RETURN	NEW MECHANICAL 128.1	480 V	3	10	12.5 A	(3)#10, #10G IN 1" C	30/3	T	13,15,17	2
5	AHU-5 SUPPLY	MECHANICAL 111	480 V	3	15	17.7 A	(3)#10, #10G IN 1" C	40/3	N	13.5	2
6A	AHU-6 SUPPLY	MECHANICAL 134	480 V	3	10	12.5 A	(3)#10, #10G IN 1" C	30/3	K	33,35.37	2
6B	AHU-6 RETURN	MECHANICAL 134	480 V	3	7.5	9.7 A	(3)#12, #12G IN 3/4" C	20/3	K	1,3.5	4
7A	AHU-7 SUPPLY	MECH 105	480 V	3	20	24 A	(3)#8, #10G IN 1" C	50/3	A (AREA 1D)	1,3.5	2
7B	EF-AHU-7	MECH 105	480 V	3	10	14 A	(3)#10, #10G IN 1" C	30/3	A (AREA 1D)	7,9,11	2
8A	CHILLER-1 HEAT TRACE	CHILLER YARD	480 V	3	10	12 A	(2)#12, #12G IN 3/4" C	20/1	W	25,27.29	2
8B	CHILLER-1 HEAT TRACE	CHILLER YARD	120 V	1	1	10 A	(2)#12, #12G IN 3/4" C	20/1	W	17	4
9A	CHILLER-2 HEAT TRACE	CHILLER YARD	480 V	3	332 A	2 SETS (3)#40, #2G IN 3" C	450/3	MSB	26,28.30	2,7	
9B	CHILLER-2 HEAT TRACE	CHILLER YARD	120 V	1	1	10 A	(2)#12, #12G IN 3/4" C	20/1	IM	5	4
11	CHP-2	CHILLER 106	480 V	3	15	21 A	(3)#8, #10G IN 1" C	40/3	V	14,16,18	2
11B	CHP-2	CHILLER 106	480 V	3	15	21 A	(3)#8, #10G IN 1" C	40/3	V	2,4.6	2
12	CHW PUMP-1	CHILLER 106	480 V	3	16.7	21 A	(3)#8, #10G IN 1" C	40/3	VA	10,12,14	2
13	CHW PUMP-2	CHILLER 106	480 V	3	16.7	21 A	(3)#8, #10G IN 1" C	40/3	VA	16,18,20	2
14	CHW PUMP-3	CHILLER 106	480 V	3	7.5	11 A	(3)#12, #12G IN 3/4" C	20/3	VA	9,11,13	2
15	CHW PUMP-4	CHILLER 106	480 V	3	7.5	11 A	(3)#12, #12G IN 3/4" C	20/3	VA	15,17,19	2
16	HHW PUMP-1	BOILER 106A	480 V	3	7.5	11 A	(3)#12, #12G IN 3/4" C	20/3	VA	21,23,25	2
17	HHW PUMP-2	BOILER 106A	480 V	3	7.5	11 A	(3)#12, #12G IN 3/4" C	20/3	VA	22,24,26	2
18	HHW PUMP-3	BOILER 106A	480 V	3	1.5	3 A	(3)#12, #12G IN 3/4" C	15/3	V	28,30,32	4
19	HHW PUMP-4	BOILER 106A	480 V	3	1.5	3 A	(3)#12, #12G IN 3/4" C	15/3	V	28,30,32	4
20	P-B-1	BOILER 106A	208 V	3	1	3.7 A	(3)#12, #12G IN 3/4" C	15/3	W	2,4.6	2
21	P-B-2	BOILER 106A	208 V	3	1	3.7 A	(3)#12, #12G IN 3/4" C	15/3	W	2,4.6	2
22	B-1	BOILER 106A	120 V	1	1	16 A	(2)#12, #12G IN 3/4" C	20/1	W	13	2,7
23	B-2	BOILER 106A	120 V	1	1	16 A	(2)#12, #12G IN 3/4" C	20/1	W	37	2,7
24	KITCHEN-107	KITCHEN 107	120 V	1	1	6.9 A	(2)#12, #12G IN 3/4" C	20/1	R	2,4	1,5
25	MAIL-1	ROOF ABOVE KITCHEN 107	208 V	3	1.5	4 A	(3)#12, #12G IN 3/4" C	15/3	R	7,9,11	2,3
26	FCU-128	MECHANICAL 128	208 V	3	3	3.7 A	(3)#12, #12G IN 3/4" C	15/3	U	2,4.6	2
27	FCU-139	MECHANICAL 139	208 V	3	3	3.7 A	(3)#12, #12G IN 3/4" C	15/3	U	1,3.5	2
28	FCU-300	CORRIDOR 300	208 V	1	2.4 A	(2)#12, #12G IN 3/4" C	15/2	D (AREA 3A)	19,21	2,10	
