BID ADDENDUM NO. 1

PROJECT:	Newburgh ECSD – Prop 5 – District Wide A/C – Electrical Upgrades Gidney Ave. Elementary School (300 Gidney Ave, Newburgh, NY 12550) 44-16-00-01-0-006-015 Temple Hill Academy (525 Union Ave, New Windsor, NY 12553) 44-16-00-01-0-036-015 Meadow Hill GEM School (124 Meadow Hill Rd, Newburgh, NY 12550) 44-16-00-01-0-035-014
LABELLA PROJECT NO:	2233600
DATE:	December 4, 2024
FROM:	LaBella Associates, D.P.C.

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

Pasquale Marchese, AIA
LABELLA ASSOCIATES, D.P.C

This Addendum contains 14 Attachments:

1. Attachment "1" – Pre-Bid Walk Through Agenda & Sign-In Sheet
2. Attachment "2" – 00 01 10 Table of Contents
3. Attachment "3" – 00 31 13.2A Prop 5 Phase 1 Gidney (GAMS) Logistics Plan
4. Attachment "4" – 00 41 16.1 / 2 / 3 Bid Forms
5. Attachment "5" – 00 52 00.01 A132
6. Attachment "6" – 00 65 20 G706A – FINAL
7. Attachment "7" – 00 72 16.02 A232
8. Attachment "8" – 00 83 40 Daily Report Cover
9. Attachment "9" – 00 84 40 Substantial Completion Request for Inspection
10. Attachment "10" – 01 23 00 – Alternates
11. Attachment "11" – 23 05 48 - Vibration and Seismic Controls
12. Attachment "12" – 23 09 00 - Instrumentation & Control for HVAC
13. Attachment "13" – Revised HVAC Drawings
14. Attachment "14" – 00 11 16 – Invitation to Bid

CLARIFICATIONS:

1.1 Bid opening: December 18, 2024 at 3:00 PM at 124 Grand Street, Newburgh, NY 12550

1.2 Pre-BID RFI's are going to be accepted by email only, use the RFI form in the BID Documents Tab. Email RFI's to:

Rodriguez, Joe jrodriguez@labellapc.com
Tether, Matthew mtether@labellapc.com
Marchese, Pasquale pmarchese@labellapc.com

TO THE SPECIFICATIONS:

1.3 See attachments

TO THE DRAWINGS:

1.4 Gidney: M601: Updates to schedules reflecting revised mechanical equipment. Updating Air Cooled Condenser Unit notes to indicate pricing to be based on 2025 EPA standards for Refrigerant.

1.5 Meadow Hill: M601: Updates to schedules reflecting revised mechanical equipment. Updating Air Cooled Condenser Unit notes to indicate pricing to be based on 2025 EPA standards for Refrigerant.

1.6 Temple Hill: M601: Updates to schedules reflecting revised mechanical equipment. Updating Air Cooled Condenser Unit notes to indicate pricing to be based on 2025 EPA standards for Refrigerant.

END OF BID ADDENDUM NO. 1

Bid Walkthrough

Date: 11/27/24

Prop 5 Phase 1

Schools: Gidney Avenue Elementary, Meadow Hill GEM School, Temple Hill Academy

Attendees: (see sign in sheet)

Notes to be memorialized in an addendum

1. All Asbestos Abatement is a Deduct Alternate under the General Contractors Bid.
2. All Control Work is a Deduct Alternate under the Mechanical Contractors Bid.
3. All Access Panels to be keyed and Common Keyed.
4. All Contractors and Subcontractors to buy NYS Insured.
5. All Subcontractors are to provide insurance coverage per AIA 232 Article 11.
6. Some Mechanical Units are to be substituted.
7. There is a Project Labor Agreement in place for this work.
8. Second Shift work to start the school year, weekends upon approval.
9. If contractor is awarded multiple schools they must provide labor force large enough complete the work of all schools.
11. Each school to be priced separately.
12. No Fly Times- Gidney Avenue Elementary School 7:30AM to 10:00AM & 3:00PM to 4:30PM.
13. No Fly Times- Meadow Hill GEM School & Temple Hill Academy Schools: 7:30 to 9:00AM & 3:00PM to 4:00PM.
14. Important Dates- Deadline for RFI's - 12/10/24, Bid Opening 12/18/24. ADD Long lead submittals
15. NECSD uses the NECSD Raptor System, Upon Award Contractors will provide NECSD with an employee list for Raptor checks at a minimum of 48 hours prior to start of work. Raptor Sticker to be displayed on hard hat, failure to display Raptor sticker will result in employee being removed from the project site.
16. Temporary Facilities- Please be advised Storage, and Portable Toilets should be provided by the GC
17. All indoor and outdoor mechanical equipment, accessories, and associated components (piping, valves, etc.) related to hallway corridor systems to be priced as an add-alternate.
All mechanical equipment, accessories, and wiring related to controls are to be held as a deduct alternate under the mechanical contract. Items related to controls are for reference only.
18. Cleaning Floors- the GC is responsible for the final cleaning, however each trade is responsible for cleaning their own work areas to the satisfaction of the appointed District Representative at the end of each working day.
19. Temporary facilities- Review the temp facilities, the MC is responsible for the removal and disposal and dumpster for large equipment on the project.
20. All Vault work must be performed at one school at a time, the district must be approve the dates and be advised at least one week in advance. This shutdown must be coordinated with Central Hudson as well as the district.
21. Bid Bond Question from DSI- Bidders will price one bid bond for all three schools for the purposes of the bid.

Nov 27, 2024 at 1:26:04 PM
220 West St
Newburgh NY 12550
United States

Pre Task Meeting Sign In

Jacobs

Date: 11/27/24

Prop 5 Phase 1

Schools: Gidney Avenue Elementary, Meadow Hill GEM School, Temple Hill Academy

	Name	Company	Contact Info
1)	Warren Sackman	Jacobs	516-353-8666
2)	Joseph Lombardo	LaBella	914-539-2514
3)	Brian Murphy	Armistead Mech.	551-262-2966
4)	JOE JASIEL	MOSHIMAK-R, INC	914.760.3196
5)	JOE RODRIGUEZ	LABELLA	845-440-1507
6)	Kelly Anson	LaBella	845-372-2852
7)	Eric Schmauch	Dynamic Systems	845-232-2414
8)	PASQUALE MARCHESE	LaBella	518-469-2131
9)	Ben Alling	Jacobs	860-638-9612
10)	MATTHEW PETHER	LaBella	mpether@LaBellaPC.com
11)	Jon Jacobs	Jacobs	845 902-5928
12)	André Lanyon	LaBella	845-270-5384
13)	CARLOS PRINCE	Ravabrecz SDUDB	845-590-9206
14)	Bob Brainard		
15)			

SECTION 00 01 10 – TABLE OF CONTENTS – PROJECT MANUAL

VOLUME 1 of 1

Division 00 – Procurement and Contracting Requirements

Division 01 – General Requirements

Division 02 – Existing Conditions

Division 03 – Concrete

Division 04 – Masonry

Division 05 – Metals

Division 07 – Thermal and Moisture Protection – Refer to Drawings

Division 08 – Openings – Refer to Drawings

Not Used

Division 09 – Finishes

Division 23 – Heating, Ventilating, and Air-Conditioning (HVAC)

END SECTION 00 01 10


North St
Hampton Pl
Exhale Skin Bar
Growing Young
School Year
Storage Area
30 Yard
Container
(summer
months only)
The Beauty Basel Spa
Gams Tech
Magnet School
Temple
Beth Jacob
Gidney Avenue
Memorial School
Gidney Ave
Fullerton Ave

SECTION 004110.01 - BID FORM CONTRACT MC-01 – Mechanical Contractor (MC-01)

Newburgh Enlarged City School District-2019 Capital Project

BIDDER INFORMATION

CONTACT: _____

COMPANY: _____

ADDRESS: _____

_____

TELEPHONE: (_____) _____

FACSIMILE: (_____) _____

BID TO (Owner): Attention: Purchasing Agent
Newburgh Enlarged City School District
124 Grand Street
Newburgh, New York 12550

PRIME CONTRACT: Contract No. 01 – Mechanical Contractor (MC-01)

PROJECT TITLE: Newburgh Enlarged City School District
2019 Capital Project

SED Project Control No.	*Gidney Avenue Elementary School*	*SED# 44-16-00-01-0-006-015*
	Temple Hill Academy	*SED# 44-16-00-01-0-036-015*
	Meadow Hill GEM School	*SED# 44-16-00-01-0-035-014*

Labella PROJECT NO: 2233600

1. **Representations**: By making this Bid, the Bidder represents that:

   The Bidder (identified above) hereby certifies that they have examined and fully understands the requirements and intent of the Bidding and Contract Documents, including Drawings, Project Manuals, and Addenda; and proposes to provide all labor, material, and equipment necessary to complete the Work on, or before, the dates specified in the Agreement for the Base Bid of:

2. **Total Base Bid**:_____($_____)

   Gidney Avenue Elementary School:_____($_____)
   Temple Hill Academy:_____($_____)
   Meadow Hill GEM School:_____($_____)
   (Words) (Figures)

   In all locations sums shall be expressed in both words and figures. In case of discrepancy, written word governs.

3. **Addenda**: The Bidder acknowledges receipt of the following Addendum:

   No. _____ Dated_____ No. _____ Dated_____
   No. _____ Dated_____ No. _____ Dated_____
   No. _____ Dated_____ No. _____ Dated_____

4. **Alternates**:
   A. Add Alternate 01- Corridor Air Conditioning System at Gidney Avenue Elementary School.
   _____($_____)
   B. Add Alternate 02- Corridor Air Conditioning System at Meadow Hill GEM School.
   _____($_____)
   C. Add Alternate 03- Corridor Air Conditioning System at Temple Hill Academy.
   _____($_____)
   D. Deduct Alternate 01- Control work at Gidney Avenue Elementary School.
   _____($_____)
   E. Deduct Alternate 02- Control work at Meadow Hill GEM School.
   _____($_____)
   F. Deduct Alternate 03- Control work at Temple Hill Academy.
   _____($_____)

5. **Bid Security:** Attached hereto is Bid Security in the form of (circle correct form) Bid Bond, Certified Check, Cash in the amount of 5 percent (5%) of the written Base Bid amount.

6. **Allowances:**
   A. $100,000 Allowance for unforeseen conditions for Mechanical Work at Gidney Avenue Elementary School.
   B. $250,000 Allowance for unforeseen conditions for Mechanical Work at Temple Hill Academy.
   C. $250,000 Allowance for unforeseen conditions for Mechanical Work at Meadow Hill GEM School.

7. **Time of Commencement and Completion**: The Bidder agrees to commence Work on the

stipulated starting date(s) and will substantially complete the Work in accordance with the project schedule stipulated in Specification Section 011200 Multiple Contract Summary and Section 003113 Preliminary Schedules.

8. **Rejection of Bids**: The Bidder acknowledges that the Owner reserves the right to waive any informality in, or to reject any or all Bids.

9. **Execution of Contract**: If notice of the acceptance of this Bid is mailed, telegraphed, or otherwise delivered to the undersigned within forty-five (45) days after the date of the Bid Opening, or any time thereafter, the undersigned will, within five (5) working days after the receipt of the form of Agreement, execute and deliver the Contract.

10. **Signature**:

_____
(Signature)

_____
(Name – Printed)

_____
(Title – Printed) (Date)

11. **Attachments**: Obtain and attach the following documents to each individual Bid.

A. 004116 Bid Form- all costs are to be filled out.
B. 004313 Bid Bond- A310.
C. 004325 Substitution list.
D. 004336 Proposed Subcontractor Form.
E. 004513 Contractor's Qualification Statement – AIA Document 305, 2020 edition.
F. 004519 Non-Collusive Bid Certification.
G. 004520 Iran Divestment Act Certification.
H. 004521 Understanding of Agreement
I. 004522 Proposer Warranties.
J. 004523 Sexual Harassment Certifications.
K. 004543 Corporate Resolution.
L. 004544 Insurance Affidavit.
M. 012200 Unit prices.
N. 012300 Alternates.

12. **Work Cost Breakdown:** This form shall be filled out and submitted by the Contractor. The

grand total must equal the BASE BID under Section I (A) "THE BID". UNIT PRICES are required for the items listed in the Unit Prices section of the work cost breakdown. Unit prices will be provided for use if the required quantities are more or less than the quantities indicated in the plans and specifications. Failure to complete the work cost breakdown may result in the disqualification of the bid. As itemized in the "Instructions to Bidders" for a complete Bid Form include the following which must be filled out completely, failure to comply with any listed below bid will be a rejected bid:

a. Bid Form, all costs must be shown in each CSI section and totaled, failure to breakdown these costs will be subject to disqualification of bid.

b. Unit costs

Gidney Avenue Elementary School Bid Cost

Mechanical Contractor 01 (MC-01)

Contract Number: Newburgh Enlarged City School District

Contract Titles: Newburgh Enlarged City School District
2019 Capital Bond

Bidder: Date:

* Refer to Section 012973 Schedule of Values for additional information

Item	Division	Description	QTY	Unit	Total
1	1	General Requirements (Submittals, Punchlist, etc.)			
2	1	012100 Allowances - Unforeseen Conditions	1	N/A	$100,000
3	2	024119 Selective Demolition			
4	7	078413 Penetration Firestopping			
5	23	230513 Common Motor Requirements			
6	23	230517 Sleeves and Sleeve Seals for HVAC Piping			
7	23	230518 Escutcheons for HVAC Piping			
8	23	230519 Meters and Gages for HVAC Piping			
9	23	230523 General-Duty Valves for HVAC Piping			
10	23	230529 Hangers and Supports for HVAC Piping and Equipment			
11	23	230548 Vibration and Seismic Controls HVAC			
12	23	230553 Identification for HVAC Piping and Equipment			
13	23	230593 Testing, Adjusting, and Balancing For HVAC			
14	23	230700 HVAC Insulation			
15	23	230800 Retro-Commissioning and Commissioning of HVAC			
16	23	230900 Instrumentation and Control for HVAC			
17	23	230924 Control Valves			
18	23	232113 Hydronic Piping and Specialties			
19	23	232123 Hydronic Pumps			
20	23	232300 Refrigerant Piping			
21	23	233113 Metal Ducts			
22	23	233300 Air Duct Accessories			
23	23	**233416 Centrifugal HVAC Fans**			
24	23	233713 Diffusers, Registers, and Grilles			
25	23	233723 Air Louvers			
26	23	233724 HVAC Gravity Ventilators			

27	23	234113 Panel Air Filters			
28	23	236200 Packaged Compressor and Condenser Units			
29	23	238126 Split System Air-Conditioners			
30	23	**238129 Variable-Refrigerant-Flow HVAC Systems**			
31	23	238223 Unit Ventilators			
32	26	**260523 Control Voltage Electrical Power Cables (For Mechanical Controls)**			

Gidney Avenue Elementary School Base Bid $_____

Temple Hill Academy Bid Cost

Mechanical Contractor 01 (MC-01)

Contract Number: Newburgh Enlarged City School District

Contract Titles: Newburgh Enlarged City School District
2019 Capital Bond

Bidder: Date:

* Refer to Section 012973 Schedule of Values for additional information

Item	Division	Description	QTY	Unit	Total
1	1	General Requirements (Submittals, Punchlist, etc.)			
2	1	015000 Temp Facilities			
3	1	012100 Allowances - Unforeseen Conditions	1	N/A	$250,000
4	2	024119 Selective Demolition			
5	7	078413 Penetration Firestopping			
6	23	230513 Common Motor Requirements			
7	23	230517 Sleeves and Sleeve Seals for HVAC Piping			
8	23	230518 Escutcheons for HVAC Piping			
9	23	230519 Meters and Gages for HVAC Piping			
10	23	230523 General-Duty Valves for HVAC Piping			
11	23	230529 Hangers and Supports for HVAC Piping and Equipment			
12	23	230548 Vibration and Seismic Controls HVAC			
13	23	230553 Identification for HVAC Piping and Equipment			
14	23	230593 Testing, Adjusting, and Balancing For HVAC			
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19	23	232113 Hydronic Piping and Specialties			
20	23	232123 Hydronic Pumps			
21	23	232300 Refrigerant Piping			
22	23	233113 Metal Ducts			
23	23	233300 Air Duct Accessories			
24	23	**233416 Centrifugal HVAC Fans**			
25	23	233713 Diffusers, Registers, and Grilles			

26	23	233723 Air Louvers			
27	23	233724 HVAC Gravity Ventilators			
28	23	234113 Panel Air Filters			
29	23	236200 Packaged Compressor and Condenser Units			
30	23	238126 Split System Air-Conditioners			
31	23	**238129 Variable-Refrigerant-Flow HVAC Systems**			
32	23	238223 Unit Ventilators			
33	23	**260523 Control Voltage Electrical Power Cables (For Mechanical Controls)**			

Temple Hill Academy Base Bid $_____

Meadow Hill GEM School Bid Cost

Mechanical Contractor 01 (MC-01)

Contract Number: Newburgh Enlarged City School District

Contract Titles: Newburgh Enlarged City School District
2019 Capital Bond

Bidder: Date:

* Refer to Section 012973 Schedule of Values for additional information

Item	Division	Description	QTY	Unit	Total
1	1	General Requirements (Submittals, Punchlist, etc.)			
2	1	015000 Temp Facilities			
3	1	012100 Allowances - Unforeseen Conditions	1	N/A	$250,000
4	2	024119 Selective Demolition			
5	7	078413 Penetration Firestopping			
6	23	230513 Common Motor Requirements			
7	23	230517 Sleeves and Sleeve Seals for HVAC Piping			
8	23	230518 Escutcheons for HVAC Piping			
9	23	230519 Meters and Gages for HVAC Piping			
10	23	230523 General-Duty Valves for HVAC Piping			
11	23	230529 Hangers and Supports for HVAC Piping and Equipment			
12	23	230548 Vibration and Seismic Controls HVAC			
13	23	230553 Identification for HVAC Piping and Equipment			
14	23	230593 Testing, Adjusting, and Balancing For HVAC			
15	23	230700 HVAC Insulation			
16	23	230800 Retro-Commissioning and Commissioning of HVAC			
17	23	230900 Instrumentation and Control for HVAC			
18	23	230924 Control Valves			
19	23	232113 Hydronic Piping and Specialties			
20	23	232123 Hydronic Pumps			
21	23	232300 Refrigerant Piping			
22	23	233113 Metal Ducts			
23	23	233300 Air Duct Accessories			
24	23	**233416 Centrifugal HVAC Fans**			
25	23	233713 Diffusers, Registers, and Grilles			
26	23	233723 Air Louvers			

27	23	233724 HVAC Gravity Ventilators			
28	23	234113 Panel Air Filters			
29	23	236200 Packaged Compressor and Condenser Units			
30	23	238126 Split System Air-Conditioners			
31	23	**238129 Variable-Refrigerant-Flow HVAC Systems**			
32	23	238223 Unit Ventilators			
33	26	**260523 Control Voltage Electrical Power Cables (For Mechanical Controls)**			

Meadow Hill GEM School Base Bid $_____

Unit Prices

Contract Number: Mechanical Contractor 01 (MC-01)
Newburgh Enlarged City School District

Contract Titles: Newburgh Enlarged City School District
2019 Capital Bond

Bidder: Date:

* Refer to Section 012200 Unit Prices for additional information

Unit Prices – Additional Fee Schedule – All prices are Furnish and Install

Item	Description	Unit	Unit Price- ADD
1	Heat Pump	EA	
2	Condensate Pump	EA	
3	Diffusers	EA	
4	Copper Piping	LF	
5	Thermostats	EA	
7	Ceiling Cassette	EA	
8	Duct Insulation	SF	
9	Registers	EA	
10	Cabinet Unit Heaters	EA	
11	Variable Refrigerant Flow HVAC System	EA	
12	Unit Ventilator	EA	
13	RA Grilles	EA	
	Ductwork-		
14	Metal	LBS	
15	Oval	LBS	

END OF SECTION 004116.05

SECTION 004116.02 - BID FORM CONTRACT EC-01 – Electrical Contractor (EC-01)

Newburgh Enlarged City School District-2019 Capital Project

BIDDER INFORMATION

CONTACT: _____

COMPANY: _____

ADDRESS: _____

_____

TELEPHONE: (_____) _____

FACSIMILE: (_____) _____

BID TO (Owner): Attention: Purchasing Agent
Newburgh Enlarged City School District
124 Grand Street
Newburgh, New York 12550

PRIME CONTRACT: Contract No. 02 – Electrical Contractor (EC-01)

PROJECT TITLE: Newburgh Enlarged City School District
2019 Capital Project

SED Project Control No.	*Gidney Ave Elementary School*	*SED# 44-16-00-01-0-006-015*
	Temple Hill Academy	*SED# 44-16-00-01-0-036-015*
	Meadow Hill GEM School	*SED# 44-16-00-01-0-035-014*

Labella PROJECT NO: 2233600

1. **Representations**: By making this Bid, the Bidder represents that:

   The Bidder (identified above) hereby certifies that they have examined and fully understands the requirements and intent of the Bidding and Contract Documents, including Drawings, Project Manuals, and Addenda; and proposes to provide all labor, material, and equipment necessary to complete the Work on, or before, the dates specified in the Agreement for the Base Bid of:

2. **Total Base Bid**:_____($_____)

   Gidney Ave Elementary School:_____($_____)
   Temple Hill Academy:_____($_____)
   Meadow Hill GEM School:_____($_____)
   (Words) (Figures)

   In all locations sums shall be expressed in both words and figures. In case of discrepancy, written word governs.

3. **Addenda**: The Bidder acknowledges receipt of the following Addendum:

   No. _____ Dated_____ No. _____ Dated_____
   No. _____ Dated_____ No. _____ Dated_____
   No. _____ Dated_____ No. _____ Dated_____

4. **Alternates**:
   Add Alternate 01- Add Power for Corridor Air Conditioning System at Gidney Ave Elementary School _____($_____)
   Add Alternate 02- Add Power for Corridor Air Conditioning System at Meadow Hill GEM School _____($_____)
   Add Alternate 03- Add Power for Corridor Air Conditioning System at Temple Hill Academy _____($_____)

5. **Bid Security:** Attached hereto is Bid Security in the form of (circle correct form) Bid Bond, Certified Check, Cash in the amount of 5 percent (5%) of the written Base Bid amount.

6. **Allowances:**
   A. $40,000.00 Allowance for unforeseen conditions for Electrical Work at Gidney Ave Elementary School.
   B. $80,000.00 Allowance for unforeseen conditions for Electrical Work at Temple Hill Academy
   C. $80,000.00 Allowance for unforeseen conditions for Electrical Work at Meadow Hill GEM School.

7. **Time of Commencement and Completion**: The Bidder agrees to commence Work on the stipulated starting date(s) and will substantially complete the Work in accordance with the project schedule stipulated in Specification Section 011200 Multiple Contract Summary and Section 003113 Preliminary Schedules.

8. **Rejection of Bids**: The Bidder acknowledges that the Owner reserves the right to waive any informality in, or to reject any or all Bids.

9. **Execution of Contract**: If notice of the acceptance of this Bid is mailed, telegraphed, or otherwise delivered to the undersigned within forty-five (45) days after the date of the Bid Opening, or any time thereafter, the undersigned will, within five (5) working days after the receipt of the form of Agreement, execute and deliver the Contract.

10. **Signature**:

_____
(Signature)

_____
(Name – Printed)

_____
(Title – Printed) (Date)

11. **Attachments**: Obtain and attach the following documents to each individual Bid.

A. 004116 Bid Form- all costs are to be filled out.
B. 004313 Bid Bond- A310.
C. 004325 Substitution list.
D. 004336 Proposed Subcontractors Form.
E. 004513 Contractor's Qualification Statement – AIA Document 305, 2020 edition.
F. 004519 Non-Collusive Bid Certification.
G. 004520 Iran Divestment Act Certification.
H. 004521 Understanding of Agreement
I. 004522 Proposer Warranties.
J. 004523 Sexual Harassment Certifications.
K. 004543 Corporate Resolution.
L. 004544 Insurance Affidavit.
M. 012200 Unit prices.
N. 012300 Alternates.

12. **Work Cost Breakdown:** This form shall be filled out and submitted by the Contractor. The grand total must equal the BASE BID under Section I (A) "THE BID". UNIT PRICES are required for the items listed in the Unit Prices section of the work cost breakdown. Unit prices will be provided for use if the required quantities are more or less than the quantities indicated in the plans and specifications. Failure to complete the work cost breakdown may result in the disqualification of the bid. As itemized in the "Instructions to Bidders" for a complete Bid Form include the following which must be filled out completely, failure to comply with any listed below bid will be a rejected bid:

a. Bid Form, all costs must be shown in each CSI section and totaled, failure to breakdown these costs will be subject to disqualification of bid.

b. Unit costs

Gidney Ave Elementary
School Bid Cost
Contract Number:

Electrical Contractor 01 (EC-01)

Contract Titles:	Newburgh Enlarged City School District 2019 Capital Bond
Bidder:	Date:

* Refer to Section 012973 Schedule of Values for additional information

Item	Division	Description	QTY	Unit	Total
1	1	General Requirements (Submittals, Punchlist, etc.)			
2	1	012100 Allowances - Unforeseen Conditions	1	NA	$30,000
3	2	**024119 Selective Demolition**			
4	7	078413 Penetration Firestopping			
5	26	260500 General Electrical Requirements			
6	26	260519 Low-Voltage Electrical Power Conductors and Cables			
7	26	**260523 Control Voltage Electric Power Cables (for Fire Alarm)**			
8	26	260526 Grounding and Bonding for Electrical Systems			
9	26	260529 Hangers and Supports for Electrical Systems			
10	26	260533 Raceways and Boxes for Electrical Systems			
11	26	260544 Sleeves and Sleeve Seals for Electrical Raceways and Cabling (Not Currently in Spec Section)			
12	26	260553 Identification for Electrical Systems			
13	26	**262213 Low Voltage Distribution Transformers**			
14	26	262416 Panelboards			
15	26	262726 Wiring Devices			
16	26	262816 Fuses			
17	26	262816 Enclosed Switched and Circuit Breakers			
18	26	Remove and Reinstall Existing Lighting System			

Gidney Ave Elementary School Base Bid $_____

Temple Hill Academy
Bid Cost

Contract Number: Electrical Contractor 01 (EC-01)

Contract Titles: Newburgh Enlarged City School District
2019 Capital Bond

Bidder: Date:

* Refer to Section 012973 Schedule of Values for additional information

Item	Division	Description	QTY	Unit	Total
1	1	General Requirements (Submittals, Punchlist, etc.)			
2	1	015000 Temp Facilities			
3	1	012100 Allowances - Unforeseen Conditions	1	NA	$40,000
4	2	**024119 Selective Demolition**			
5	7	078413 Penetration Firestopping			
6	26	260500 General Electrical Requirements			
7	26	260519 Low-Voltage Electrical Power Conductors and Cables			
8	26	**260523 Control Voltage Electrical Power Cables (For Fire Alarm)**			
9	26	260526 Grounding and Bonding for Electrical Systems			
10	26	260529 Hangers and Supports for Electrical Systems			
11	26	260533 Raceways and Boxes for Electrical Systems			
12	26	260544 Sleeves and Sleeve Seals for Electrical Raceways and Cabling			
13	26	260553 Identification for Electrical Systems			
14	26	**262213 Low Voltage Distribution Transformers**			
15	26	262416 Panelboards			
16	26	262726 Wiring Devices			
17	26	262816 Fuses			
18	26	262816 Enclosed Switched and Circuit Breakers			
19	26	Remove and Reinstall Existing Lighting System			

Temple Hill Academy Base Bid $_____

Meadow Hill GEM
School Bid Cost

Contract Number: Electrical Contractor 01 (EC-01)

Contract Titles: Newburgh Enlarged City School District
2019 Capital Bond

Bidder: Date:

* Refer to Section 012973 Schedule of Values for additional information

Item	Division	Description	QTY	Unit	Total
1	1	General Requirements (Submittals, Punchlist, etc.)			
2	1	015000 Temp Facilities			
3	1	012100 Allowances - Unforeseen Conditions	1	NA	$40,000
4	2	**024119 Selective Demolition**			
5	7	078413 Penetration Firestopping			
6	26	260500 General Electrical Requirements			
7	26	260519 Low-Voltage Electrical Power Conductors and Cables			
8	26	**260523 Control Voltage Electrical Power Cables (For Fire Alarm)**			
9	26	260526 Grounding and Bonding for Electrical Systems			
10	26	260529 Hangers and Supports for Electrical Systems			
11	26	260533 Raceways and Boxes for Electrical Systems			
12	26	260544 Sleeves and Sleeve Seals for Electrical Raceways and Cabling			
13	26	260553 Identification for Electrical Systems			
14	26	**262213 Low Voltage Distribution Transformers**			
15	26	262416 Panelboards			
16	26	262726 Wiring Devices			
17	26	262816 Fuses			
18	26	262816 Enclosed Switched and Circuit Breakers			
19	26	Remove and Reinstall Existing Lighting System			

Meadow Hill GEM School Base Bid $_____

Unit Prices

Contract Number: Electrical Contractor 01 (EC-01)
Newburgh Enlarged City School District

Contract Titles: Newburgh Enlarged City School District
2019 Capital Bond

Bidder: Date:

* Refer to Section 012200 Unit Prices for additional information

Unit Prices – Additional Fee Schedule – All prices are Furnish and Install complete system

Item	Description	Unit	Unit Price - ADD
	Demo of Light Fixture	EA	
	Reinstallation of Light Fixture	EA	
	¾'' Conduit	LF	
	1-1/2" Conduit	LF	
	Fire Alarm Strobe	EA	
	1 pull breaker	EA	
	2 pull breakers	EA	
	Conductors	LF	
	Generator (Including Fuel & Other Operating Costs)	Day	
	Generator (Including Fuel & Other Operating Costs)	Wk	
	Receptacles		
	Quad	EA	
	Wall Duplex	EA	

SECTION 004116.03 - BID FORM CONTRACT GC-01 – General Contractor (GC-01)

Newburgh Enlarged City School District-2019 Capital Project Phase 1 Prop 5

BIDDER INFORMATION

CONTACT: _____

COMPANY: _____

ADDRESS: _____

_____

TELEPHONE: (_____) _____

FACSIMILE: (_____) _____

BID TO (Owner): Attention: Purchasing Agent
Newburgh Enlarged City School District
124 Grand Street
Newburgh, New York 12550

PRIME CONTRACT: Contract No. 03 – General Contractor (GC-01)

PROJECT TITLE: Newburgh Enlarged City School District
2019 Capital Project

SED Project Control No.	*Gidney Avenue Elementary School*	*SED# 44-16-00-01-0-006-015*
	Temple Hill Academy	*SED# 44-16-00-01-0-036-015*
	Meadow Hill GEM School	*SED# 44-16-00-01-0-035-014*

LaBella PROJECT NO: 2233600

1. **Representations**: By making this Bid, the Bidder represents that:

   The Bidder (identified above) hereby certifies that they have examined and fully understands the requirements and intent of the Bidding and Contract Documents, including Drawings, Project Manuals, and Addenda; and proposes to provide all labor, material, and equipment necessary to complete the Work on, or before, the dates specified in the Agreement for the Base Bid of:

2. **Total Base Bid**:_____($_____)

   Gidney Avenue Elementary School:_____($_____)
   Temple Hill Academy:_____($_____)
   Meadow Hill GEM School:_____($_____)
   (Words) (Figures)

   In all locations sums shall be expressed in both words and figures. In case of discrepancy, written word governs.

3. **Addenda**: The Bidder acknowledges receipt of the following Addendum:

   No. _____ Dated_____ No. _____ Dated_____
   No. _____ Dated_____ No. _____ Dated_____
   No. _____ Dated_____ No. _____ Dated_____

4. **Alternates**:
   A. Alternate - 01 Precast Concrete Mechanical Equipment Pads for Meadow Hill GEM School:
   _____($_____)
   B. Alternate - 02 Precast Concrete Mechanical Equipment Pads for Temple Hill Academy:
   _____($_____)
   C. Add Alternate- 01 Painting Gym Deck, Joists, Existing and New Ductwork at Meadow Hill GEM School:
   _____($_____)
   D. Add Alternate- 02 Painting Gym Deck, Joists, Existing and New Ductwork at Temple Hill Academy:
   _____($_____)
   E. Deduct Alternate- 01 Asbestos Abatement Work at Meadow Hill GEM School:
   _____($_____)
   F. Deduct Alternate- 02 Asbestos Abatement Work at Temple Hill Academy:
   _____($_____)

5. **Bid Security:** Attached hereto is Bid Security in the form of (circle correct form) Bid Bond, Certified Check, Cash in the amount of 5 percent (5%) of the written Base Bid amount.

6. **Allowances:**
   A. $100,000.00 Allowance for unforeseen conditions for General Work at Gidney Avenue Elementary School.

B. $300,000.00 Allowance for unforeseen conditions for General Work at Temple Hill Academy.
C. $300,000.00 Allowance for unforeseen conditions for General Work at Meadow Hill GEM School.

7. **Time of Commencement and Completion**: The Bidder agrees to commence Work on the stipulated starting date(s) and will substantially complete the Work in accordance with the project schedule stipulated in Specification Section 011200 Multiple Contract Summary and Section 003113 Preliminary Schedules.

8. **Rejection of Bids**: The Bidder acknowledges that the Owner reserves the right to waive any informality in, or to reject any or all Bids.

9. **Execution of Contract**: If notice of the acceptance of this Bid is mailed, telegraphed, or otherwise delivered to the undersigned within forty-five (45) days after the date of the Bid Opening, or any time thereafter, the undersigned will, within five (5) working days after the receipt of the form of Agreement, execute and deliver the Contract.

10. **Signature**:

_____
(Signature)

_____
(Name – Printed)

_____
(Title – Printed) (Date)

11. **Attachments**: Obtain and attach the following documents to each individual Bid.

A. 004116 Bid Form- all costs are to be filled out.
B. 004313 Bid Bond- A310.
C. 004325 Substitution list.
D. 004336 Proposed Subcontractors Form.
E. 004513 Contractor's Qualification Statement – AIA Document 305, 2020 edition.
F. 004519 Non-Collusive Bid Certification.
G. 004520 Iran Divestment Act Certification.
H. 004521 Understanding of Agreement.
I. 004522 Proposer Warranties.

J. 004523 Sexual Harassment Certifications.
K. 004543 Corporate Resolution.
L. 004544 Insurance Affidavit.
M. 012200 Unit prices.
N. 012300 Alternates.

12. **Work Cost Breakdown:** This form shall be filled out and submitted by the Contractor. The grand total must equal the BASE BID under Section I (A) "THE BID". UNIT PRICES are required for the items listed in the Unit Prices section of the work cost breakdown. Unit prices will be provided for use if the required quantities are more or less than the quantities indicated in the plans and specifications. Failure to complete the work cost breakdown may result in the disqualification of the bid. As itemized in the "Instructions to Bidders" for a complete Bid Form include the following which must be filled out completely, failure to comply with any listed below bid will be a rejected bid:
    a. Bid Form, all costs must be shown in each CSI section and totaled, failure to breakdown these costs will be subject to disqualification of bid.
    b. Unit costs

Gidney Avenue Elementary School Bid Cost

Contract Number:	General Contractor 01 (GC-01) Newburgh Enlarged City School District
Contract Titles:	Newburgh Enlarged City School District 2019 Capital Bond Phase 1 Prop 5

Bidder: Date:

* Refer to Spec Section 012973 Schedule of Values for additional information

Item	Division	Description	QTY	Unit	Total
1	1	General Requirements (Submittals, Punchlist, etc.)			
2	1	**012100** Allowances - Unforeseen Conditions	1	N/A	$100,000
3	2	**020810 Lead – Protection of Workers**			
4	2	**024119 Selective Demolition**			
5	3	033000 Cast-In-Place Concrete			
6	4	040120 Brick Masonry Repair			
7	4	042000 Unit Masonry			
8	5	055000 Metal Fabrications			
9	5	**055216 Rooftop Guardrail System**			
10	6	061053 Miscellaneous Rough Carpentry			
11	7	071416 Moisture and Waterproofing			
12	7	075323 Roofing			
13	7	**076200 Sheet Metal Flashing and Trim**			
14	7	**077200 Roof Accessories**			
15	7	078413 Penetration Firestopping			
16	7	079200 Joint Sealants			
17	8	081000 Doors, Frames, Hardware			
18	8	083113 Security Access Doors			
19	9	092216 Non-Structural Metal Framing			
20	9	092900 Gypsum Board			
21	9	095113 Acoustic Panel Ceilings			
22	9	**099000 Painting and Finishing**			
23	31	312000 Earth Moving- Excavation/backfill			
24	31	312319 Dewatering			
25	31	312500 Erosion and Sediment Control			
26	32	329200 Topsoil and Seeding			
27	32	**321216 Asphalt and Paving**			
28	32	323123 Vinyl Fencing and Gates			

Gidney Avenue Elementary School Base Bid $_____

Temple Hill Academy Base Bid

Contract Number:	General Contractor 01 (GC-01) Newburgh Enlarged City School District
Contract Titles:	Newburgh Enlarged City School District 2019 Capital Bond Phase 1 Prop 5
Bidder:	Date:

* Refer to Spec Section 012973 Schedule of Values for additional information

Item	Division	Description	QTY	Unit	Total
1	1	General Requirements (Submittals, Punchlist, etc.)			
2	1	**012100** Allowances - Unforeseen Conditions	1	N/A	$300,000
3	2	**020800 Asbestos Removal**			
4	2	**020810 Lead – Protection of Workers**			
5	2	**024119 Selective Demolition**			
6	3	033000 Cast-In-Place Concrete			
7	4	040120 Brick Masonry Repair			
8	4	042000 Unit Masonry			
9	5	055000 Metal Fabrications			
10	5	**055216 Rooftop Guardrail System**			
11	6	061053 Miscellaneous Rough Carpentry			
12	7	071416 Moisture and Waterproofing			
13	7	075323 Roofing			
14	7	**076200 Sheet Metal Flashing and Trim**			
15	7	**077200 Roof Accessories**			
16	7	078413 Penetration Firestopping			
17	7	079200 Joint Sealants			
18	8	08000 Doors, Frames, Hardware			
19	8	083113 Security Access Doors			
20	8	088000 Glazing			
21	9	092216 Non-Structural Metal Framing			
22	9	092900 Gypsum Board			
23	9	095113 Acoustic Panel Ceilings			
24	9	**099000 Painting and Finishing**			
25	31	312000 Earth Moving- Excavation/backfill			
26	31	312319 Dewatering			
27	31	312500 Erosion and Sediment Control			
28	32	329200 Topsoil and Seeding			
29	32	**321216 Asphalt and Paving**			

30	32	323123 Vinyl Fencing and Gates			
		Concrete Vault and Loading Dock Repair Work			
		General Section			
31	2	024119 Selective Demolition			
32	3	**031000 Concrete Forming and Accessories**			
33	3	**032000 Concrete Reinforcing**			
34	3	033000 Concrete			
35	4	042000 Masonry			
36	5	055200 Metal Railings			
37	7	071000 Waterproofing			
38	9	099100 Painting			

Temple Hill Academy Base Bid $_____

Meadow Hill GEM School Base Bid

Contract Number:	General Contractor 01 (GC-01) Newburgh Enlarged City School District
Contract Titles:	Newburgh Enlarged City School District 2019 Capital Bond Phase 1 Prop 5
Bidder:	Date:

* Refer to Spec Section 012973 Schedule of Values for additional information

Item	Division	Description	QTY	Unit	Total
1	1	General Requirements (Submittals, Punchlist, etc.)			
2	1	**012100** Allowances - Unforeseen Conditions	1	N/A	$300,000
3	2	**020800 Asbestos Removal**			
4	2	**020810 Lead – Protection of Workers**			
5	2	**024119 Selective Demolition**			
6	3	033000 Cast-In-Place Concrete			
7	4	040120 Brick Masonry Repair			
8	4	042000 Unit Masonry			
9	5	055000 Metal Fabrications			
10	5	**055216 Rooftop Guardrail System**			
11	6	061053 Miscellaneous Rough Carpentry			
12	7	071416 Moisture and Waterproofing			
13	7	075323 Roofing			
14	7	**077200 Roof Accessories**			
15	7	**076200 Sheet Metal Flashing and Trim**			
16	7	078413 Penetration Firestopping			
17	7	079200 Joint Sealants			
18	8	08000 Doors, Frames, Hardware			
19	8	083113 Security Access Doors			
20	8	088000 Glazing			
21	9	092216 Non-Structural Metal Framing			
22	9	092900 Gypsum Board			
23	9	095113 Acoustic Panel Ceilings			
24	9	**099000 Painting and Finishing**			
25	31	312000 Earth Moving- Excavation/backfill			
26	31	312319 Dewatering			
27	31	312500 Erosion and Sediment Control			
28	32	329200 Topsoil and Seeding			

29	32	**321216 Asphalt Paving**			
30	32	323123 Vinyl Fencing and Gates			
		Concrete Vault and Loading Dock Repair Work			
		General Section			
31	2	024119 Selective Demolition			
32	3	**031000 Concrete Forming and Accessories**			
33	3	**032000 Concrete Reinforcing**			
34	3	033000 Concrete			
35	4	042000 Masonry			
36	5	055200 Metal Railings			
37	7	071000 Waterproofing			
38	9	099100 Painting			

Meadow Hill GEM School Base Bid $_____

Unit Prices

Contract Number: General Contractor 01 (GC-01) Newburgh Enlarged City School District

Contract Titles: Newburgh Enlarged City School District 2019 Capital Bond

Bidder: Date:

* Refer to Section 012200 Unit Prices for additional information

Unit Prices – Additional Fee Schedule – All prices are Furnish and Install

Item	Description	Unit	Unit Price- ADD
1	Painting	SF	
2	Fire Rated Sheetrock Repair	SF	
3	Ceiling Tile	EA	
4	Fencing Cost	LF	
5	Concrete Cost	CY	
6	Brick Repair	SF	

END OF SECTION 004116.05

AIA® Document A132™ – 2019

Standard Form of Agreement Between Owner and Contractor,
Construction Manager as Adviser Edition

AGREEMENT made as of the « XX » day of «XX » in the year « 2024 »
(In words, indicate day, month, and year.)

BETWEEN the Owner:
(Name, legal status, address, and other information)

«Newburgh Enlarged CSD (NECSD) »
«124 Grand Street »
«Newburgh, NY 12550 »

and the Contractor:
(Name, legal status, address, and other information)

TBD

for the following Project:
(Name, location, and detailed description)

«Newburgh Enlarged CSD»
Proposition 5 - 2019 Capital Improvements Project
HVAC Upgrades
SED Project Control No(s).
Gidney Ave. Memorial School SED #44-16-00-01-0-006-015
Temple Hill School (525 Union Ave, New Windsor, NY 12553)
44-16-00-01-0-036-015
Meadow Hill School (124 Meadow Hill Rd, Newburgh, NY 12550)
44-16-00-01-0-035-014

The Construction Manager:
(Name, legal status, address, and other information)

Jacobs
One Penn Plaza
24th Floor, Suite 2400
New York, NY 10119
United States

The Architect:
(Name, legal status, address, and other information)

«LaBella Associates, D.P.C»
«4 British American Blvd.»
«Latham NY 12110»

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition; B132™–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser. AIA Document A232™–2019 is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

TABLE OF ARTICLES

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND DATES OF SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[**X**] The date of this Agreement.

[« »] A date set forth in a notice to proceed issued by the Owner.

[« »] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion of the Project or Portions Thereof

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the date of Substantial Completion of the Work of all of the Contractors for the Project will be:
(Insert the date of Substantial Completion of the Work of all Contractors for the Project.)

« »

§ 3.4.3 If the Contractor fails to substantially complete the Work of this Contract, or portions thereof, as provided in this Section 3.4, liquidated damages, if any, shall be assessed.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:
(Check the appropriate box.)

[X] Stipulated Sum, in accordance with Section 4.2 below

[« »] Cost of the Work plus the Contractor's Fee, in accordance with Section 4.3 below

[« »] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 4.4 below

(Based on the selection above, complete Section 4.2, 4.3 or 4.4 below.)

§ 4.2 Stipulated Sum

§ 4.2.1 The Contract Sum shall be xxx ($), subject to additions and deductions as provided in the Contract Documents.

§ 4.2.2 Alternates

§ 4.2.2.1 N/A

§ 4.2.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price

§ 4.2.4 Unit prices, if any:
(Identify the item and state the unit price, and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Construction Manager by the Contractor, and Certificates for Payment issued by the Construction Manager and Architect, the Owner shall make progress payments on account of the Contract Sum, to the Contractor, as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 5.1.3 Provided that an Application for Payment is received by the Construction Manager not later than the last day of a month for work up to that date, the Owner shall make payment of the amount certified to the Contractor not later than the last day of the following month. If an Application for Payment is received by the Construction Manager after the application date fixed above, payment of the amount certified shall be made by the Owner not later than Forty-Five (45) days after the Construction Manager receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Progress Payments Where the Contract Sum is Based on a Stipulated Sum

§ 5.1.4.1 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents and approved by Construction Manager and Architect. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Construction Manager and Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.4.2 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.4.3 In accordance with AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.4.3.1 The amount of each progress payment shall first include:

.1 That portion of the Contract Sum properly allocable to completed Work;

.2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing, must have written attestation from Construction Manager that materials and equipment have been readily inspected and include photographs of the items clearly labeled for the Owner (NECSD); and

.3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.4.3.2 The amount of each progress payment shall then be reduced by:

.1 The aggregate of any amounts previously paid by the Owner;

.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019;

.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019; and

.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to when the Work of this Contract is substantially complete, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

« **5%** »

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

N/A

§ 5.2 Final Payment

§ 5.2.1 Final Payment Where the Contract Sum is Based on a Stipulated Sum

§ 5.2.1.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Construction Manager, Architect and Owner have accepted in writing the Contractor has completed the work as described in the Punch List, and all Close Out documentation has been received by the Owner.

.2 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect;

§ 5.2.1.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment.

« »

§ 5.3 Notwithstanding the above, all payments shall be made to the Contractor consistent with the requirements of General Municipal Law §106-b..

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as Initial Decision Maker pursuant to Article 15 of AIA Document A232–2019, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

N/A

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A232–2019, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« »] Arbitration pursuant to Article 15 of AIA Document A232–2019.

[« X »] Litigation in a court of competent jurisdiction.

[« »] Other: *(Specify)*

« »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 Where the Contract Sum is a Stipulated Sum

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2019.

§ 7.1.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A232–2019, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

N/A

§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019.

§ 7.2.1.3 Termination by the Owner for Convenience

If the Owner terminates the Contract for convenience in accordance with Article 14 of AIA Document A232–2019, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of or method for determining the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

« The value of the work that has actually been performed to date of termination, value of stored materials if accepted by the Architect and documented in writing by Construction Manager, and negotiated overhead and profit rate.»

§ 7.3 Suspension

The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019; in such case, the Contract Sum and Contract Time shall be increased as provided in Article 14 of AIA Document A232–2019, except that the term "profit" shall be understood to mean the Contractor's Fee as described in Section 4.3.2 or 4.4.2, as applicable, of this Agreement.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232–2019 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

Newburgh ECSD
Mr. Anibal Velez "Andy"
Exec. Director of Operations and Maintenance
124 Grand Street
Newburgh NY 12550
(845) 234-0035
avelez@necsd.net

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

TBD

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A232™–2019, General Conditions, Construction Manager as Adviser Edition.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A232™–2019. General Conditions, Construction Manager as Adviser Edition.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A232–2019, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

N/A

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition

.2 AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition

.3 Drawings

Number	Title	Date

.4 Specifications

Section	Title	Date	Pages

.5 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.6 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[« X »] AIA Document A132™–2019, Exhibit "A" – Project Labor Agreement

.7 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A232–2019 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

« »

This Agreement is entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
Newburgh Enlarged City School District Dr. Jackielyn Manning Campbell, Superintendent	« »« »
(Printed name and title)	*(Printed name and title)*

AIA® Document G706®A – 1994

Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)* Newburgh Enlarged CSD Proposition 5 - 2019 Capital Improvements Project HVAC Upgrades SED Project Control No(s). Gidney Ave. Memorial School SED# 44-16-00-01-0-006-015 Temple Hill School (525 Union Ave., New Windsor, NY 12553) SED# 44-16-00-01-0-036-015 Meadow Hill School (124 Meadow Hill Road, Newburgh, NY 12550) SED# 44-16-00-01-0-035-014	**ARCHITECT'S PROJECT NUMBER:** **CONTRACT FOR:** **CONTRACT DATED:**	OWNER: ☐ ARCHITECT: ☐ CONTRACTOR: ☐ SURETY: ☐ OTHER: ☐
TO OWNER: *(Name and address)* Newburgh Enlarged CSD (NECSD) 124 Grand Street Newburgh, NY 12550		

STATE OF:
COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR: *(Name and address)*

BY: _____
(Signature of authorized representative)

_____
(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:

DRAFT

AIA® Document A232™ – 2019

General Conditions of the Contract for Construction,
Construction Manager as Adviser Edition

for the following PROJECT:
(Name, and location or address)

Newburgh Enlarged City School District
HVAC Upgrades
SED Project Control No(s).
Gidney Ave. Memorial School SED #44-16-00-01-0-006-015
300 Gidney Ave, Newburgh, NY 12550
Meadow Hill School 44-16-00-01-0-035-014
124 Meadow Hill Road, Newburgh, NY 12550
Temple Hill School 44-16-00-01-0-036-015
525 Union Avenue, New Windsor, NY 12553
LaBella Project #2233600 Phase I

THE CONSTRUCTION MANAGER:
(Name, legal status, and address)

Jacobs Project Management Co.
One Penn Plaza, 24th Floor, Suite 24000
New York, New York 10119

THE OWNER:
(Name, legal status, and address)

Newburgh Enlarged City School District
124 Grand Street
Newburgh, New York 12550

THE ARCHITECT:
(Name, legal status, and address)

Labella Associates D.P.C.
21 Fox St., Poughkeepsie,
NY 12601

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132™–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

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TABLE OF ARTICLES

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents. The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract. The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their duties.

§ 1.1.3 The Work. The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project. The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by other Contractors, and by the Owner's own forces and Separate Contractors.

§ 1.1.5 Contractors. Contractors are persons or entities, other than the Contractor or Separate Contractors, who perform Work under contracts with the Owner that are administered by the Architect and Construction Manager.

§ 1.1.6 Separate Contractors. Separate Contractors are persons or entities who perform construction under separate contracts with the Owner not administered by the Architect and Construction Manager.

§ 1.1.7 The Drawings. The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.8 The Specifications. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.9 Instruments of Service. Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.10 Initial Decision Maker. The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.1.11 Project Labor Agreement. "Project Labor Agreement" refers to a pre-hire collective bargaining agreement

between a Contractor and a building and construction trade labor organization establishing the labor organization as the collective bargaining representative for all person who will perform work on a public works project, and which provides that only contractors and subcontractors who provide a signed Letter of Assent agreeing to be bound by the Project Labor Agreement.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. If, in the interpretation of Contract Documents, conflicting requirements within the Drawings and Specifications occur, or if it appears that the Drawings and Specifications are not in agreement, the requirement to be followed shall be decided by the Architect. Addenda supersede the provisions they amended. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

1. All dimensions shown on the Drawings are for bidding purposes only. It is the responsibility of the Contractor to verify all dimensions in the field to ensure proper and accurate fit of materials and items to be installed.
2. The lists of equipment, tabulations of data and schedules appearing in the Specifications or Drawings are included for assistance and guidance in arriving at a more complete understanding of the intended installation. They are not intended, or to be construed, as relieving the responsibility of the Contractor in making their own takeoffs.
3. It is intended that all mechanical and electrical systems will be complete and in proper operation and that all construction components will be complete and in compliance with accepted construction practice upon completion of the Work. Even if items are missing from the Plans and/or Specifications, but are normally required for proper operation of mechanical and electrical systems, or to complete otherwise incomplete construction or to meet governing code requirements, they shall be included by the Contractor, unless he sought and received contradictory interpretation or clarification from the Architect in writing.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1. Sections of the General Requirements, Division 01, govern the execution of all remaining Divisions of the Specifications.
2. It shall be the Contractor's responsibility, when subcontracting any portion of Work, to arrange or group items of work under particular trades to conform with prevailing customs of the trade, regardless of the particular Divisions and Sections of the Specifications in which the work is described.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 Within the Contract Documents for which each Prime Contractor is responsible, any Work included by reference in any section to another Specification's Section shall be included as Work under the Contract, whether or not it is called for under the Section referred to. Failure to cross-reference such items shall not relieve the Contractor or any Prime Contractor from the obligations to provide such work.

§ 1.3 Capitalization
Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation
In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service
§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, except to the extent of the Owner's rights as set forth in the Owner-Architect Agreement, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice
§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission
The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

§ 1.7.2 Contractor's Use of Instruments of Service in Electronic Form

§ 1.7.2.1 The Architect may, with the concurrence of the Owner and upon compensation by the Contractor to the Architect, furnish to the Contractor versions of Instruments of Service in digital form. The Instruments of Service executed or identified in accordance with Subparagraph 1.1.7 shall prevail in case of an inconsistency with subsequent versions made through manipulatable electronic means.

§ 1.7.2.2 The Contractor shall not transfer or reuse Instruments of Service in electronic or machine-readable form without the prior written consent of the Architect.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

§ 1.9 COMMUNICATION

§ 1.9.1 Construction Manager, Contractor and Architect shall meet periodically at mutually agreed upon intervals for the purpose of establishing procedures to facilitate cooperation, communication and timely responses among the participants. By participating in these meetings, the parties do not intend to create additional contractual obligations or modify the legal relationships which may already exist.

§ 1.10 Project Labor Agreement

§ 1.12.1 THIS PROJECT IS SUBJECT TO A PROJECT LABOR AGREEMENT COVERING CONSTRUCTION OF CONSTRUCTION PROJECTS, NEWBURGH ENLARGED CITY SCHOOL DISTRICT EFFECTIVE FEBRUARY 1, 2021, BETWEEN NEWBURGH ENLARGED CITY SCHOOL DISTRICT, THE HUDSON VALLEY BUILDING AND CONSTRUCTION TRADES COUNCIL ON BEHALF OF ITSELF AND ITS AFFILIATED LOCAL UNIONS, AND SIGNATORY LOCAL UNIONS ON BEHALF OF THEMSELVES AND THEIR MEMBERS ("PLA"), WHICH IS ATTACHED TO THESE GENERAL CONDITIONS AS APPENDIX "A ", THE PROVISIONS OF WHICH MAY BE SPECIFICALLY INCLUDED HEREIN AS WELL AS INCORPORATED BY REFERENCE WITHIN THESE GENERAL CONDITIONS AS FULLY AS IF SET FORTH AT LENGTH HEREIN. TO THE EXTENT OF ANY CONFLICT BETWEEN THE GENERAL/SPECIAL CONDITIONS AND THE PLA, THE PROVISIONS IN THE PLA WILL CONTROL. NOTWITHSTANDING SPECIFIC REFERENCES TO CERTAIN PROVISIONS THE PLA IN THESE GENERAL CONDITIONS, THE CONTRACTORS AND SUBCONTRACTORS OF ALL TIERS MUST COMPLY WITH ALL PROVISIONS OF THE PLA.

ALL SUCCESSFUL BIDDERS AND THEIR SUBCONTRACTORS OF WHATEVER TIER MUST BECOME BOUND BY, AND SIGNATORIES TO, THE PLA BY SIGNING A LETTER OF ASSENT. THE LETTER OF ASSENT REQUIRED OF CONTRACTORS AND SUBCONTRACTORS IS SET FORTH AS SCHEDULE B TO THE PLA.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Construction Manager and the Architect do not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights.

§ 2.2 Omitted

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. Unless otherwise provided under the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 The Owner shall retain a construction manager adviser lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.4 Omitted

§ 2.3.5
The Owner shall furnish, upon written request only and as necessary to complete this work, surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to reasonably rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.6 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.7
The Contractor and/or Prime Contractors will be furnished, free of charge, two sets of the Contract Drawings and Project Manuals. Additional sets will be furnished at cost of reproduction and postage and handling when applicable. Subcontractors and other entities desiring copies of Drawings and Project Manuals shall obtain them via one of the Prime Contracts.

§ 2.3.8 The Owner shall forward all communications to the Contractor through the Construction Manager. Other communication shall be made as set forth in Section 4.2.6.

§ 2.4 Owner's Right to Stop the Work
If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work
If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to review by the Construction Manager and prior approval of the Architect, and the Construction Manager or Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

§ 2.6 ACCELERATION CLAUSE
§ 2.6.1 The Owner reserves the right to accelerate the work of the Contract. In the event that the Owner directs acceleration, such directive will be only in written form. The Contractor shall keep cost and other project records related to the written acceleration directive separately from normal project costs and records and shall provide a written record of acceleration cost to the Owner on a daily basis.

§ 2.6.2 In order to p recover additional costs due to a written acceleration directive, the Contractor must document that additional expenses were incurred and paid by the Contractor. Labor costs recoverable will be only overtime or shift premium costs or the cost of additional laborers brought to the site to accomplish the accelerated work effort. Equipment costs recoverable will be only the cost of added equipment mobilized to the site to accomplish the accelerated work effort.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor. Staging and storage areas for materials shall be as agreed on between the Contractor and the Owner's Project Representative.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the contract by the Contractor is a representation that the Contractor has carefully examined the Contract Documents and the site, and represents that the Contractor is thoroughly familiar with the nature and location of the Work, the site, the specific conditions under which the Work is to be performed, and all matters which may in any way affect the Work or its performance. The Contractor further represents that as a result of such examinations and investigations, the Contractor thoroughly understands the Contract Documents and their intent and purpose, and is familiar with all applicable codes, ordinances, laws, regulations, and rules as they apply to the Work, and that the Contractor will abide by same. Claims for additional time or additional compensation as a result of the Contractor's failure to follow the foregoing procedure and to familiarize itself with all local conditions and the Contract Documents are waived and will not be permitted.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted in writing on such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. If the Contractor performs any construction activity which involves an error, inconsistency or omission in the Contract Documents without first providing notice to the Owner, Architect and Construction Manager of such condition and receiving authorization to proceed, the Contractor shall assume responsibility for such performance and shall bear an appropriate amount of the attributable costs for correction.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or

3.2.3, the Contractor shall submit Claims in writing as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.2.5 Where existing conditions are obscured or concealed from the Owner or Architect's view prior to the start of this Project's construction activities, portrayal of such conditions in the documents is based on reasonable implications and assumptions. The Owner and Architect do not imply or guarantee to the Contractor in any way that such portrayals in the Documents are accurate or true.

§ 3.2.5.1 Physical investigations and testing of existing conditions were not undertaken by the Architect, unless so indicated in the Contract Documents.

§3.2.5.2 The Contractor may submit written requests for information to the Architect to help facilitate the Contractor's performance of the contract. Prior to submitting each request for information, the Contractor shall first carefully study and compare the Contract Documents, field conditions, other Owner provided information, Contractor prepared Coordination Drawings, and prior Project correspondence and documentation to determine that the information to be requested is not reasonably obtainable from such sources.

§ 3.2.5.3 Each request for information shall be submitted to the Architect, in writing, with a copy to the Construction Manager. Each request for information shall identify the specific sources which were reviewed by the Contractor in an effort to determine the information requested, and a statement to the effect that the information being requested could not be determined from such sources.

§ 3.2.5.4 The Contractor shall submit each request for information sufficiently in advance of the date by which such information is requested in order to allow the Architect sufficient time, in the Architect's professional judgment, to permit adequate review and response and to permit Contractor compliance with the latest construction schedule.

§ 3.2.5.5 The Construction Manager shall maintain a log at the Project site that sequentially numbers and lists each request for information. This log shall contain the Drawings reference or Specification section to which the request pertains, the date of the request, to whom the request was made, by whom the request was made, the nature of the request, and the Architect's resolution thereof. This log shall be reviewed at each Project meeting and the status of the requests for information shall be made part of the minutes of such meetings.

§ 3.2.5.6 The Contractor shall reimburse the Owner amounts charged to the Owner by the Architect or Construction Manager for responding to Contractor requests for information where such information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner provided information, Contractor prepared Coordination Drawings, or prior Project correspondence or documentation.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner, the Construction Manager, and the Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. The Construction Manager shall review the proposed alternative for sequencing, constructability, and coordination impacts on the other Contractors. Unless the Architect or the Construction Manager objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures. The Contractor shall be responsible for and coordinate any

and all inspections required by any governmental body having jurisdiction over the project. Failure to obtain any permits, licenses or other approvals because of the failure of the Contractor to conform to this requirement shall not extend the Contract time, and the Contractor shall not be entitled to any increase in the contract sum therefor. In addition, any additional costs and/or expenses of any nature incurred by the Owner as a result of the Contractor's failure to conform to this requirement shall constitute a charge against the Contractor's contract. Each contractor shall be responsible for complying with union regulations existing under current labor agreements in performing construction work on the project.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of the Project already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 During period of active Construction, the Contractor shall consult daily and cooperate with the Construction Manager. On a daily basis, the Contractor shall keep the Construction Manager and Architect notified of when Work will be starting, restarting, suspended and temporarily or permanently concluding.

§ 3.3.5 Within 15 days of the date of the Notice to Proceed, each Contractor shall submit to the Construction Manager and Architect a list of all Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 After the Contract has been executed, the Architect in conjunction with the Construction Manager, will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 01 of the Specifications). Substitutions shall satisfy the following conditions:

1. The materials, products and equipment described in the Contract Documents establish the standard of required quality, function, dimension and appearance expected.
2. Requests for substitutions must be submitted at the time that bids are received.
3. Substitution requests will be considered only if standards are met or exceeded as described above and are subsequently approved in writing by the Architect and Owner.
4. Each such request shall include the name of the material, product or equipment item for which substitution is requested and a complete description of the proposed substitute, including drawings, cuts, performance and test data and any other information necessary for a complete evaluation.
5. Each such request shall include a statement setting forth any changes in other materials, product or equipment or other work that incorporation of the substitution would require.
6. The burden of proof of the merit of the proposed substitution is upon the proposer.
7. The Architect's decision of approval or disapproval of a proposed substitution shall be final and will be set forth in writing.
8. Additional substitution requests, during construction, will be considered only if substitution is caused by specific material, product or equipment's subsequent removal from, or unavailability in the market place and only at "no change" or "credit" to Contract amount.
9. Contractor's Responsibilities: If any of the following conditions occur due to substitutions, the contractor making the substitution shall bear the cost of such conditions, including payment for services rendered by the Architect:
    (a) Redesign required for any of the Work.
    (b) Material or quantity changes for any of the Work.
    (c) Delays in any of the Work.
    (d) Request for information generated due to substitutions."

§ 3.4.3 The Contractor, as indicated in the Instructions to Bidders, shall furnish in writing to the Owner through the Construction Manager a list showing the name of the manufacturer proposed to be used for equivalents of products identified in the Specifications, and where applicable, the name of the installing subcontractor. By identifying and submitting a proposed manufacturer and/or installer the Contractor warrants that products furnished and/or installed by them conform to such requirements of the Contract Documents The Construction Manager, in conjunction with the Architect will reply with reasonable promptness to the Contractor in writing stating whether or not the Owner, Construction Manager or Architect, after due investigation, have reasonable objection to any such proposed manufacturer or installer.

.1 If adequate data on a proposed equivalent manufacturer or installer is not available, the Architect may state that the action will be deferred until the Contractor provides additional data.

.2 Failure of the Owner, Construction Manager or Architect to object to a manufacturer or installer shall not constitute a waiver of the requirements of the Contract Documents.

.3 Products furnished by the listed manufacturer or installed by the listed installer shall conform to such requirements of the Contract Documents.

§ 3.4.3 The Contractor shall insure that its work continues uninterrupted pursuant the Project Schedule during the pendency of any labor dispute.

§ 3.4.4 The Contractor shall comply with the most current Contract Requirements and Prevailing Wage Rate Schedules as published by the Bureau of Public Works, State of New York, Department of Labor established for this Project.

§ 3.4.5 No materials or supplies for the Work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that he has full title to all materials and supplies used by him in the Work, or resold to the Owner, pursuant to this Contract Document, free from all liens, claims or encumbrances.

§ 3.4.6 All materials used permanently in the Work shall be new unless otherwise specified. The apparent silence of the Specifications as to any detail described concerning any Work to be done and materials to be furnished shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the first quality are to be used, and all interpretations of the Specifications shall be made on this basis. All material incorporated in the Project Work shall be clean and exhibit no appearance of aging, exposure to weather, prior use, handling or damage of any kind.

§ 3.4.7 Manufacturer's identifications shall be inconspicuous, but where nameplates contain information relative to characteristics or maintenance, they shall be clearly visible and located for easy access.

§ 3.4.8 Equipment intended for permanent installation shall not be operated for temporary purposes without the written permission of the Architect.

§ 3.4.9 Materials shall be delivered in manufacturer's original sealed containers, with complete identification of contents and manufacturer, and kept sealed in original containers until used. Labels shall not be removed until materials have been installed and inspected.

§ 3.4.10 Whenever the Contract Documents require delivery by the Contractor of any materials, equipment or other items, the term delivery shall be deemed to include unloading and storing with proper protection where directed.

§ 3.4.11 Materials shall be applied or installed under proper climactic conditions, not when they may be affected by temperature, moisture, humidity or dust.

§ 3.4.12 As defined by Federal and State Laws, no materials incorporated into the Project Work shall contain asbestos. Material shall be "asbestos-free" containing zero percent (0%) asbestos. The Architect reserves the right to request certification from the material manufacturer through the Contractor for certification that materials installed contact zero percent (0%) asbestos.

§ 3.4.13 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

.1 A sufficient force of competent experienced workman, foreman and superintendents shall be employed at all times to permit the Work to be pursued with diligence until completion.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner, Construction Manager, and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

Exempt from Sales Tax: New York State Sales Tax is not applicable to any materials and supplies to be incorporated into Work under the terms of the Contract, the Owner being exempt therefrom. There is no exemption from the sales or use tax on charges to the Contractor or subcontractor for lease of tools, machinery, equipment or other property used in conjunction with the Project. The Contractors and subcontractors shall be solely responsible for and pay any and all applicable taxes, including sales and compensating use taxes, on such leased tools, machinery, equipment or other property, and for materials not incorporated in the Project and the amount of such taxes, if any, shall be deemed included in executed Base Bid.

§ 3.7 Permits, Fees, Notices, and Compliance with Laws

§ 3.7.1 The Owner, through the Construction Manager, shall secure and pay for the building permit. The Contractor shall secure and pay for other permits, fees, licenses, and inspections by government agencies necessary for proper execution of and completion of the contract, which are legally required.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work which it knows or should have known was contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 CONCEALED OR UNKNOWN CONDITIONS. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner, Construction Manager, and the Architect in writing before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect and Construction Manager will investigate such conditions with reasonable promptness and, if the Architect, in consultation with the Construction Manager, determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and Contractor, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner, Construction Manager, and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents

.1 Contingency Allowances shall cover the direct cost to the Contractor for labor, materials and equipment, including delivery, unloading, storage, handling and installation. They do not include the Contractor's overhead and profit, including the costs of bonds, insurance, administration and supervision, which costs should be carried as part of the Contract Sum.

§ 3.8.2 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site full time during performance of the Work. The Superintendent shall be the same individual throughout the duration of the project. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect, through the Construction Manager, of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor, stating whether the Owner, the Construction Manager, or the Architect (1) has reasonable objection to the proposed superintendent or (2) require additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner, Construction Manager, or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information, and the Construction Manager's use in developing the Project schedule, a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Contractors, or the construction or operations of the Owner's own forces or Separate Contractors.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Construction Manager's and Architect's approval. The Architect and Construction Manager's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time in their respective judgments to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall participate with other Contractors, the Construction Manager, and the Owner in reviewing and coordinating all schedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.

§ 3.10.4 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager, and Architect, and incorporated into the approved Project schedule.

§ 3.11 Documents and Samples at the Site

The Contractor shall maintain at the Project site for the Owner two sets of record Drawings and one set of record Specifications, Addenda, Change Orders, Allowance Authorizations, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples, and similar required submittals in good order and condition. . The Contractor shall mark these documents on a weekly basis to record all approved changes, and to record the dimensional locations of his installed work if it deviates from that shown on the Contract or Shop Drawings. Particular attention shall be given to site utilities, the location of valves, HVAC equipment, and all ductwork and major electrical conduit. These shall be in electronic form or paper copy, available to the Construction Manager, Architect, and Owner, and delivered to the Construction Manager for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data, and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect and Construction Manager is subject to the limitations of Sections 4.2.10 through 4.2.12. Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Construction Manager or Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Construction Manager, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the Project submittal schedule approved by the Construction Manager and Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Contractors, Separate Contractors, or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples, and similar submittals with related documents submitted by other Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner, Construction Manager, and Architect, that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 Work performed without approved shop drawings, product data, samples or similar submittals as required by the Specifications is subject to all comments and conditions of approval regardless of Work progress. Completed work must be in accordance with all comments and conditions of approval regardless of Work progress. Completed work must be in accordance with all comments on approved submittals. Any portion of the Work performed prior to

review and approval by the Construction Manager and Architect of required Shop Drawings, Product Data, Samples, or other Submittals, is performed at Contractor's risk. No Contract adjustments will be made to correct or modify Work installed without prior written approval of the Construction Manager and Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Construction Manager and Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Construction Manager and Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner, the Architect, and the Construction Manager shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Construction Manager shall review submittals for sequencing, constructability, and coordination impacts on other Contractors.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Construction Manager and Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner, Separate Contractors, or of other Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner, Separate Contractors, or by other Contractors except with written consent of the Construction Manager, Owner, and such other Contractors or Separate Contractors. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Separate Contractors, other Contractors, or the Owner, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner, or Construction Manager with the Owner's approval, may do so and the Owner shall be entitled to reimbursement from the Contractor. Upon completion of the work, and prior to final inspection and acceptable of the same by the owner, the contractor shall thorougly clean all Work, remedy any defetcs, and leave the project in goos conditions.

§ 3.16 Access to Work

The Contractor shall provide the Owner, Construction Manager, and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner, Construction Manager, and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner, Architect, or Construction Manager. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect through the Construction Manager.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the Owner, Construction Manager, Architect, each of their consultant's, officers, board members, agents, and employees from and against any suits, claims, damages, losses, or expenses, including but not limited to attorneys' fees and litigation costs, arising out of or resulting from performance of the Work, provided that such suit, claim, damage, loss or expense is attributable to any bodily injury, sickness, disease, or death, or injury to or destruction of any tangible property, including loss of use resulting therefrom, but only to the extent caused in whole or in part by the act, omission, fault, breach of contract, breach of warranty or statutory violation of the Contractor, a subcontractor, or any person or entity directly or indirectly employed by them, or any person or entity for whose acts they may be liable or arises out of operation of law as a consequence of any act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of the above may be liable, regardless of whether any of them has been negligent. This provision shall not be construed to require the Contractor to indemnify the Owner, Construction Manager, or Architect for the negligence of the Owner, Construction Manager, or Architect to the extent such negligence, in whole or in part, proximately caused the damages resulting in the suit, claim, damage, loss or expense."

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.18.3 The indemnification provisions contained in this **§ 3.18** shall survive the completion or tewrmination of the Contract

§ 3.19 DAILY RECORDS CLAUSE

§3.19.1 The Contractor shall prepare and maintain Daily Inspection Records to document the progress of the work on a daily basis. Such daily records shall include a detailed daily accounting of all labor and all equipment on the site for the Contractor and all subcontractors, at any tier. Such daily records will make a clear distinction between work being performed under Change Order, base scope work and/or disputed work.

3.19.2 In the event that any labor or equipment is idled, solely as a result of Owner actions or inactions, the daily records shall record which laborers and equipment were idled and for how long. In the event that specific work activities were stopped, solely as a result of Owner actions or inactions, and labor and equipment was reassigned to perform work on other activities, the daily records will make a clear record of which activities were stopped and where labor and equipment was redirected to.

§**3.19.3** Such daily records shall be copied and provided to the Owner at the end of every week.

ARTICLE 4 ARCHITECT AND CONSTRUCTION MANAGER

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner and Architect.

§ 4.2 Administration of the Contract

§ 4.2.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's Representative (1) during construction, (2) until 90 days after issuance of the State Education Department's Certificate of Substantial Completion or issuance of the Final Project Certificate for Payment, whichever is later, and (3) with the Owner's concurrence, from time to time during the one-year period for correction of Work described in Section 12.2. The Construction Manager and Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if, in its professional judgment, the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of the site visits, the Architect will keep the Owner and the Construction Manager reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner and Construction Manager known deviations from the Contract Documents and defects and deficiencies observed in the Work.

§ 4.2.2.1 The Contractor shall reimburse the Owner for compensation paid to the Architect for additional site visits made necessary by the fault, neglect or request of the Contractor.

§ 4.2.3 The Construction Manager shall provide one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents, will keep the Owner and Architect reasonably informed of the progress of the Work, and will promptly report to the Owner and Architect known deviations from the Contract Documents and the most recent Project schedule, and defects and deficiencies observed in the Work.

§ 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Contractors in accordance with the latest approved Project schedule.

§ 4.2.5 The Construction Manager, except to the extent required by Section 4.2.4, and Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and

responsibilities under the Contract Documents, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of, or be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work.

§ 4.2.6 Communications. The Owner shall communicate with the Contractor and the Construction Manager's consultants through the Construction Manager about matters arising out of or relating to the Contract Documents. The Owner and Construction Manager shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Construction Manager otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with other Contractors shall be through the Construction Manager. Communications by and with the Owner's own forces and Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.7 The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.

§ 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents, and will notify each other about the rejection. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, upon written authorization of the Owner, whether or not the Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons performing any of the Work.

§ 4.2.9 Utilizing the submittal schedule provided by the Contractor, the Construction Manager shall prepare, and revise as necessary, a Project submittal schedule incorporating information from other Contractors, the Owner, Owner's consultants, Owner's Separate Contractors and vendors, governmental agencies, and participants in the Project under the management of the Construction Manager. The Project submittal schedule and any revisions shall be submitted to the Architect for approval.

§ 4.2.10 The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data, and Samples. Where there are other Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from the Contractor and other Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

§ 4.2.11 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

§ 4.2.12 Review of the Contractor's submittals by the Construction Manager and Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Construction Manager and Architect's

review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Construction Manager and Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.13 The Construction Manager will prepare Change Orders and Construction Change Directives.

§ 4.2.14 The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7, and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.15 Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples, and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

§ 4.2.16 The Construction Manager will assist the Architect in conducting inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

§ 4.2.17 The Owner shall notify the Construction Manager of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.18 The Architect will interpret and decide matters concerning performance of the Contractor under, and requirements of, the Contract Documents on written request of the Construction Manager, Owner, or Contractor through the Construction Manager. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.19 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. The Architect will not be liable for the results of any such interpretations or decisions rendered in good faith and in accordance with its professional judgment.

§ 4.2.21 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing, through the Construction Manager, to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made in writing within any time limits agreed upon or otherwise with reasonable promptness but, in any event, allowing the Architect sufficient time in its professional judgment to properly review the request. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include other Contractors or Separate Contractors or the subcontractors of other Contractors or Separate Contractors.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 As stated in the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall notify in writing for review by the Construction Manager and Architect, of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor whether the Owner, the Construction Manager or the Architect (1) has reasonable objection to any such proposed person or entity or, (2) requires additional time for review.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner, Construction Manager or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner, Construction Manager or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including, but not limited to, the responsibility for safety of the Subcontractor's Work and obligations to defend and indemnify, that the Contractor, by these Contract Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- **.1** assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- **.2** assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor Contractor or other entity. If the Owner assigns the subcontract to a successor Contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor Contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction with Own Forces and to Award Other Contracts

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When the Owner performs construction or operations with the Owner's own forces or Separate Contractors, the Owner shall provide for coordination of such forces and Separate Contractors with the Work of the Contractor, who shall cooperate with them.

§ 6.1.3 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner's own forces, Separate Contractors, Construction Manager and other Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner's own forces, Separate Contractors or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Construction Manager and Architect in writing and in detail of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor or other Contractors that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Construction Manager and the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's or other Contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractors or other Contractors that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a Separate Contractors or to other Contractors, because of the Contractor's delays, improperly timed activities or defective construction

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction, or to property of the Owner, Separate Contractors, or other Contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner, Separate Contractors, and other Contractors shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, other Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste

materials and rubbish, the Owner may clean up and the Construction Manager, with notice to the Architect, will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Construction Manager, Architect and Contractor. A Construction Change Directive requires agreement by the Owner, Construction Manager and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

A Change Order is a written instrument prepared by the Construction Manager and signed by the Owner, Construction Manager, Architect, and Contractor, stating their agreement upon all of the following:

.1 The change in the Work;
.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Construction Manager and signed by the Owner, Construction Manager and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Construction Manager shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Contract Documents, or if no such amount is set forth in the Contract Documents, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance directly related to the work, and other employee costs approved by the Construction Manager and Architect;
.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools and equipment normally encumbered to perform the work, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, directly related to the work; and

.5 Costs of supervision by the Site Superintendent directly attributable to the change, if the change requires an extension of time beyond that time indicated in the Contract.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Construction Manager and Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Construction Manager and Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Construction Manager shall prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Construction Manager and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Construction Manager that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

§ 7.5 OVERHEAD AND PROFIT

§ 7.5.1 The combined overhead and profit included in the total cost to the Owner shall be based on the following schedule:

§ 7.5.1.a The Contractor: For Work performed by the The Contractor's own forces, markup shall not exceed a total of fifteen percent (15%), of the value of labor and materials (L+M).

.1 Example: Total Contractor Amount = (L+M) + 15% O&P

§ 7.5.1.b Contractor's Subcontractor: For Work performed by the Subcontractor's own forces, markup shall not exceed a total of ten percent (10%), of the value of labor and material (L+M). For the Contractor, for

work performed by that Contractor's Subcontractor, markup shall not exceed five percent (5%) for the value of the Subcontractor amount.

.1 Example: Total Subcontractor Amount = (L+M) + 10% O&P
.2 Example: Total Contractor Amount = Total Subcontract Amount + 5% O&P

§ 7.5.1.c Sub-Subcontractor: For Work performed by the Subcontractor's own forces, markup shall not exceed a total of five percent (5%) of the value of labor and materials (L+M). For the Subcontractor, for work performed by the Subcontractor's Sub-subcontract, markup shall not exceed 5% of the Subcontractor Amount. For the Prime Contractor, for Work performed by the Subcontractor's Sub-subcontractor, markup shall not exceed 5% of the Subcontractor Amount.

.1 Example: Total Sub-subcontractor Amount = (L+M) + 5% O&P
.2 Example: Total Subcontractor Amount = Sub-subcontractor Amount + 5% O&P
.3 Example: Total Contractor Amount = Subcontractor Amount + 5% O&P

§ 7.5.2 Performance and Payment Bond Adjustments: Do not itemize increases for bond premiums for each individual Change Order per General Conditions of the Contract, Paragraph 11.4.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8. The Work of this Project shall be substantially complete on or before the dates indicated in Milestone Construction Schedule for those portions of the Work so stipulated. Actual damages may be assessed by the Owner if specified completion dates are not adhered to by the Contractor.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner, Architect, Construction Manager, or an employee of any of them, or of the Owner's own forces, Separate Contractors, or other Contractors; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts and the Architect, based on the recommendation of the Construction Manager, determines justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 The Owner shall not be liable to the Contractor and/or any subcontractor for claims or damages of any nature caused by or arising out of delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work, the amount of which shall be subject to the claims procedure set forth herein. Except to the extent, if any, expressly prohibited by law, the Contractor expressly agrees not to make and hereby waives any claim for damages for delay, including, but not limited to, those resulting from increased labor or material costs; directions given or not given by the Owner, Construction Manager or Architect, including scheduling and coordination of the Work; the Architect's preparation of drawings and specifications or review of shop drawings and requests for instruction(s); or, on account of any delay, obstruction or hindrance for any cause whatsoever by the Owner, Construction Manager, Architect, or any other contractor on the project, whether or not foreseeable or anticipated. The Contractor agrees that its sole right and remedy therefor shall be an extension of time, if appropriate. **IT IS EMPHASIZED THAT NO MONETARY RECOVERY MAY BE OBTAINED BY THE CONTRACTOR FOR DELAY AGAINST THE OWNER, CONSTRUCTION MANAGER, OR ARCHITECT BASED ON ANY REASON AND THAT THE CONTRACTOR'S SOLE REMEDY, IF APPROPRIATE, IS ADDITIONAL TIME.**"

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

As indicated in the Contract Documents, the Contractor shall submit a schedule of values to the Construction Manager, before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Construction Manager and the Architect. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. The Construction Manager shall forward to the Architect the Contractor's schedule of values. Any changes to the schedule of values shall be submitted to the Construction Manager and supported by such data to substantiate its accuracy as the Construction Manager and the Architect may require, and unless objected to by the Construction Manager or the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 The Contractor shall submit applications for payment in accordance with Specification Section "Payment Procedures."

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Construction Manager and Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 Until Substantial Completion, the Owner shall pay ninety-five percent (95%) of the amount due to the Contractor on account of progress payments.