29	FCU-300A	CORRIDOR 300A	208 V	1	2.4 A	(2)#12, #12G IN 3/4" C	15/2	B (AREA 3B)	27,29	2,10	
30	FCU-302	CORRIDOR 302	208 V	1	3.7 A	(2)#12, #12G IN 3/4" C	15/2	B (AREA 3B)	31,33	2,10	
31	FCU-303	CORRIDOR 303	208 V	1	2.1 A	(2)#12, #12G IN 3/4" C	15/2	B (AREA 3B)	31,33	2,10	
32	FCU-307	CORRIDOR 307	208 V	1	4.1 A	(2)#12, #12G IN 3/4" C	15/2	C (AREA 3A)	25,27	2,10	
33	FCU-308	CORRIDOR 308	208 V	1	4.1 A	(2)#12, #12G IN 3/4" C	15/2	D (AREA 3A)	31,33	2,10	
34	FCU-309	CORRIDOR 309	208 V	1	1.4 A	(2)#12, #12G IN 3/4" C	15/2	D (AREA 3A)	31,33	2,10	
35	FCU-310	CORRIDOR 310	208 V	1	4.1 A	(2)#12, #12G IN 3/4" C	15/2	D (AREA 3A)	35,37	2,10	
36	FCU-311	CORRIDOR 311	208 V	1	4.1 A	(2)#12, #12G IN 3/4" C	15/2	D (AREA 3A)	35,37	2,10	
37	FCU-312	CORRIDOR 312	208 V	1	4.1 A	(2)#12, #12G IN 3/4" C	15/2	C (AREA 3A)	29,31	2,10	
38	FCU-313	CLASSROOM 313	208 V	1	4.1 A	(2)#12, #12G IN 3/4" C	15/2	B (AREA 3B)	35,37	2,10	
39	FCU-314	CLASSROOM 314	208 V	1	4.1 A	(2)#12, #12G IN 3/4" C	15/2	B (AREA 3B)	35,37	2,10	
40	UH-106	CHILLER 106	120 V	1	1/15	1 A	(2)#12, #12G IN 3/4" C	20/1	W	9	1
41	UH-317	ELECTRICAL 317	120 V	1	1/25	1 A	(2)#12, #12G IN 3/4" C	20/1	X	17	2
42	LPV-1	LP TANK YARD	480 V	3	22 A	(3)#8, #10G IN 1" C	30/3	MSB	56,58,60	2,10	
43A	SSO-1	CORRIDOR 300 EXTERIOR	208 V	1	27 A	(2)#8, #10G IN 1" C	40/2	U	39,41	1	
43B	SS-1	CORRIDOR 300	208 V	1	0 A	(2)#12, #12G IN 3/4" C	40/2	U	39,41	9,10	
44A	SSO-2	CORRIDOR 300 EXTERIOR	208 V	1	27 A	(2)#8, #10G IN 1" C	40/2	U	39,41	1	
44B	SS-2	CORRIDOR 300	208 V	1	0 A	(2)#12, #12G IN 3/4" C	40/2	U	39,41	9,10	
45	EF-1	LAUNDRY 136 TOILET	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	U	7	1	
46	EF-2	TOILET 113	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	U	7	1	
47	EF-3	MOP 105	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	15/1	R	4	2,3	
48	EF-4	CLASSROOM 116A KILN	120 V	1	0.5 A	(2)#12, #12G IN 3/4" C	15/1	M	30	2,3	
49	EF-5	MECHANICAL 111	480 V	3	1-1/2	3 A	(3)#12, #12G IN 3/4" C	15/3	N	7,9,11	2
50	EF-6	MECHANICAL 111	120 V	1	4.9 A	(2)#12, #12G IN 3/4" C	15/1	P	20	2	
51	EF-7	TOILET 124	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	15/1	M	41	2,3	
52	EF-8	TOILET 132A	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	P	26	1	
53	EF-9	TOILET 133A	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	P	26	1	
54	EF-10	PLANNING 139A TOILET	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	P	26	1	
55	EF-12	ROOF ABOVE DISHWASHING 104	120 V	1	1/4	5.8 A	(2)#12, #12G IN 3/4" C	15/1	R	28	2,3