§ 9.3.1.4 When the work or major portions thereof as contemplated by the terms of the Contract are substantially complete, the Contractor shall submit to the Construction Manager and Architect a requisition for payment of the remaining amount of the Contract balance. Upon receipt of such requisition, the Owner shall approve and promptly pay the remaining amount of the Contract less two times the value of any remaining items to be completed and an amount necessary to satisfy any claims, liens or judgments against the Contractor, which have not been suitably discharged, as determined by the Architect in conjunction with the Construction Manager. Any claims, liens or

judgments referred to in this clause shall pertain to the Project and shall be filed in accordance with the terms of the Contract, and applicable laws.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site. The Owner shall have the right, at any time on reasonable notice to inspect materials and equipment which have been stored off the site in accordance with this paragraph.

§ 9.3.2.1 Proof of insurance for items stored off site and copies of invoices are to be provided with Applications for Payment requesting payment for stored materials.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 Where there is only one Contractor, the Construction Manager will, within seven days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Certificate for Payment, in the full amount of the Application for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

§ 9.4.2 Where there is more than one Contractor performing portions of the Project, the Construction Manager will, within seven days after the Construction Manager receives all of the Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Contractor's application with information from similar applications for progress payments from the other Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

§ 9.4.2.1 Within seven days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Project Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Project Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.

§ 9.4.3 The Construction Manager's certification of an Application for Payment or, in the case of more than one Contractor, a Project Application and Certificate for Payment, shall be based upon the Construction Manager's evaluation of the Work and the data in the Application or Applications for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified.

§ 9.4.4 The Architect's issuance of a Certificate for Payment or, in the case of more than one Contractor, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and data in the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's judgment, knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified.

§ 9.4.5 The representations made pursuant to Sections 9.4.3 and 9.4.4 are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Construction Manager or Architect.

§ 9.4.6 The issuance of a Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.3 and 9.4.4 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.2. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- **.4** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- **.5** damage to the Owner or a Separate Contractor or other Contractor;
- **.6** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- **.7** repeated failure to carry out the Work in accordance with the Contract Documents.
- **.8** failure of Contractor to provide executed supplementary bid forms, performance and payment bonds or a current Certificate of Insurance.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Construction Manager, and both will reflect such payment on the next Certificate for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment or Project Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Construction Manager and Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Construction Manager will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Owner, Construction Manager and Architect on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner, Construction Manager nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall notify the Construction Manager, and the Contractor and Construction Manager shall jointly prepare and submit to the Architect a comprehensive written list of items to be completed or corrected prior to Architect's first (1st) inspection. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's punchlist, the Architect, assisted by the Construction Manager, will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's punchlist, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect, assisted by the Construction Manager, to determine Substantial Completion.

§ 9.8.3.1 Except with the consent of the Owner, the Architect in conjunction with the Construction Manager will perform no more than three (3) inspections to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The three (3) inspections will include not only determining if the area is substantially complete, but will also include any follow-up inspection to confirm *all* open punchlist items have been completed for that specific item. The Owner may deduct from the Contract Sum amounts paid to the Architect for any additional inspections necessitated by the Contractor's misrepresentation of conditions.

§ 9.8.4 When the Architect, assisted by the Construction Manager, determines that the Work of all of the Contractors, or designated portion thereof, is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute, a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents. The payment shall be sufficient to increase the total payments to one-hundred percent (100%) of the Contract Sum, less two times the value of any remaining items to be completed and any amount necessary to satisfy claims, liens or judgments against the Contractor which have not been suitably discharged, as determined by the Architect assisted by the Construction Manager.

§ 9.8.6 In the event the Contractor does not achieve final completion within ninety (90) days after the date of Substantial Completion, allowing for any approved extensions of the Contract time, Contractor shall not be entitled to any further payment and Contractor agrees that such failure to complete the work within the time set forth above shall constitute a waiver of all claims by the Contractor to any money that may be due. This provision shall not operate as a waiver by the Owner of any claims or remedies of any nature against the Contractor arising out of the Contract.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor and Construction Manager shall jointly prepare and

submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect after consultation with the Construction Manager.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Construction Manager, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon completion of the Work, the Contractor shall forward to the Construction Manager a notice that the Work is ready for final inspection and acceptance, and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager shall perform an inspection to confirm the completion of Work of the Contractor. The Construction Manager shall make recommendations to the Architect when the Work of all of the Contractors is ready for final inspection, and shall then forward the Contractors' notices and Application for Payment or Project Application for Payment, to the Architect, who will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment or Project Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.1.1 Except with the consent of the Owner, the Architect in conjunction with the Construction Manager will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner may deduct from the Contract Sum amounts paid to the Architect for any additional inspections necessitated by the Contractor's misrepresentation of final completion.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner and (7) all Project closeout documents per the General Conditions of the Contract. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Construction Manager and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Manager and Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is

less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect through the Construction Manager prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.3.1 Exception is made for the Contractor expressly retained for the removal of lead, asbestos or polychlorinated (PCB) from the site. In this condition, all Contract Specifications and Drawings shall govern the handling of this material.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents;
- **.3** terms of special warranties required by the Contract Documents; or
- **.4** audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors. The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor;
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction; and
- **.4** construction or operations by the Owner, Separate Contractors, or other Contractors.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly

employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner, Construction Manager and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner, Construction Manager and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor, Construction Manager and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor, the Construction Manager and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.2.1 Exception is made for the Contractor expressly retained for the removal of lead, asbestos or polychlorinated (PCB) from the site. In this condition, all Contract Specifications and Drawings shall govern the handling of this material.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall obtain, pay for and keep in full force and effect during the entire term of this Contract, and during the performance, final completion and acceptance of any Work, and after the term of this Contract (as may be specified herein) insurance, in a company or companies lawfully licensed to do business in the jurisdiction in which the Project is located, as designated by this Article 11 and any other insurance required by applicable law, regulations, or orders of state, municipality or other entity having jurisdiction over the Work or the Project. Contractor shall not take any action, or omit to take any action that would suspend or invalidate any of the required coverages during the time period such coverages are required to be in effect.

§ 11.1.1.1 Workers' Compensation and NYS Disability Insurance. and any other federal and/or state coverages as appropriate, including but not limited to: Occupational Disease Benefits, Voluntary Compensation, and Disability Benefits, for not less than the statutory requirements, and if applicable an "Other States Endorsement"; and

Statutory Workers' Compensation (c-105.2 or U-26.3); and NYS Disability Insurance for all employees. Proof of Coverage must be on the approved specific form, as required by the New York State Workers' Compensation Board. ACORD certificates are not acceptable. A Person seeking an exemption must file a CE-200 Form with the state. The form can be completed and submitted directly to the WC Board online.

§ 11.1.1.2 Commercial General Liability Insurance is to be provided under the Insurance Service Office's (ISO) most current form, on a project specific basis, with limits not less than the following required limits:

Each Occurrence:	$1,000,000
General Aggregate:	$2,000,000
Products and Completed/Operations:	$2,000,000
Personal & Advertising Injury:	$1,000,000
Fire Damage:	$ 100,000
Medical Expense:	$ 10,000

The general aggregate shall apply on a per-project basis.

Such insurance shall include the following coverages:

(i) claims for damages because of bodily injury, occupational sickness or disease, or death;
(ii) claims for damages insured by usual personal injury liability coverage;
(iii) claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
(iv) premises operations;
(v) product liability and completed operations, and the policy shall specifically include coverage for two (2) years of extended completed operations coverage, which will commence immediately following the expiration date of the Commercial General Liability policy;
(vi) owners protective;
(vii) contractors protective;
(viii) contractual liability covering liabilities assumed under the Contract (including the tort liability of another assumed in a contract), and including, coverage for claims arising out of construction or demolition operations when working within 50 feet of railroad track;
(ix) personal injury and advertising injury liability;
(x) extended bodily injury coverage with respect to bodily injury resulting from the use of reasonable force to protect persons or property;
(xi) medical payments coverage;
(xii) broad form property damage liability coverage, including coverage for completed operations;
(xiii) explosion, collapse, and underground property damage (XCU);
(xiv) construction means and methods;
(xv) independent contractors;

(xvi) Owner and other's identified herein as additional insured to be specifically evidenced as additional insureds via ISO Endorsements GC 2010 and CG 2037.

§11.1.1.3 Owners Contractors Protective (OCP) Insurance for projects less than or equal to $1,000,000 and/or on 1 story (10 feet) only; $1,000,000 per occurrence, $2,000,000 aggregate with the Owner as the name insured.

For Projects greater than $1,000,000 and/or work over 1 story (10 feet); $2,000,000 per occurrence, $4,000,000 aggregate with the Owner as the named insured.

The OCP Policy must be with a NYS licensed and admitted carrier.

The Owner will be the Named Insured on OCP Policies. There will be no Additional Insureds on any OCP Policies.

§11.1.1.4 Automobile Liability Insurance, including uninsured/underinsured and medical payment protection, and including all owned, non-owned and hired autos, with a limit of liability of not less than $1,000,000 each occurrence (combined single limit for personal injury, including bodily injury or death, and property damage).

§11.1.1.5 Umbrella/Excess Insurance, providing excess coverage in excess of the limits for the insurance coverages required by Sections 11.1.1.1, 11.1.1.2, and 11.1.1.3 above, with such excess/umbrella coverage being at least as broad as each and every one of the underlying policies), with the provision that coverage shall extend for a period of at least two (2) years from the date of final completion and acceptance by Owner of all Work.

$5,000,000 each Occurrence and Aggregate for general construction and no work at elevation (1 story or 10 feet) and project values less than or equal to $1,000,000.

$10,000,000 each Occurrence and Aggregate for high-risk construction, work at elevation (>1 story or 10 feet) and project values greater than $1,000,000.

Umbrella/Excess coverage shall be on a follow-form basis or provide broader coverage over the General Liability and Auto Liability coverages.

§ 11.1.2 All insurance shall be written on an occurrence basis. A copy of the additional insured endorsement shall be attached.

§ 11.1.3 Contractor's insurance requirements shall be provided by an insurance carrier licensed to do business in the State of New York and have an A.M. Best Rating of A(-)8 or better as determine in the most recent A.M. Best Publication, or as may otherwise be agreed by Owner.

§ 11.1.4 Insurance coverage to be provided by the Contractor shall state that the Contractor's coverage shall be "primary" and non-contributing to any insurances (or self-insurance), including any deductible, maintained by, or provided to Owner or the other Additional Insureds; and shall contain a Waiver of Subrogation in favor of Owner and the other Additional Insureds, so that in no event shall the insurance carriers have any right of recovery against Owner, the other Additional Insureds, or the agents or employees or either of them; and shall contain a separation of insured provision (severability of interest clause). If the Owner or another Additional Insured has other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis.

§ 11.1.5 In the event that any of the insurance coverage to be provided by the Contractor contains a deductible or self-insured retention, the Contractor shall indemnify and hold the Owner, and any Additional Insured harmless from the payment of such deductible, which deductible shall in all circumstances remain the sole obligation and expense of the Contractor.

§ 11.1.6 The Contractor shall require all Subcontractors to carry the same insurance coverage's and limits of liability as set forth herein and submit same to the Owner through the Construction Manager and obtain approval prior to start of any Work. This includes an OCP policy. To facilitate the review process, the Contractor shall submit the Subcontractors insurance a minimum of 4 weeks before they are scheduled to start work on site. In the event

Contractor fails to obtain the required certificates of insurance from Subcontractor and prove them to Construction Manager and a claim is made or suffered, the Contractor shall, to the fullest extent permitted by law, indemnify, defend, and hold harmless the Owner and the Additional Insureds from any and all claims for which the required insurance would have provided coverage. This indemnity obligation is in addition to any other indemnity obligation provided in the Contract Documents and shall survive the term or earlier termination of the Contract.

§ 11.1.7 Environmental Impairment Liability (Pollution Insurance) (EIL): All Contractors and Subcontractors involved with the removal and/or abatement of pollutants (including but not limited to asbestos abatement contractors, lead abatement contractors, roofing contractors, tank removal contractors) are required to maintain a minimum of $2,000,000 EIL coverage. Owner and all other parties required by this Contract to be Additional Insured and all others identified by Owner as such, shall be included as Additional Insured on any EIL policy on a primary and non-contributing basis.

§ 11.1.8 The Contractor assumes responsibility for all injury or destruction of the Contractor's and Subcontractors' materials, tools, machinery, equipment, appliances, shoring, scaffolding, and personal property of Contractor's and Subcontractors' employees from whatever cause arises. Any policy of insurance secured covering the Contractor's or Subcontractors' property leased or hired by them and any policy of insurance covering the Contractor or Subcontractors against physical loss or damage to such property shall include an endorsement waiving the right of subrogation against the Owner for any loss or damage to such property.

§ 11.1.9 Additional Insured/Certificate Holder. The Contractor shall cause the commercial liability and other coverage required by the Contract to include the following as Additional Insureds:

(i) Newburgh Enlarged City School District;
(ii) Members of the Board of the Newburgh Enlarged City School District;
(iii) Jacobs Project Management
(iv) Collins+Scoville Architecture | Engineering | Construction Management, D.P.C., d/b/a CSArch ; and
(v) Any directors, partners, members, shareholders, officers, employees, successors, assigns, heirs, affiliates, agents, and representatives of each and any of the foregoing.

Contractor shall also add any other entities and/or individuals as may be required by Owner as Additional Insured.

The certificate holder shall be Newburgh Enlarged City School District unless Owner requires otherwise.

Contractor shall provide an Additional Insured endorsement that expressly names each of the above identified Additional Insureds (non-blanket) and shall ensure that the endorsement does not include language that requires an Additional Insured to have a written contract with the named insured for coverage to apply.

Additional insured status shall be provided by standard or other endorsements that extend coverage to the District/BOCES for on-going operations (CG 20 38) and products and completed operations (CG 20 37). The decision to accept an endorsement rest solely with the District/BOCES. A completed copy of the endorsements must be attached to the Certificate of Insurance

§ 11.1.10 Certificates of insurance acceptable to the Construction Manager and Owner shall be provided to the Construction Manager and filed with the Owner prior to commencement of the Work. A fully completed New York Construction Certificate of Liability Insurance Addendum (ACORD 855 2014/15) must be included with the certificates of insurance. The certificates and the insurance policies shall contain a provision that coverages afforded under the policies will not be allowed to be materially changed or canceled or allowed to expire until at least thirty (30) days' prior written notice has been given to the Owner via Certified/Registered Mail. If any of the foregoing insurance coverages are required to remain in force after final payment, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

§ 11.1.11 The Contractor acknowledges that its failure to obtain or keep current the required insurance coverage shall constitute a material breach of contract and subjects the Contractor to liability for damages the Owner (or others, including without limitation the other Additional Insured) sustains as a result of such breach. In addition, the Contractor shall be responsible to the fullest extent permitted by law for the indemnification to the Owner and all

Additional Insured of any and all costs associated with such lapse in coverage, including but not limited to reasonable attorneys' fees (and this indemnification obligation shall survive the term or earlier termination of the Contract).

§ 11.1.12 The amount of insurance required by the Contract shall not be construed to be a limitation of the liability of on the part of the Contractor or any of its Subcontractors.

§ 11.1.13 No act or omission of any insurance agent, broker, or insurance company representative shall relieve Contractor of any of its obligations under this Contract.

§ 11.1.14 Notwithstanding anything in Section 11.3 and its subsections to the contrary, the Contractor shall provide insurance coverage for portions of the Work stored off the site, in transit, and stored on the site but not incorporated into the Work on a full replacement cost basis. The Contractor is responsible for all deductible amounts.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.5 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice directly to the Owner, and separately to the Construction Manager, of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

11.2.1.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in the Contract Documents or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.2.1.2 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for the Architect's, Contractor's, and Construction Manager's services and expenses required as a result of such insured loss.

§ 11.2.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles, unless the underlying loss is caused in whole or in part by Contractor or any of its Subcontractors or anyone for whom either of them are responsible, then, the Contractor shall pay such costs of deductibles.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform both the Contractor and the Construction Manager, separately and in writing, prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice directly to the Contractor, and separately to the Construction Manager, of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Construction Manager and Construction Manager's consultants; (3) the Architect and Architect's consultants; (4) other Contractors and any of their subcontractors, sub-subcontractors, agents, and employees; and (5) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, other Contractors, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.1.1 Owner and Contractor intend that any policies provided in response to the insurance provisions shall protect all of the parties insured and provide primary coverage for losses and damages caused by perils covered thereby. Accordingly, all such policies shall contain provisions to the effect that in the event of payment for loss or damage, the insurer will have no right of recovery against any of the parties named as insureds or additional insureds.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final

payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance
The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor, Architect, and Construction Manager for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss
§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Construction Manager, Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Construction Manager, Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND
§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.1.1 The Contractor shall furnish bonds covering faithful performance of the contract and payment of obligations arising thereunder. The value of each bond shall be for one-hundred percent (100%) of the Contract Sum and shall be adjusted during the Project construction period to reflect changes in the Contract Sum. Bonds shall be issued by a bonding company licensed in the State of New York, on AIA Document A312, Performance and Payment Bond.

§ 11.4.1.2 Contractor shall deliver bonds in conjunction with executed Agreement and they shall be dated the same date as Agreement.

§ 11.4.1.3 The attorney in fact who executes the required bonds on behalf of the surety, shall affix thereto a certified and current copy of the power of attorney.

§ 11.4.1.4 Status Reports issued by a Bonding Company shall be sent to and completed by the Owner and then returned to the Bonding Company by the Owner.

§ 11.4.1.5 Any additional cost for bonding premium shall not be itemized within individual Change Orders. Adjustments for Contractor's bonding cost shall be adjusted at the end of the Project based on approved executed changes in the Work and the Bonding Company's final adjusted premium at project closeout.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Construction Manager's or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Construction Manager or Architect has not specifically requested to examine prior to its being covered, the Construction Manager or Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion, and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof, or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner, Construction Manager or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.3.1 Upon request by the Owner and prior to expiration of one year from the date of Substantial Completion, the Construction Manager and the Architect will conduct and the Contractor shall attend a meeting with the Owner to review the facility operations and performance.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner, Separate Contractors, or other Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located. The parties expressly agree that any claim, dispute or other controversy of any nature arising out of the Contract or performance of the Work shall be commenced and maintained in New York State Supreme Court located in Orange County.

§ 13.1.2 The Contractor shall at all times observe and comply with all Federal and State Laws, and all Laws, Ordinances and Regulations of the Owner, in any manner affecting the work, and all such orders decreed as exist at present and those which may be enacted later, by bodies or tribunals having jurisdiction or authority over the Work, and the Contractor shall defend, indemnify and save harmless the Owner, Construction Manager and Architect and all their officers, agents or servants against any claim or liability arising from, or based on, a violation of any such law, ordinances, regulation or order, whether by himself or by his employee or agents.

§ 13.1.3 The Contractor specifically agrees as required by Labor Law, Sections 220 and 220-d, as amended that:

1. No laborer, workman or mechanic in the employ of the Contractor, subcontractor or other person doing contracting or contracting to do the whole or any part of the work contemplated by the Contract, shall be permitted or required to work more than eight hours in one calendar day or more than five days in one week, except in the emergencies set forth in the Labor Law.
2. The wages paid for a legal day's work shall not be less than the prevailing rate of wages as defined by law, and
3. The minimum hourly rate of wages to be paid shall not be less than that stated in the Specifications, and any re-determination of the prevailing rate of wages after the Contract is approved shall be deemed to be incorporated herein by reference as of the effective date of re-determination and shall form a part of this Contract. The Labor Law provides that the Contract may be forfeited and no sum paid for any work done thereunder on a second conviction of willfully paying less than:
   a. the stipulated wage scale as provided in Labor Law, Section 220, Sub-division 3, as amended; or
   b. the stipulated minimum hourly wage scale as provided in Labor Law, 220-d, as amended.

§ 13.1.4 The Contractor specifically agrees as required by the provisions of Labor Law, Section 220-e, as amended that:

1. In hiring of employees for the performance of work under this Contract or any subcontract hereunder or for the manufacture, sale, or distribution of materials, equipment or supplies, hereunder, no Contractor or Subcontractor nor any person acting on behalf of such Contractor or Subcontractor, shall by reason of race, creed, color, disability, sex, or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates.
2. No Contractor, Subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee under this Contract on account of race, creed, color, disability, sex, or national origin.
3. There may be deducted from the amount payable to the Contractor by the Owner under this Contract, a penalty of fifty dollars ($50) for each person for each calendar day during which such a person was discriminated against or intimidated in violation of the provisions of the Contract, and

4. The provisions of this section covering every Contract for or on behalf of the Owner, the State or a municipality for the manufacture or sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.

§ 13.1.5 During the performance of this Contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, sexual orientation, military status, sex, disability, predisposing genetic characteristics, marital status, or domestic violence victim status.
2. If directed to do so by the Owner or the State Commissioner of Human Rights, the Contractor will send to each labor union or representative of workers which with the Contractor has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the State Commissioner of Human Rights, advising such labor union or representative of the Contractor's agreement under clauses (1) through (6) (hereinafter called "non-discrimination clauses"). If the Contractor was directed to do so by the Owner as part of the bid or negation of this Contract, the Contractor shall request such labor union or representative to furnish a written statement that such a labor union representative will not discriminate because of age, race, creed, color, national origin, sexual orientation, military status, sex, disability, predisposing genetic characteristics, or marital status, and that such labor union or representative will cooperate, within the limits of its legal contractual authority, in the implementation of the policy and provisions of these non-discrimination clauses and that it consents and agrees that the recruitment, employment and the terms and conditions of employment under this Contract shall be in accordance with the purposes and provision of these non-discrimination clauses. If such labor union or representative fails or refuses to comply with such a request that it furnish such a statement, the Contractor shall promptly notify the Owner and the State Commissioner of Human Rights of such failure or refusal.
3. If directed to do so by the Owner or the Commissioner of Human Rights, the Contractor will post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Commissioner of Human Rights setting forth the substance of provisions of clauses (1) and (2) and such provision of the State's law against discrimination as the State Commissioner of Human Rights shall determine.
4. The Contractor will state in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will be afforded equal employment opportunities without discrimination because of age, race, creed, color, national origin, sexual orientation, military status, sex, disability, predisposing genetic characteristics, marital status, or domestic violence victim status.
5. The Contractor will comply with the provisions of Sections 290-299 of the Executive Law, and with the Civil Rights Law, will furnish all information and reports deemed necessary by the State Commissioner of Human Rights under these non-discrimination clauses and such section of the Executive Law, and will permit access to the Contractor's books, records, and accounts by the Owner, the State Commissioner of Human Rights, the Attorney General and the Industrial Commissioner for the purposes of investigation to ascertain compliance with the non-discrimination clauses and such sections of the Executive Law Civil Rights Law.
6. This Contract may be forthwith cancelled, terminated or suspended, in whole or in part, by the Owner upon the basis of a finding made by the State Commissioner of Human Rights that the Contractor has not complied with the non-discrimination clauses, and that the Contractor may be declared ineligible for future contracts made by or on behalf of the Owner, the State or a public authority or agency of the State, until the Contractor satisfies the State Commissioner of Human Rights that the Contractor has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such findings may be made by the State Commissioner of the Human Rights after conciliation efforts by the Commissioner have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Commissioner, notice thereof has been given to the Contractor to be heard publicly in accordance with the Executive Law. Such sanctions may be imposed and remedies invoked independently of or in addition to sanctions and remedies otherwise provided by law, and
7. The Contractor will include the provisions of clauses .1 through .6 in every subcontract or purchase order in such a manner that such provisions will be binding upon each subcontractor or vendor as to operations to be performed within the State of New York. The Contractor will take action in enforcing such provisions of such subcontract or purchase order as the State Commissioner of Human Rights or

the Owner may direct, including sanctions or remedies for non-compliance. If the Contractor becomes involved or is threatened with litigation with a subcontractor or vendor as a result of such directions by the State Commissioner of Human Rights or the Owner, the Contractor shall promptly so notify the Owner and the Attorney General requesting the Attorney General to intervene and protect the interests of the State of New York.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Construction Manager, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Construction Manager timely notice of when and where tests and inspections are to be made so that the Construction Manager may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Construction Manager, Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Construction Manager and Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Construction Manager and Architect of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Construction Manager's and Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Construction Manager for transmittal to the Architect.

§ 13.4.5 If the Construction Manager or Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Construction Manager or Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments to Contractor, including any interest, shall be consistent with this Agreement and in accordance with New York State General Municipal Law Section 106-b.

§ 13.6 TIME LIMITS ON CLAIMS

The Owner and the Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement and within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and the Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

§13.7 EQUAL OPPORTUNITY

§13.7.1 The Contractor shall maintain policies of employment as follows:

1. he Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin. The Contractor shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, religion, color, sex and national origin. Such action shall include, but not limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection of training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination, and
2. the Contractor and the Contractor's Subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state all qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- **.3** Because the Construction Manager has not certified or the Architect has not issued a Certificate for Payment and, after the Contractor has provided written notice of the lack of certification with a reasonable opportunity to cure, has not notified the Contractor of the reason for withholding certification as provided in Section 9.4, or because the Owner, after the Contractor has provided written notice of the lack of payment with a reasonable opportunity to cure, has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon thirty days' notice to the Owner with a reasonable opportunity to cure, Construction Manager and Architect, terminate the Contract and recover from the Owner payment for Work properly executed.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees, or any other persons performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon thirty additional days' notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- **.3** disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents.
- **.5** breaches any warranty made by the Contractor under or pursuant to the Contract Documents.
- **.6** fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with all of the requirements of the Contract Documents."

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- **.1** Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- **.2** Accept assignment of subcontracts pursuant to Section 5.4; and
- **.3** Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work. The costs of finishing the Work include, without limitations, all reasonable attorney's fees, additional Architect/Engineering and Construction Manager costs, insurance, additional interest because of any delay in completing the Work, and all other direct and indirect and consequential damages incurred by the Owner by reason of the termination of the Contractors stated herein.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and the Contract Time may be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. No adjustment shall be made to the extent:

- **.1** that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- **.2** that an equitable adjustment is made or denied under another provision of this Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 Notwithstanding any other provision to the contrary in this Agreement, the Owner reserves the right at any time and in its absolute discretion to terminate the services of the Contractor and/or the Work for the Owner's

convenience and without cause by giving written notice to the Contractor. This termination for the convenience of the Owner provision allows and authorizes the Owner to terminate this Agreement at any time and for any reason whatsoever. This right may be exercised by the Owner in its complete discretion.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- **.1** cease operations as directed by the Owner in the notice;
- **.2** take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- **.3** except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In the case of such termination for the Owner's convenience, the Contractor shall be entitled to, and the Owner shall reimburse the Contractor for, an equitable portion of the Contractor's fee based on the portion of the Work properly completed before the effective date of termination. Contractor's entitlement to payment for all such work shall be predicated on its performance of such work in accordance with the Contract Documents as certified by the Architect and Construction Manager. Contractor shall be entitled to no other payment and waives any claim for damages.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents. The Owner may refer a claim to the Construction Manager and or the Architect for their review and assistance; however, such is not required by this Agreement.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2. The provisions of Education Law §3813(2) shall apply to this Agreement.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Construction Manager and Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. The provisions of Education Law §3813(1) shall apply to this Agreement.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.3.3 Claims by the Contractor must be made by written notice in accordance with the following procedures.

- **.1** the Contractor may submit a claim concerning a matter properly noticed in accordance with the time requirements of this Contract set forth in paragraph 15.1.3 and elsewhere;
- **.2** failure by the Contractor to furnish the required claim documentation within the time set forth above shall constitute waiver of the Contractor's right to compensation for such claim.

.3 Contractor shall furnish three (3) certified copies of the required claim documentation. The claim documentation shall be complete when furnished. The evaluation of the Contractor's claim will be based, among other things, upon the Owner's Project Records and the Contractor's furnished claim documentation

.4 claim documentation shall conform to Generally Accepted Accounting Principles and shall be in the following format:

a. general introduction;
b. general background discussion
c. issues
   i. index of issues (listed numerically);
   ii. for each issue:
      (1) background
      (2) chronology
      (3) Contractor's position (reason for Owner's potential liability)
      (4) supporting documentation of merit or entitlement
      (5) supporting documentation of damages
      (6) begin each issue on a new page
d. all critical path method schedules (as-planned, monthly updates, schedule revisions and as-built, along with computer disks of all schedules related to the claim;
e. productivity exhibits (if appropriate); and
f. summary of issues and damages.

.5 supporting documentation of merit for each issue shall be cited by reference, photocopies or explanation. Supporting documentation may include, but shall not be limited to General Conditions, General Requirements, technical specifications, drawings, correspondence, conference notes, shop drawings and submittals, shop drawing logs, survey books, inspection reports, delivery schedules, test reports, daily reports, subcontracts, fragmentary CPM schedules or time impact analyses, photographs, technical reports, requests for information, field instructions and all other related records necessary to support the Contractor's claim.

.6 supporting documentation of damages for each issue shall be cited, photocopied or explained. Supporting documentation may include, but shall not be limited to, any or all documents related to the preparation and submission of the bid; certified, detailed labor records including labor distribution reports; material and equipment procurement records; construction equipment ownership, cost records or rental records; subcontractor or vendor files and cost records; service cost records; purchase orders; invoices; Project as-planned and as-built cost records; general ledger records; variance reports; accounting adjustment records, and any other accounting material necessary to support the Contractor's claims.

.7 each copy of the claim documentation shall be certified by a responsible officer of the Contractor in accordance with the requirements of these Contract Documents.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost. If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6.3 Claims for increase in the Contract time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days increased in the Contract time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

§ 15.1.6.4 The Contractor shall not be entitled to a separate increase in the Contract time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

§ 15.1.7 Waiver of Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

§15.1.8.1 Claims and Actions Thereon. No claim against the Owner for damages for breach of contract or compensation for extra work shall be made or asserted in any action or proceeding at law, or in equity, unless the Contractor shall have strictly complied with all the requirements relating to the giving of notice and of information with respect to such claims all as provided in this Agreement.

§15.1.8.2 No Estoppel. Neither the Owner nor any department officer, agent or employees thereof, shall be bound, precluded or estopped by any determination, decision, approval, order, letter, payment or certificate made or given under or in connection with this Contract by the Owner, or any officer, agent or employee of the Owner, either before or after the final completion and acceptance of the Work and payment therefor: (1) from showing the true and correct classification, amount, quality or character of the Work actually done; or that any such termination, decision, order, letter, payment or certificate was untrue, incorrect or improperly made in any particular matter, or that the Work or any part thereof does not in fact conform to the requirements of this Contract; or (2) from demanding and recovering from the Contractor any overpayments made to him, or such damages as it may sustain by reason of his failure to perform each and every part of this Contract in strict accordance with its terms; or (3) both (1) and (2) hereto."

§ 15.2 Initial Decision

§ 15.2.1 Claims, by the Contractor, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim by the Contractor against the Owner. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within twenty one days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a Contractor to furnish additional supporting data, the Contractor shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 If a Claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Architect, the Architect will render to the parties the Architect's written recommendation relative to the Claim, including any recommended change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Architect may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days of receipt thereof, then both parties waive their rights to mediate.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.2.9 Nothing contained in this Agreement is intended to alter or replace any provisions of the laws of the state of New York relating to claims made against the Owner or to relieve Contractor from any obligations thereunder.

§ 15.3 Omitted

§ 15.4 Arbitration

§ 15.4.1 The parties expressly agree to **delete** the requirement that any and all controversies and claims arising out of the contract be referred to arbitration. By so agreeing, the parties express their mutual intent that there is **no agreement** to arbitrate such disputes, notwithstanding the use and reference to arbitration elsewhere in the contract documents."

§ 15.5 The parties expressly agree that any claim, dispute, or other controversy of any nature arising out of the contract or performance of the work shall be commenced and maintained in New York State Supreme Court located in Orange County.

LaBella
Powered by partnership.

Daily Report Cover

PROJECT:	Newburgh Enlarged City School District District Wide A/C – Electrical Upgrades	DATE:
		CONTRACT NO.
LaBella Associates PROJECT NO. 2233600		CONTRACT FOR:

	7:00 a.m.	Noon	3:30 p.m.
Temperature			
Weather			

PERSONNEL (list by trade or attach daily time sheet)

SUBCONTRACTORS / PERSONNEL

EQUIPMENT

Send to: LABELLA

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Substantial Completion Request for Inspection

PROJECT Newburgh Enlarged City School District District Wide A/C – Electrical Upgrades	**DATE:**
	CONTRACTOR:
LaBella Associates PROJECT No. 2233600	**CONTRACT No.**
	AREA:

DIRECTIONS:

- The Contractor has verified that installations and finishes are complete and installed per the Contract, and that the items listed below are outstanding and will be completed as agreed upon with the Architect and Owner.
- Upon verification of report by the Construction Site Representative, the Architect shall inspect and issue a Punch List.

Contract Supervisor's Signature:	Date:
Construction Site Representative Signature:	Date:

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SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates is included at the end of this Section identifying each Alternate by number and describes basic changes to be incorporated into the Work only when that Alternate is made part of the Work by specific provision in the Owner/Contractor Agreement. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES:

A. Contract No. MC-01 – Mechanical Work: Add Alternate 01- Corridor Air Conditioning System at Gidney School. ***"All indoor and outdoor mechanical equipment, accessories, and associated components (piping, valves, etc.) related to hallway corridor systems to be priced as an add-alternate."***

B. Contract No. MC-01 – Mechanical Work: Add Alternate 02- Corridor Air Conditioning System at Meadow Hill School. ***"All indoor and outdoor mechanical equipment, accessories, and associated components (piping, valves, etc.) related to hallway corridor systems to be priced as an add-alternate."***

C. Contract No. MC-01 – Mechanical Work: Add Alternate 03- Corridor Air Conditioning System at Temple Hill School. ***"All indoor and outdoor mechanical equipment, accessories, and associated components (piping, valves, etc.) related to hallway corridor systems to be priced as an add-alternate."***

D. Contract No. MC-01 – Mechanical Work: Deduct Alternate 01- Control work at Gidney School. ***All mechanical equipment, accessories, and wiring related to controls shall be quantified as a Deduct Alternate under the Mechanical Contract (MC-1). Items related to controls are for reference only.***

E. Contract No. MC-01 – Mechanical Work: Deduct Alternate 02- Control work at Meadow Hill School. ***All mechanical equipment, accessories, and wiring related to controls shall be quantified as a Deduct Alternate under the Mechanical Contract (MC-1). Items related to controls are for reference only.***

F. Contract No. MC-01 – Mechanical Work: Deduct Alternate 03- Control work at Temple Hill School. ***All mechanical equipment, accessories, and wiring related to controls shall be quantified as a Deduct Alternate under the Mechanical Contract (MC-1). Items related to controls are for reference only.***

G. Contract No. EC-02 – Electrical Work: Add Alternate 01- Add Power for Corridor Air Conditioning System at Gidney School. ***Provide all conduit, wiring, circuit breakers and connections required to power Corridor Air Conditioning System at Gidney School.***

H. Contract No. EC-02 – Electrical Work: Add Alternate 02- Add Power for Corridor Air Conditioning System at Meadow Hill School. ***Provide all conduit, wiring, circuit breakers and connections required to power Corridor Air Conditioning System at Meadow Hill School.***

I. Contract No. EC-02 – Electrical Work: Add Alternate 03- Add Power for Corridor Air Conditioning System at Temple Hill School. ***Provide all conduit, wiring, circuit breakers and connections required to power Corridor Air Conditioning System at Temple Hill School.***

J. Contract No. GC-03 – General Contractor Work: Alternate 01- Precast Concrete Mechanical Equipment Pads for Meadow Hill School. ***Provide precast concrete pads for exterior mechanical equipment in lieu of cast-in-place. Provide dimensions and reinforcing as indicated on the drawings. Coordinate with equipment manufacturer and provide sleeves at all piping / conduit stub-up locations. Assure uniform bearing of concrete pads at subbase. Submit shop drawing prior to fabrication.***

K. Contract No. GC-03 – General Contractor Work: Alternate 02- Precast Concrete Mechanical Equipment Pads for Temple Hill School. ***Provide precast concrete pads for exterior mechanical equipment in lieu of cast-in-place. Provide dimensions and reinforcing as indicated on the drawings. Coordinate with equipment manufacturer and provide sleeves at all piping / conduit stub-up locations. Assure uniform bearing of concrete pads at subbase. Submit shop drawing prior to fabrication.***

L. Contract No. GC-03 – General Contractor Work: Add Alternate 01- Painting Gym Deck, Joists, Existing and New Ductwork Meadow Hill School. ***In addition to the Base Bid Scope, which includes that painting of all Gymnasium walls, provide an Add Alternate for the following scope: Paint the interior underside of the roof deck, structural steel, existing ductwork, and new ductwork.***

M. Contract No. GC-03 – General Contractor Work: Add Alternate 02- Painting Gym Deck, Joists, Existing and New Ductwork Temple Hill School. ***In addition to the Base Bid Scope, which includes that painting of all Gymnasium walls, provide an Add Alternate for the following scope: Paint the interior underside of the roof deck, structural steel, existing ductwork, and new ductwork.***

N. Contract No. GC-03 – General Contractor Work: Deduct Alternate 01- Asbestos Abatement Work at Meadow Hill School. ***All asbestos abatement related to this***

project shall be quantified as a Deduct Alternate. Items related to asbestos abatement are for reference only.

O. Contract No. GC-03 – General Contractor Work: Deduct Alternate 02- Asbestos Abatement Work at Temple Hill School. ***All asbestos abatement related to this project shall be quantified as a Deduct Alternate. Items related to asbestos abatement are for reference only.***

END OF SECTION 012300

SECTION 230548 - VIBRATION AND SEISMIC CONTROLS FOR HVAC

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. Restrained Elastomeric Isolation Mounts
2. Restrained Spring Isolators
3. Resilient pipe guides.
4. Elastomeric hangers.
5. Spring hangers.
6. Snubbers.
7. Restraint cables.
8. Seismic-restraint accessories.
9. Mechanical anchor bolts.
10. Vibration isolation equipment bases.
11. Restrained isolation roof-curb rails.

1.3 DEFINITIONS

A. IBC: International Building Code.
B. ICC-ES: ICC-Evaluation Service.
C. OSHPD: Office of Statewide Health Planning & Development (for the State of California).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include rated load, rated deflection, and overload capacity for each vibration isolation device.
2. Illustrate and indicate style, material, strength, fastening provision, and finish for each type and size of vibration isolation device and seismic-restraint component required.

a. Tabulate types and sizes of seismic restraints, complete with report numbers and rated strength in tension and shear as evaluated by an evaluation service member of ICC-ES or OSHPD.
b. Annotate to indicate application of each product submitted and compliance with requirements.

3. Interlocking Snubbers: Include ratings for horizontal, vertical, and combined loads.

B. Shop Drawings:

1. Detail fabrication and assembly of equipment bases. Detail fabrication including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.
2. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Show coordination of vibration isolation device installation and seismic bracing for HVAC piping and equipment with other systems and equipment in the vicinity, including other supports and restraints, if any.

B. Qualification Data: For testing agency.

C. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7 and that is acceptable to authorities having jurisdiction.

B. Comply with seismic-restraint requirements in the IBC unless requirements in this Section are more stringent.

C. Seismic-restraint devices shall have horizontal and vertical load testing and analysis and shall bear anchorage preapproval OPA number from OSHPD, preapproval by ICC-ES, or preapproval by another agency acceptable to authorities having jurisdiction, showing maximum seismic-restraint ratings. Ratings based on independent testing are preferred to ratings based on calculations. If preapproved ratings are unavailable, submittals based on independent testing are preferred. Calculations (including combining shear and tensile loads) to support seismic-restraint designs must be signed and sealed by a qualified professional engineer.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Wind-Restraint Loading:

1. Nominal Wind Speed: 93 mph (3-second gust).
2. Building Occupancy Risk Category: IV.
3. Minimum 10 lb/sq. ft. multiplied by maximum area of HVAC component projected on vertical plane normal to wind direction, and 45 degrees either side of normal.

B. Seismic-Restraint Loading:

1. Seismic Design Category as Defined by ASCE: C.
2. Assigned Seismic Use Group or Building Category as Defined in the IBC: See drawings.

    a. Component Importance Factor: 1.5.
    b. SDS: 0.145g as per ASCE 7-10 Section 11.4.4
    c. SD1: 0.087g as per ASCE 7-10 Section 11.4.4

3. Design Spectral Response Acceleration at Short Periods (0.2 Second): 0.136g.
4. Design Spectral Response Acceleration at 1.0-Second Period: 0.054g.
5. Structural Safety Factor: Allowable strength in tension, shear, and pullout force of components shall be at least four times the maximum seismic forces to which they are subjected.

2.2 ELASTOMERIC ISOLATION MOUNTS

A. Double-Deflection, Elastomeric Isolation Mounts: .

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Ace Mountings Co., Inc.
    b. Kinetics Noise Control, Inc.
    c. Mason Industries, Inc.
    d. Vibration Isolation.
    e. Vibration Mountings & Controls, Inc.

2. Mounting Plates:

    a. Top Plate: Encapsulated steel load transfer top plates, factory drilled and threaded with threaded studs or bolts.
    b. Baseplate: Encapsulated steel bottom plates with holes provided for anchoring to support structure.

3. Elastomeric Material: Molded, oil-resistant rubber, neoprene, or other elastomeric material.

2.3 RESTRAINED ELASTOMERIC ISOLATION MOUNTS

A. Restrained Elastomeric Isolation Mounts:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Ace Mountings Co., Inc.
   b. Kinetics Noise Control, Inc.
   c. Mason Industries, Inc.
   d. Vibration Eliminator Co., Inc.
   e. Vibration Isolation.

2. Description: All-directional isolator with seismic restraints containing two separate and opposing elastomeric elements that prevent central threaded element and attachment hardware from contacting the housing during normal operation.

   a. Housing: Cast-ductile iron or welded steel.
   b. Elastomeric Material: Molded, oil-resistant rubber, neoprene, or other elastomeric material.

2.4 RESTRAINED-SPRING ISOLATORS

A. Freestanding, Laterally Stable, Open-Spring Isolators with Vertical-Limit Stop Restraint:
.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Ace Mountings Co., Inc.
   b. Kinetics Noise Control, Inc.
   c. Mason Industries, Inc.
   d. Vibration Eliminator Co., Inc.
   e. Vibration Isolation.

2. Housing: Steel housing with vertical-limit stops to prevent spring extension due to weight being removed.

   a. Base with holes for bolting to structure with an elastomeric isolator pad attached to the underside. Bases shall limit floor load to 500 psig.
   b. Top plate with threaded mounting holes.
   c. Internal leveling bolt that acts as blocking during installation.

3. Restraint: Limit stop as required for equipment and authorities having jurisdiction.
4. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
5. Minimum Additional Travel: 50 percent of the required deflection at rated load.
6. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
7. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

2.5 RESILIENT PIPE GUIDES

A. Description: Telescopic arrangement of two steel tubes or post and sleeve arrangement separated by a minimum 1/2-inch-thick neoprene.

1. Factory-Set Height Guide with Shear Pin: Shear pin shall be removable and reinsertable to allow for selection of pipe movement. Guides shall be capable of motion to meet location requirements.

2.6 ELASTOMERIC HANGERS

A. Elastomeric Mount in a Steel Frame with Upper and Lower Steel Hanger Rods: .

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Ace Mountings Co., Inc.
   b. Kinetics Noise Control, Inc.
   c. Mason Industries, Inc.
   d. Vibration Eliminator Co., Inc.
   e. Vibration Mountings & Controls, Inc.

2. Frame: Steel, fabricated with a connection for an upper threaded hanger rod and an opening on the underside to allow for a maximum of 30 degrees of angular lower hanger-rod misalignment without binding or reducing isolation efficiency.

3. Dampening Element: Molded, oil-resistant rubber, neoprene, or other elastomeric material with a projecting bushing for the underside opening preventing steel to steel contact.

2.7 SPRING HANGERS

A. Combination Coil-Spring and Elastomeric-Insert Hanger with Spring and Insert in Compression: .

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Ace Mountings Co., Inc.
b. Kinetics Noise Control, Inc.
c. Mason Industries, Inc.
d. Vibration Eliminator Co., Inc.
e. Vibration Isolation.

2. Frame: Steel, fabricated for connection to threaded hanger rods and to allow for a maximum of 30 degrees of angular hanger-rod misalignment without binding or reducing isolation efficiency.

3. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
4. Minimum Additional Travel: 50 percent of the required deflection at rated load.
5. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
6. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
7. Elastomeric Element: Molded, oil-resistant rubber or neoprene. Steel-washer-reinforced cup to support spring and bushing projecting through bottom of frame.
8. Adjustable Vertical Stop: Steel washer with neoprene washer "up-stop" on lower threaded rod.
9. Self-centering hanger-rod cap to ensure concentricity between hanger rod and support spring coil.

2.8 SNUBBERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Kinetics Noise Control, Inc.
2. Mason Industries, Inc.
3. Vibration Mountings & Controls, Inc.

B. Description: Factory fabricated using welded structural-steel shapes and plates, anchor bolts, and replaceable resilient isolation washers and bushings.

1. Anchor bolts for attaching to concrete shall be seismic-rated, drill-in, and stud-wedge or female-wedge type.
2. Resilient Isolation Washers and Bushings: Oil- and water-resistant neoprene.
3. Maximum 1/4-inch air gap, and minimum 1/4-inch-thick resilient cushion.

2.9 RESTRAINT CABLES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Kinetics Noise Control, Inc.

2. Mason Industries, Inc.
3. Vibration Mountings & Controls, Inc.

B. Restraint Cables: ASTM A 603 galvanized-steel cables. End connections made of steel assemblies with thimbles, brackets, swivel, and bolts designed for restraining cable service; with a minimum of two clamping bolts for cable engagement.

2.10 SEISMIC-RESTRAINT ACCESSORIES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. B-line, an Eaton business.
2. Kinetics Noise Control, Inc.
3. Mason Industries, Inc.

B. Hanger-Rod Stiffener: Steel tube or steel slotted-support-system sleeve with internally bolted connections to hanger rod.

C. Hinged and Swivel Brace Attachments: Multifunctional steel connectors for attaching hangers to rigid channel bracings.

D. Bushings for Floor-Mounted Equipment Anchor Bolts: Neoprene bushings designed for rigid equipment mountings, and matched to type and size of anchor bolts and studs.

E. Bushing Assemblies for Wall-Mounted Equipment Anchorage: Assemblies of neoprene elements and steel sleeves designed for rigid equipment mountings, and matched to type and size of attachment devices used.

F. Resilient Isolation Washers and Bushings: One-piece, molded, oil- and water-resistant neoprene, with a flat washer face.

2.11 MECHANICAL ANCHOR BOLTS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. B-line, an Eaton business.
2. Hilti, Inc.
3. Kinetics Noise Control, Inc.
4. Mason Industries, Inc.

B. Mechanical Anchor Bolts: Drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.

2.12 VIBRATION ISOLATION EQUIPMENT BASES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Kinetics Noise Control, Inc.
2. Mason Industries, Inc.
3. Vibration Eliminator Co., Inc.
4. Vibration Isolation.

B. Steel Rails: Factory-fabricated, welded, structural-steel rails.

1. Design Requirements: Lowest possible mounting height with not less than 1-inch clearance above the floor. Include equipment anchor bolts and auxiliary motor slide rails.

    a. Include supports for suction and discharge elbows for pumps.

2. Structural Steel: Steel shapes, plates, and bars complying with ASTM A 36/A 36M. Rails shall have shape to accommodate supported equipment.
3. Support Brackets: Factory-welded steel brackets on frame for outrigger isolation mountings and to provide for anchor bolts and equipment support.

C. Steel Bases: Factory-fabricated, welded, structural-steel bases and rails.

1. Design Requirements: Lowest possible mounting height with not less than 1-inch clearance above the floor. Include equipment anchor bolts and auxiliary motor slide bases or rails.

    a. Include supports for suction and discharge elbows for pumps.

2. Structural Steel: Steel shapes, plates, and bars complying with ASTM A 36/A 36M. Bases shall have shape to accommodate supported equipment.
3. Support Brackets: Factory-welded steel brackets on frame for outrigger isolation mountings and to provide for anchor bolts and equipment support.

D. Concrete Inertia Base: Factory-fabricated or field-fabricated, welded, structural-steel bases and rails ready for placement of cast-in-place concrete.

1. Design Requirements: Lowest possible mounting height with not less than 1-inch clearance above the floor. Include equipment anchor bolts and auxiliary motor slide bases or rails.

    a. Include supports for suction and discharge elbows for pumps.

2. Structural Steel: Steel shapes, plates, and bars complying with ASTM A 36/A 36M. Bases shall have shape to accommodate supported equipment.
3. Support Brackets: Factory-welded steel brackets on frame for outrigger isolation mountings and to provide for anchor bolts and equipment support.
4. Fabrication: Fabricate steel templates to hold equipment anchor-bolt sleeves and anchors in place during placement of concrete. Obtain anchor-bolt templates from supported equipment manufacturer.

2.13 RESTRAINED ISOLATION ROOF-CURB RAILS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Ace Mountings Co., Inc.
2. Kinetics Noise Control, Inc.
3. Mason Industries, Inc.
4. Thybar Corporation.

B. Description: Factory-assembled, fully enclosed, insulated, air- and watertight curb rail designed to resiliently support equipment and to withstand seismic and wind forces.

C. Upper Frame: The upper frame shall provide continuous support for equipment and shall be captive to resiliently resist seismic and wind forces.

D. Lower Support Assembly: The lower support assembly shall be formed sheet metal section containing adjustable and removable steel springs that support the upper frame. The lower support assembly shall have a means for attaching to building structure and a wood nailer for attaching roof materials, and shall be insulated with a minimum of 2 inches of rigid, glass-fiber insulation on inside of assembly. Adjustable, restrained-spring isolators shall be mounted on elastomeric vibration isolation pads and shall have access ports, for level adjustment, with removable waterproof covers at all isolator locations. Isolators shall be located so they are accessible for adjustment at any time during the life of the installation without interfering with the integrity of the roof.

E. Snubber Bushings: All-directional, elastomeric snubber bushings at least 1/4 inch thick.

F. Water Seal: Galvanized sheet metal with EPDM seals at corners, attached to upper support frame, extending down past wood nailer of lower support assembly, and counterflashed over roof materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and equipment to receive vibration isolation and seismic- and wind-control devices for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in of reinforcement and cast-in-place anchors to verify actual locations before installation.

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

3.2 APPLICATIONS

A. Multiple Pipe Supports: Secure pipes to trapeze member with clamps approved for application by an evaluation service member of ICC-ES or OSHPD.

B. Hanger-Rod Stiffeners: Install hanger-rod stiffeners where indicated or scheduled on Drawings to receive them and where required to prevent buckling of hanger rods due to seismic forces.

C. Strength of Support and Seismic-Restraint Assemblies: Where not indicated, select sizes of components so strength is adequate to carry present and future static and seismic loads within specified loading limits.

3.3 VIBRATION CONTROL AND SEISMIC-RESTRAINT DEVICE INSTALLATION

A. Installation of vibration isolators must not cause any change of position of equipment, piping, or ductwork resulting in stresses or misalignment.

B. Comply with requirements in Section 077200 "Roof Accessories" for installation of roof curbs, equipment supports, and roof penetrations.

C. Equipment Restraints:

1. Install seismic snubbers on HVAC equipment mounted on vibration isolators. Locate snubbers as close as possible to vibration isolators and bolt to equipment base and supporting structure.
2. Install resilient bolt isolation washers on equipment anchor bolts where clearance between anchor and adjacent surface exceeds 0.125 inch.
3. Install seismic-restraint devices using methods approved by an evaluation service member of ICC-ES or OSHPD that provides required submittals for component.

D. Piping Restraints:

1. Comply with requirements in MSS SP-127.
2. Space lateral supports a maximum of 40 feet o.c., and longitudinal supports a maximum of 80 feet o.c.
3. Brace a change of direction longer than 12 feet.

E. Install cables so they do not bend across edges of adjacent equipment or building structure.

F. Install seismic-restraint devices using methods approved by an evaluation service member of ICC-ES or OSHPD that provides required submittals for component.

G. Install bushing assemblies for anchor bolts for floor-mounted equipment, arranged to provide resilient media between anchor bolt and mounting hole in concrete base.

H. Install bushing assemblies for mounting bolts for wall-mounted equipment, arranged to provide resilient media where equipment or equipment-mounting channels are attached to wall.

I. Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords of bar joists, or at concrete members.

J. Drilled-in Anchors:

1. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the structural engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
2. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.
3. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened.
4. Adhesive Anchors: Clean holes to remove loose material and drilling dust prior to installation of adhesive. Place adhesive in holes proceeding from the bottom of the hole and progressing toward the surface in such a manner as to avoid introduction of air pockets in the adhesive.
5. Set anchors to manufacturer's recommended torque, using a torque wrench.
6. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.

3.4 ACCOMMODATION OF DIFFERENTIAL SEISMIC MOTION

A. Install flexible connections in piping where they cross seismic joints, where adjacent sections or branches are supported by different structural elements, and where the connections terminate with connection to equipment that is anchored to a different structural element from the one supporting the connections as they approach

equipment. Comply with requirements in Section 232113 "Hydronic Piping" for piping flexible connections.

3.5 FIELD QUALITY CONTROL

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

B. Perform tests and inspections.

C. Tests and Inspections:

1. Provide evidence of recent calibration of test equipment by a testing agency acceptable to authorities having jurisdiction.
2. Schedule test with Owner, through Architect, before connecting anchorage device to restrained component (unless postconnection testing has been approved), and with at least seven days' advance notice.
3. Obtain Architect's approval before transmitting test loads to structure. Provide temporary load-spreading members.
4. Test at least four of each type and size of installed anchors and fasteners selected by Architect.
5. Test to 90 percent of rated proof load of device.
6. Measure isolator restraint clearance.
7. Measure isolator deflection.
8. Verify snubber minimum clearances.
9. Test and adjust restrained-air-spring isolator controls and safeties.

D. Remove and replace malfunctioning units and retest as specified above.

E. Prepare test and inspection reports.

3.6 ADJUSTING

A. Adjust isolators after piping system is at operating weight.

B. Adjust limit stops on restrained-spring isolators to mount equipment at normal operating height. After equipment installation is complete, adjust limit stops so they are out of contact during normal operation.

END OF SECTION 230548

SECTION 230900 - INSTRUMENTATION AND CONTROL FOR HVAC

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.

B. See specification section 238129 – Variable Refrigerant Flow HVAC Systems for additional control system requirements and coordination.

1.2 SUMMARY

A. This Section includes control equipment for HVAC systems and components, including control components for terminal heating and cooling units not supplied with factory-wired controls. All buildings have existing Johnson Metasys control systems at are less than 5 years old. Control valves, actuators, and sensors may be re-used. Contractor to inspect all components to verify suitability for reuse and report any deficiencies to the engineer. Product controllers shall be replaced only if necessary.

The head end DDC system should not require any modification for this project except that graphics shall be replaced as needed to match the new equipment.

All new sequences are shown on the controls drawings.

1.3 DEFINITIONS

A. DDC: Direct digital control.
B. I/O: Input/output.
C. MS/TP: Master slave/token passing.
D. PC: Personal computer.
E. PID: Proportional plus integral plus derivative.
F. RTD: Resistance temperature detector.

1.4 SYSTEM PERFORMANCE

A. Comply with the following performance requirements:

1. Alarm Response Time: Annunciate alarm at workstation within 45 seconds. Multiple workstations must receive alarms within five seconds of each other.
2. Program Execution Frequency: Run capability of applications as often as five seconds, but selected consistent with mechanical process under control.

3. Performance: Programmable controllers shall execute DDC PID control loops, and scan and update process values and outputs at least once per second.
4. Reporting Accuracy and Stability of Control: Report values and maintain measured variables within tolerances as follows:

    a. Water Temperature: Plus or minus 1 deg F.
    b. Water Flow: Plus or minus 5 percent of full scale.
    c. Water Pressure: Plus or minus 2 percent of full scale.
    d. Space Temperature: Plus or minus 1 deg F.
    e. Ducted Air Temperature: Plus or minus 1 deg F.
    f. Outside Air Temperature: Plus or minus 2 deg F.
    g. Temperature Differential: Plus or minus 0.25 deg F.
    h. Relative Humidity: Plus or minus 5 percent.
    i. Airflow (Pressurized Spaces): Plus or minus 3 percent of full scale.
    j. Airflow (Measuring Stations): Plus or minus 5 percent of full scale.
    k. Airflow (Terminal): Plus or minus 10 percent of full scale.
    l. Air Pressure (Space): Plus or minus 0.01-inch wg.
    m. Air Pressure (Ducts): Plus or minus 0.1-inch wg.

1.5 SEQUENCE OF OPERATION – See Drawings.

1.6 ACTION SUBMITTALS

A. Product Data: Include manufacturer's technical literature for each control device. Indicate dimensions, capacities, performance characteristics, electrical characteristics, finishes for materials, and installation and startup instructions for each type of product indicated.

    1. DDC System Hardware: Bill of materials of equipment indicating quantity, manufacturer, and model number. Include technical data for operator workstation equipment, interface equipment, control units, transducers/transmitters, sensors, actuators, valves, relays/switches, control panels, and operator interface equipment.
    2. Controlled Systems: Instrumentation list with element name, type of device, manufacturer, model number, and product data. Include written description of sequence of operation including schematic diagram.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

    1. Bill of materials of equipment indicating quantity, manufacturer, and model number.
    2. Schematic flow diagrams showing fans, pumps, coils, dampers, valves, and control devices.
    3. Wiring Diagrams: Power, signal, and control wiring.
    4. Details of control panel faces, including controls, instruments, and labeling.
    5. Written description of sequence of operation.

6. Schedule of dampers including size, leakage, and flow characteristics.
7. Schedule of valves including flow characteristics.
8. DDC System Hardware:

    a. Wiring diagrams for control units with termination numbers.
    b. Schematic diagrams and floor plans for field sensors and control hardware.
    c. Schematic diagrams for control, communication, and power wiring, showing trunk data conductors and wiring between operator workstation and control unit locations.

9. Controlled Systems:

    a. Schematic diagrams of each controlled system with control points labeled and control elements graphically shown, with wiring.
    b. Scaled drawings showing mounting, routing, and wiring of elements including bases and special construction.
    c. Written description of sequence of operation including schematic diagram.
    d. Points list.

1.7 INFORMATIONAL SUBMITTALS

A. Data Communications Protocol Certificates: Certify that each proposed DDC system component complies with ASHRAE 135.

B. Field quality-control test reports.

1.8 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For HVAC instrumentation and control system to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:

1. Maintenance instructions and lists of spare parts for each type of control device.
2. Interconnection wiring diagrams with identified and numbered system components and devices.
3. Keyboard illustrations and step-by-step procedures indexed for each operator function.
4. Inspection period, cleaning methods, cleaning materials recommended, and calibration tolerances.
5. Calibration records and list of set points.

B. Software and Firmware Operational Documentation: Include the following:

1. Software operating and upgrade manuals.
2. Program Software Backup: On a magnetic media or compact disc, complete with data files.
3. Device address list.
4. Printout of software application and graphic screens.

5. Software license required by and installed for DDC workstations and control systems.

1.9 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Replacement Materials: One replacement diaphragm or relay mechanism for each unique valve, motor controller, thermostat positioning relay.

1.10 QUALITY ASSURANCE

A. Installer Qualifications: Automatic control system manufacturer's authorized representative who is trained and approved for installation of system components required for this Project.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with ASHRAE 135 for DDC system components.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Factory-Mounted Components: Where control devices specified in this Section are indicated to be factory mounted on equipment, arrange for shipping of control devices to equipment manufacturer.

B. System Software: Update to latest version of software at Project completion.

1.12 COORDINATION

A. Coordinate location of thermostats, humidistats, and other exposed control sensors with plans and room details before installation.

B. Coordinate supply of conditioned electrical branch circuits for control units and operator workstation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Basis of Design: ***Johnson Controls, Inc.; Controls Group***. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

a. Siemens APOGEE
b. TAC Americas, INC.
c. Trane

2. Regardless of manufacturer, all control work shall integrate seamlessly with the existing ***Johnson Controls Facility explorer system*** server, include the generation of new and modification of existing graphics, setpoint, monitoring and control sequences included in the scope of work. Gateways are not acceptable.

2.2 CONTROL SYSTEM

A. Control system shall consist of sensors, indicators, actuators, final control elements, interface equipment, other apparatus, and accessories to control mechanical systems.

B. Control system shall consist of sensors, indicators, actuators, final control elements, interface equipment, other apparatus, accessories, and software connected to distributed controllers operating in multiuser, multitasking environment on token-passing network and programmed to control mechanical systems. An operator workstation permits interface with the network via dynamic color graphics with each mechanical system, building floor plan, and control device depicted by point-and-click graphics.

2.3 DDC EQUIPMENT

A. Control Units: Modular, comprising processor board with programmable, nonvolatile, random-access memory; local operator access and display panel; integral interface equipment; and backup power source.

1. Units monitor or control each I/O point; process information; execute commands from other control units, devices, and operator stations; and download from or upload to operator workstation or diagnostic terminal unit.
2. Stand-alone mode control functions operate regardless of network status. Functions include the following:

a. Global communications.

b. Discrete/digital, analog, and pulse I/O.
c. Monitoring, controlling, or addressing data points.
d. Software applications, scheduling, and alarm processing.
e. Testing and developing control algorithms without disrupting field hardware and controlled environment.

3. Standard Application Programs:

a. Electric Control Programs: Demand limiting, duty cycling, automatic time scheduling, start/stop time optimization, night setback/setup, on-off control with differential sequencing, staggered start, antishort cycling, PID control, DDC with fine tuning, and trend logging.
b. HVAC Control Programs: Optimal run time, supply-air reset, and enthalpy switchover.
c. Chiller Control Programs: Control function of condenser-water reset, chilled-water reset, and equipment sequencing.
d. Programming Application Features: Include trend point; alarm processing and messaging; weekly, monthly, and annual scheduling; energy calculations; run-time totalization; and security access.
e. Remote communications.
f. Maintenance management.
g. Units of Measure: Inch-pound and SI (metric).

4. Local operator interface provides for download from or upload to operator workstation or diagnostic terminal unit.
5. ASHRAE 135 Compliance: Control units shall use ASHRAE 135 protocol and communicate using ISO 8802-3 (Ethernet) datalink/physical layer protocol.

B. Local Control Units: Modular, comprising processor board with electronically programmable, nonvolatile, read-only memory; and backup power source.

1. Units monitor or control each I/O point, process information, and download from or upload to operator workstation or diagnostic terminal unit.
2. Stand-alone mode control functions operate regardless of network status. Functions include the following:

a. Global communications.
b. Discrete/digital, analog, and pulse I/O.
c. Monitoring, controlling, or addressing data points.

3. Local operator interface provides for download from or upload to operator workstation or diagnostic terminal unit.
4. ASHRAE 135 Compliance: Control units shall use ASHRAE 135 protocol and communicate using ISO 8802-3 (Ethernet) datalink/physical layer protocol.

C. I/O Interface: Hardwired inputs and outputs may tie into system through controllers. Protect points so that shorting will cause no damage to controllers.

1. Binary Inputs: Allow monitoring of on-off signals without external power.
2. Pulse Accumulation Inputs: Accept up to 10 pulses per second.

3. Analog Inputs: Allow monitoring of low-voltage (0- to 10-V dc), current (4 to 20 mA), or resistance signals.
4. Binary Outputs: Provide on-off or pulsed low-voltage signal, selectable for normally open or normally closed operation with three-position (on-off-auto) override switches and status lights.
5. Analog Outputs: Provide modulating signal, either low voltage (0- to 10-V dc) or current (4 to 20 mA) with status lights, two-position (auto-manual) switch, and manually adjustable potentiometer.
6. Tri-State Outputs: Provide two coordinated binary outputs for control of three-point, floating-type electronic actuators.
7. Universal I/Os: Provide software selectable binary or analog outputs.

D. Power Supplies: Transformers with Class 2 current-limiting type or overcurrent protection; limit connected loads to 80 percent of rated capacity. DC power supply shall match output current and voltage requirements and be full-wave rectifier type with the following:

1. Output ripple of 5.0 mV maximum peak to peak.
2. Combined 1 percent line and load regulation with 100-mic.sec. response time for 50 percent load changes.
3. Built-in overvoltage and overcurrent protection and be able to withstand 150 percent overload for at least 3 seconds without failure.

E. Power Line Filtering: Internal or external transient voltage and surge suppression for workstations or controllers with the following:

1. Minimum dielectric strength of 1000 V.
2. Maximum response time of 10 nanoseconds.
3. Minimum transverse-mode noise attenuation of 65 dB.
4. Minimum common-mode noise attenuation of 150 dB at 40 to 100 Hz.

2.4 UNITARY CONTROLLERS

A. Unitized, capable of stand-alone operation with sufficient memory to support its operating system, database, and programming requirements, and with sufficient I/O capacity for the application.

1. Configuration: Local keypad and display; diagnostic LEDs for power, communication, and processor; wiring termination to terminal strip or card connected with ribbon cable; memory with bios; and 72-hour battery backup.
2. Operating System: Manage I/O communication to allow distributed controllers to share real and virtual object information and allow central monitoring and alarms. Perform scheduling with real-time clock. Perform automatic system diagnostics; monitor system and report failures.
3. ASHRAE 135 Compliance: Communicate using read (execute and initiate) and write (execute and initiate) property services defined in ASHRAE 135. Reside on network using MS/TP datalink/physical layer protocol and have service communication port for connection to diagnostic terminal unit.
4. Enclosure: Dustproof rated for operation at 32 to 120 deg F.

5. Enclosure: Waterproof rated for operation at 40 to 150 deg F.

2.5 ANALOG CONTROLLERS

A. Step Controllers: 6- or 10-stage type, with heavy-duty switching rated to handle loads and operated by electric motor.

B. Electric, Outdoor-Reset Controllers: Remote-bulb or bimetal rod-and-tube type, proportioning action with adjustable throttling range, adjustable set point, scale range minus 10 to plus 70 deg F, and single- or double-pole contacts.

C. Electronic Controllers: Wheatstone-bridge-amplifier type, in steel enclosure with provision for remote-resistance readjustment. Identify adjustments on controllers, including proportional band and authority.

1. Single controllers can be integral with control motor if provided with accessible control readjustment potentiometer.

D. Fan-Speed Controllers: Solid-state model providing field-adjustable proportional control of motor speed from maximum to minimum of 55 percent and on-off action below minimum fan speed. Controller shall briefly apply full voltage, when motor is started, to rapidly bring motor up to minimum speed. Equip with filtered circuit to eliminate radio interference.

E. Receiver Controllers: Single- or multiple-input models with control-point adjustment, direct or reverse acting with mechanical set-point adjustment with locking device, proportional band adjustment, authority adjustment, and proportional control mode.

1. Remote-control-point adjustment shall be plus or minus 20 percent of sensor span, input signal of 3 to 13 psig.
2. Proportional band shall extend from 2 to 20 percent for 5 psig.
3. Authority shall be 20 to 200 percent.
4. Gages: 2-1/2 inches in diameter, 2.5 percent wide-scale accuracy, and range to match transmitter input or output pressure.

2.6 ELECTRONIC SENSORS

A. Description: Vibration and corrosion resistant; for wall, immersion, or duct mounting as required.

B. Thermistor Temperature Sensors and Transmitters:

1. Accuracy: Plus or minus 0.5 deg F at calibration point.
2. Wire: Twisted, shielded-pair cable.
3. Insertion Elements in Ducts: Single point, 8 inches long; use where not affected by temperature stratification or where ducts are smaller than 9 sq. ft..
4. Averaging Elements in Ducts: 36 inches long, flexible; use where prone to temperature stratification or where ducts are larger than 10 sq. ft..

5. Insertion Elements for Liquids: Brass or stainless-steel socket with minimum insertion length of 2-1/2 inches.
6. Room Sensor Cover Construction: Manufacturer's standard locking covers.

    a. Set-Point Adjustment: Concealed.
    b. Set-Point Indication: Concealed.
    c. Thermometer: Concealed.
    d. Color: White

7. Outside-Air Sensors: Watertight inlet fitting, shielded from direct sunlight.
8. Room Security Sensors: Stainless-steel cover plate with insulated back and security screws.

C. RTDs and Transmitters:

1. Accuracy: Plus or minus 0.2 percent at calibration point.
2. Wire: Twisted, shielded-pair cable.
3. Insertion Elements in Ducts: Single point, 8 inches long; use where not affected by temperature stratification or where ducts are smaller than 9 sq. ft..
4. Averaging Elements in Ducts: 18 inches long, rigid; use where prone to temperature stratification or where ducts are larger than 9 sq. ft.; length as required.
5. Insertion Elements for Liquids: Brass socket with minimum insertion length of 2-1/2 inches.
6. Room Sensor Cover Construction: Manufacturer's standard locking covers.

    a. Set-Point Adjustment: Concealed.
    b. Set-Point Indication: Concealed.
    c. Thermometer: Concealed.
    d. Color: White.

7. Outside-Air Sensors: Watertight inlet fitting, shielded from direct sunlight.
8. Room Security Sensors: Stainless-steel cover plate with insulated back and security screws.

D. Humidity Sensors: Bulk polymer sensor element.

1. Accuracy: 2 percent full range with linear output.
2. Duct Sensor: 20 to 80 percent relative humidity range with element guard and mounting plate.
3. Outside-Air Sensor: 20 to 80 percent relative humidity range with mounting enclosure, suitable for operation at outdoor temperatures of minus 22 to plus 185 deg F.
4. Duct and Sensors: With element guard and mounting plate, range of 0 to 100 percent relative humidity.

E. Pressure Transmitters/Transducers:

1. Static-Pressure Transmitter: Nondirectional sensor with suitable range for expected input, and temperature compensated.

a. Accuracy: 2 percent of full scale with repeatability of 0.5 percent.
b. Output: 4 to 20 mA.
c. Building Static-Pressure Range: 0- to 0.25-inch wg.
d. Duct Static-Pressure Range: 0- to 5-inch wg.

2. Water Pressure Transducers: Stainless-steel diaphragm construction, suitable for service; minimum 150-psig operating pressure; linear output 4 to 20 mA.
3. Water Differential-Pressure Transducers: Stainless-steel diaphragm construction, suitable for service; minimum 150-psig operating pressure and tested to 300-psig; linear output 4 to 20 mA.
4. Differential-Pressure Switch (Air or Water): Snap acting, with pilot-duty rating and with suitable scale range and differential.
5. Pressure Transmitters: Direct acting for gas, liquid, or steam service; range suitable for system; linear output 4 to 20 mA.

F. Room Sensor Cover Construction: Manufacturer's standard locking covers.

2.7 STATUS SENSORS

A. Status Inputs for Fans: Differential-pressure switch with pilot-duty rating and with adjustable range of 0- to 5-inch wg.

B. Status Inputs for Pumps: Differential-pressure switch with pilot-duty rating and with adjustable pressure-differential range of 8 to 60 psig, piped across pump.

C. Status Inputs for Electric Motors: Comply with ISA 50.00.01, current-sensing fixed- or split-core transformers with self-powered transmitter, adjustable and suitable for 175 percent of rated motor current.

D. Voltage Transmitter (100- to 600-V ac): Comply with ISA 50.00.01, single-loop, self-powered transmitter, adjustable, with suitable range and 1 percent full-scale accuracy.

E. Power Monitor: 3-phase type with disconnect/shorting switch assembly, listed voltage and current transformers, with pulse kilowatt hour output and 4- to 20-mA kW output, with maximum 2 percent error at 1.0 power factor and 2.5 percent error at 0.5 power factor.

F. Current Switches: Self-powered, solid-state with adjustable trip current, selected to match current and system output requirements.

G. Electronic Valve/Damper Position Indicator: Visual scale indicating percent of travel and 2- to 10-V dc, feedback signal.

H. Water-Flow Switches: Bellows-actuated mercury or snap-acting type with pilot-duty rating, stainless-steel or bronze paddle, with appropriate range and differential adjustment, in NEMA 250, Type 1 enclosure.

2.8 FLOW MEASURING STATIONS

A. Duct Airflow Station: Combination of air straightener and multiport, self-averaging pitot tube station.

1. Casing: Galvanized-steel frame.
2. Flow Straightener: Aluminum honeycomb, 3/4-inch parallel cell, 3 inches deep.
3. Sensing Manifold: Copper manifold with bullet-nosed static pressure sensors positioned on equal area basis.

2.9 THERMOSTATS

A. Mercury thermometers and sensors are not permitted.

B. Electric, solid-state, microcomputer-based room thermostat with remote sensor.

1. Automatic switching from heating to cooling.
2. Preferential rate control to minimize overshoot and deviation from set point.
3. Set up for four separate temperatures per day.
4. Instant override of set point for continuous or timed period from 1 hour to 31 days.
5. Short-cycle protection.
6. Programming based on every day of week.
7. Selection features include degree F or degree C display, 12- or 24-hour clock, keyboard disable, remote sensor, and fan on-auto.
8. Battery replacement without program loss.
9. Thermostat display features include the following:

    a. Time of day.
    b. Actual room temperature.
    c. Programmed temperature.
    d. Programmed time.
    e. Duration of timed override.
    f. Day of week.
    g. System mode indications include "heating," "off," "fan auto," and "fan on."

C. Remote-Bulb Thermostats: On-off or modulating type, liquid filled to compensate for changes in ambient temperature; with copper capillary and bulb, unless otherwise indicated.

1. Bulbs in water lines with separate wells of same material as bulb.
2. Bulbs in air ducts with flanges and shields.
3. Averaging Elements: Copper tubing with either single- or multiple-unit elements, extended to cover full width of duct or unit; adequately supported.
4. Scale settings and differential settings are clearly visible and adjustable from front of instrument.
5. On-Off Thermostat: With precision snap switches and with electrical ratings required by application.

6. Modulating Thermostats: Construct so complete potentiometer coil and wiper assembly is removable for inspection or replacement without disturbing calibration of instrument.

D. Fire-Protection Thermostats: Listed and labeled by an NRTL acceptable to authorities having jurisdiction; with fixed or adjustable settings to operate at not less than 75 deg F above normal maximum operating temperature, and the following:

1. Reset: Manual.
2. Reset: Automatic, with control circuit arranged to require manual reset at central control panel; with pilot light and reset switch on panel labeled to indicate operation.

E. Immersion Thermostat: Remote-bulb or bimetal rod-and-tube type, proportioning action with adjustable throttling range and adjustable set point.

F. Airstream Thermostats: Two-pipe, fully proportional, single-temperature type; with adjustable set point in middle of range, adjustable throttling range, plug-in test fitting or permanent pressure gage, remote bulb, bimetal rod and tube, or averaging element.

G. Electric, Low-Limit Duct Thermostat: Snap-acting, single-pole, single-throw, manual- or automatic- reset switch that trips if temperature sensed across any 12 inches of bulb length is equal to or below set point.

1. Bulb Length: Minimum 20 feet.
2. Quantity: One thermostat for every 20 sq. ft. of coil surface.

H. Electric, High-Limit Duct Thermostat: Snap-acting, single-pole, single-throw, manual- or automatic- reset switch that trips if temperature sensed across any 12 inches of bulb length is equal to or above set point.

1. Bulb Length: Minimum 20 feet.
2. Quantity: One thermostat for every 20 sq. ft. of coil surface.

I. Heating/Cooling Valve-Top Thermostats: Proportional acting for proportional flow, with molded-rubber diaphragm, remote-bulb liquid-filled element, direct and reverse acting at minimum shutoff pressure of 25 psig, and cast housing with position indicator and adjusting knob.

2.10 CO2 Sensors

A. Wall Mount – Mount at locations shown on drawings.

B. Sensor Requirements
1. Accuracy: 3% of reading or ±40 ppm
2. Signal Output: 0-10V (10k min.) or 4-20 mA
3. Repeatability: ±20 ppm
4. Measurement Range: 0-2000 ppm CO2
5. Sensing Technology: Non-dispersive IR (NDIR)

6. Calibration: Push button @ 2000 ppm
7. Calibration Interval: 5 years
8. Life Expectancy: 10 years typical
9. Warranty: 3 years
10. Visual Indication: Green 1000 ppm, Red > 2000 ppm
11. Warm Up Time: 3 minutes
12. Response Time: <1 minute
13. Operating Temperature: 31° to 122ºF
14. Operating Humidity: 0% to 99% RH (noncondensing)Comply with requirements in Section 230513 "Common Motor Requirements for HVAC Equipment."

2.11 HUMIDISTATS

A. Duct-Mounting Humidistats: Electric insertion, 2-position type with adjustable, 2 percent throttling range, 20 to 80 percent operating range, and single- or double-pole contacts.

2.12 ACTUATORS

A. Electric Motors: Size to operate with sufficient reserve power to provide smooth modulating action or two-position action.

1. Comply with requirements in Section 230513 "Common Motor Requirements for HVAC Equipment."
2. Permanent Split-Capacitor or Shaded-Pole Type: Gear trains completely oil immersed and sealed. Equip spring-return motors with integral spiral-spring mechanism in housings designed for easy removal for service or adjustment of limit switches, auxiliary switches, or feedback potentiometer.
3. Spring-Return Motors for Valves Larger Than NPS 2-1/2: Size for running and
4. Spring-Return Motors for Dampers Larger Than 25 Sq. Ft.: Size for running and breakaway torque of 150 in. x lbf.

B. Electronic Actuators: Direct-coupled type designed for minimum 60,000 full-stroke cycles at rated torque.

1. Manufacturers:

    a. Belimo Aircontrols (USA), Inc.

2. Valves: Size for torque required for valve close off at maximum pump differential pressure.
3. Dampers: Size for running torque calculated as follows:
    a. Parallel-Blade Damper with Edge Seals: 7 inch-lb/sq. ft. of damper.
    b. Dampers with 2- to 3-Inch wg of Pressure Drop or Face Velocities of 1000 to 2500 fpm: Increase running torque by 1.5.
4. Coupling: V-bolt and V-shaped, toothed cradle.
5. Overload Protection: Electronic overload or digital rotation-sensing circuitry.
6. Fail-Safe Operation: Mechanical, spring-return mechanism. Provide external, manual gear release on non-spring-return actuators.

7. Power Requirements (Two-Position Spring Return): 24-V ac.
8. Power Requirements (Modulating): Maximum 10 VA at 24-V ac or 8 W at 24-V dc.
9. Proportional Signal: 2-10-V dc or 4-20 mA, and 2-10-V dc position feedback signal.
10. Temperature Rating: Minus 22 to plus 122 deg F.
11. Temperature Rating (Smoke Dampers): Minus 22 to plus 250 deg F.
12. Run Time: 12 seconds open, 5 seconds closed.

2.13 CONTROL VALVES

A. Manufacturers:

1. Danfoss Inc.; Air Conditioning & Refrigeration Div.
2. Neles-Jamesbury.
3. Parker Hannifin Corporation; Skinner Valve Division.
4. Pneuline Controls.
5. Sauter Controls Corporation.

B. Control Valves: Factory fabricated, of type, body material, and pressure class based on maximum pressure and temperature rating of piping system, unless otherwise indicated.

C. Hydronic system globe valves shall have the following characteristics:

1. NPS 2 and Smaller: Class 125 bronze body, bronze trim, rising stem, renewable composition disc, and screwed ends with backseating capacity repackable under pressure.

2. Internal Construction: Replaceable plugs and stainless-steel or brass seats.

   a. Single-Seated Valves: Cage trim provides seating and guiding surfaces for plug on top and bottom.
   b. Double-Seated Valves: Balanced plug; cage trim provides seating and guiding surfaces for plugs on top and bottom.

3. Sizing: 3-psig maximum pressure drop at design flow rate or the following:

   a. Two Position: Line size.
   b. Two-Way Modulating: Either the value specified above or twice the load pressure drop, whichever is more.

4. Flow Characteristics: Two-way valves shall have equal percentage characteristics.

5. Close-Off (Differential) Pressure Rating: Combination of actuator and trim shall provide minimum close-off pressure rating of 150 percent of total system (pump) head for two-way valves and 100 percent of pressure differential across valve or 100 percent of total system (pump) head.

D. Terminal Unit Control Valves: Bronze body, bronze trim, two or three ports as indicated, replaceable plugs and seats, and union and threaded ends.

1. Rating: Class 125 for service at 125 psig and 250 deg F operating conditions.
2. Sizing: 3-psig maximum pressure drop at design flow rate, to close against pump shutoff head.
3. Flow Characteristics: Two-way valves shall have equal percentage characteristics; three-way valves shall have linear characteristics.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that conditioned power supply is available to control units and operator workstation.

3.2 INSTALLATION

A. Install software in control units and operator workstation(s). Implement all features of programs to specified requirements and as appropriate to sequence of operation.

B. Connect and configure equipment and software to achieve sequence of operation specified.

A. Verify location of thermostats with Drawings and room details before installation. Install devices 48 inches above the floor.

B. Install guards on thermostats in the following locations:

1. Entrances.
2. Public areas.
3. Where indicated.

C. Install labels and nameplates to identify control components according to Section 230553 "Identification for HVAC Piping and Equipment."

D. Install hydronic instrument wells, valves, and other accessories according to Section 232113 Hydronic Piping Specialties."