56	EF-13	CLASSROOM 108A TOILET	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	P	28	1	
57	EF-14	CLASSROOM 107A TOILET	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	P	28	1	
58	EF-15	CHILLER 106	120 V	1	1/2	9.8 A	(2)#12, #12G IN 3/4" C	20/1	W	7	1
59	EF-16	ROOF ABOVE KITCHEN 107	208 V	3	1	4.6 A	(3)#12, #12G IN 3/4" C	15/3	R	13,15,17	3,4
60	EF-17	ROOF ABOVE GYM 118	208 V	3	1/2	2.4 A	(3)#12, #12G IN 3/4" C	15/3	U	8,10,12	3,4
61	EF-18	ROOF ABOVE GYM 118	208 V	3	1/2	2.4 A	(3)#12, #12G IN 3/4" C	15/3	U	8,10,12	3,4
62	EF-19	ROOF ABOVE MECHANICAL 139	120 V	1	1/6	4.4 A	(2)#12, #12G IN 3/4" C	15/1	U	11	2,3
63	EF-20	ROOF ABOVE WOMENS 121	120 V	1	1/15	1.3 A	(2)#12, #12G IN 3/4" C	15/1	A (AREA 1A)	20	2,3
64	EF-21	TOILET 113	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	M	39	4	
65	EF-22	TOILET 114	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	M	39	4	
66	EF-23	CLASSROOM 108 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	16	1,8	
67	EF-24	CLASSROOM 108 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	16	1,8	
68	EF-25	CLASSROOM 109 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	14	1,8	
69	EF-26	CLASSROOM 109 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	14	1,8	
70	EF-27	CLASSROOM 107 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	12	1,8	
71	EF-28	CLASSROOM 107 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	12	1,8	
72	EF-29	CLASSROOM 110 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	10	1,8	
73	EF-30	CLASSROOM 110 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	10	1,8	
74	EF-31	CLASSROOM 111 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	8	1,8	
75	EF-32	CLASSROOM 111 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	8	1,8	
76	EF-33	CUST 116	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	18	1	
77	EF-34	ELEC 117	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	18	1	
78	EF-35	STAFF 115	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	18	1	
79	EF-36	CLASSROOM 112 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	20	1,8	
80	EF-37	CLASSROOM 112 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	20	1,8	
81	EF-38	CLASSROOM 113 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	22	1,8	
82	EF-39	CLASSROOM 113 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 1D)	22	1,8	
83	EF-40	CLASSROOM 124 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	B (AREA 1D)	13	1,8	
84	EF-41	CLASSROOM 124 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	B (AREA 1D)	13	1,8	