E. Install refrigerant instrument wells, valves, and other accessories according to Section 232300 "Refrigerant Piping."

3.3 ELECTRICAL WIRING AND CONNECTION INSTALLATION

A. Install raceways, boxes, and cabinets according to Section 260533 "Raceways and Boxes for Electrical Systems."

B. Install building wire and cable according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

~~C.~~ Install signal and communication cable as follows:

1. Conceal cable, except in mechanical rooms and areas where other conduit and piping are exposed.
2. Install exposed cable in raceway.
3. Install concealed cable in raceway.
4. Bundle and harness multiconductor instrument cable in place of single cables where several cables follow a common path.
5. Fasten flexible conductors, bridging cabinets and doors, along hinge side; protect against abrasion. Tie and support conductors.
6. Number-code or color-code conductors for future identification and service of control system, except local individual room control cables.
7. Install wire and cable with sufficient slack and flexible connections to allow for vibration of piping and equipment.

D. Connect manual-reset limit controls independent of manual-control switch positions. Automatic duct heater resets may be connected in interlock circuit of power controllers.

E. Connect hand-off-auto selector switches to override automatic interlock controls when switch is in hand position.

3.4 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.

B. Perform the following field tests and inspections and prepare test reports:

1. Operational Test: After electrical circuitry has been energized, start units to confirm proper unit operation. Remove and replace malfunctioning units and retest.
2. Test and adjust controls and safeties.
3. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
4. Test calibration of electronic controllers by disconnecting input sensors and stimulating operation with compatible signal generator.
5. Test each point through its full operating range to verify that safety and operating control set points are as required.
6. Test each control loop to verify stable mode of operation and compliance with sequence of operation. Adjust PID actions.
7. Test each system for compliance with sequence of operation.
8. Test software and hardware interlocks.

C. DDC Verification:

1. Verify that instruments are installed before calibration, testing, and loop or leak checks.
2. Check instruments for proper location and accessibility.
3. Check instrument installation for direction of flow, elevation, orientation, insertion depth, and other applicable considerations.
4. Check instrument tubing for proper fittings, slope, material, and support.
5. Check installation of air supply for each instrument.
6. Check flow instruments. Inspect tag number and line and bore size, and verify that inlet side is identified and that meters are installed correctly.
7. Check pressure instruments, piping slope, installation of valve manifold, and self-contained pressure regulators.
8. Check temperature instruments and material and length of sensing elements.
9. Check control valves. Verify that they are in correct direction.
10. Check air-operated dampers. Verify that pressure gages are provided and that proper blade alignment, either parallel or opposed, has been provided.
11. Check DDC system as follows:

    a. Verify that DDC controller power supply is from emergency power supply, if applicable.
    b. Verify that wires at control panels are tagged with their service designation and approved tagging system.
    c. Verify that spare I/O capacity has been provided.
    d. Verify that DDC controllers are protected from power supply surges.

D. Provide up to two days assistance to the commissioning agent to assist in commissioning. Provide login and password to CxA so he can log into the system and test the system and sequences of operation.

E. Provide up to two days assistance to the TAB contractor to assist in balancing systems for min/max air flows and to satisfy the DCV sequence of operation.

F. Replace damaged or malfunctioning controls and equipment and repeat testing procedures.

3.5 ADJUSTING

A. Calibrating and Adjusting:

1. Calibrate instruments.
2. Make three-point calibration test for both linearity and accuracy for each analog instrument.
3. Calibrate equipment and procedures using manufacturer's written recommendations and instruction manuals. Use test equipment with accuracy at least double that of instrument being calibrated.
4. Control System Inputs and Outputs:

    a. Check analog inputs at 0, 50, and 100 percent of span.
    b. Check analog outputs using milliampere meter at 0, 50, and 100 percent output.

c. Check digital inputs using jumper wire.
d. Check digital outputs using ohmmeter to test for contact making or breaking.
e. Check resistance temperature inputs at 0, 50, and 100 percent of span using a precision-resistant source.

5. Flow:

a. Set differential pressure flow transmitters for 0 and 100 percent values with 3-point calibration accomplished at 50, 90, and 100 percent of span.
b. Manually operate flow switches to verify that they make or break contact.

6. Pressure:

a. Calibrate pressure transmitters at 0, 50, and 100 percent of span.
b. Calibrate pressure switches to make or break contacts, with adjustable differential set at minimum.

7. Temperature:

a. Calibrate resistance temperature transmitters at 0, 50, and 100 percent of span using a precision-resistance source.
b. Calibrate temperature switches to make or break contacts.

8. Stroke and adjust control valves and dampers without positioners, following the manufacturer's recommended procedure, so that valve or damper is 100 percent open and closed.
9. Stroke and adjust control valves and dampers with positioners, following manufacturer's recommended procedure, so that valve and damper is 0, 50, and 100 percent closed.
10. Provide diagnostic and test instruments for calibration and adjustment of system.
11. Provide written description of procedures and equipment for calibrating each type of instrument. Submit procedures review and approval before initiating startup procedures.

B. Adjust initial temperature and humidity set points.

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

3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain HVAC instrumentation and controls.

B. Provide eight hours of training in two four-hour blocks. Training periods shall be spaced by at least four weeks.

END OF SECTION 230900

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DRAWING SYMBOLS

CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
GHR	GLYCOL HOT WATER RETURN
GHS	GLYCOL HOT WATER SUPPLY
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
C	CONDENSATE
CTR	COOLING TOWER RETURN
CTS	COOLING TOWER SUPPLY
	DIRECTION OF FLOW
DN	DIRECTION OF PITCH
R	REFRIGERANT
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
RG	REFRIGERANT GAS
SV	STEAM VENT
HPLR	HEAT PUMP LOOP RETURN
HPLS	HEAT PUMP LOOP SUPPLY
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
MU	MAKE-UP WATER
NG	NATURAL GAS
PC	PUMPED CONDENSATE
VAC	VACUUM
IW	INDIRECT WASTE

EXISTING DUCTWORK, PIPE, EQUIPMENT

NEW DUCTWORK, PIPE, EQUIPMENT

DUCTWORK, PIPE, EQUIPMENT TO BE REMOVED

PIPE TURNED UP

PIPE TURNED DOWN

BRANCH OFF TOP OF PIPE

BRANCH OFF BOTTOM OF PIPE

REDUCER

PIPE BREAK

BALL VALVE

BUTTERFLY VALVE

GATE VALVE

SHUT OFF VALVE (GATE, BALL, OR BUTTERFLY - REFER TO SPECS)

CHECK VALVE

BALANCE VALVE

ANGLE VALVE

PRESSURE REDUCING VALVE

STEAM TRAP

MOTOR OR SOLENOID CONTROL VALVE

MOTOR OR SOLENOID CONTROL VALVE (3-WAY)

TRIPLE DUTY VALVE

RELIEF VALVE

STRAINER

UNION

PRESSURE GAUGE

PUMP

EQUIPMENT TO BE REMOVED

VRF FAN COIL CASSETTE UNIT

REMOVE TO THIS POINT)

NEW CONNECTION TO EXISTING

SECTION CALLOUT (A / M-2)

DETAIL NUMBER (A / M-2)

DEMOLITION KEYNOTE (1)

KEYNOTE (1)

RETURN AIR

SUPPLY AIR

DUCT (DIMENSIONS SHOWN IN DUCT. DIMENSIONS IN INCHES.) (18/8)

DUCT (DIMENSIONS SHOWN BY LEADER. DIMENSIONS IN INCHES.) (18/8)

FLEX DUCT

DUCT SECTION - SUPPLY AIR

DUCT SECTION - EXHAUST AIR

DUCT SECTION - RETURN AIR

VOLUME DAMPER

14" ROUND DUCT (14" Ø)

18" x 8" FLAT OVAL DUCT (18/8 =)

NOTE:
NOT ALL SYMBOLS, ABBREVIATIONS AND EQUIPMENT DESIGNATIONS MAY APPLY TO THIS PARTICULAR PROJECT. ANY ADDITIONS OR OMISSIONS FROM THIS LEGEND SHEET DOES NOT IMPLY INCLUSION AND/ OR EXCLUSIONS OF ANY PARTICULAR ITEM FROM THIS PROJECT.

LINED DUCT (DIM. IS INTERNAL) (18/8)

MITERED ELBOW W/ TURNING VANES

WALL OR DUCT MOUNTED SUPPLY GRILLE

WALL OR DUCT MOUNTED RETURN OR EXHAUST GRILLE

FIRE DAMPER (FD / AD)
ACCESS DOOR TO BE LOCATED ON MOST ACCESSIBLE SIDE OF DUCT

SMOKE DAMPER (SD / AD)
ACCESS DOOR TO BE LOCATED ON MOST ACCESSIBLE SIDE OF DUCT

COMBINATION FIRE / SMOKE DAMPER (F/S / AD)
ACCESS DOOR TO BE LOCATED ON MOST ACCESSIBLE SIDE OF DUCT

MOTOR OPERATED DAMPER (M)

TEMPERATURE SENSOR (T)

SENSOR (S)

HUMIDISTAT (H)

CARBON DIOXIDE SENSOR (CO2)

EXHAUST GRILLE

SUPPLY DIFFUSER

RETURN GRILLE

REGISTER OR GRILLE - TOP NUMBER REPRESENTS TAG, SEE SCHEDULE; BOTTOM NUMBER REPRESENTS CFM. (8 / 750)

DIFFUSER - LETTER REPRESENTS TAG, SEE SCHEDULE; NUMBER REPRESENTS CFM (A / 125)

GENERAL NOTES

DUCTWORK GENERAL NOTES

1 HVAC CONTRACTOR TO PROVIDE CRANE AND NECESSARY EQUIPMENT TO HOIST ROOF MOUNTED HVAC EQUIPMENT FROM SITE TO FINAL ROOF LOCATION. GENERAL CONTRACTOR TO PROVIDE ALL ROOF PENETRATIONS REQUIRED TO ACCOMMODATE HVAC EQUIPMENT OPENINGS AND SET CURBS. HVAC CONTRACTOR TO COORDINATE EXACT LOCATION OF PENETRATIONS WITH G.C. AND SHALL ASSIST WITH SETTING ALL HVAC EQUIPMENT ROOF CURBS. HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY CAP OF ALL ROOF PENETRATIONS IN INTERIM FROM TIME PENETRATIONS ARE COMPLETE TO TIME EQUIPMENT IS SET ON ROOF CURBS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FLASHING ALL EQUIPMENT CURBS AND OTHER HVAC RELATED ROOF PENETRATIONS. HVAC CONTRACTOR SHALL REMOVE AND DISPOSE OF TEMPORARY CAP WHEN EQUIPMENT IS SET IN PLACE.

2 PROVIDE 45 DEGREE SHOE-TAP FITTING AND VOLUME DAMPER AT ALL BRANCH DUCT TAKE-OFFS (TOP, SIDE AND BOTTOM) FOR SUPPLY, RETURN AND EXHAUST AIR, UNLESS SHOWN OR NOTED OTHERWISE. VOLUME DAMPERS SHALL BE OMITTED FROM VAV INLET BRANCH DUCTWORK.

3 COORDINATE HVAC INSTALLATION WITH STRUCTURE, CEILING, LIGHTING, CONDUIT, HEATING AND DOMESTIC PIPING, STORM AND SANITARY DRAIN PIPING (ALL TRADES). PREPARE AND SUBMIT FULL COORDINATION DRAWINGS FOR APPROVAL BY ENGINEER PRIOR TO ORDERING MATERIALS AND/OR BEGINNING CONSTRUCTION.

4 INSULATE OR LINE DUCTWORK AS SPECIFIED IN THE MECHANICAL INSULATION AND METAL DUCTS SPECIFICATIONS OR NOTED ON DRAWINGS. NOTE THAT DUCT SIZES SHOWN ON DRAWINGS ARE INSIDE NET CLEAR DIMENSIONS.

5 ALL 90 DEGREE RECTANGULAR ELBOWS AND DUCTWORK TEES SHALL BE HARD MITERED WITH FACTORY TURNING VANES. TURNING VANES SHALL BE OMITTED FROM AIR TRANSFER DUCT ELBOWS.

6 ALL DUCTWORK PASSING THROUGH NON-FIRE RATED WALLS TO BE SEALED AROUND PERIMETER (BOTH SIDES) WITH DRYWALL JOINT COMPOUND OR APPROVED EQUAL.

7 INLET OF VAV BOX TO BE ARRANGED SUCH THAT THERE IS NO RESTRICTION OF AIRFLOW. THERE SHALL BE A MINIMUM OF THREE DUCT DIAMETERS OF STRAIGHT DUCT (FLEX DUCT WILL NOT BE PERMITTED) UPSTREAM OF THE INLET. INLET DUCT SIZE TO BE SAME SIZE AS VAV BOX INLET COLLAR UNLESS NOTED OTHERWISE. REFER TO VAV BOX INSTALLATION DETAIL FOR ADDITIONAL REQUIREMENTS.

8 HVAC CONTRACTOR TO PROVIDE ALL WALL & ROOF PENETRATIONS 8"x8" OR SMALLER. ALL PENETRATIONS LARGER THAN 8"x8" IS THE RESPONSIBILITY OF THE G.C. COORDINATE ALL 8"x8" OR LARGER PENETRATION LOCATIONS WITH G.C. LINTELS (BY G.C.) REFER TO STRUCTURAL DRAWINGS FOR LINTEL SCHEDULE. PENETRATIONS AND LINTEL LOCATIONS TO BE COORDINATED WITH G.C. AND DOCUMENTED ON COORDINATION DRAWINGS.

9 BALANCING CONTRACTOR TO SET MINIMUM OUTSIDE AIR DAMPER POSITION TO MEET VENTILATION AIR QUANTITIES REQUIRED AS SHOWN ON PLANS OR LISTED IN EQUIPMENT SCHEDULES.

10 NATURAL GAS PIPING WHERE REQUIRED SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR, WHICH SHALL INCLUDE FINAL CONNECTIONS TO HVAC EQUIPMENT. COORDINATE ALL EQUIPMENT LOCATIONS THAT REQUIRE NATURAL GAS WITH THE PLUMBING CONTRACTOR.

11 ALL SUPPORT OF EQUIPMENT, DUCTWORK AND ASSOCIATED DISTRIBUTION SERVICES SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE BUILDING CODE OF NEW YORK STATE. THE DISCIPLINE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE STRUCTURAL STEEL WHERE REQUIRED IN ORDER TO SUPPORT EQUIPMENT, DUCTWORK AND ASSOCIATED DISTRIBUTION SERVICES WHERE THE BUILDING STRUCTURE SPACING IS TOO GREAT TO ALLOW DIRECT SUPPORT. THE DISCIPLINE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMATION OF ALL SUPPORTS AND SHALL OBTAIN THE PROFESSIONAL SERVICE OF A STRUCTURAL ENGINEER LICENSED IN THE STATE OF NEW YORK AND FURNISH SEALED DRAWINGS AND DETAILS ILLUSTRATING SUCH SUPPORTS AND COMPLIANCE METHODS.

12 INSULATE ALL DUCTWORK PER NYS ENERGY CODE.

APPLICABLE CODES

1 BUILDING CODE OF NEW YORK STATE
2 ENERGY CODE OF NEW YORK STATE
3 MECHANICAL CODE OF NEW YORK STATE
4 FIRE CODE OF NEW YORK STATE
5 PLUMBING CODE OF NEW YORK STATE
6 ENERGY CONSERVATION CODE OF NEW YORK STATE
7 ACCESSIBLE AND USABLE BUILDING AND FACILITIES-CABO/ANSI A117.1
8 NATIONAL ELECTRIC CODE
9 NATIONAL FIRE CODE NFPA 13

EQUIPMENT DESIGNATIONS

ACU	AIR CONDITIONING UNIT
AHU	AIR HANDLING UNIT
AD	ACCESS DOOR
AS	AIR SEPARATOR
BDD	BACK DRAFT DAMPER
B	BOILER
CA	AIR COMPRESSOR
CAV	CONSTANT AIR VOLUME BOX
CC	COOLING COIL
CFP	CHEMICAL FEED PUMP
CH	CHILLER
CHP	CHILLED WATER PUMP
CP	CONDENSATE PUMP
CRAC	COMPUTER ROOM UNIT
CRU	CONDENSATE RETURN UNIT
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
DHW	DOMESTIC WATER HEATER
EF	EXHAUST FAN
ET	EXPANSION TANK
FCU	FAN COIL UNIT
FP	FIRE PUMP
FT	FINNED TUBE
HC	HEATING COIL
HP	HEAT PUMP
HU	HUMIDIFIER
HWP	HOT WATER PUMP
HX	HEAT EXCHANGER
L	LOUVER
MAU	MAKE UP AIR UNITS
MD	MOTORIZED DAMPER
P	PUMP
PHC	PREHEAT COIL
PPU	PUMPING PACKAGED UNIT
PRG	GAS PRESSURE REGULATOR
PRV	PRESSURE REDUCING VALVE
R	REGISTER
RCP	RADIANT CEILING PANEL
RTU	ROOF TOP UNIT
UH	UNIT HEATER
UV	UNIT VENTILATOR
VAV	VARIABLE AIR VOLUME BOX
VD	VOLUME DAMPER
VFD	VARIABLE SPEED DRIVE
WU-G	WINDOW UNIT MOUNTED IN GLASS
WU-W	WINDOW UNIT MOUNTED IN WALL
WS	WATER SOFTENER

NOTE:
SOME ABBREVIATIONS MAY NOT BE USED ON DRAWINGS

ABBREVIATIONS

%	PERCENT
AC	ALTERNATING CURRENT
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
AMB	AMBIENT
AMP	AMPERE (AMP,AMPS)
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
APPROX	APPOROXIAMTE (LY)
AVG	AVERAGE
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BO	BOTTOM OF
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BV	BALANCING VALVE
CAP	CAPACITY
CIP	CAST IRON PIPE
CLG	CEILING
CLR	CLEAR
CO	CLEANOUT or CARBON MONOXIDE
COL	COLUMN
CONN	CONNECTION
CONC	CONCRETE
CONT	CONTINUOUS
CU FT	CUBIC FEET
CV	VALVE FLOW COEFFICIENT
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DCV	DETECTOR CHECK VALVE
DCW	DOMESTIC COLD WATER
DEMO	DEMOLISH or DEMOLITION
DHW	DOMESTIC HOT WATER
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DWH	DOMESTIC WATER HEATER
DWV	DRAIN, WASTE, & VENT
DWG	DRAWING
(E)	EXISTING
ENGR	ENGINEER
EQ	EQUAL
EST	ESTIMATED
ETR	EXISTING TO REMAIN
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
°F	DEGREES FAHRENHEIT
FA	FREE AREA
FIN	FINISHED
FL	FLOOR
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FOOT OR FEET
FUT	FUTURE
GA	GAGE OR GAUGE
GAL	GALLONS
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
HD	HEAD
HG	MERCURY
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HR	HOUR
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HZ	FREQUENCY
ID	DIAMTER, INSIDE
IN	INCH
INSUL	INSULATION
INT	INTERIOR
IPS	IRON PIPE SIZE
INV	INVERT
KW	KILOWATT
KWH	KILOWATT HOUR
LBS	POUNDS
LF	LINEAR FEET
LG	LENGTH
LOC	LOCATION
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MATL	MATERIAL
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MECH	MECHANICAL
MFG	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MOCP	MAXIMUM OVERCURRENT PROTECTION
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MTG	MOUNTING
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPT	NATIONAL PIPE TREAD
NRS	NON-RISING STEM
NTS	NOT TO SCALE
OC	ON CENTER
OD	DIAMETER, OUTSIDE
OSSY	OUTSIDE SCREW AND YOKE
PC	PLUMBING CONTRACTOR
PLBG	PLUMBING
PH	PHASE (ELECTRICAL)
PRESS	PRESSURE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	PSI GUAGE
PRV	PRESSURE REDUCING VALVE
RCVR	RECEIVER
RECIRC	RECIRCULATE
RHW	HOT WATER RE-CIRCULATION
RO	ROUGH OPENING
RPDA	REDUCED-PRESSURE DETECTOR ASSY.
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED-PRESSURE ZONE
SCH	STEAM CAPTURE HOOD
SPEC	SPECIFICATION
SPLY	SUPPLY
SQ	SQUARE
SQ FT	SQUARE FOOT (FEET)
SQ IN	SQUARE INCH (INCHES)
STD	STANDARD
SUCT	SUCTION
TSTAT	THERMOSTAT
TBD	TO BE DETERMINED
TC	TEMPERATURE CONTROL CONTRACTOR
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TO	TOP OF
TYP	TYPICAL
V	VOLT
VAC	VACUUM
VAR	VARIABLE
VEL	VELOCITY
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WATT
W/	WITH
W/O	WITH OUT
WCO	WALL CLEANOUT
WHA	WATER HAMMER ARRESTER
WM	WATER METER
WPD	WATER PRESSURE DROP
WT	WEIGHT
WWP	WORKING WATER PRESSURE

NOTE:
SOME ABBREVIATIONS MAY NOT BE USED ON DRAWINGS

MECHANICAL SHEET LIST

Sheet Number	Sheet Name	Drawn By	Approved By
M001	MECHANICAL LEGEND SHEET	DRM	MB
M002	VENTILATION TABLE	DRM	MB
MD101	FIRST FLOOR DEMOLITION PLAN	DRM	MB
MD102	SECOND FLOOR DEMOLITION PLAN	DRM	MB
M101	FIRST FLOOR DUCTWORK PLAN	DRM	MB
M102	SECOND FLOOR MECHANICAL PLAN	DRM	MB
M103	ROOF MECHANICAL PLAN	DRM	MB
M201	FIRST FLOOR PIPING PLAN	DRM	MB
M202	SECOND FLOOR PIPING PLAN	DRM	MB
M401	FIRST FLOOR PIPING PLAN - ENLARGED VIEWS	DRM	MB
M501	MECHANICAL DETAILS	DRM	MB
M601	MECHANICAL SCHEDULES	DRM	MB
M701	MECHANICAL CONTROLS	DRM	MB

Grand total: 13

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LAND SURVEYING: 017976 LICENSE NO. C-0430
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT
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NEWBURGH ENLARGED CITY SCHOOL DISTRICT

GIDNEY AVENUE MEMORIAL SCHOOL
300 GIDNEY AVENUE
NEWBURGH, NY 12550

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME: MECHANICAL LEGEND SHEET

DRAWING NUMBER: M001

12/2/2024 5:38:09 PM

Room Name	Unit	Square Footage	Type	Occupancy Density/1000sf	Calculated Occupancy	Max Occupancy	OA/person	CFM/SF	Code OA (cfm)	Provided OA (cfm)
110 - Classroom	UV-110	850	Classroom	25	22	22	10	0.12	322	390
111 - Classroom	UV-111	850	Classroom	25	22	22	10	0.12	322	390
112 - Classroom	UV-112	1000	Classroom	25	25	25	10	0.12	370	390
113 - 1st Grade Classroom	UV-113	980	Classroom	25	25	25	10	0.12	367.6	390
114 - 1st Grade Classroom	UV-114	1000	Classroom	25	25	25	10	0.12	370	390
115 - 1st Grade Classroom	UV-115	980	Classroom	25	25	25	10	0.12	367.6	390
116 - Classroom	UV-116	1000	Classroom	25	25	25	10	0.12	370	390
117 - 1st Grade Classroom	UV-117	450	Classroom	25	12	12	10	0.12	174	190
118 - Classroom	UV-118	450	Classroom	25	12	12	10	0.12	174	190
119 - 1st Grade Classroom	UV-119	980	Classroom	25	25	25	10	0.12	367.6	390
120- Primary Resource	UV-120	1000	Classroom	25	25	25	10	0.12	370	390
121 - Primary Resource	UV-121	980	Classroom	25	25	25	10	0.12	367.6	390
122 - Classroom	UV-122	480	Classroom	25	12	12	10	0.12	177.6	190
123 - Kindergarten Classroom	UV-123	480	Classroom	25	12	12	10	0.12	177.6	190
124 - Intermediate Resource	UV-116A	990	Classroom	25	25	25	10	0.12	368.8	390
125 - Intermediate Resource	UV-116B	980	Classroom	25	25	25	10	0.12	367.6	390
142 - Gym	AHU-1 & AHU-2	3830	Multi-Use Assembly	100	383	300	7.5	0.06	2479.8	2684
137 - Cafeteria	RTU-1 & RTU 2	3595	Cafeteria	100	360	360	7.5	0.18	3347.1	4000

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NO:	DATE:	DESCRIPTION:
1	8/30/2024	SED ADDENDUM 2
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME:

VENTILATION TABLE

DRAWING NUMBER:

M002

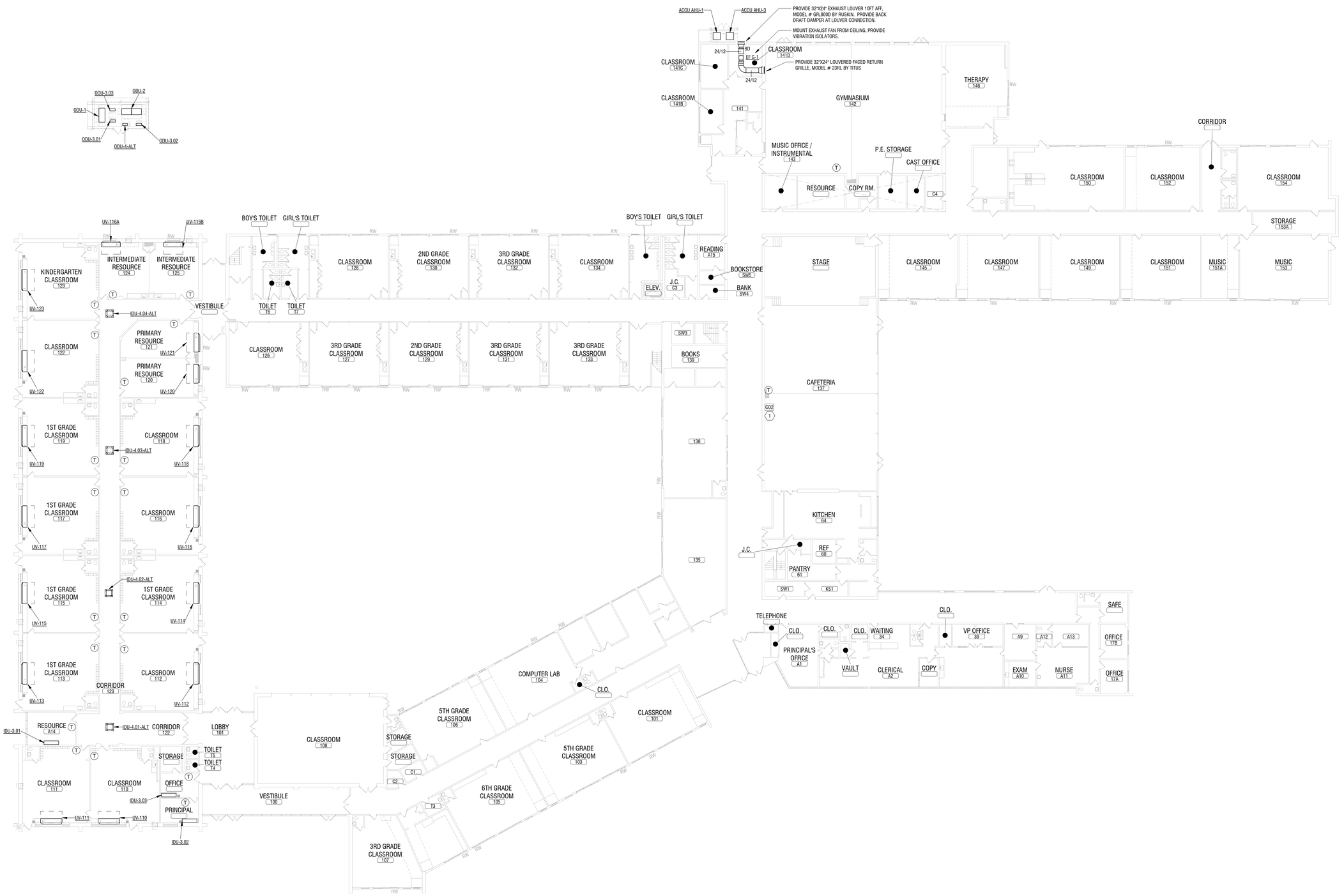
12/2/2024 5:38:10 PM

MECHANICAL NOTES:

1. CONTRACTOR TO CONFIRM DUCTWORK SIZE AND REPORT BACK TO ENGINEER
2. PROVIDE TEMPERATURE SENSOR AND TIE BACK TO BMS SYSTEM (TYP.)

KEY NOTES:

1. CO2 SENSOR TO BE LOCATED 54" A.F.F. IN BREATHING ZONE FOR DCV; REDUNDANT CO2 SENSOR TO BE INSTALLED AT EACH LOCATION (TYP). PROVIDE PROTECTIVE COVER FOR EACH SENSOR INSTALLED.



1 M101 FIRST FLOOR MECHANICAL PLAN

1/16" = 1'-0"

GRAPHIC SCALE

SCALE: 1/16" = 1'-0"

0 16' 32' 48' 64'

12/2/2024 5:38:12 PM

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NO:	DATE:	DESCRIPTION:
4	10-4-2024	SED ADDENDUM 5
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME:

FIRST FLOOR DUCTWORK PLAN

DRAWING NUMBER:

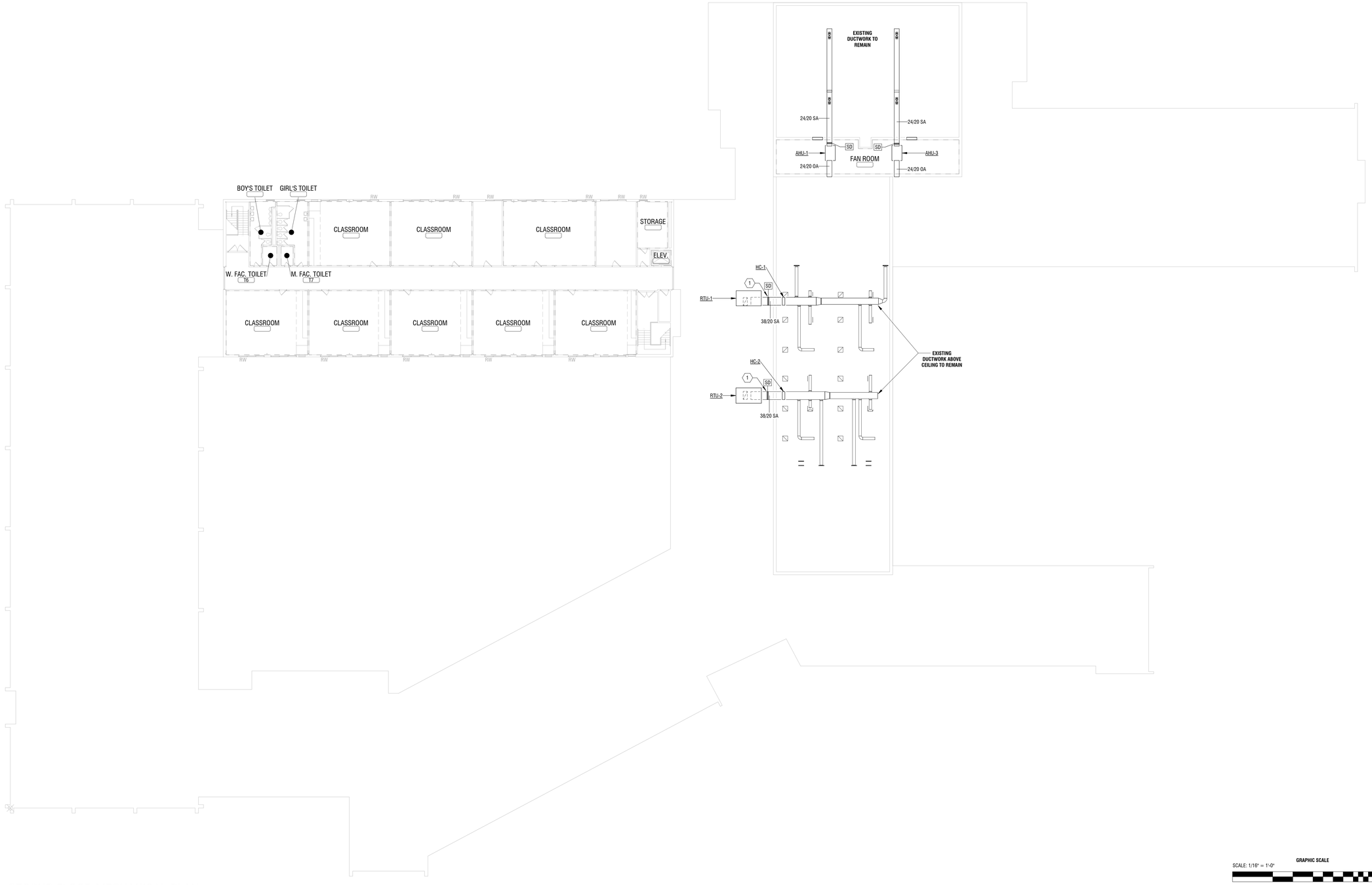
M101

MECHANICAL NOTES:

1. PROVIDE AHU AS SCHEDULED. RECONNECT TO EXISTING HWS/HWR PIPING ROUGH-INS. PROVIDE VALVES AND ACCESSORIES AS DETAILED. RECONNECT TO EXISTING DUCTWORK. PROVIDE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.

KEY NOTES:

(1) PROVIDE DUCT MOUNTED SMOKE DETECTOR RATED FOR VELOCITY OF CORRESPONDING SUPPLY DUCT (TYP).



1 M102 SECOND FLOOR MECHANICAL PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

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NO:	DATE:	DESCRIPTION:
4	10-4-2024	SED ADDENDUM 5
3	09-20-2024	SED ADDENDUM 4
2	9/13/2024	SED ADDENDUM 3
1	8/30/2024	SED ADDENDUM 2
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015

PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

SECOND FLOOR MECHANCIAL PLAN

DRAWING NUMBER:

M102

1 M103 ROOF MECHANICAL PLAN
1/16" = 1'-0"

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ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME:

ROOF MECHANCIAL PLAN

DRAWING NUMBER:

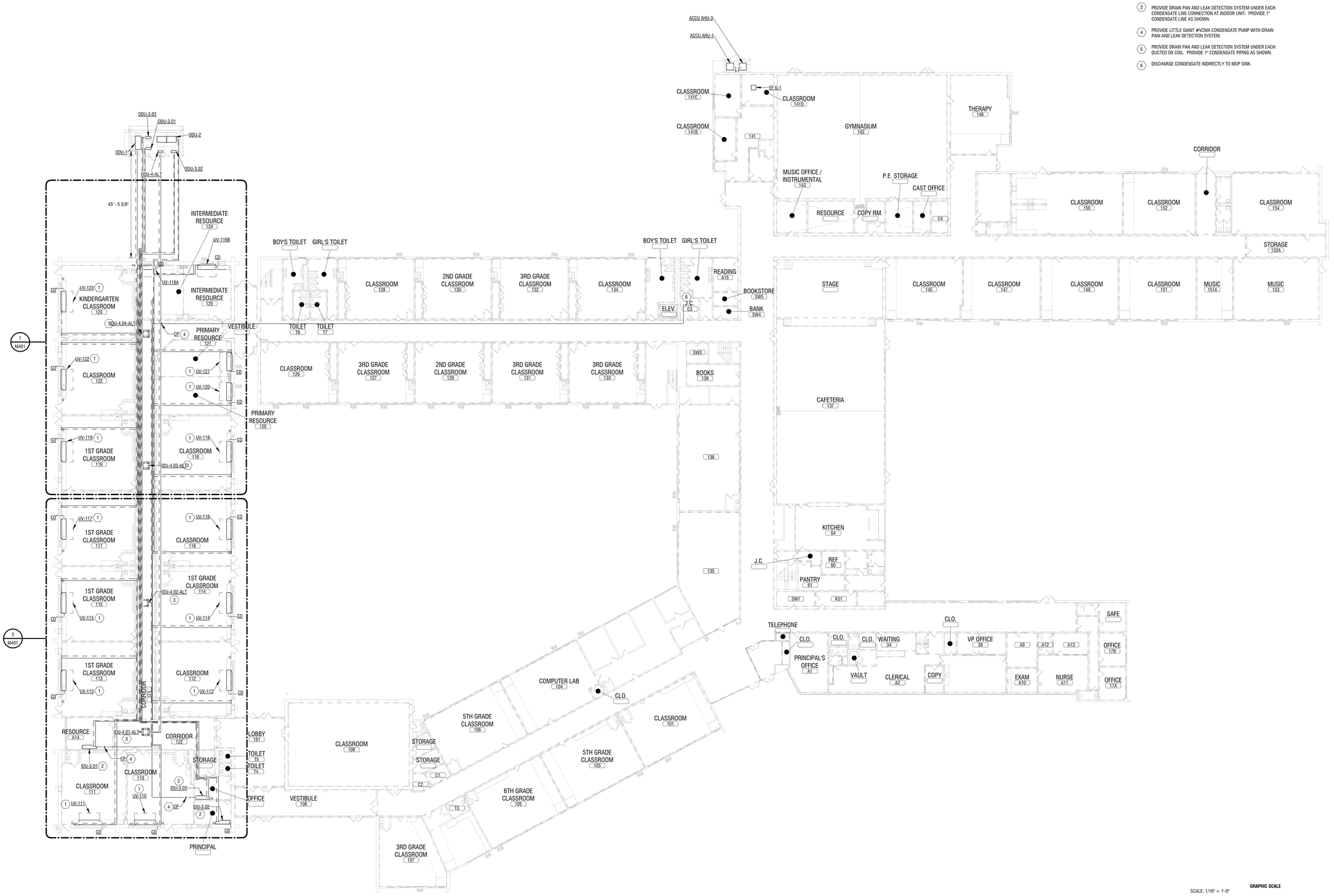
M103

MECHANICAL NOTES:

1. CONTRACTOR TO PROVIDE PIPE EXPANSION AS REQUIRED.

KEY NOTES:

1. RECONNECT EXISTING 1" HWS/HWR PIPING TO HOT WATER COIL WITHIN UV. PROVIDE A SHUT OFF VALVE ON THE HWS PIPE CONNECTION. PROVIDE A SHUT OFF VALVE AND BALANCING VALVE ON THE HWR PIPE CONNECTION. PROVIDE REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO REFRIGERANT COIL WITHIN UV AS SIZED AND DIRECTED BY MANUFACTURER. PROVIDE 1" CONDENSATE PIPE DISCHARGE TO THE EXTERIOR WALL, DRAINED BY GRAVITY.
2. PROVIDE REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO REFRIGERANT COIL WITHIN UV AS SIZED AND DIRECTED BY MANUFACTURER. PROVIDE 1" CONDENSATE PIPING TO THE CLOSEST EXTERIOR WALL, DRAINED BY GRAVITY.
3. PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH CONDENSATE LINE CONNECTION AT INDOOR UNIT. PROVIDE 1" CONDENSATE LINE AS SHOWN.
4. PROVIDE LITTLE GIANT #VCMA CONDENSATE PUMP WITH DRAIN PAIN AND LEAK DETECTION SYSTEM.
5. PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH DUCTED DX COIL. PROVIDE 1" CONDENSATE PIPING AS SHOWN.
6. DISCHARGE CONDENSATE INDIRECTLY TO MOP SINK.



1 M201 FIRST FLOOR MECHANICAL PIPING PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:38:15 PM

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NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

FIRST FLOOR PIPING PLAN

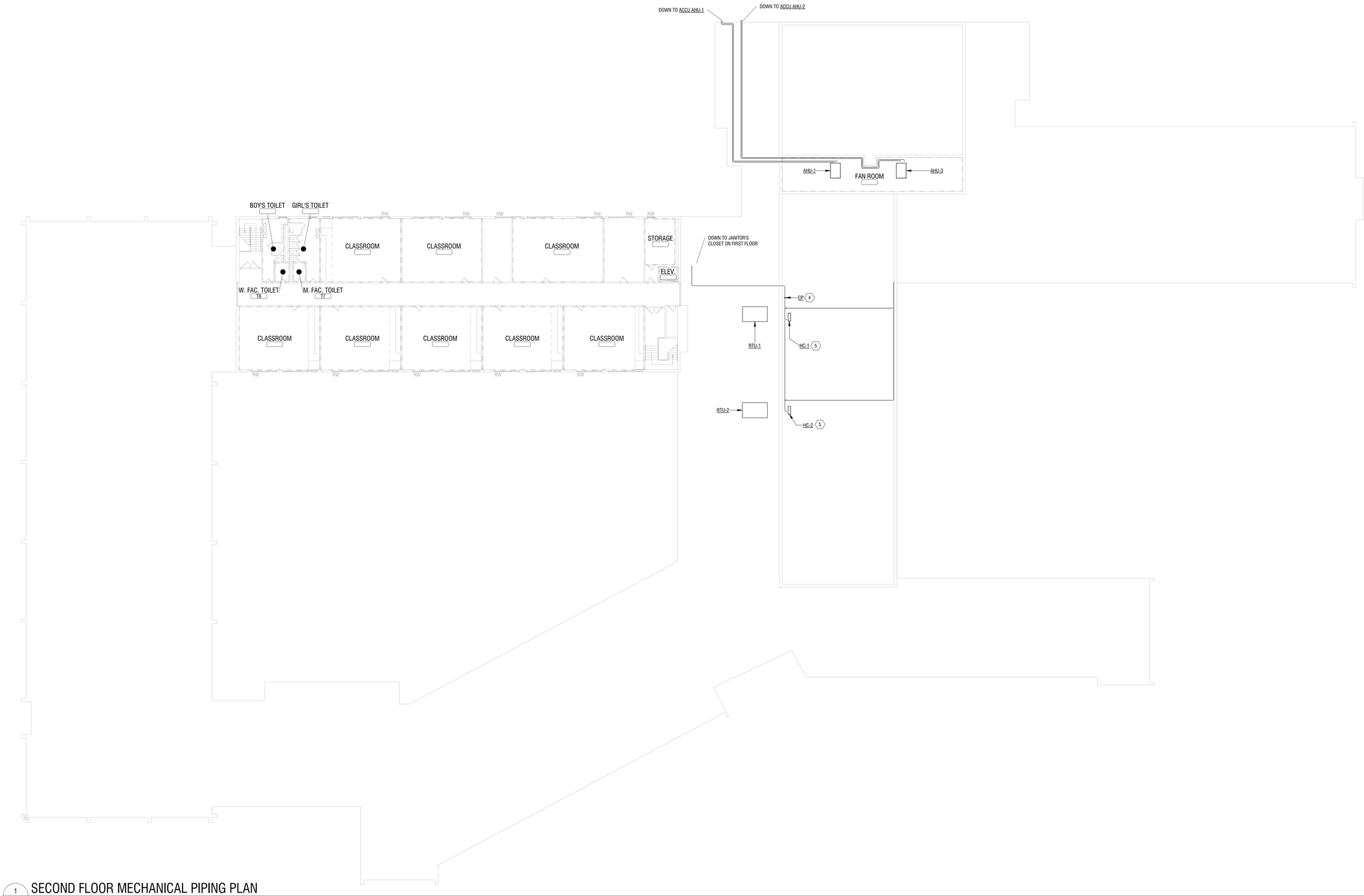
DRAWING NUMBER:

M201

KEY NOTES:

4 PROVIDE LITTLE GIANT #VCMA CONDENSATE PUMP WITH DRAIN PAIN AND LEAK DETECTION SYSTEM.

5 PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH DUCTED DX COIL. PROVIDE 1" CONDENSATE PIPING AS SHOWN.



1 M202 SECOND FLOOR MECHANICAL PIPING PLAN
1/16" = 1'-0"

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GEOLOGICAL: 018750

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Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

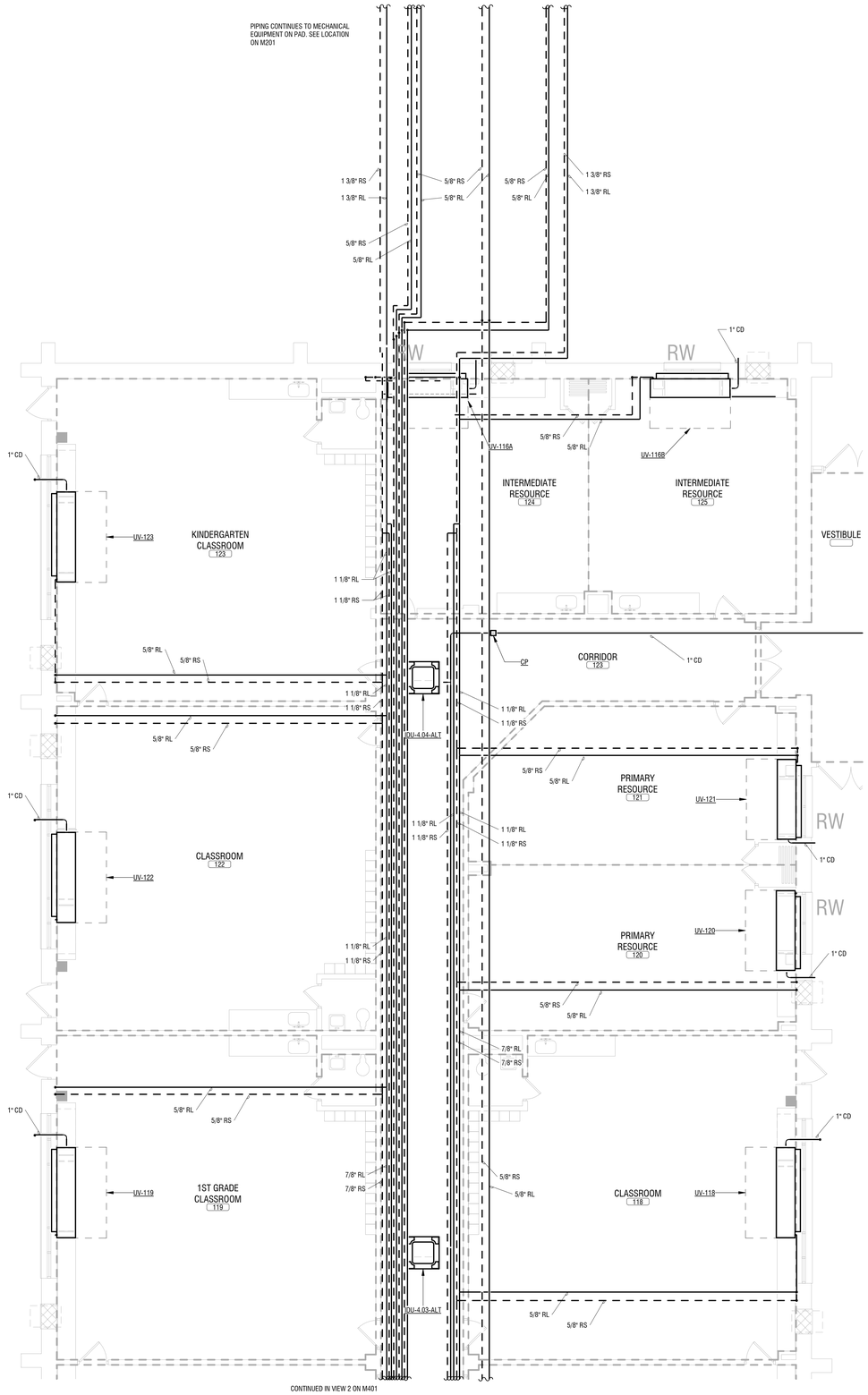
DATE: 12/03/2024

DRAWING NAME:

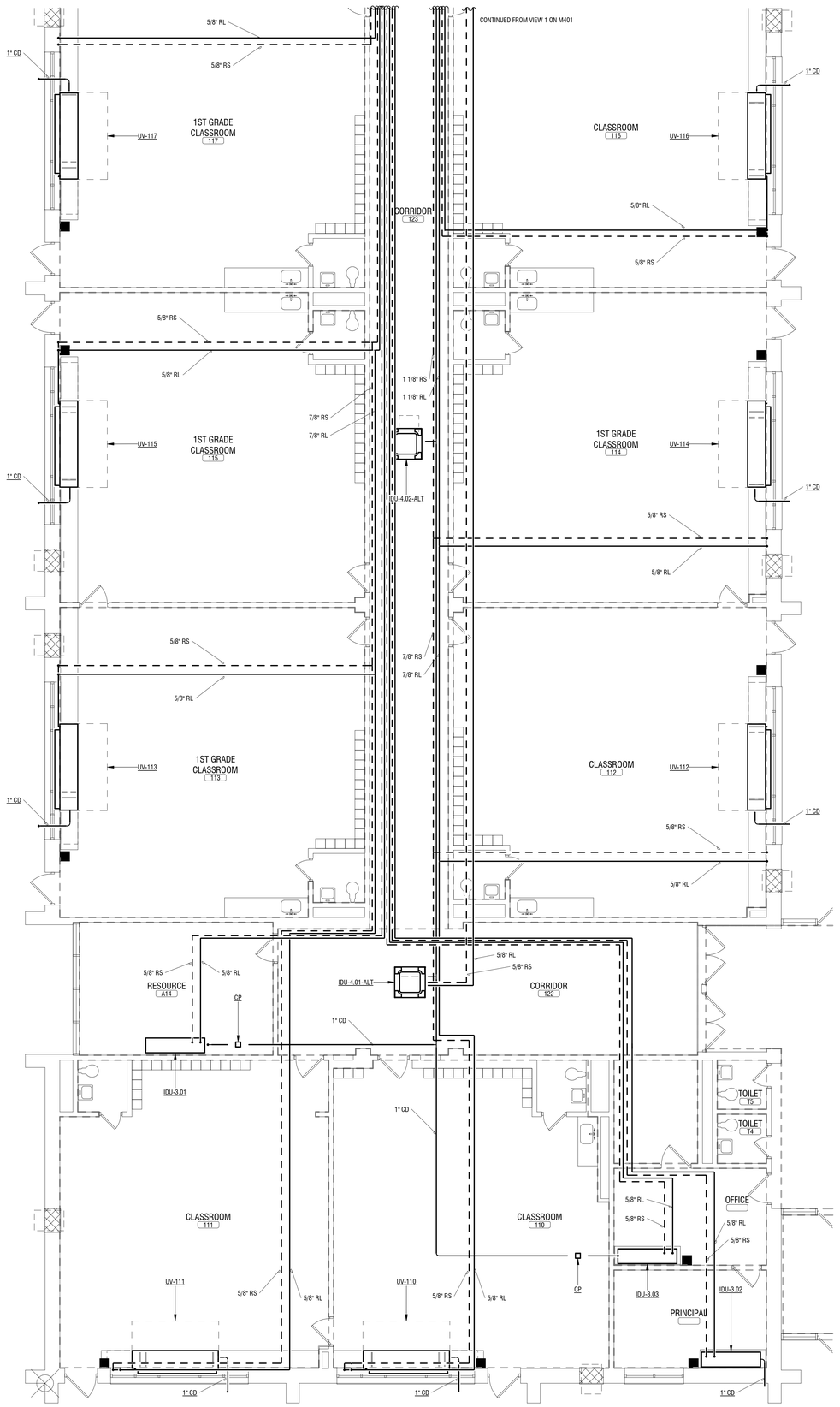
SECOND FLOOR PIPING PLAN

DRAWING NUMBER:

M202



1 M401 FIRST FLOOR MECHANICAL PIPING ENLARGED PLAN - NORTH
3/16" = 1'-0"



2 M401 FIRST FLOOR MECHANICAL PIPING ENLARGED PLAN - SOUTH
3/16" = 1'-0"

12/2/2024 5:38:16 PM

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GEOLOGICAL: 018750

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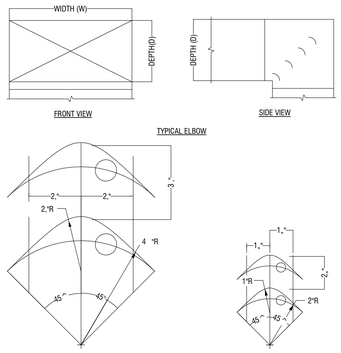
NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

FIRST FLOOR PIPING PLAN - ENLARGED VIEWS

DRAWING NUMBER:

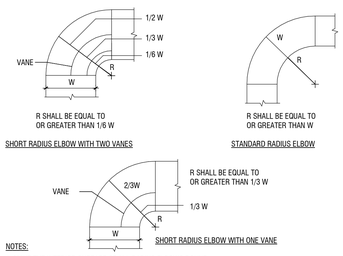
M401



NOTES:

1. ALL SQUARE OR RECTANGULAR ELBOWS SHALL HAVE ONE OF THE TWO TYPES OF TURNING VANES SHOWN ABOVE. SINGLE VANE ELBOWS SHALL NOT BE PERMITTED.
2. CONSTRUCT, SUPPORT, AND FASTEN ALL VANES AS RECOMMENDED BY SMACNA.
3. ALL SQUARE OR RECTANGULAR ELBOWS SHOWN ON PLANS FOR EXHAUST OR RETURN DUCT MAY BE MADE RADIUS ELBOWS, PROVIDED THAT SPACE PERMITS RADIUS INSTALLATION.
4. ALL SQUARE OR RECTANGULAR ELBOWS SHOWN ON PLANS FOR SUPPLY DUCT MAY BE MADE RADIUS ELBOWS, PROVIDED THAT SPACE PERMITS RADIUS INSTALLATION AND/OR THERE IS NO OUTLET OR TAKE-OFF WITHIN 5D ON THE DOWNSTREAM SIDE OF THE ELBOW.

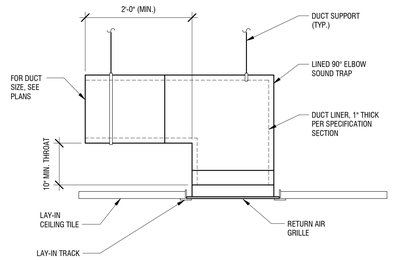
1 M501 DUCT - SQUARE OR RECTANGULAR ELBOWS
NOT TO SCALE



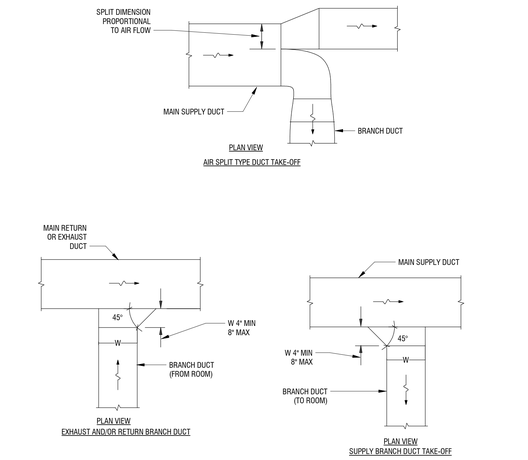
NOTES:

1. MAKE THE INTERIOR SURFACE OF ALL RADIUS ELBOWS ROUND.
2. MAKE ALL STANDARD RADIUS ELBOWS SHOWN ON PLANS SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS HAVE VANES, AND VANES ARE CONSTRUCTED, SUPPORTED AND FASTENED IN ACCORDANCE WITH SMACNA.

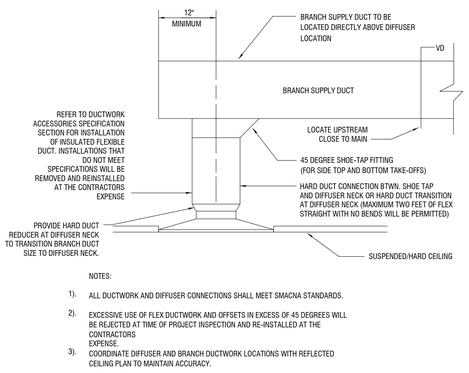
2 M501 DUCT - TYPICAL RADIUS ELBOWS
NOT TO SCALE



3 M501 DUCT - AT - RETURN GRILLE W/ SOUND/LIGHT TRAP
NOT TO SCALE



4 M501 DUCT - TYPICAL DUCTWORK DETAILS
NOT TO SCALE



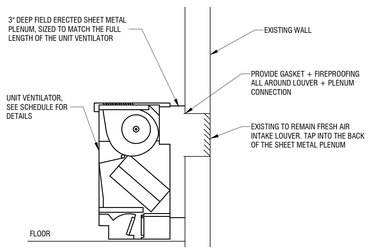
NOTES:

1). ALL DUCTWORK AND DIFFUSER CONNECTIONS SHALL MEET SMACNA STANDARDS.

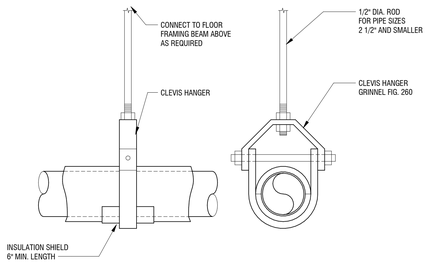
2). EXCESSIVE USE OF FLEX DUCTWORK AND OFFSETS IN EXCESS OF 45 DEGREES WILL BE REJECTED AT TIME OF PROJECT INSPECTION AND RE-INSTALLED AT THE CONTRACTORS EXPENSE.

3). COORDINATE DIFFUSER AND BRANCH DUCTWORK LOCATIONS WITH REFLECTED CEILING PLAN TO MAINTAIN ACCURACY.

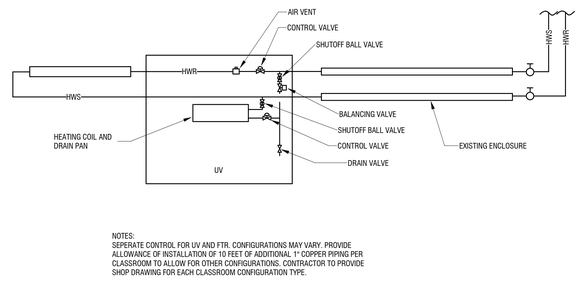
5 M501 DUCT - AT - DIFFUSER DETAIL
NOT TO SCALE



6 M501 UNIT VENTILATOR PLENUM DETAIL
NOT TO SCALE

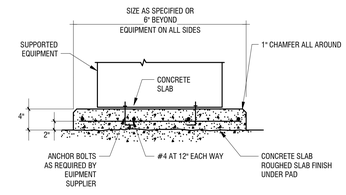


7 M501 PIPE - PIPE SUPPORT DETAIL
NOT TO SCALE

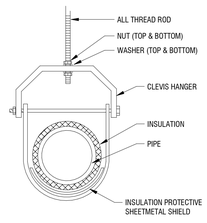


NOTES:
SEPERATE CONTROL FOR UV AND FTR. CONFIGURATIONS MAY VARY. PROVIDE ALLOWANCE OF INSTALLATION OF 10 FEET OF ADDITIONAL 1" COPPER PIPING PER CLASSROOM TO ALLOW FOR OTHER CONFIGURATIONS. CONTRACTOR TO PROVIDE SHOP DRAWING FOR EACH CLASSROOM CONFIGURATION TYPE.

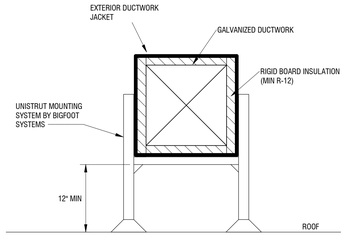
8 M501 VRV UNIT VENTILATOR PIPING DETAIL
NOT TO SCALE



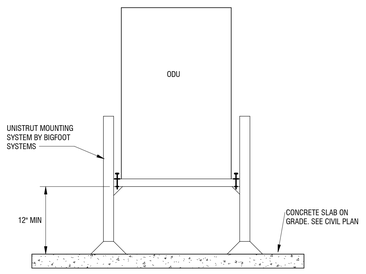
9 M501 S - HOUSEKEEPING PAD DETAIL
NOT TO SCALE



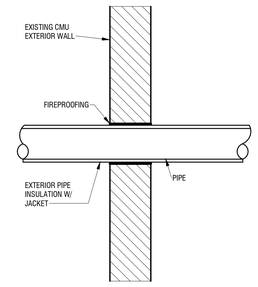
10 M501 PIPE - PIPE CLEVIS HANGER DETAIL
NOT TO SCALE



11 M501 EXTERIOR DUCTWORK DETAIL
NOT TO SCALE



12 M501 OUTDOOR UNIT MOUNTING DETAIL
NOT TO SCALE



13 M501 PIPE THROUGH EXTERIOR WALL DETAIL
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NEWBURGH
ENLARGED CITY SCHOOL DISTRICT

GIDNEY AVENUE MEMORIAL SCHOOL
300 GIDNEY AVENUE
NEWBURGH, NY 12550

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

MECHANICAL DETAILS

DRAWING NUMBER:

M501

12/2/2024 5:38:17 PM

VRV UNIT VENTILATORS

TAG	SERVED BY	SUPPLY FAN AIRFLOW (CFM)	SUPPLY FAN OA (CFM)	COOLING TOT. CAP. (BTU/H)	COOLING SENS. CAP. (BTU/H)	COOLING EAT DB (°F)	COOLING EAT WB (°F)	COOLING LAT DB (°F)	COOLING LAT WB (°F)	REFRIGERANT TYPE	HEATING TOT. CAP (BTU/H)	HEATING EAT DB (°F)	HEATING LAT DB (°F)	HEATING COIL ROWS	HEATING FLOW (GPM)	HEATING EWT (°F)	HEATING LWT (°F)	ELECTRICAL VOLT/HZ/PHASE	ELECTRICAL MCA (A)	ELECTRICAL MOCP (A)	UNIT SIZE L	UNIT SIZE W	UNIT SIZE H	WEIGHT (LB)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
UV-110	ODU-2	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-111	ODU-1	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-112	ODU-2	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-113	ODU-1	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-114	ODU-2	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-115	ODU-1	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-116	ODU-2	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	0.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-116A	ODU-2	650	190	24700	16700	80 °F	63 °F	56 °F	50 °F	R-410A	37400	47 °F	99 °F	2	2.0	160 °F	123 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9A07	
UV-116B	ODU-2	650	190	24700	16700	80 °F	63 °F	56 °F	50 °F	R-410A	37400	47 °F	99 °F	2	2.0	160 °F	123 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9A07	
UV-117	ODU-1	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-118	ODU-2	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-119	ODU-1	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-120	ODU-2	650	190	24700	16700	80 °F	63 °F	56 °F	50 °F	R-410A	37400	47 °F	99 °F	2	2.0	160 °F	123 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9A07	
UV-121	ODU-2	650	190	24700	16700	80 °F	63 °F	56 °F	50 °F	R-410A	37400	47 °F	99 °F	2	2.0	160 °F	123 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9A07	
UV-122	ODU-1	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	
UV-123	ODU-1	1250	390	36800	23800	81 °F	63 °F	54 °F	51 °F	R-410A	62300	43 °F	93 °F	2	3.0	160 °F	118 °F	208 V/60 Hz/1	4	15	86	22	30	525	DAIKIN APPLIED	UAVS9V13	

NOTES:

1. PROVIDE CONDENSATE PUMP
2. INTEGRATE INTO BACNET SYSTEM (SEE CONTROLS DRAWINGS)
3. PROVIDE BACK UP MERV 13 FILTER

DUCTED HEATING COILS

TAG	CFM	EAT / LAT	CAPACITY	EWT/LWT	FLOWRATE	FACE AREA	FACE VELOCITY (FPM)	# ROWS	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
HC-1	4000	58F / 90F	138,240 BTUH	160 / 140	13.8 GPM	8.0 SQFT	500	1			
HC-2	4000	58F / 90F	138,240 BTUH	160 / 140	13.8 GPM	8.0 SQFT	500	1			

AIR COOLED CONDENSING UNITS (ACCU)

TAG	SERVES	LOCATION	NOMINAL TONS	COMPRESSORS	STAGES	COOLING MBH	COOLING AMBIENT DB	COOLING EER	SOUND LEVEL (dbA)	ELECTRICAL SUPPLY VOLTAGE	ELECTRICAL MCA	ELECTRICAL MOP	WEIGHT (LBS)	REFRIGERANT TYPE	LINE SIZES (IN) SUCTION / LIQUID	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
ACCU AHU-1	AHU-1	ON GRADE	10	1	2	115	95	11.2	84.7	208V/3PH	47.7	80	345	R-410A	1.625 / 0.625	DAIKIN	DX14XA1203A	ALL
ACCU AHU-3	AHU-3	ON GRADE	10	1	2	115	95	11.2	84.7	208V/3PH	47.7	80	345	R-410A	1.625 / 0.625	DAIKIN	DX14XA1203A	ALL

NOTES:

1. COMPRESSOR WARRANTY - 5 YEARS
2. PART WARRANTY - 1 YEAR
3. LOW AMBIENT TO 45 DEGREES
4. PROVIDE RAWAL TYPE APR VALVE
5. PROVIDE MOTORIZED OUTSIDE AIR DAMPER WITH SPRING RETURN ACTUATOR WIRED BY EC
6. UNITS TO BE PRICED BASED ON 2025 NATIONAL EPA STANDARDS FOR REFRIGERANT. UNITS TO UTILIZE R-32 REFRIGERANT OR EQUAL

AIR HANDLING UNITS

TAG	LOCATION	SERVES	FAN TOTAL CFM	FAN OA CFM	FAN MIN OA	FAN TSP (IN WG)	FAN ESP (IN WG)	FAN MOTOR BHP	HW HEATING EAT	HW HEATING LAT	HW HEATING EWT	HW HEATING LWT	HW HEATING PD (FT)	HW HEATING GPM	HW HEATING MBH	DX COOLING EA (DB/WB)	DX COOLING LA (DB/WB)	DX COOLING SENSIBLE COOLING (MBH)	DX COOLING TOTAL COOLING (MBH)	DX COOLING AIR PD (IN WC)	DX COOLING # ROWS	DIMENSIONS (LxHxW)	WEIGHT (LBS)	ELECTRICAL V/PH	ELECTRICAL MCA	ELECTRICAL MOP	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
AHU-1	GYM MEZZANINE	NORTH GYM	3500	1342	268	1.52	0.8	2 X 4.42	43.4	92	180	150	13.7	12.8	186	81.8 / 70.2	61.1 / 60.1	78	117	0.32	3	74x30x54	730	208/3	26	35	DAIKIN	BCHE0401	ALL
AHU-3	GYM MEZZANINE	SOUTH GYM	3500	1342	268	1.52	0.8	2 X 4.42	43.4	92	180	150	13.7	12.8	186	81.8 / 70.2	61.1 / 60.1	78	117	0.32	3	74x30x54	730	208/3	26	35	DAIKIN	BCHE0401	ALL

NOTES:

1. INDOOR UNITS LOCATED IN MECHANICAL MEZZANINE
2. PROVIDE MIXING BOX WITH MERV 13 FILTERS
3. HORIZONTAL UNIT WITH END SUPPLY, END OA, AND BOTTOM RA
4. FACTORY MOUNTED FREEZESTAT
5. 1" INJECTED FOAM CASING INSULATION
6. CERTIFICATION - AHRI 430
7. PROVIDE BACK UP MERV 13 FILTER

EXHAUST FAN SCHEDULE

TAG	SERVES	TYPE	AIRFLOW CFM	TSP IN.WG	DRIVE	DIMENSIONS	BHP	MOTOR HP	FLA	MOP	VOLTAGE/PHASE	NOISE (SONES)	CONTROL	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
EF G-1	GYM	INLINE	2750	0.75	VARI-GREEN	26"X26"X26"	0.46	3/4	10	20	115V / 1PH	12.6	0-10vdc	GREENHECK	G-180-VG	ALL

NOTES:

1. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH
2. PROVIDE VARI-GREEN MOTOR

VRF HEAT PUMP INDOOR UNIT SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	TYPE	AIRFLOW (H/M/L)	HEATING CAPACITY (BTU/H)	TOTAL COOLING CAPACITY (BTU/H)	SENSIBLE COOLING CAPACITY (BTU/H)	DIMENSIONS (H X W X D)	WEIGHT (LBS)	VOLTAGE/PHASE	MCA	MOP	NOTES
IDU-3.01	DAIKIN	FTX12NMVJU	WALL MOUNTED	434/311/247	13,400	13,300	10,600	11-1/4" X 30-5/16" X 8-3/4"	18	208V/1PH	0.4	15	1,2
IDU-3.02	DAIKIN	FTX12NMVJU	WALL MOUNTED	434/311/247	13,400	13,300	10,600	11-1/4" X 30-5/16" X 8-3/4"	18	208V/1PH	0.4	15	1,2
IDU-3.03	DAIKIN	FTX12NMVJU	WALL MOUNTED	434/311/247	13,400	13,300	10,600	11-1/4" X 30-5/16" X 8-3/4"	18	208V/1PH	0.4	15	1,2
IDU-4.01-ALT	DAIKIN	FXZQ12TAVJU	2X2 CASETTE	353/300/247	13,500	12,000	7,800	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	1,2,3
IDU-4.02-ALT	DAIKIN	FXZQ12TAVJU	2X2 CASETTE	353/300/247	13,500	12,000	7,800	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	1,2,3
IDU-4.03-ALT	DAIKIN	FXZQ12TAVJU	2X2 CASETTE	353/300/247	13,500	12,000	7,800	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	1,2,3
IDU-4.04-ALT	DAIKIN	FXZQ12TAVJU	2X2 CASETTE	353/300/247	13,500	12,000	7,800	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	1,2,3

NOTES:

1. PROVIDE CONDENSATE PUMP FOR EACH WALL MOUNTED UNIT
2. INTEGRATE INTO BACNET BMS SYSTEM (SEE CONTROLS DRAWINGS)
3. PROPOSED AS AN ADD/ALTERNATE.

AIR-COOLED VRV HEAT PUMP CONDENSING UNIT

TAG	MANUFACTURER	MODEL NUMBER	NOMINAL HEATING CAPACITY (BTU/H)	NOMINAL COOLING CAPACITY (BTU/H)	REFRIGERANT TYPE	REFRIGERANT FACTORY CHARGE (LBS)	COMPRESSOR TYPE	COMPRESSOR QTY	DIMENSIONS (H X W X D)	WEIGHT (LBS)	ELECTRICAL VOLTAGE/PHASE	ELECTRICAL RLA	ELECTRICAL MCA	ELECTRICAL MOP	NOTES
ODU-1	DAIKIN	RXYQ240AATJA	132761	222748	R-410A	52	SCROLL	1	65-3/8" X 68-7/8" X 30-1/8" + 19"W HOOD EA. SIDE	904	208V/3PH	48.7	73.7	80	1,2
ODU-2	DAIKIN	RXYQ288AATJA	203726	276153	R-410A	52	SCROLL	2	65-3/8" X 48-13/16" X 30-1/8" (X2) + 19"W HOOD EA. SIDE	1500	208V/3PH	25.8	47.8	50	1,2
ODU-2A	DAIKIN	RXYQ144AATJA	203726	276153	R-410A	52	SCROLL	2	97.6" X 65.4" X 30.1"	1500	208V/3PH	25.8	47.8	50	1,2
ODU-3.01	DAIKIN	RXL12QMVJU9	13,400	10,600	R-410A	2.09	SWING	1	21-5/8" X 26-9/16" X 11-3/16"	70	208V/1PH	12.0	13.0	15	1,2
ODU-3.02	DAIKIN	RXL12QMVJU9	13,400	10,600	R-410A	2.09	SWING	1	21-5/8" X 26-9/16" X 11-3/16"	70	208V/1PH	12.0	13.0	15	1,2
ODU-3.03	DAIKIN	RXL12QMVJU9	13,400	10,600	R-410A	2.09	SWING	1	21-5/8" X 26-9/16" X 11-3/16"	70	208V/1PH	12.0	13.0	15	1,2
ODU-4-ALT	DAIKIN	RXTQ36TBVJU	34380	45296	R-410A	6.4	SWING	1	39" X 37" X 12-5/8"	172	208V/1PH	15.3	16.5	20	1,2,3

NOTES:

1. PROVIDE FACTORY DISCONNECT AND WEATHERPROOF SERVICE RECEPTACLE. WIRED BY EC.
2. SEE DETAIL FOR MOUNTING INFORMATION
3. PROPOSED AS AN ADD/ALTERNATE.

PACKAGED COOLING ROOFTOP UNIT WITH ENERGY RECOVERY WHEEL

TAG	LOCATION	TOTAL CFM	OA CFM	ESP	EER/IEER	DX COOLING TOTAL CAPACITY	DX COOLING SENSIBLE CAPACITY	DX COOLING REFIGERANT	DX COOLING EAT DB/WB	DX COOLING LAT DB/WB	HOT GAS REHEAT CAPACITY	HOT GAS REHEAT LAT DB/WB	ENERGY RECOVERY WHEEL SUMMER LAT DB/WB	SUMMER OA DB/WB EAT	SUMMER RA DB/WB EAT	SUMMER MIXED AR DB/WB LAT	SUMMER REMOVED CAPACITY	SUMMER EFFECTIVENESS TOTAL	SUMMER EFFECTIVENESS SENSIBLE	WINTER OA DB/WB EAT	WINTER RA DB/WB EAT	WINTER MIXED AIR DB/WB LAT	WINTER REMOVED CAPACITY	WINTER EFFECTIVENESS TOTAL	WINTER EFFECTIVENESS SENSIBLE	DIMENSIONS (LxHxW)	WEIGHT (LBS)	ELECTRICAL V/PH	ELECTRICAL FLA	ELECTRICAL MCA	ELECTRICAL MOP	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
RTU-1	CAFETERIA	4000	2000	1.0"	12.0/21.7	120,348 BTUH	90,911 BTUH	R32	78.5 F/65.2 F	56.7 F / 56.6 F	57,680 BTUH	70 F / 61.1 F	56.7F / 56.6F	95F / 75F	75F / 62F	78.5F / 68.2F	52, 664 BTUH	56.12 MBH	65.25 MBH	0F / 0F	75F / 50F	58.8F / 43.9F	117,304 BTUH	0.78%	0.08%	121.6 X 73.4 X 85.9	2299	208V/3PH	64.9	75.4	110	DAIKIN	DPSC07B	
RTU-2	CAFETERIA	4000	2000	1.0"	12.0/21.7	120,348 BTUH	90,911 BTUH	R32	78.5 F/65.2 F	56.7 F / 56.6 F	57,680 BTUH	70 F / 61.1 F	56.7F / 56.6F	95F / 75F	75F / 62F	78.5F / 68.2F	52, 664 BTUH	56.12 MBH	65.25 MBH	0F / 0F	75F / 50F	58.8F / 43.9F	117,304 BTUH	0.78%	0.08%	121.6 X 73.4 X 85.9	2299	208V/3PH	64.9	75.4	110	DAIKIN	DPSC07B	

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NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME:

MECHANICAL SCHEDULES

DRAWING NUMBER:

M601

12/2/2024 5:38:17 PM

HALLWAY SPLIT SYSTEM - POINTS LIST

POINT #	POINT DESCRIPTION	READ POINTS	READ/WRITE POINTS	SOFTWARE POINTS SCHEDULE	ALARM	TREND	NOTES
1	SYSTEM ENABLE/DISABLE		X				
2	OCCUPIED HEATING SETPOINT		X				
3	UNOCCUPIED HEATING SETPOINT		X				
4	OCCUPIED COOLING SETPOINT		X				
5	UNOCCUPIED COOLING SETPOINT		X				
6	GENERAL ALARM		X		X		
7	SPACE TEMPERATURE	X			X	X	

OFFICE SPLIT SYSTEM - POINTS LIST

POINT #	POINT DESCRIPTION	READ POINTS	READ/WRITE POINTS	SOFTWARE POINTS SCHEDULE	ALARM	TREND	NOTES
1	SYSTEM ENABLE/DISABLE		X				
2	OCCUPIED MODE		X	X			
3	UNOCCUPIED MODE		X	X			
4	GENERAL ALARM		X		X		
5	SPACE TEMPERATURES	X			X	X	PROVIDE USER ADJUSTABLE THERMOSTATS IN EACH SPACE

NOTES:
1. CONTRACTOR TO PROGRAM DEFAULT HEATING AND COOLING SETPOINTS
2. CONTRACTOR TO PROGRAM SETPOINT ADJUSTMENT RANGE +/- 2 DEG. F
3. SCHEDULES SHALL BE PROGRAMMED IN BMS OR SPLIT SYSTEM CONTROLLER

ACCUS - POINTS LIST

POINT #	POINT DESCRIPTION	READ POINTS	READ/WRITE POINTS	SOFTWARE POINTS SCHEDULE	ALARM	TREND	NOTES
1	SYSTEM ENABLE/DISABLE		X				
2	COMPRESSOR STATUS	X			X		
3	MODEL SELECT (HEATING/COOLING)		X			X	
4	GENERAL ALARM				X		
5	COMPRESSOR START/STOP (2)		X			X	

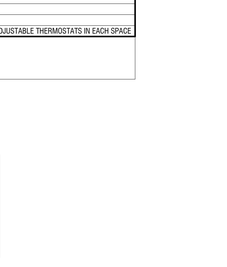
NOTES:
1. CONTRACTOR TO PROGRAM DEFAULT HEATING AND COOLING SETPOINTS
2. CONTRACTOR TO PROGRAM SETPOINT ADJUSTMENT RANGE +/- 2 DEG. F
3. SCHEDULES SHALL BE PROGRAMMED IN BMS OR SPLIT SYSTEM CONTROLLER

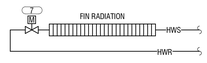
VRF UNIT VENTILATOR - POINTS LIST

ABBREVIATION KEY:
AI = ANALOG INPUT, AO = ANALOG OUTPUT, DI = DIGITAL INPUT, DO = DIGITAL OUTPUT, AV = ANALO...
DV = DIGITAL VALUE

NOTES:

POINT #	POINT DESCRIPTION	HARDWARE POINTS AI	AO	DI	DO	AV	DV	SOFTWARE POINTS SCHED	ALARM	TREND	NOTES
1	FAN MOTOR START/STOP				X						
2	FAN MOTOR STATUS			X						X	
3	FAN MOTOR ALARM			X					X		
4	OA/RA DAMPER		X			X					
5	SUPPLY TEMPERATURE	X							X		
6	SPACE TEMPERATURE	X							X	X	
7	FIN TUBE CONTROL VALVE		X							X	
7	EF DAMPER				X				X		
8	FAN SPEED		X								
9	HEATING COIL CONTROL VALVE		X							X	
10	FACE/BYPASS DAMPER		X							X	
11	MODE TO VRV SYSTEM						X			X	
12	VRV ODU TEMP. SENSOR (EACH CLASSROOM)	X							X	X	





NOTE: FIN RADIATION CONTROL IS NOT PRESENT IN ALL SPACES.

OCCUPIED MODE: THE UNIT SHALL MAINTAIN A 70°F (ADJ.) HEATING SETPOINT, 74°F COOLING SETPOINT.

UNOCCUPIED MODE: (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A 60°F (ADJ.) HEATING SETPOINT, 80°F COOLING SETPOINT.

SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE SPACE TEMPERATURE HEATING SETPOINT AT THE SPACE SENSOR.

F/B DAMPER AND HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE SPACE TEMPERATURE. WHENEVER THE SPACE TEMPERATURE FALLS BELOW THE HEATING SETPOINT, MODULATE THE FACE AND BYPASS DAMPER TO MAINTAIN SETPOINT. THE HOT WATER COIL VALVE SHALL BE OPEN.
HEATING SHALL BE ENABLED WHENEVER:
-OUTSIDE AIR TEMPERATURE IS LESS THAN 50°F (ADJ.) AND
-THE SPACE TEMPERATURE IS BELOW HEATING SETPOINT.

ECONOMIZER MODE WHEN OUTSIDE AIR IS ABOVE 60ºF (ADJ.):

WHENEVER THE F/B DAMPER IS IN FULL BYPASS POSITION AND THE SPACE TEMPERATURE RISES ABOVE SPACE SETPOINT, THE HOT WATER COIL SHALL CLOSE. UPON FURTHER RISE IN TEMPERATURE, THE OUTSIDE AIR DAMPER SHALL OPEN TO 100% TO ALLOW FOR ECONOMIZER COOLING.

DISCHARGE AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

OUTSIDE AIR DAMPER:
THE OUTSIDE AIR DAMPER SHALL OPEN TO ITS MINIMUM OUTSIDE AIR POSITION WHENEVER:
-THE UNIT IS IN OCCUPIED MODE AND
-THE FAN IS ON.

EXISTING BUILDING CONTROLS: WHEN OA DAMPERS OPEN, EXG. RELIEF AIR DAMPERS SHALL OPEN AND RELIEF AIR EXHAUST FANS SHALL RUN.

FAN:
DURING OCCUPIED MODE THE SUPPLY FAN WILL RUN AT A CONSTANT, MANUALLY DESIGNATED SPEED (LOW/MED/HIGH).
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS:
- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).
- HIGH SPACE TEMPERATURE: IF THE SPACE TEMPERATURE IS GREATER THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT.
- LOW SPACE TEMPERATURE: IF THE SPACE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT.
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

FIN RADIATION HEATING VALVE (IF EXISTING IN PLACE):
WHERE EXISTING, THE FIN RADIATION SHALL:
-PROVIDE THE SECOND STAGE OF HEATING.
-PROVIDE UNOCCUPIED MODE HEATING.
-BE DISABLED WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 60 DEG F (ADJ.)

EXISTING CLASSROOM RELIEF SYSTEM:
EXISTING RELIEF SYSTEM SHALL OPERATE DURING OCCUPIED MODES AND BE OFF DURING UNOCCUPIED MODE.