85	EF-42	CLASSROOM 123 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	B (AREA 1D)	15	1,8	
86	EF-43	CLASSROOM 125 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	B (AREA 1D)	15	1,8	
87	EF-44	CLASSROOM 125 TOILET ROOM	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	B (AREA 1D)	15	1,8	
88	MECH-45	MECHANICAL 130	120 V	1	4.9 A	(2)#12, #12G IN 3/4" C	15/1	F	24	2	
89	EF-46	STAFF 131	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	F	35	1	
90	EF-47	CUST 132	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	F	35	1	
91	EF-48	MECHANICAL 150	120 V	1	4.9 A	(2)#12, #12G IN 3/4" C	15/1	H	28	2	
92	EF-49	CUST 132	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	H	30	1	
93	EF-50	TOILET 153	120 V	1	0.2 A	(2)#12, #12G IN 3/4" C	20/1	H	30	1	
94	EF-301A	LOUNGE 301A	120 V	1	1.3 A	(2)#12, #12G IN 3/4" C	20/1	B (AREA 3B)	23	2	
95	EF-303	CLASSROOM 303	120 V	1	1.3 A	(2)#12, #12G IN 3/4" C	20/1	B (AREA 3B)	23	2	
96	EF-307	CLASSROOM 307	120 V	1	1.3 A	(2)#12, #12G IN 3/4" C	20/1	C (AREA 3A)	2	4	
97	EF-308	CLASSROOM 308	120 V	1	1.3 A	(2)#12, #12G IN 3/4" C	20/1	D (AREA 3A)	13	4	
98	EF-309	CLASSROOM 309	120 V	1	1.3 A	(2)#12, #12G IN 3/4" C	20/1				

PANEL MSB (Existing)		VOLTAGE: FEEDER AMP: LUGS:	480/277 2500	3 PH 4W MAINS:	2500	MDS Bottom	A/C RATING: MOUNTING: ENCLOSURE:	65K Surface NEMA 1	REMARKS: Westlinghouse Switchboard				
BKR	NOTE	LOAD...	VA	CKT	PHASE	CKT	VA	LOAD DESCRIPTION	NOTE	BKR			
250/3	↓	PANEL A (AREA 1D)	37778	1	A	2	41246	PANEL D (AREA 1H)	E	250/3			
↓	↓	↓	37652	3	B	4	40321	↓	↓	↓			
↓	↓	↓	32406	5	C	6	33897	↓	↓	↓			
250/3	↓	PANEL K	26121	7	A	8	34999	PANEL N	E	250/3			
↓	↓	↓	27851	9	B	10	32044	↓	↓	↓			
↓	↓	↓	26011	11	C	12	31828	↓	↓	↓			
250/3	↓	PANEL G	34259	13	A	14	47580	PANEL V	E	250/3			
↓	↓	↓	35227	15	B	16	50572	↓	↓	↓			
↓	↓	↓	32757	17	C	18	52156	↓	↓	↓			
250/3	↓	EXISTING LOAD	0	19	A	20	0	EXISTING LOAD	E	xxx/3			
↓	↓	↓	0	21	B	22	0	↓	↓	↓			
↓	↓	↓	0	23	C	24	0	↓	↓	↓			
450/3	N	CHILLER 1	91742	25	A	26	91742	CHILLER 2	N	450/3			
↓	↓	↓	91742	27	B	28	91742	↓	↓	↓			
↓	↓	↓	91742	29	C	30	91742	↓	↓	↓			
125/3	N	PANEL VA	17111	31	A	32	0	↓	↓	↓			
↓	↓	↓	17411	33	B	34	0	↓	↓	↓			
↓	↓	↓	15811	35	C	36	0	↓	↓	↓			
400/3	E	PANEL 1L	14136	37	A	38	0	SPARE	R	350/3			
↓	↓	↓	16300	39	B	40	0	↓	↓	↓			
↓	↓	↓	14720	41	C	42	0	↓	↓	↓			
350/3	E	SPARE	0	43	A	44	16567	PANEL T	E	450/3			
↓	↓	↓	0	45	B	46	18447	↓	↓	↓			
↓	↓	↓	0	47	C	48	20447	↓	↓	↓			
-	E	SPACE	0	49	A	50	2160	PANEL CC	E	50/3			
↓	↓	↓	0	51	B	52	1620	↓	↓	↓			