3 VRV UNIT VENTILATOR CONTROLS SCHEMATIC
M701 NOT TO SCALE

ROOF TOP UNIT CONTROLS - POINTS LIST

Point #	Point Description	HARDWARE POINTS AI	AO	DI	DO	AV	DV	SOFTWARE POINTS SCHED	ALARM	TREND	GRAPHIC	NOTES
1	OUTSIDE AIR DAMPER		X								X	
2	OUTDOOR AIR FILTER CHANGE							X			X	
3	OUTDOOR AIR FILTER DIFFERENTIAL PRESSURE			X						X	X	
4	OUTSIDE AIR TEMPERATURE	X								X	X	
5	OUTSIDE AIR HUMIDITY	X								X	X	
6	FREEZESTAT - ELECTRIC MULTIPLE CONTACT			X				X		X	X	
7	MIXED AIR TEMPERATURE	X								X	X	
8	SUPPLY FAN START/STOP				X							
9	SUPPLY FAN STATUS (CURRENT SENSING SWITCH)			X						X		
10	SUPPLY FAN SPEED			X						X		
11	HOT WATER VALVE	X								X		
12	RETURN AIR DAMPER		X								X	
13	EXHAUST FAN START/STOP				X					X		
14	EXHAUST FAN STATUS (CURRENT SENSING SWITCH)			X								
15	EXHAUST FAN SPEED			X								
16	EXHAUST AIR DAMPER				X						X	
17	DISCHARGE AIR TEMP	X								X	X	
18	SPACE TEMPERATURE SENSOR	X								X		
19	SPACE HUMIDITY SENSOR	X								X		
20	CO2 SENSOR	X								X		
21	CO2 SENSOR	X								X		

SAFETIES

ALARMS SHALL BE PROVIDED AS FOLLOWS:

AN ALARM SHALL BE GENERATED BY EACH OF THE ALARMS SHOWN ON THE POINTS LIST.
- IF ANY DIGITAL STATUS POINT DISAGREES WITH THE COMMAND FOR MORE THAN 5 MINUTES AN ALARM SHALL BE GENERATED
- IF ANY TEMPERATURE SETPOINT IS MORE THAN 4 DEGREES FROM THE SETPOINT FOR MORE THEN 10 MINUTES, AN ALARM SHALL BE GENERATED
- FILTER CHANGE NOTIFICATION: FILTER DIFFERENTIAL PRESSURE EXCEEDS SETPOINT (ADJ.).
- FAN SHUTDOWN UPON DUCT SMOKE DETECTOR ACTIVATION

FAN OPERATION

OCCUPIED MODE
THE SUPPLY FAN SHALL BE RUN CONTINUOUSLY UNLESS SHUTDOWN BY SAFETIES. THE SUPPLY AIR FANS SPEED SHALL BE OPTIMIZED IN THE FIELD DURING SYSTEM BALANCING TO DELIVER THE SCHEDULED SUPPLY AIRFLOW.

THE OA AND RA DAMPERS SHALL BE POSITIONED TO DELIVER THE APPROPRIATE AMOUNT OF OUTSIDE AIR AS DESCRIBED BELOW.

THE EXHAUST FAN SHALL RUN CONTINUOUSLY. THE SPEED SHALL BE MODULATED ACCORDING TO THE OUTSIDE AIR DAMPER POSITION. THE MODULATION SCHEDULE SHALL BE SET BY THE AIR BALANCER.

UNOCCUPIED MODE

GIDNEY SEQUENCE

- THE SUPPLY FAN AND EXHAUST FAN SHALL BE OFF. EXISTING FINNED TUBE RADIATION SHALL MAINTAIN THE UNOCCUPIED SPACE TEMPERATURE.

HILLS SEQUENCE-

THE SUPPLY FAN AND EXHAUST FAN SHALL BE OFF. IF THE SETPONT TEMPERATURE DROPS TWO DEGREES BELOW THE UNOCCUPIED SETPOINT, THE SUPPLY FAN SHALL START AND THE HEATING COIL SHALL OPEN TO 50% POSITION UNTIL THE SPACE TEMPERATURE IS 2 DEGREES ABOVE THE SETPOINT. THE FANS SHALL STOP AND THE HEATING VALVE SHALL CLOSE.

SETPOINTS

OCCUPIED HEATING – 70ºF
OCCUPIED COOLING - 73ºF

UNOCCUPIED HEATING – 63ºF
UNOCCUPIED COOLING - 85ºF

FREEZE PROTECTION

THE FREEZE STAT SETPOINT SHALL BE 40 DEGF. IF THE FREEZE STAT TRIPS, THE FANS SHALL STOP, THE DAMPERS SHALL MODULATE TO FULL RETURN POSITION AND THE HEATING COIL VALVE SHALL OPEN 50%. AN ALARM SHALL BE SENT.

HEATING MODE

THE HEATING CONTROL VALVE SHALL MODULATE TO MAINTAIN THE HEATING SETPOINT TEMPERATURE

ECONOMIZER MODE

IF THE OUTDOOR ENTHALY IS LESS THAN THE INDOOR INTHALPY AND THE SPACE TEMPERATURE IS ABOVE THE COOLING SETPOINT, ECONOMIZER COOLING SHALL BE ENABLED. THE MIXED AIR DAMPERS SHALL USE OUTSIDE AIR TO MAINTAIN THE COOLING SETPOINT. THE EXHAUST FAN SHALL MODULATE IN SYNC WITH THE OUTSIDE AIR DAMPER POSITION TO MAINTAIN SPACE PRESSURE BALANCE.

COOLING MODE

THE MIXED DAMPERS SHALL BE AT THE MINIMUM OCCUPIED POSITION OR THE POSITION DICTATED BY THE DCV CONTROL, WHICHEVER IS GREATER. THE ACCU SHALL START AND MODULATE TO MAINTAIN THE SPACE TEMPERATURE. THE MINIMUM SUPPLY AIR TEMPERATURE SHALL BE 50ºF.

DCV CONTROL

OCCUPIED MODE

THE MIXED AIR DAMPERS SHALL MODULATE TO MAINTAIN A CO2 SETPOINT OF 800 PPM (ADJ). THE MIXED AIR DAMPERS SHALL BEGIN TO MODULATE OPEN WHEN THE INDOOR CO2 LEVEL IS 100 PPM OVER THE OUTDOOR CO2 LEVEL.

THE MINIMUM POSITION OF THE OA DAMPER SHALL BE SET BY THE AIR BALANCER TO MAINTAIN THE MINIMUM AIR FLOW SHOWN ON THE SCHEDULE.

PURGE MODE

PRE-OCCUPANCY – THERE SHALL BE A 30 MINUTE PRE-OCCUPANCY PURGE WITH THE OUTSIDE DAMPERS SET TO THE MAXIMUM AIR FLOW POSITION SHOWN ON THE SCHEDULE AS SET BY THE AIR BALANCER.

POST-OCCUPANCY FLUSH - THE POST-OCCUPANCY FLUSH SHALL OPERATE UNTIL CO2 LEVELS ARE REDUCED TO 450 PPM. DURING POST-OCCUPANCY FLUSH THE DAMPERS SHALL BE IN THE MINIMUM VENTILATION POSITION AS SHOWN ON THE AHU SCHEDULE.

SENSOR FAILURE

IF A CO2 SENSOR FAILS, THE MIXED AIR DAMPERS SHALL OPEN TO THE MAXIMUM POSITION.

COMMISSIONING AND RECORD KEEPING REQUIREMENTS

THE CO2 SENSOR CALIBRATION SHALL BE CHECKED ONE YEAR AFTER INITIAL COMMISSIONING IS COMPLETED.
CO2 CONCENTRATION READINGS SHALL BE LOGGED BY THE BMS ON A 15-MINUTE INTERVAL. RECORDS MUST BE KEPT FOR A MINIMUM OR THREE YEARS.

2 ROOF TOP UNIT CONTROLS
M701 1/8" = 1'-0"

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CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 018281
LAND SURVEYING: 017976
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT
124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH
ENLARGED CITY SCHOOL DISTRICT

GIDNEY AVENUE MEMORIAL SCHOOL
300 GIDNEY AVENUE
NEWBURGH, NY 12550

NO:	DATE:	DESCRIPTION:
1	8/30/2024	SED ADDENDUM 2
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015

PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

MECHANICAL CONTROLS

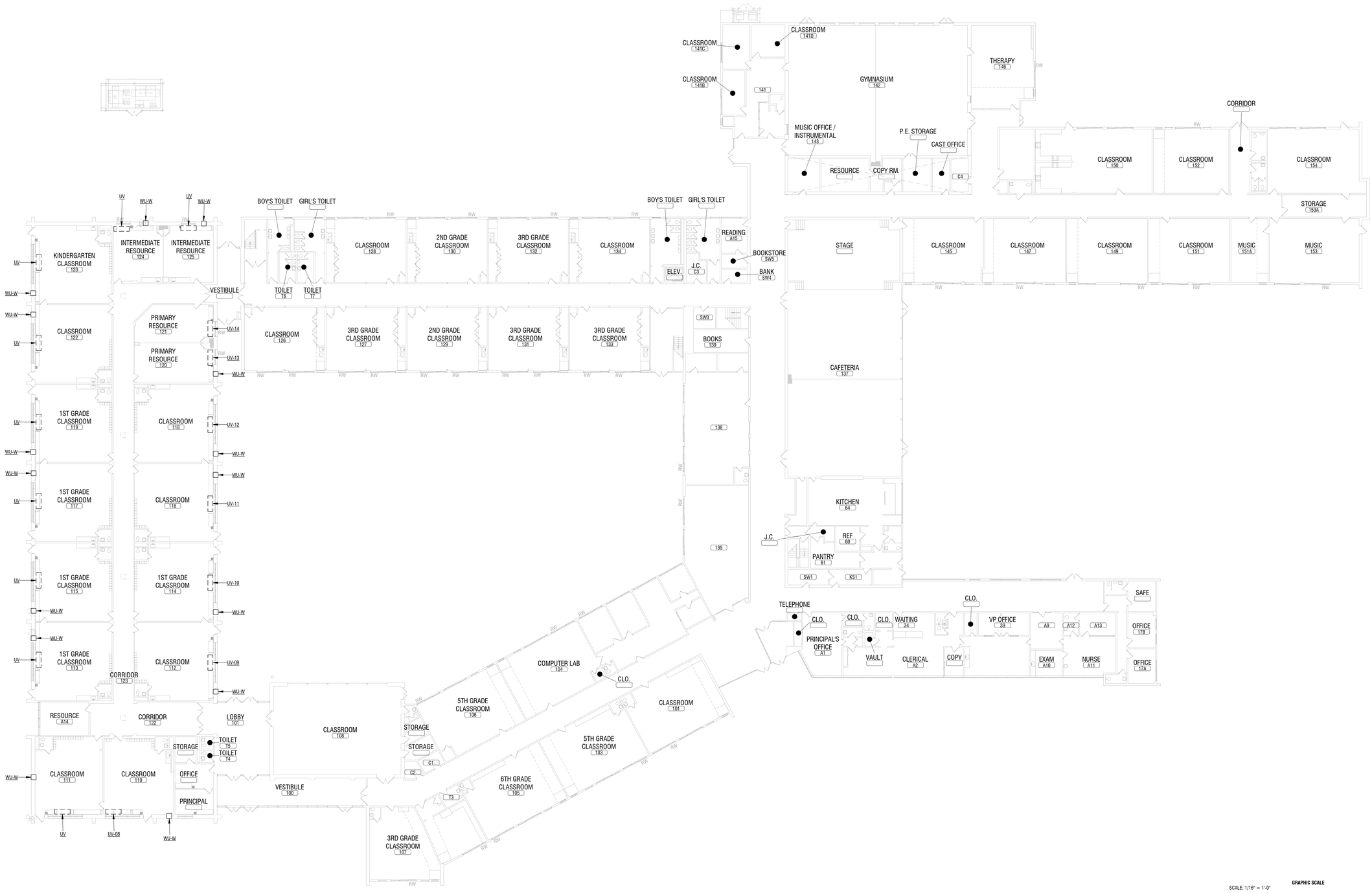
DRAWING NUMBER:

M701

12/2/2024 5:38:18 PM

MECHANICAL NOTES:

1. REMOVE UNIT VENTILATOR IN ITS ENTIRETY. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING OUTSIDE AIR LOUVER TO REMAIN FOR RECONNECTION. CLEAN LOUVER AND TRANSFER DUCT. REPORT PROBLEMS TO ENGINEER.
2. REMOVE EXISTING WINDOW AIR CONDITIONING UNITS IN THEIR ENTIRETY.



1 MD101 FIRST FLOOR DEMOLITION PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:58:19 PM

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CERTIFICATE OF AUTHORIZATION NUMBER:
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LAND SURVEYING: 017976 LICENSE NO. C-0430
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT
124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH ENLARGED CITY SCHOOL DISTRICT

GIDNEY AVENUE MEMORIAL SCHOOL
300 GIDNEY AVENUE
NEWBURGH, NY 12550

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

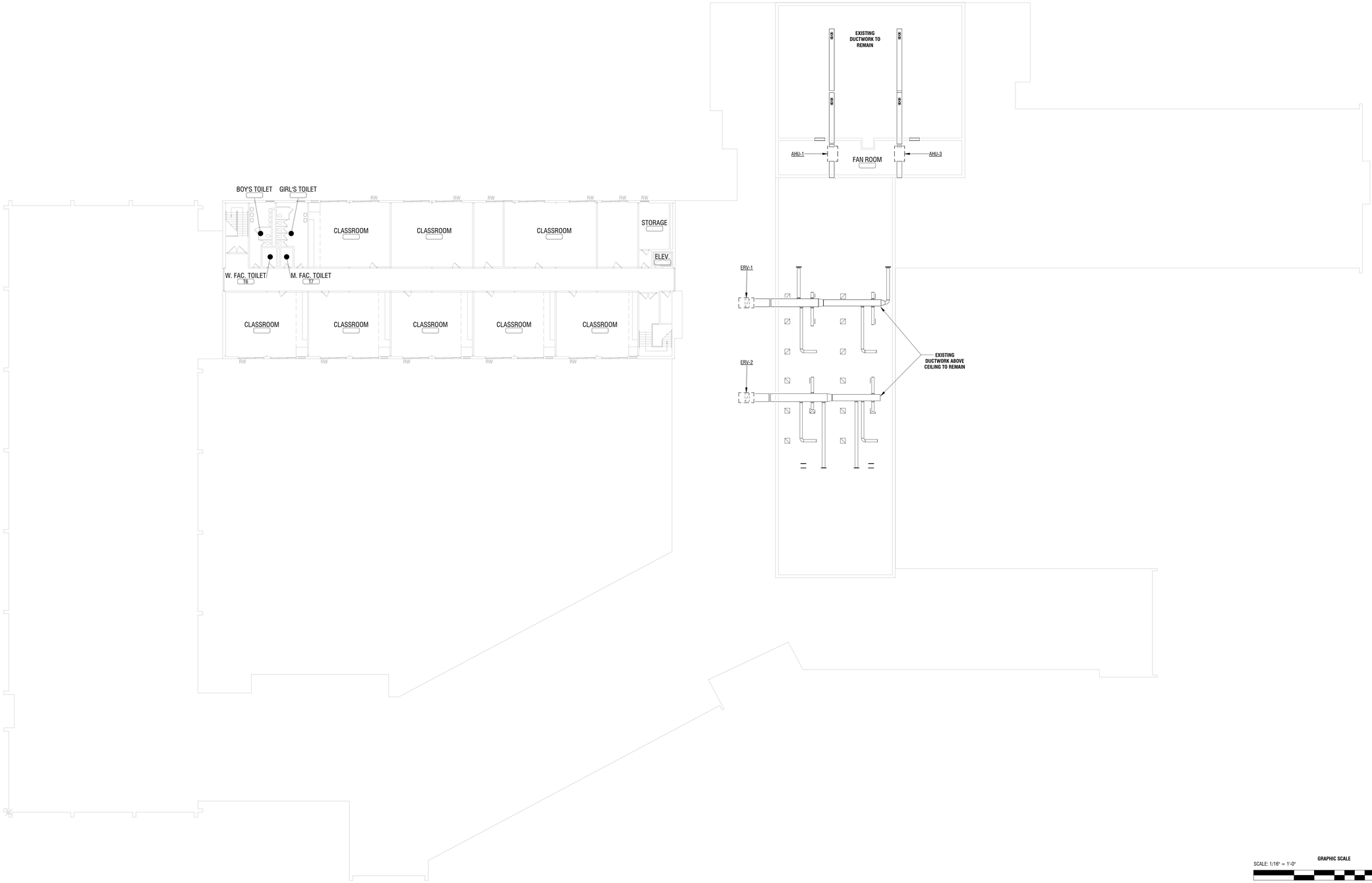
FIRST FLOOR DEMOLITION PLAN

DRAWING NUMBER:

MD101

MECHANICAL NOTES:

1. REMOVE EXISTING AIR HANDLING UNIT. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING OUTSIDE AIR DUCTWORK TO REMAIN FOR RECONNECTION.



GRAPHIC SCALE

SCALE: 1/16" = 1'-0"

0 16' 32' 48' 64'

1 MD102 SECOND FLOOR DEMOLITION PLAN

1/16" = 1'-0"

12/2/2024 5:38:19 PM

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GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT

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NEWBURGH ENLARGED CITY SCHOOL DISTRICT

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300 GIDNEY AVENUE
NEWBURGH, NY 12550

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-006-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME:

SECOND FLOOR DEMOLITION PLAN

DRAWING NUMBER:

MD102

DRAWING SYMBOLS

CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
GHR	GLYCOL HOT WATER RETURN
GHS	GLYCOL HOT WATER SUPPLY
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
C	CONDENSATE
CTR	COOLING TOWER RETURN
CTS	COOLING TOWER SUPPLY
	DIRECTION OF FLOW
DN	DIRECTION OF PITCH
R	REFRIGERANT
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
RG	REFRIGERANT GAS
SV	STEAM VENT

HPLR	HEAT PUMP LOOP RETURN
HPLS	HEAT PUMP LOOP SUPPLY
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
MU	MAKE-UP WATER
NG	NATURAL GAS
PC	PUMPED CONDENSATE
VAC	VACUUM
IW	INDIRECT WASTE

EXISTING DUCTWORK, PIPE, EQUIPMENT

NEW DUCTWORK, PIPE, EQUIPMENT

DUCTWORK, PIPE, EQUIPMENT TO BE REMOVED

PIPE TURNED UP

PIPE TURNED DOWN

BRANCH OFF TOP OF PIPE

BRANCH OFF BOTTOM OF PIPE

REDUCER

PIPE BREAK

BALL VALVE

BUTTERFLY VALVE

GATE VALVE

SHUT OFF VALVE (GATE, BALL, OR BUTTERFLY - REFER TO SPECS)

CHECK VALVE

BALANCE VALVE

ANGLE VALVE

PRESSURE REDUCING VALVE

STEAM TRAP

MOTOR OR SOLENOID CONTROL VALVE

MOTOR OR SOLENOID CONTROL VALVE (3-WAY)

TRIPLE DUTY VALVE

RELIEF VALVE

STRAINER

UNION

PRESSURE GAUGE

PUMP

EQUIPMENT TO BE REMOVED

VRF FAN COIL CASSETTE UNIT

REMOVE TO THIS POINT)

NEW CONNECTION TO EXISTING

SECTION CALLOUT (A / M-2)

DETAIL NUMBER (A / M-2)

DEMOLITION KEYNOTE (1)

KEYNOTE (1)

RETURN AIR

SUPPLY AIR

DUCT (DIMENSIONS SHOWN IN DUCT. DIMENSIONS IN INCHES.) (18/8)

DUCT (DIMENSIONS SHOWN BY LEADER. DIMENSIONS IN INCHES.) (18/8)

FLEX DUCT

DUCT SECTION - SUPPLY AIR

DUCT SECTION - EXHAUST AIR

DUCT SECTION - RETURN AIR

VOLUME DAMPER

14" Ø — 14" ROUND DUCT

18/8 — 18" x 8" FLAT OVAL DUCT

NOTE:
NOT ALL SYMBOLS, ABBREVIATIONS AND EQUIPMENT DESIGNATIONS MAY APPLY TO THIS PARTICULAR PROJECT. ANY ADDITIONS OR OMISSIONS FROM THIS LEGEND SHEET DOES NOT IMPLY INCLUSION AND/ OR EXCLUSIONS OF ANY PARTICULAR ITEM FROM THIS PROJECT.

LINED DUCT (DIM. IS INTERNAL) (18/8)

MITERED ELBOW W/ TURNING VANES

WALL OR DUCT MOUNTED SUPPLY GRILLE

WALL OR DUCT MOUNTED RETURN OR EXHAUST GRILLE

FIRE DAMPER (FD / AD)

ACCESS DOOR TO BE LOCATED ON MOST ACCESSIBLE SIDE OF DUCT

SMOKE DAMPER (SD / AD)

ACCESS DOOR TO BE LOCATED ON MOST ACCESSIBLE SIDE OF DUCT

COMBINATION FIRE / SMOKE DAMPER (F/S / AD)

ACCESS DOOR TO BE LOCATED ON MOST ACCESSIBLE SIDE OF DUCT

MOTOR OPERATED DAMPER (M)

TEMPERATURE SENSOR (T)

SENSOR (S)

HUMIDISTAT (H)

CARBON DIOXIDE SENSOR (CO2)

EXHAUST GRILLE

SUPPLY DIFFUSER

RETURN GRILLE

REGISTER OR GRILLE - TOP NUMBER REPRESENTS TAG, SEE SCHEDULE; BOTTOM NUMBER REPRESENTS CFM. (8 / 750)

DIFFUSER - LETTER REPRESENTS TAG, SEE SCHEDULE; NUMBER REPRESENTS CFM (A / 125)

APPLICABLE CODES

1 BUILDING CODE OF NEW YORK STATE
2 ENERGY CODE OF NEW YORK STATE
3 MECHANICAL CODE OF NEW YORK STATE
4 FIRE CODE OF NEW YORK STATE
5 PLUMBING CODE OF NEW YORK STATE
6 ENERGY CONSERVATION CODE OF NEW YORK STATE
7 ACCESSIBLE AND USABLE BUILDING AND FACILITIES-CABO/ANSI A117.1
8 NATIONAL ELECTRIC CODE
9 NATIONAL FIRE CODE NFPA 13

EQUIPMENT DESIGNATIONS

ACU	AIR CONDITIONING UNIT
AHU	AIR HANDLING UNIT
AD	ACCESS DOOR
AS	AIR SEPARATOR
BDD	BACK DRAFT DAMPER
B	BOILER
CA	AIR COMPRESSOR
CAV	CONSTANT AIR VOLUME BOX
CC	COOLING COIL
CFP	CHEMICAL FEED PUMP
CH	CHILLER
CHP	CHILLED WATER PUMP
CP	CONDENSATE PUMP
CRAC	COMPUTER ROOM UNIT
CRU	CONDENSATE RETURN UNIT
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
DHW	DOMESTIC WATER HEATER
EF	EXHAUST FAN
ET	EXPANSION TANK
FCU	FAN COIL UNIT
FP	FIRE PUMP
FT	FINNED TUBE
HC	HEATING COIL
HP	HEAT PUMP
HU	HUMIDIFIER
HWP	HOT WATER PUMP
HX	HEAT EXCHANGER
L	LOUVER
MAU	MAKE UP AIR UNITS
MD	MOTORIZED DAMPER
P	PUMP
PHC	PREHEAT COIL
PPU	PUMPING PACKAGED UNIT
PRG	GAS PRESSURE REGULATOR
PRV	PRESSURE REDUCING VALVE
R	REGISTER
RCP	RADIANT CEILING PANEL
RTU	ROOF TOP UNIT
UH	UNIT HEATER
UV	UNIT VENTILATOR
VAV	VARIABLE AIR VOLUME BOX
VD	VOLUME DAMPER
VFD	VARIABLE SPEED DRIVE
WU-G	WINDOW UNIT MOUNTED IN GLASS
WU-W	WINDOW UNIT MOUNTED IN WALL
WS	WATER SOFTENER

NOTE:
SOME ABBREVIATIONS MAY NOT BE USED ON DRAWINGS

ABBREVIATIONS

%	PERCENT
AC	ALTERNATING CURRENT
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
AMB	AMBIENT
AMP	AMPERE (AMP.)AMPS)
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
APPROX	APPOXIAMTE (LY)
AVG	AVERAGE
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BO	BOTTOM OF
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BV	BALANCING VALVE
CAP	CAPACITY
CIP	CAST IRON PIPE
CLG	CEILING
CLR	CLEAR
CO	CLEANOUT or CARBON MONOXIDE
COL	COLUMN
CONN	CONNECTION
CONC	CONCRETE
CONT	CONTINUOUS
CU FT	CUBIC FEET
CV	VALVE FLOW COEFFICIENT
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DCV	DETECTOR CHECK VALVE
DCW	DOMESTIC COLD WATER
DEMO	DEMOLISH or DEMOLITION
DHW	DOMESTIC HOT WATER
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DWH	DOMESTIC WATER HEATER
DWV	DRAIN, WASTE, & VENT
DWG	DRAWING
(E)	EXISTING
ENGR	ENGINEER
EQ	EQUAL
EST	ESTIMATED
ETR	EXISTING TO REMAIN
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
°F	DEGREES FAHRENHEIT
FA	FREE AREA
FIN	FINISHED
FL	FLOOR
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FOOT OR FEET
FUT	FUTURE
GA	GAGE OR GAUGE
GAL	GALLONS
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
HD	HEAD
HG	MERCURY
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HR	HOUR
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HZ	FREQUENCY
ID	DIAMTER, INSIDE
IN	INCH
INSUL	INSULATION
INT	INTERIOR
IPS	IRON PIPE SIZE
INV	INVERT
KW	KILOWATT
KWH	KILOWATT HOUR
LBS	POUNDS
LF	LINEAR FEET
LG	LENGTH
LOC	LOCATION
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MATL	MATERIAL
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MECH	MECHANICAL
MFG	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MOCP	MAXIMUM OVERCURRENT PROTECTION
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MTG	MOUNTING
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPT	NATIONAL PIPE TREAD
NRS	NON-RISING STEM
NTS	NOT TO SCALE
OC	ON CENTER
OD	DIAMETER, OUTSIDE
OS&Y	OUTSIDE SCREW AND YOKE
PC	PLUMBING CONTRACTOR
PLBG	PLUMBING
PH	PHASE (ELECTRICAL)
PRESS	PRESSURE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	PSI GUAGE
PRV	PRESSURE REDUCING VALVE
RCVR	RECEIVER
RECIRC	RECIRCULATE
RHW	HOT WATER RE-CIRCULATION
RO	ROUGH OPENING
RPDA	REDUCED-PRESSURE DETECTOR ASSY.
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED-PRESSURE ZONE
SCH	STEAM CAPTURE HOOD
SPEC	SPECIFICATION
SPLY	SUPPLY
SQ	SQUARE
SQ FT	SQUARE FOOT (FEET)
SQ IN	SQUARE INCH (INCHES)
STD	STANDARD
SUCT	SUCTION
TSTAT	THERMOSTAT
TBD	TO BE DETERMINED
TC	TEMPERATURE CONTROL CONTRACTOR
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TO	TOP OF
TYP	TYPICAL
V	VOLT
VAC	VACUUM
VAR	VARIABLE
VEL	VELOCITY
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WATT
W/	WITH
W/O	WITH OUT
WCO	WALL CLEANOUT
WHA	WATER HAMMER ARRESTER
WM	WATER METER
WPD	WATER PRESSURE DROP
WT	WEIGHT
WWP	WORKING WATER PRESSURE

NOTE:
SOME ABBREVIATIONS MAY NOT BE USED ON DRAWINGS

GENERAL NOTES

DUCTWORK GENERAL NOTES

1 HVAC CONTRACTOR TO PROVIDE CRANE AND NECESSARY EQUIPMENT TO HOIST ROOF MOUNTED HVAC EQUIPMENT FROM SITE TO FINAL ROOF LOCATION. GENERAL CONTRACTOR TO PROVIDE ALL ROOF PENETRATIONS REQUIRED TO ACCOMMODATE HVAC EQUIPMENT OPENINGS AND SET CURBS. HVAC CONTRACTOR TO COORDINATE EXACT LOCATION OF PENETRATIONS WITH G.C. AND SHALL ASSIST WITH SETTING ALL HVAC EQUIPMENT ROOF CURBS. HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY CAP OF ALL ROOF PENETRATIONS IN INTERIM FROM TIME PENETRATIONS ARE COMPLETE TO TIME EQUIPMENT IS SET ON ROOF CURBS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FLASHING ALL EQUIPMENT CURBS AND OTHER HVAC RELATED ROOF PENETRATIONS. HVAC CONTRACTOR SHALL REMOVE AND DISPOSE OF TEMPORARY CAP WHEN EQUIPMENT IS SET IN PLACE.

2 PROVIDE 45 DEGREE SHOE-TAP FITTING AND VOLUME DAMPER AT ALL BRANCH DUCT TAKE-OFFS. (TOP, SIDE AND BOTTOM) FOR SUPPLY, RETURN AND EXHAUST AIR, UNLESS SHOWN OR NOTED OTHERWISE. VOLUME DAMPERS SHALL BE OMITTED FROM VAV INLET BRANCH DUCTWORK.

3 COORDINATE HVAC INSTALLATION WITH STRUCTURE, CEILING, LIGHTING, CONDUIT, HEATING AND DOMESTIC PIPING, STORM AND SANITARY DRAIN PIPING (ALL TRADES). PREPARE AND SUBMIT FULL COORDINATION DRAWINGS FOR APPROVAL BY ENGINEER PRIOR TO ORDERING MATERIALS AND/OR BEGINNING CONSTRUCTION.

4 INSULATE OR LINE DUCTWORK AS SPECIFIED IN THE MECHANICAL INSULATION AND METAL DUCTS SPECIFICATIONS OR NOTED ON DRAWINGS. NOTE THAT DUCT SIZES SHOWN ON DRAWINGS ARE INSIDE NET CLEAR DIMENSIONS.

5 ALL 90 DEGREE RECTANGULAR ELBOWS AND DUCTWORK TEES SHALL BE HARD MITERED WITH FACTORY TURNING VANES. TURNING VANES SHALL BE OMITTED FROM AIR TRANSFER DUCT ELBOWS.

6 ALL DUCTWORK PASSING THROUGH NON-FIRE RATED WALLS TO BE SEALED AROUND PERIMETER (BOTH SIDES) WITH DRYWALL JOINT COMPOUND OR APPROVED EQUAL.

7 INLET OF VAV BOX TO BE ARRANGED SUCH THAT THERE IS NO RESTRICTION OF AIRFLOW. THERE SHALL BE A MINIMUM OF THREE DUCT DIAMETERS OF STRAIGHT DUCT (FLEX DUCT WILL NOT BE PERMITTED) UPSTREAM OF THE INLET. INLET DUCT SIZE TO BE SAME SIZE AS VAV BOX INLET COLLAR UNLESS NOTED OTHERWISE. REFER TO VAV BOX INSTALLATION DETAIL FOR ADDITIONAL REQUIREMENTS.

8 HVAC CONTRACTOR TO PROVIDE ALL WALL & ROOF PENETRATIONS 8"x8" OR SMALLER. ALL PENETRATIONS LARGER THAN 8"x8" IS THE RESPONSIBILITY OF THE G.C. COORDINATE ALL 8"x8" OR LARGER PENETRATION LOCATIONS WITH G.C. LINTELS (BY G.C.) REFER TO STRUCTURAL DRAWINGS FOR LINTEL SCHEDULE. PENETRATIONS AND LINTEL LOCATIONS TO BE COORDINATED WITH G.C. AND DOCUMENTED ON COORDINATION DRAWINGS.

9 BALANCING CONTRACTOR TO SET MINIMUM OUTSIDE AIR DAMPER POSITION TO MEET VENTILATION AIR QUANTITIES REQUIRED AS SHOWN ON PLANS OR LISTED IN EQUIPMENT SCHEDULES.

10 NATURAL GAS PIPING WHERE REQUIRED SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR, WHICH SHALL INCLUDE FINAL CONNECTIONS TO HVAC EQUIPMENT. COORDINATE ALL EQUIPMENT LOCATIONS THAT REQUIRE NATURAL GAS WITH THE PLUMBING CONTRACTOR.

11 ALL SUPPORT OF EQUIPMENT, DUCTWORK AND ASSOCIATED DISTRIBUTION SERVICES SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE BUILDING CODE OF NEW YORK STATE. THE DISCIPLINE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE STRUCTURAL STEEL WHERE REQUIRED IN ORDER TO SUPPORT EQUIPMENT, DUCTWORK AND ASSOCIATED DISTRIBUTION SERVICES WHERE THE BUILDING STRUCTURE SPACING IS TOO GREAT TO ALLOW DIRECT SUPPORT. THE DISCIPLINE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMATION OF ALL SUPPORTS AND SHALL OBTAIN THE PROFESSIONAL SERVICE OF A STRUCTURAL ENGINEER LICENSED IN THE STATE OF NEW YORK AND FURNISH SEALED DRAWINGS AND DETAILS ILLUSTRATING SUCH SUPPORTS AND COMPLIANCE METHODS.

12 INSULATE ALL DUCTWORK PER NYS ENERGY CODE.

MECHANICAL SHEET LIST

Sheet Number	Sheet Name	Drawn By	Approved By
M001	MECHANICAL LEGEND SHEET	DRM	MB
M002	VENTILATION TABLE	DRM	MB
MD101	FIRST FLOOR DEMOLITION PLAN	DRM	MB
MD102	SECOND FLOOR DEMOLITION PLAN	DRM	MB
MD103	ROOF DEMOLITION PLAN	DRM	MB
M101	FIRST FLOOR DUCTWORK PLAN	DRM	MB
M102	SECOND FLOOR DUCTWORK PLAN	DRM	MB
M103	ROOF EQUIPMENT PLAN	DRM	MB
M201	FIRST FLOOR PIPING PLAN	DRM	MB
M202	SECOND FLOOR PIPING PLAN	DRM	MB
M501	MECHANICAL DETAILS	DRM	MB
M601	MECHANICAL SCHEDULES	DRM	MB
M701	MECHANICAL CONTROLS	DRM	MB

Grand total: 13

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GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT
124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH
ENLARGED CITY SCHOOL DISTRICT

MEADOW HILL GEM SCHOOL
124 MEADOW HILL ROAD
NEWBURGH, NY 12550

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-035-014

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME:

MECHANICAL LEGEND SHEET

DRAWING NUMBER:

M001

12/2/2024 5:34:05 PM

Room Name	Unit	Square Footage	Type	Type	Occupancy Density/1000sf	Max Occupancy	OA/person	CFM/SF	Code OA (cfm)	Provided OA (cfm)
1 - Kindergarten Classroom	UV-1	986	Classroom	E - Classrooms (ages 5-8)	25	25	10	0.12	368.32	500
2 - Kindergarten Classroom	UV-2	986	Classroom	E - Classrooms (ages 5-8)	25	25	10	0.12	368.32	500
2C - Kindergarten Reading Rm	UV-2C	368	Classroom	E - Classrooms (ages 5-8)	25	10	10	0.12	144.16	210
3 - Kindergarten Classroom	UV-3	990	Classroom	E - Classrooms (ages 5-8)	25	25	10	0.12	368.8	500
4 - Kindergarten Classroom	UV-4	992	Classroom	E - Classrooms (ages 5-8)	25	25	10	0.12	369.04	500
5 - Kindergarten Classroom	UV-5	880	Classroom	E - Classrooms (ages 5-8)	25	22	10	0.12	325.6	500
6 - Kindergarten Classroom	UV-6	880	Classroom	E - Classrooms (ages 5-8)	25	22	10	0.12	325.6	500
7 - Kindergarten Classroom	UV-7	820	Classroom	E - Classrooms (ages 5-8)	25	21	10	0.12	308.4	420
8 - 1st Grade Classroom	UV-8	845	Classroom	E - Classrooms (ages 5-8)	25	22	10	0.12	321.4	470
9A- 1st Grade Classroom	UV-9A	562	Classroom	E - Classrooms (ages 5-8)	25	15	10	0.12	217.44	210
9B - 1st Grade Classroom	UV-9B	562	Classroom	E - Classrooms (ages 5-8)	25	15	10	0.12	217.44	210
10 - 1st Grade Classroom	UV-10	840	Classroom	E - Classrooms (ages 5-8)	25	21	10	0.12	310.8	470
11 - 1st Grade Classroom	UV-11	840	Classroom	E - Classrooms (ages 5-8)	25	21	10	0.12	310.8	470
12 - 1st Grade Classroom	UV-12	840	Classroom	E - Classrooms (ages 5-8)	25	21	10	0.12	310.8	470
13 - 1st Grade Classroom	UV-13	840	Classroom	E - Classrooms (ages 5-8)	25	21	10	0.12	310.8	470
14 - 1st Grade Classroom	UV-14	840	Classroom	E - Classrooms (ages 5-8)	25	21	10	0.12	310.8	470
15 - 1st Grade Classroom	UV-15	830	Classroom	E - Classrooms (ages 5-8)	25	21	10	0.12	309.6	420
17 - Classroom	UV-17	755	Classroom	E - Classrooms (ages 5-8)	25	19	10	0.12	280.6	470
120 - Art Room	UV-120	1088	Art Room	E - Art classroom	20	22	10	0.18	415.84	420
121 - 2nd Grade Classroom	UV-121	790	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.8	470
122 - Art Room	UV-122	1012	Art Room	E - Art classroom	20	21	10	0.18	392.16	420
123 - 2nd Grade Classroom	UV-123	790	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.8	470
124 - 3rd Grade Classroom	UV-124	790	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.8	470
125A - 4th Grade Classroom	UV-125A	790	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.8	470
125B - 4th Grade Classroom	UV-125B	790	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.8	470
126A - 3rd Grade Classroom	UV-126A	790	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.8	470
126B - 3rd Grade Classroom	UV-126B	790	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.8	470
127 - 2nd Grade Classroom	UV-127	790	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.8	470
128 - Primary Playroom	UV-128	5015	Multi-Use Assembly	E - Multiuse assembly	100	315	7.5	0.06	2663.4	2796
129 - 2nd Grade Classroom	UV-129	790	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.8	470
131A - 2nd Grade Classroom	UV-131A	785	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.2	470
131B - 2nd Grade Classroom	UV-131B	785	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.2	470
133 - 2nd Grade Classroom	UV-133	800	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	296	470
135A - 3rd Grade Classroom	UV-135A	420	Classroom	E - Classrooms (ages 5-8)	25	11	10	0.12	160.4	210
135B - 3rd Grade Classroom	UV-135B	420	Classroom	E - Classrooms (ages 5-8)	25	11	10	0.12	160.4	210
137 - 3rd Grade Classroom	UV-137	788	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.56	470
139 - 3rd Grade Classroom	UV-139	788	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.56	470
141 - 3rd Grade Classroom	UV-141	788	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.56	470
220 - 5th Grade	UV-220	900	Classroom	E - Classrooms (ages 5-8)	25	23	10	0.12	338	420
221 - 5th Grade	UV-221	785	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.2	470
222 - 4th Grade	UV-222	800	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	296	500
223 - 5th Grade	UV-223	785	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	294.2	470
224 - Music Room	UV-227	760	Classroom	E - Classrooms (ages 5-8)	25	19	10	0.12	281.2	470
225 - 5th Grade	UV-225	780	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	293.6	470
226 -3rd Grade	UV-226	780	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	293.6	470
227A - 6th Grade Classroom	UV-227A	1020	Classroom	E - Classrooms (ages 5-8)	25	26	10	0.12	382.4	500
228 - 3rd Grade	UV-228	780	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	293.6	470
229 - 6th Grade Classroom	UV-229	1000	Classroom	E - Classrooms (ages 5-8)	25	25	10	0.12	370	470
231 - 6th Grade Classroom	UV-231	1000	Classroom	E - Classrooms (ages 5-8)	25	25	10	0.12	370	470
233 - 6th Grade Classroom	UV-233	1030	Classroom	E - Classrooms (ages 5-8)	25	26	10	0.12	383.6	470
235 - Classroom	UV-235	1250	Classroom	E - Classrooms (ages 5-8)	25	32	10	0.12	470	500
237A - 6th Grade Classroom	UV-237A	590	Classroom	E - Classrooms (ages 5-8)	25	15	10	0.12	220.8	210
237B - 6th Grade Classroom	UV-237B	620	Classroom	E - Classrooms (ages 5-8)	25	16	10	0.12	234.4	210
239 - 4th Grade Classroom	UV-239	800	Classroom	E - Classrooms (ages 5-8)	25	20	10	0.12	296	470
Chorus Room	UV-109	985	Classroom	E - Classrooms (ages 5-8)	25	25	10	0.12	368.2	420
Band	UV-110	1168	Classroom	E - Classrooms (ages 5-8)	25	30	10	0.12	440.16	470
Resource	UV-224	375	Classroom	E - Classrooms (ages 5-8)	25	10	10	0.12	145	210
Gym	T-5 & T-6	6625	Multi-Use Assembly	E - Multiuse assembly	100	600	7.5	0.06	4897.5	4960
Cafetorium	RTU-H-2 & RTU-H-3 & RTU-H-4	4910	Dining Room	FB - Dining rooms	70	300	7.5	0.18	3133.8	3130
Stage	RTU-H-1	1100	Stage	TH - Stages, studios	70	50	10	0.06	566	572

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NO:	DATE:	DESCRIPTION:
2	9/3/2024	ADDENDUM#2

Revisions

S.E.D. NUMBER: 44-16-00-01-0-035-014

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME:

VENTILATION TABLE

DRAWING NUMBER:

M002

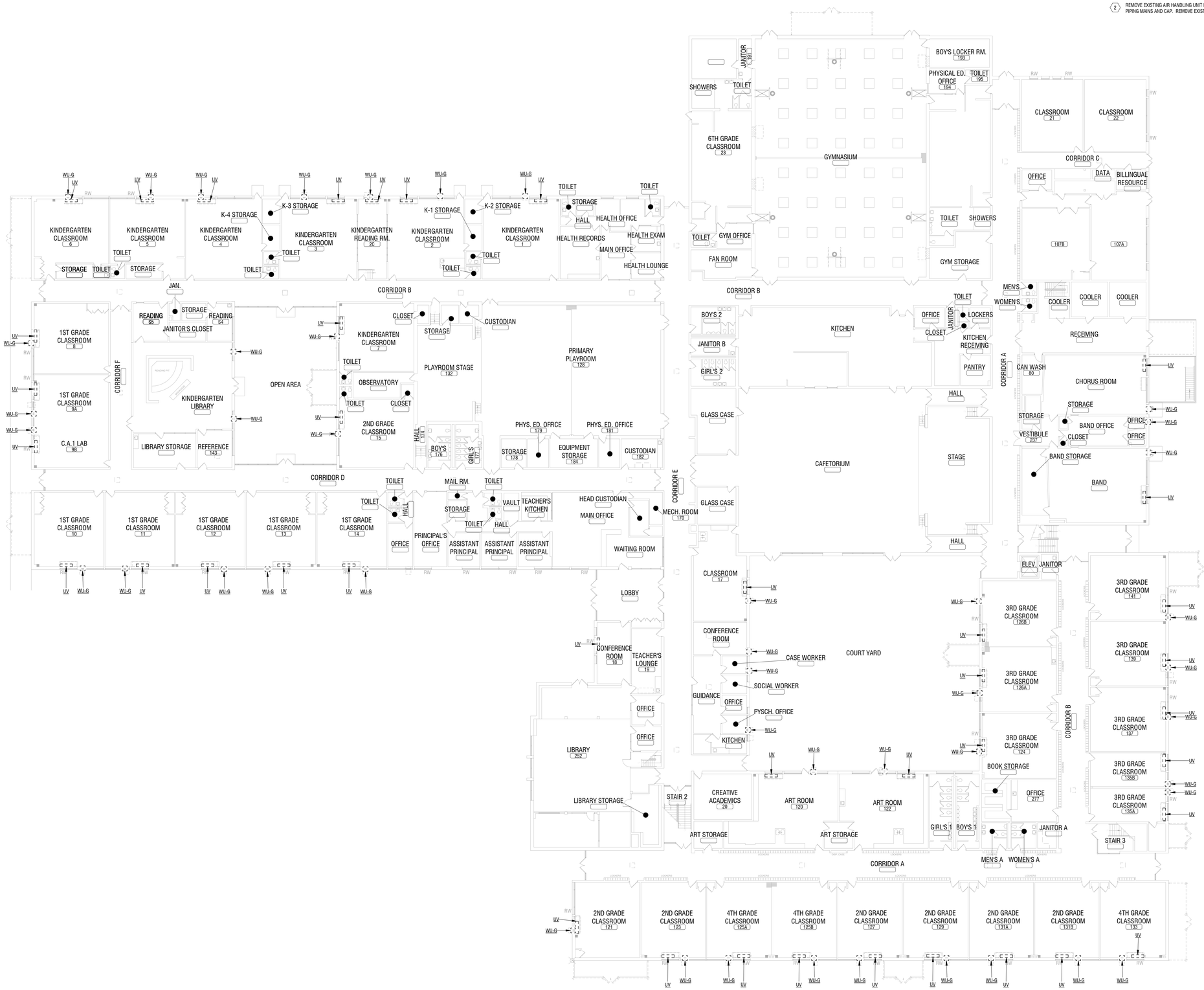
12/2/2024 5:34:06 PM

MECHANICAL NOTES:

1. REMOVE UNIT VENTILATOR IN ITS ENTIRETY. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING OUTSIDE AIR LOUVER TO REMAIN FOR RECONNECTION.
2. REMOVE EXISTING WINDOW AIR CONDITIONING UNIT IN ITS ENTIRETY.