↓	↓	↓	0	53	C	54	1080	↓	↓	↓			
xxx/3	E	SPARE	0	55	A	56	5956	LPV-1	N	30/3			
↓	↓	↓	0	57	B	58	5956	↓	↓	↓			
↓	↓	↓	0	59	C	60	5956	↓	↓	↓			
600/3	E	PANEL Y TRANSFORMER	120108	61	A	62	0	SPACE TAKEN BY CKT 61.63.65	E	-			
↓	↓	↓	114077	63	B	64	0	↓	↓	↓			
↓	↓	↓	116820	65	C	66	0	↓	↓	↓			
Connected Load Per Phase PH A:			581506		PH B:		580963		PH C:		569374		
Lighting		HVAC		Motors		Recept.		Refrig		Kitchen		Misc	
196245		868263		117054		180740		864		328868		39808	
Demand Factor		1.25		1.00		1.00		NEC		0.00		0.65	
Demand VA		245306		868263		117054		95370		0		213764	
												39808	
												1737566	
												1900.0	

PANEL VA		VOLTAGE: FEEDER AMP: LUGS:	480/277 3 PH 4W 125	3 PH 4W MNTS:	125	MLO	A/C RATING: MOUNTING:	EXISTING	REMARKS:	
			VA	CKT	FEED:	PHASE	VA	LOAD DESCRIPTION	SQUARE D H/F	
BKR	NOTE	LOAD DESCRIPTION	VA	CKT		PHASE	VA	LOAD DESCRIPTION	NOTE	BKR
20/1	E	KITCHEN CAFETERIA EM. LTG	1200	1	A	A	2	1200	LTG. RM. D103, D104	E 20/1
20/1	E	LTG. RM. 107	3000	3	B	B	4	2500	LTG. RM. D102	E 20/1
20/1	E	OUTDOOR LTG. VIA TIMECLOCK	1400	5	C	C	6	2500	LTG. RM. D102	E 20/1
20/1	E	MECH ROOM EM. LTG	1600	7	A	A	8	1200	SKY LTG. D102, D103	E 20/1
20/3	N	CHW PUMP-3	3047	9	B	B	10	5817	CHW PUMP-1	N 40/3
↓	↓	↓	3047	11	C	C	12	5817	↓	↓
↓	↓	↓	3047	13	A	A	14	5817	↓	↓
20/3	N	CHW PUMP-4	0	15	B	B	16	0	CHW PUMP-2	N 40/3
↓	↓	↓	0	17	C	C	18	0	↓	↓
↓	↓	↓	0	19	A	A	20	0	↓	↓
20/3	N	HHW PUMP-1	3047	21	B	B	22	0	HHW PUMP-2	N 20/3
↓	↓	↓	3047	23	C	C	24	0	↓	↓
↓	↓	↓	3047	25	A	A	26	0	↓	↓
-	E	SPACE	0	27	B	B	28	0	SPACE	E -
-	E	SPACE	0	29	C	C	30	0	SPACE	E -
Connected Load Per Phase			PH A:	17111	PH B:	17411	PH C:	15811		
Lighting			HVAC	Motors	Recept.	Refrig	Kitchen	Misc	Total VA	Amps
14600			17451	18282	0	0	0	0	50333	60.5
Demand Factor			1.25	1.00	1.00	NEC	0.00	1.00	1.00	
Demand VA			18250	17451	18282	0	0	0	53983	64.9

PANEL T			VOLTAGE:	480/277	3 PH 4W	A/C RATING:		EXISTING	REMARKS:	
			FEEDER AMP:	400	MAINS:	400	MLO	MOUNTING:	WESTINGHOUSE PRL2	
(Existing)			LUGS:			FEED:	ENCLOSURE:	NEMA 1		
BKR	NOTE	LOAD DESCRIPTION	VA	CKT	PHASE	CKT	VA	LOAD DESCRIPTION	NOTE	BKR
15/3	↓	SPARE	0	1	A	2	0	SPARE	E	20/1
↓	↓	↓	0	3	B	4	0	SPARE	E	20/1
↓	↓	↓	0	5	C	6	2880	LIGHTS D132, D134, D137	E	20/1
15/3	↓	R SPARE	0	7	A	8	1000	EMERGENCY LIGHTS	E	20/1
↓	↓	↓	0	9	B	10	2880	LIGHTS D113 - D117	E	20/1
↓	↓	↓	0	11	C	12	2000	OUTDOOR POLE LIGHTS	E	20/1
30/3	N	AHU-4 RETURN	3463	13	A	14	0	SPARE	E	20/1
↓	↓	↓	3463	15	B	16	0	SPARE	E	20/1
↓	↓	↓	3463	17	C	18	0	SPARE	E	20/1
20/3	E	CIRCULATING PUMP	3878	19	A	20	0	SPARE	E	20/1
↓	↓	↓	3878	21	B	22	0	SPARE	E	20/1
↓	↓	↓	3878	23	C	24	0	SPARE	E	-
20/1	E	SPARE	0	25	A	26	4903	AHU-4 SUPPLY	N	40/3
30/3	N	AHU-1 SUPPLY	3324	27	B	28	4903	↓	↓	↓
↓	↓	↓	3324	29	C	30	4903	↓	↓	↓
↓	↓	↓	3324	31	A	32	0	SPACE	E	-
-	E	SPACE	0	33	B	34	0	SPACE	E	-
-	E	SPACE	0	35	C	36	0	SPACE	E	-
-	E	SPACE	0	37	A	38	0	SPACE	E	-
-	E	SPACE	0	39	B	40	0	SPACE	E	-
-	E	SPACE	0	41	C	42	0	SPACE	E	-
200/2	SUB	EXISTING MDP TRANSFORMER, RM 133	0	43	A					SUB
Connected Load Per Phase			PH A:	16567	PH B:	18447	PH C:	20447		
Connected VA			Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc	Total VA
Demand Factor			1.25	1.00	1.00	NEC	0.00	1.00	1.00	55462
Demand VA			10950	46702	0	0	0	0	0	57652
										66.7
										69.3

PANEL N		VOLTAGE: 480/277 3 PH 4W	225	3 MAINS:	225	MCB	A/C RATING: EXISTING	REMARKS:		
(Existing)		FEEDER AMP: LUGS:	225	3 MAINS:	225	MCB	ENCLOSURE: NEMA 1	WESTINGHOUSE PRL2		
BKR	NOTE	LOAD DESCRIPTION	VA	CKT	PHASE	CKT	VA	LOAD DESCRIPTION	NOTE	BKR
40/3	N	AHU-5 SUPPLY	4903	1	A	2	0	SPACE	E	-
↓	↓	↓	4903	3	B	4	0	SPACE	E	-
↓	↓	↓	4903	5	C	6	0	SPACE	E	-
15/3	N	EF-5	831	7	A	8	2000	LIGHTS A107, A108	E	20/1
↓	↓	↓	831	9	B	10	2000	LIGHTS A107, A108	E	20/1
↓	↓	↓	831	11	C	12	2000	LIGHTS A116, A, B	E	20/1
20/1	E	CORRIDOR LIGHTS	2000	13	A	14	2000	LIGHTS A115, A111 - A114	E	20/1
20/1	E	CORRIDOR LIGHTS	2000	15	B	16	2000	LIGHTS A108 - A110	E	20/1
20/1	E	CORRIDOR LIGHTS	2000	17	C	18	2000	OUTSIDE LIGHTS VIA TIME CLOCK	E	20/1
20/1	E	EMERGENCY LIGHTS	1200	19	A	20	0	SPARE	E	20/1
20/1	E	SPARE	0	21	B	22	0	SPARE	E	20/1
20/1	E	SPARE	0	23	C	24	0	SPARE	E	20/1
20/1	E	SPARE	0	25	A	26	0	SPARE	E	20/1
20/1	E	SPARE	0	27	B	28	0	SPARE	E	20/1
20/1	E	SPARE	0	29	C	30	0	SPARE	E	20/1
20/1	E	SPARE	0	31	A	32	0	SPACE	E	-
20/1	E	SPARE	0	33	B	34	0	SPACE	E	-
-	E	SPACE	0	35	C	36	0	SPACE	E	-
-	E	SPACE	0	37	A	38	0	SPACE	E	-
-	E	SPACE	0	39	B	40	0	SPACE	E	-
-	E	SPACE	0	41	C	42	0	SPACE	E	-
110/3	SUB	PANEL M 150kVA TRANSFORMER	22065	A	B	C	0			
		20310								
		20094								
			0							
Connected Load Per Phase			PH A:	34999	PH B:	32044	PH C:	31828		
Connected VA		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc	Total VA	Amps
Demand Factor		19200	25066	0	41540	225	0	12840	98871	118.9
Demand VA		1.25	1.00	1.00	NEC	0.00	1.00	1.00		
		24000	25066	225	25770	0	0	12840		

PANEL Y		VOLTAGE: 208/120 3 PH 4W				A/C RATING: EXISTING		REMARKS:		
(Existing)		FEEDER AMP: LUGS:		1200 MAINS:		1200 MCB		WESTINGHOUSE PRL I		
BKR	NOTE	LOAD DESCRIPTION	VA	CKT	PHASE	CKT	VA	LOAD DESCRIPTION	NOTE	BKR
100/3	E	PANEL S	8736	1	A	2	7460	PANEL U	E	100/3
↓	↓	↓	5160	3	B	4	11305	↓	↓	↓
↓	↓	↓	6996	5	C	6	12276	↓	↓	↓
↓	E	SPACE	0	7	A	8	0	SPARE	E	200/3
↓	↓	↓	0	9	B	10	0	↓	↓	↓
↓	↓	↓	0	11	C	12	0	↓	↓	↓
200/3	E	SPARE	0	13	A	14	22976	PANEL R	E	225/3
↓	↓	↓	0	15	B	16	18732	↓	↓	↓
↓	↓	↓	0	17	C	18	18096	↓	↓	↓
↓	E	SPACE	0	19	A	20	0	SPACE	E	↓
↓	↓	↓	0	21	B	22	0	↓	↓	↓
↓	↓	↓	0	23	C	24	0	↓	↓	↓
400/3	E	PANEL Q	26936	25	A	26	0	SPACE	E	↓
↓	↓	↓	24880	27	B	28	0	↓	↓	↓
↓	↓	↓	25452	29	C	30	0	↓	↓	↓
600/3	E	KITCHEN ISLAND PANEL	54000	31	A	32	0	↓	E	↓
↓	↓	↓	54000	33	B	34	0	↓	↓	↓
↓	↓	↓	54000	35	C	36	0	↓	↓	↓
Connected Load Per Phase			PH A:	120108	PH B:	114077	PH C:	116820		
Connected VA		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc	Total VA	Amps
Demand Factor		1.25	1.00	1.00	NEC	0.00	0.65	1.00	351005	974.3
Demand VA		1250	21372	225	15470	0	17917	2980	239214	664.0

PANEL W			VOLTAGE: 208/120 3 PH 4W		A/C RATING: EXISTING		REMARKS:			
(Existing)			FEEDER AMP: 100		MOUNTING: 100		WESTINGHOUSE PRL1			
LUGS:			MAINS:		ENCLOSURE: NEMA 1					
BKR	NOTE	LOAD DESCRIPTION	VA	CKT	PHASE	VA	LOAD DESCRIPTION	NOTE	BKR	
15/3	R	SPARE	0	1	A	2	888	BOILER PUMPS P-B-1, P-B-2	R 15/3	
↓	↓	↓	0	3	B	4	888		↓	
↓	↓	↓	0	5	C	6	888		↓	
20/1	R	EF-15 (CHILLER 106)	1536	7	A	8	500	BOILER CONTROLS	E 20/1	
20/1	R	UNIT HEATER UH-1	120	9	B	10	1440	WATER HEATER MOTOR	E 20/1	
20/1	E	PUMP 23	864	11	A	12	1440	WATER HEATER MOTOR	E 20/1	
20/2	N	BOILER B-1	1920	13	A	14	200	LCS #8	E 20/1	
↓	↓	↓	0	15	B	16	180	OUTSIDE REC	E 20/1	
20/1	R	CHILLER HEAT TRACE	1200	17	B	18	1000	SPARE	E 20/1	
20/1	E	REC D106, D106A	540	19	A	20	1000	TRACK LTS STAGE	E 20/1	
20/1	E	DMS	500	21	B	22	1000	TRACK LTS STAGE	E 20/1	
20/1	R	LP GAS YARD LIGHTING	0	23	A	24	1000	TRACK LTS STAGE	E 20/1	
20/1	E	CONTROLS	200	25	A	26	200	TANK GUARD	E 20/1	
20/1	E	CONTROLS 2ND CHEMICAL PUMP	200	27	B	28	0	SPACE	E 20/1	
30/3	E	SURGE PROTECTOR	0	29	C	30	200	PURE PAK	E 20/1	
↓	↓	↓	0	31	A	32	4200	WALK-IN COOLER	E 50/3	
↓	↓	↓	0	33	B	34	4200	↓	↓	
15/1	N	P-AHU-2	0	35	A	36	4200	↓	↓	
20/2	N	BOILER B-2	1920	37	A	38	0	SPARE	E 30/2	
↓	↓	↓	0	39	B	40	0	↓	↓	
↓	↓	↓	0	41	C	42	864	SPACE	E ↓	
-	E	SPACE	864	41	C	42	864	SPACE	E ↓	
Connected Load Per Phase			PH A:	13104	PH B:	8528	PH C:	11520		
Connected VA		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc.	Total VA	Amps
		3000	14608	0	1080	864	12600	1000	33152	92.0
Demand Factor		1.25	1.00	1.00	NEC	0.00	1.00	1.00		
Demand VA		3750	14608	0	1080	0	12600	1000	33038	91.7