KEY NOTES:

1. REMOVE EXISTING AIR HANDLING UNIT. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING OUTSIDE AIR DUCTWORK TO REMAIN FOR RECONNECTION.
2. REMOVE EXISTING AIR HANDLING UNIT IN ITS ENTIRETY. REMOVE EXISTING HWS/HWR PIPING AND ASSOCIATED VALVES BACK TO PIPING MAINS AND CAP. REMOVE EXISTING OUTSIDE AIR DUCTWORK UP TO LOUVER/ROOF PENTHOUSE AND CAP.



1 MD101 1ST FLOOR DEMO PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:34:08 PM

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GEOLOGICAL: 018750

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NEWBURGH ENLARGED CITY SCHOOL DISTRICT

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NEWBURGH, NY 12550

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-035-014
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

FIRST FLOOR DEMOLITION PLAN

DRAWING NUMBER:

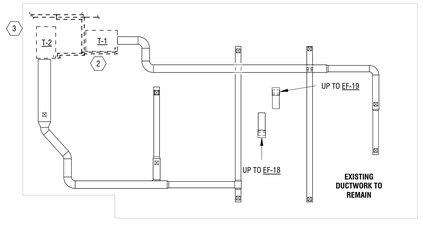
MD101

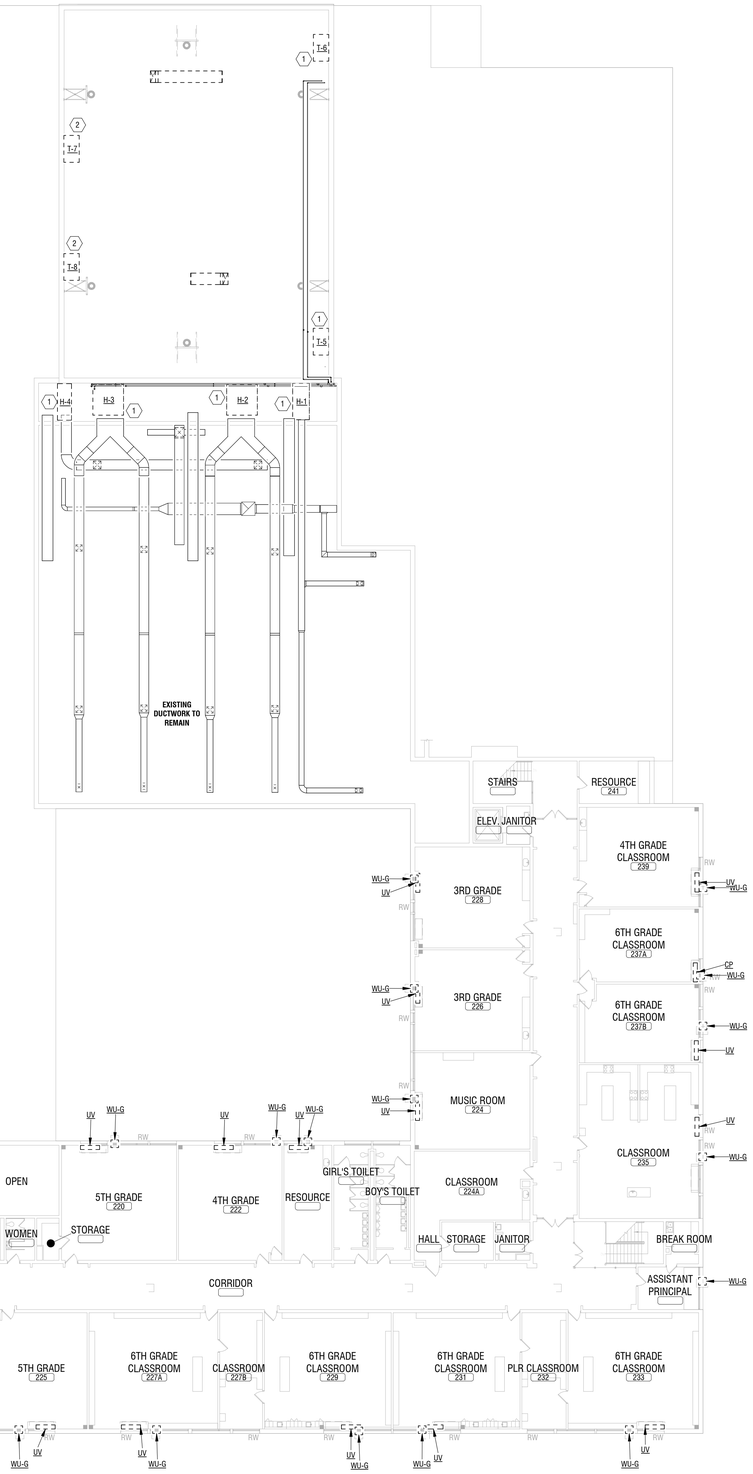
MECHANICAL NOTES:

1. REMOVE UNIT VENTILATOR IN ITS ENTIRETY. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING OUTSIDE AIR LOUVER TO REMAIN FOR RECONNECTION.
2. REMOVE EXISTING WINDOW AIR CONDITIONING UNIT IN ITS ENTIRETY.

KEY NOTES:

1. REMOVE EXISTING AIR HANDLING UNIT. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING OUTSIDE AIR DUCTWORK TO REMAIN FOR RECONNECTION.
2. REMOVE EXISTING AIR HANDLING UNIT. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK TO REMAIN FOR RECONNECTION.





1 MD102 2ND FLOOR DEMO PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

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S.E.D. NUMBER: 44-16-00-01-0-035-014
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

SECOND FLOOR DEMOLITION PLAN

DRAWING NUMBER:

MD102

MECHANICAL NOTES:

1. REMOVE EXHAUST. MAINTAIN EXISTING ROOFCURB AND DUCTWORK FOR RECONNECTION.

1 MD103 ROOF MECHANICAL DEMOLITION PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:34:10 PM

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NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-035-014

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME: ROOF DEMOLITION PLAN

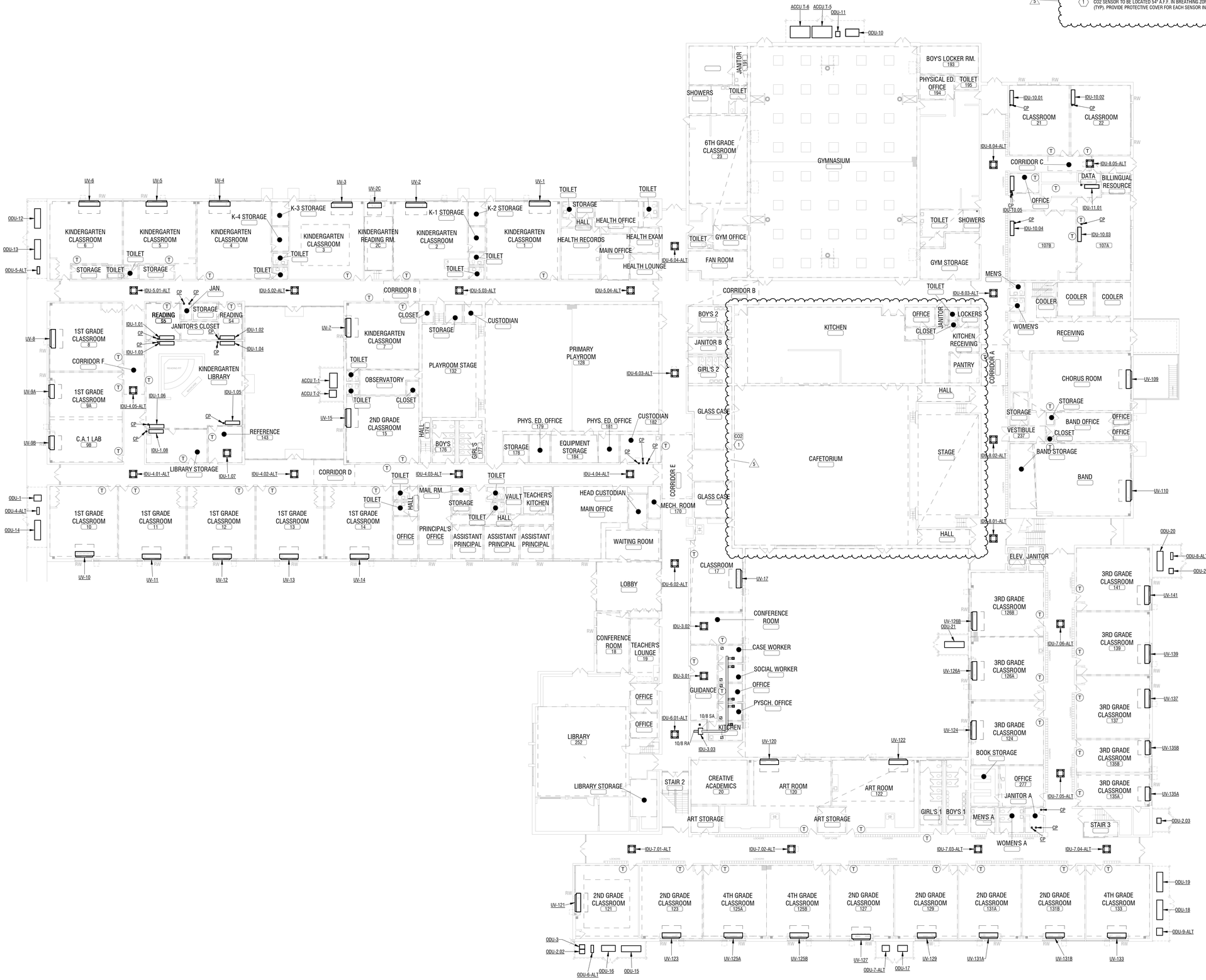
DRAWING NUMBER: MD103

MECHANICAL NOTES:

1. PROVIDE TEMPERATURE SENSOR AND TIE BACK TO BMS SYSTEM (TYP.)
2. RECONNECT AHUs TO EXISTING HWS/HWR PIPING ROUGH-INS. PROVIDE VALVES AND ACCESSORIES AS DETAILED. RECONNECT TO EXISTING DUCTWORK. PROVIDE REFRIGERANT PIPING PER MANUFACTURERS

KEY NOTES:

5 — 1 CO2 SENSOR TO BE LOCATED 54" A.F.F. IN BREATHING ZONE FOR DCV; REDUNDANT CO2 SENSOR TO BE INSTALLED AT EACH LOCATION (TYP). PROVIDE PROTECTIVE COVER FOR EACH SENSOR INSTALLED.



1 M101 FIRST FLOOR DUCTWORK PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:34:13 PM

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NO:	DATE:	DESCRIPTION:
5	10-04-2024	ADDENDUM #5
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-035-014

PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

FIRST FLOOR DUCTWORK PLAN

DRAWING NUMBER:

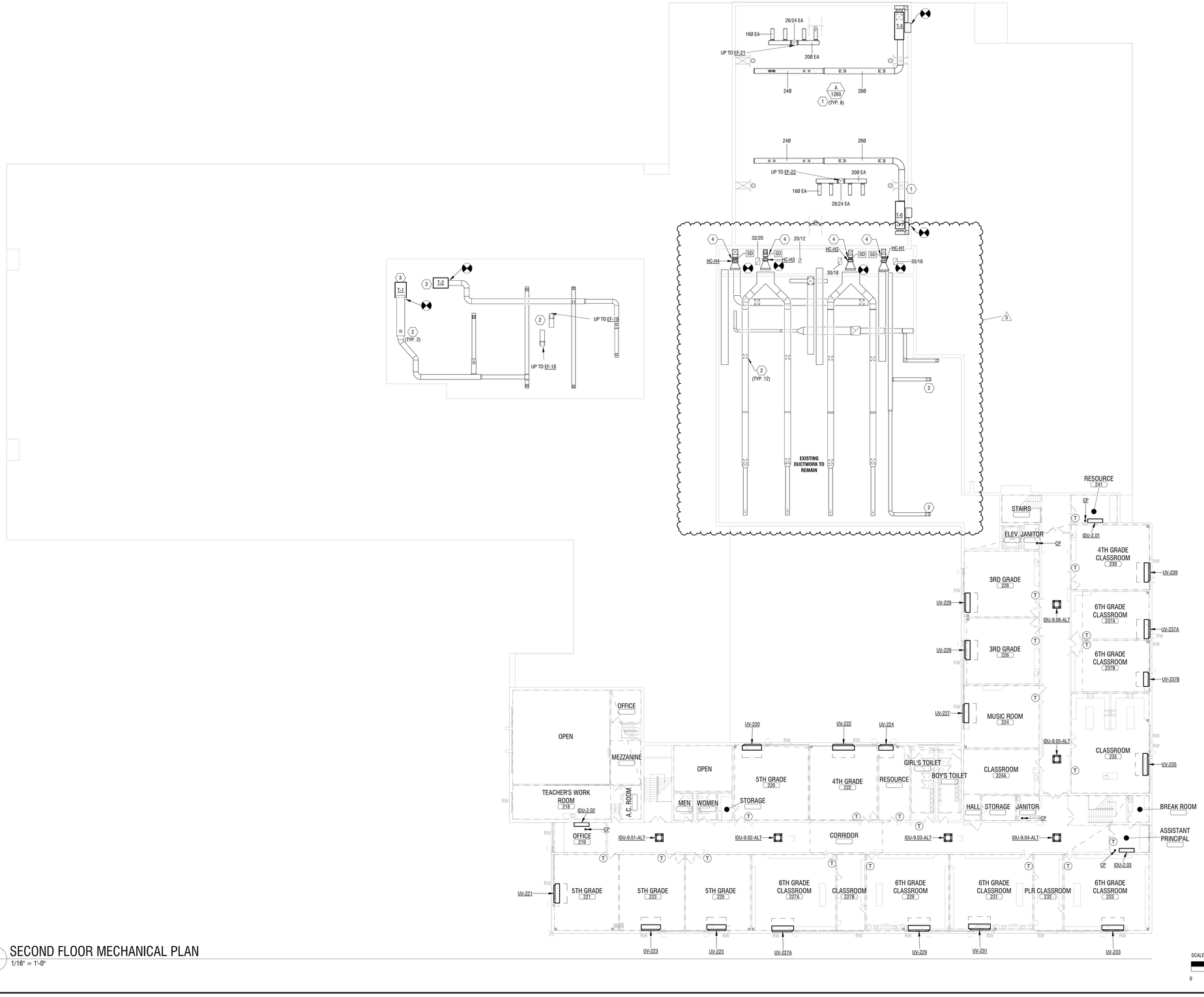
M101

MECHANICAL NOTES:

1. PROVIDE TEMPERATURE SENSOR AND TIE BACK TO BMS SYSTEM (TYP.)
2. PROVIDE AHU AS SCHEDULED. RECONNECT TO EXISTING HWS/HWR PIPING ROUGH-INS. PROVIDE VALVES AND ACCESSORIES AS DETAILED. RECONNECT TO EXISTING DUCTWORK. PROVIDE REFRIGERANT PIPING PER MANUFACTURERS

KEY NOTES:

1. PROVIDE VOLUME DAMPER AT NECK OF EACH DIFFUSER
2. REBALANCE EXISTING DIFFUSERS
3. PROVIDE UNISTRUT MOUNTING SYSTEM TO HANG AHU FROM CEILING
4. PROVIDE DUCT MOUNTED SMOKE DETECTOR RATED FOR VELOCITY OF CORRESPONDING SUPPLY DUCT (TYP).



1 M102 SECOND FLOOR MECHANICAL PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

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LAND SURVEYING: 017976
GEOLOGICAL: 018750

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NEWBURGH ENLARGED CITY SCHOOL DISTRICT

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NEWBURGH, NY 12550

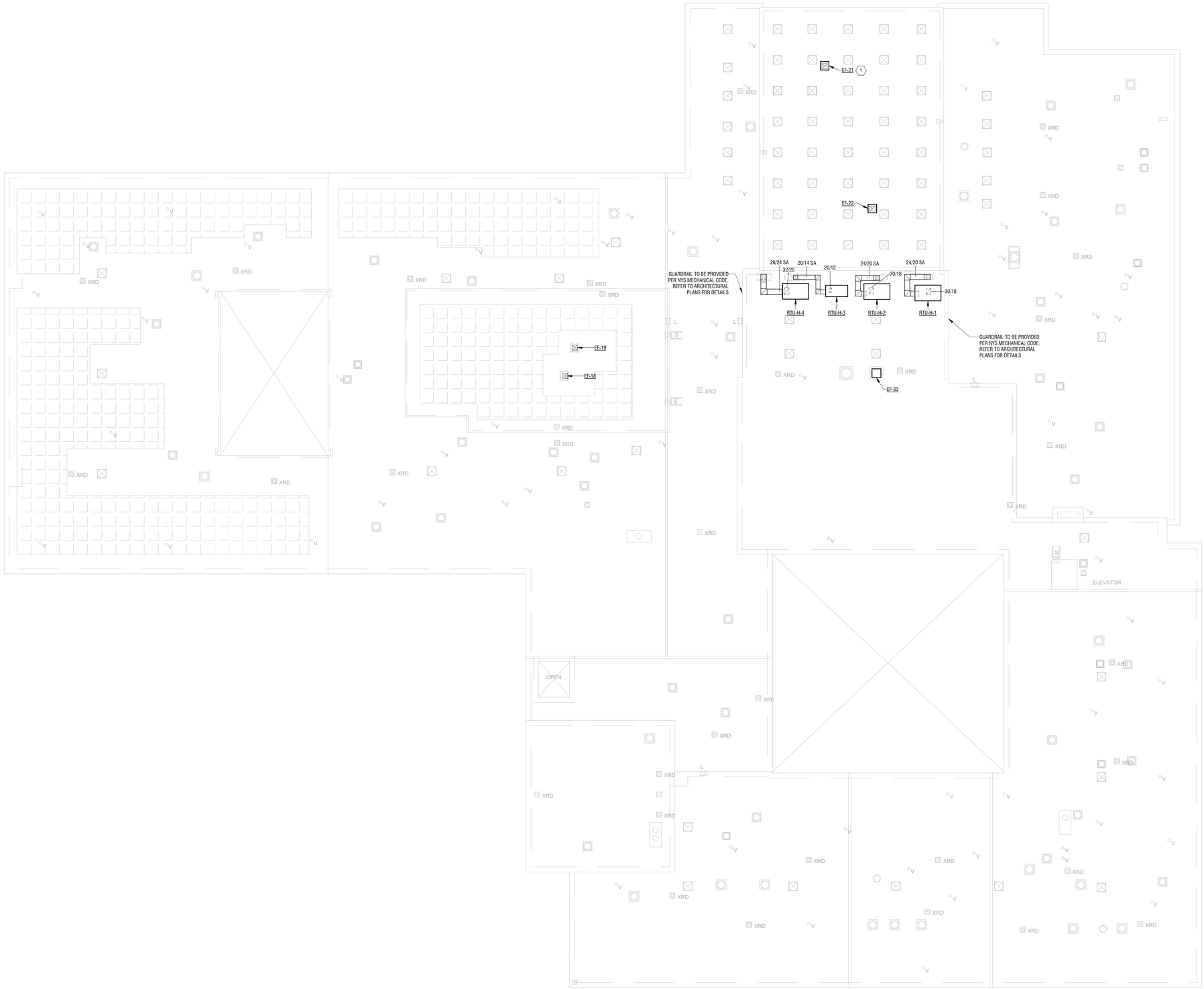
NO:	DATE:	DESCRIPTION:
5	10-04-2024	ADDENDUM #5
4	09-20-2024	ADDENDUM #4
3	09-13-2024	ADDENDUM #3
2	9/3/2024	ADDENDUM#2
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-035-014
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

SECOND FLOOR DUCTWORK PLAN

DRAWING NUMBER:

M102



1 M103 ROOF MECHANICAL PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

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NO:	DATE:	DESCRIPTION:
3	09-13-2024	ADDENDUM #3
2	9/3/2024	ADDENDUM#2
Revisions		

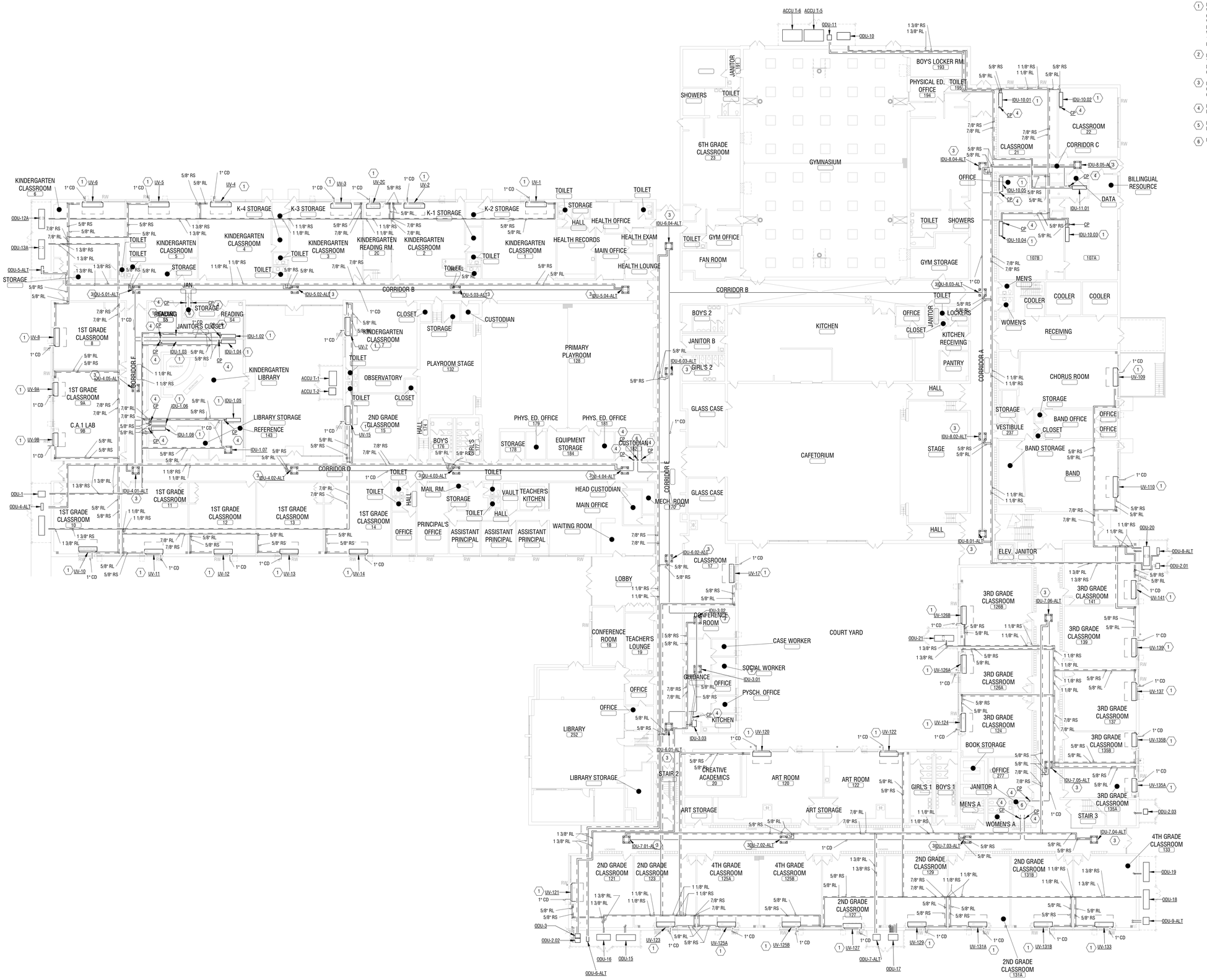
S.E.D. NUMBER: 44-16-00-01-0-035-014

PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

ROOF EQUIPMENT PLAN

DRAWING NUMBER:

M103



1 FIRST FLOOR PIPING PLAN
M201 1/16" = 1'-0"

MECHANICAL NOTES:

1. CONTRACTOR TO PROVIDE PIPE EXPANSION AS REQUIRED.
2. ALL CONDENSATE DRAINS TO BE ROUGHLY 1"

KEY NOTES:

1. RECONNECT EXISTING 1" HWS/HWR PIPING TO HOT WATER COIL WITHIN UV. PROVIDE A SHUT OFF VALVE ON THE HWS PIPE CONNECTION. PROVIDE A SHUT OFF VALVE AND BALANCING VALVE ON THE HWR PIPE CONNECTION. PROVIDE REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO REFRIGERANT COIL WITHIN UV AS SIZED AND DIRECTED BY MANUFACTURER. PROVIDE 1" CONDENSATE PIPE DISCHARGE TO THE EXTERIOR WALL, DRAINED BY GRAVITY.
2. PROVIDE REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO REFRIGERANT COIL WITHIN UV AS SIZED AND DIRECTED BY MANUFACTURER. PROVIDE 1" CONDENSATE PIPING TO THE CLOSEST EXTERIOR WALL, DRAINED BY GRAVITY.
3. PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH CONDENSATE LINE CONNECTION AT INDOOR UNIT. PROVIDE 1" CONDENSATE LINE AS SHOWN.
4. PROVIDE LITTLE GIANT #VCMA CONDENSATE PUMP WITH DRAIN PAIN AND LEAK DETECTION SYSTEM.
5. PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH DUCTED DX COIL. PROVIDE 1" CONDENSATE PIPING AS SHOWN.
6. DISCHARGE CONDENSATE INDIRECTLY TO MOP SINK.

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

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Latham, NY 12110
(518) 273-0055
labellapc.com

CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 018281
LAND SURVEYING: 017976
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT
124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH
ENLARGED CITY SCHOOL DISTRICT

MEADOW HILL GEM SCHOOL
124 MEADOW HILL ROAD
NEWBURGH, NY 12550

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-035-014
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME: FIRST FLOOR PIPING PLAN
DRAWING NUMBER: M201

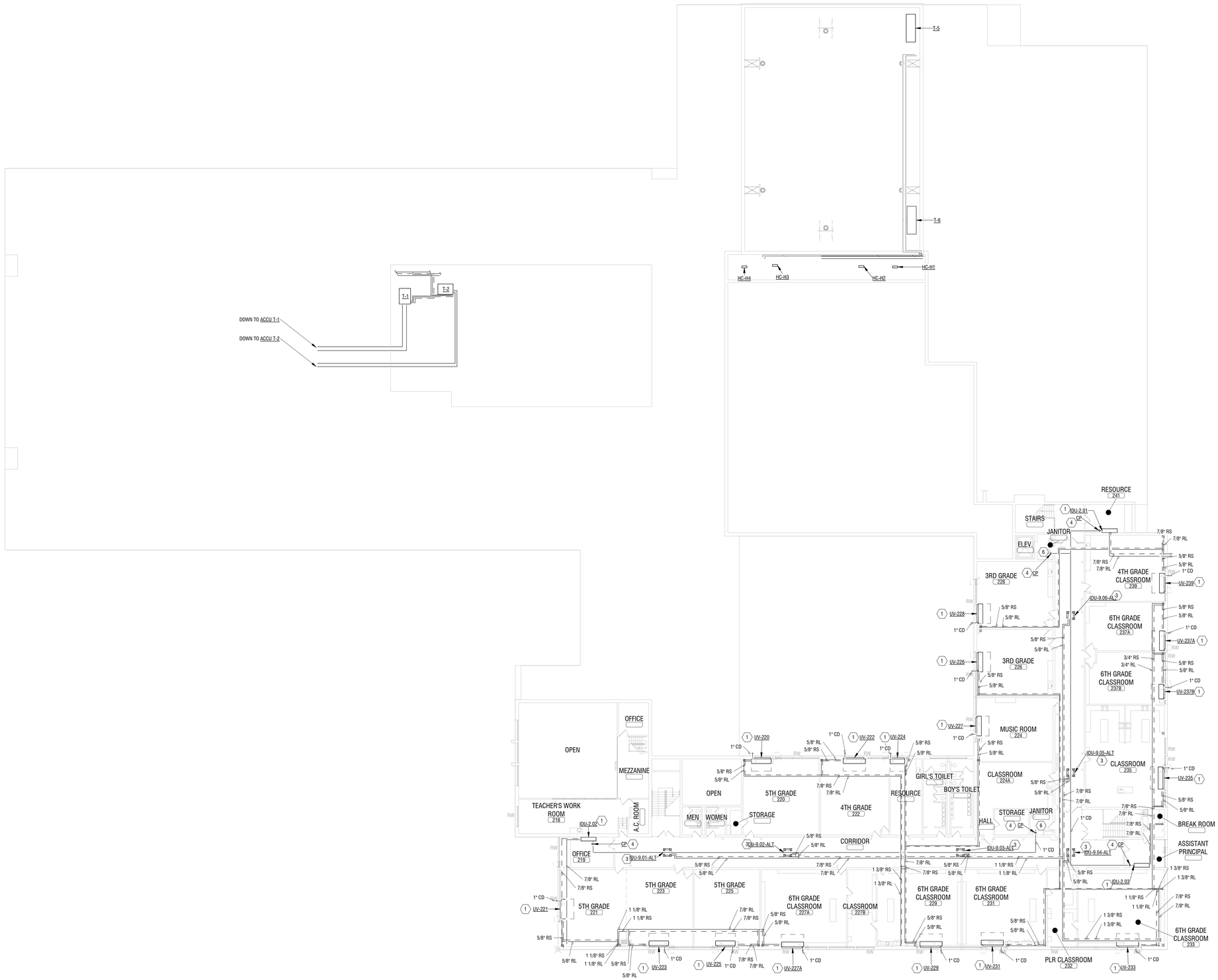
12/2/2024 5:34:18 PM

MECHANICAL NOTES:

1. CONTRACTOR TO PROVIDE PIPE EXPANSION AS REQUIRED.

KEY NOTES:

1. RECONNECT EXISTING 1" HWS/HWR PIPING TO HOT WATER COIL WITHIN UV. PROVIDE A SHUT OFF VALVE ON THE HWS PIPE CONNECTION. PROVIDE A SHUT OFF VALVE AND BALANCING VALVE ON THE HWR PIPE CONNECTION. PROVIDE REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO REFRIGERANT COIL WITHIN UV AS SIZED AND DIRECTED BY MANUFACTURER. PROVIDE 1" CONDENSATE PIPE DISCHARGE TO THE EXTERIOR WALL, DRAINED BY GRAVITY.
2. PROVIDE REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO REFRIGERANT COIL WITHIN UV AS SIZED AND DIRECTED BY MANUFACTURER. PROVIDE 1" CONDENSATE PIPING TO THE CLOSEST EXTERIOR WALL, DRAINED BY GRAVITY.
3. PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH CONDENSATE LINE CONNECTION AT INDOOR UNIT. PROVIDE 1" CONDENSATE LINE AS SHOWN.
4. PROVIDE LITTLE GIANT #VCMA CONDENSATE PUMP WITH DRAIN PAIN AND LEAK DETECTION SYSTEM.
5. PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH DUCTED DX COIL. PROVIDE 1" CONDENSATE PIPING AS SHOWN.
6. DISCHARGE CONDENSATE INDIRECTLY TO MOP SINK.



1 M202 SECOND FLOOR PIPING PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

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CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 018281
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NEWBURGH ENLARGED CITY SCHOOL DISTRICT
124 GRAND ST. - NEWBURGH, NY 12550

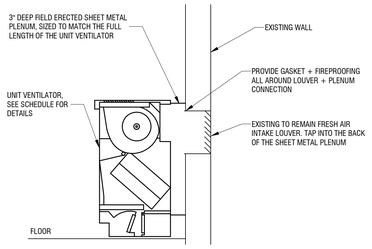
NEWBURGH ENLARGED CITY SCHOOL DISTRICT

MEADOW HILL GEM SCHOOL
124 MEADOW HILL ROAD
NEWBURGH, NY 12550

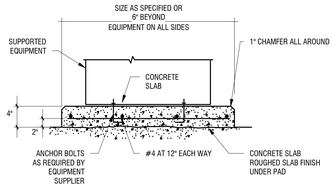
NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-035-014
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME: SECOND FLOOR PIPING PLAN
DRAWING NUMBER: M202

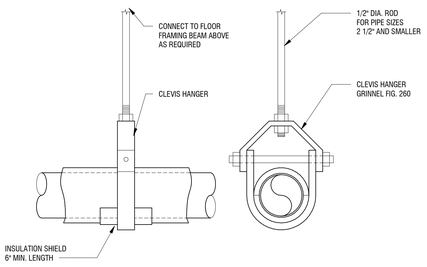
12/2/2024 5:34:19 PM



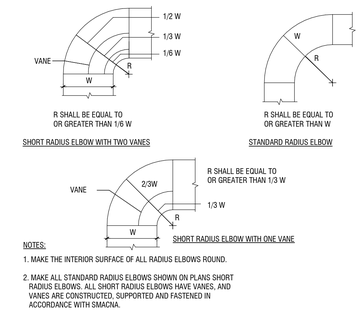
1 M501 — UNIT VENTILATOR PLENUM DETAIL
3/16" = 1'-0"



2 M501 — S - HOUSEKEEPING PAD DETAIL
NOT TO SCALE

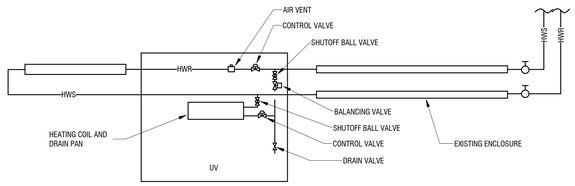


3 M501 — PIPE - PIPE SUPPORT DETAIL
NOT TO SCALE



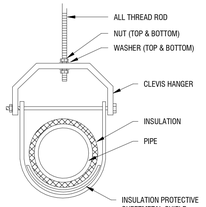
NOTES:
1. MAKE THE INTERIOR SURFACE OF ALL RADIUS ELBOWS ROUND.
2. MAKE ALL STANDARD RADIUS ELBOWS SHOWN ON PLANS SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS HAVE VANES, AND VANES ARE CONSTRUCTED, SUPPORTED AND FASTENED IN ACCORDANCE WITH SMACNA.

4 M501 — DUCT - TYPICAL RADIUS ELBOWS
NOT TO SCALE

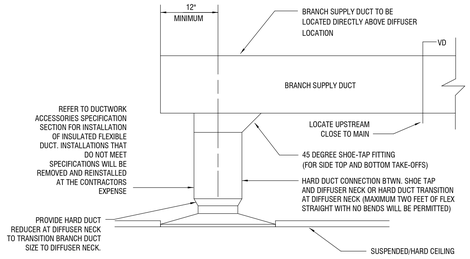


NOTES:
SEPARATE CONTROL FOR UV AND FTR. CONFIGURATIONS MAY VARY. PROVIDE ALLOWANCE OF INSTALLATION OF 10 FEET OF ADDITIONAL 1" COPPER PIPING PER CLASSROOM TO ALLOW FOR OTHER CONFIGURATIONS. CONTRACTOR TO PROVIDE SHOP DRAWING FOR EACH CLASSROOM CONFIGURATION TYPE.

5 M501 — VRV UNIT VENTILATOR PIPING DETAIL
3/16" = 1'-0"

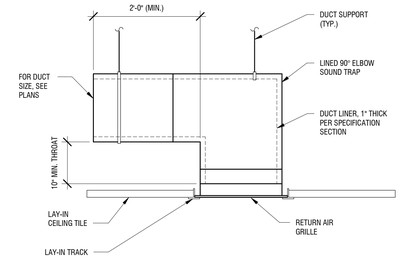


6 M501 — PIPE - PIPE CLEVIS HANGER DETAIL
NOT TO SCALE

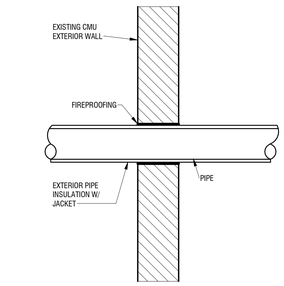


NOTES:
1). ALL DUCTWORK AND DIFFUSER CONNECTIONS SHALL MEET SMACNA STANDARDS.
2). EXCESSIVE USE OF FLEX DUCTWORK AND OFFSETS IN EXCESS OF 45 DEGREES WILL BE REJECTED AT TIME OF PROJECT INSPECTION AND RE-INSTALLED AT THE CONTRACTORS EXPENSE.
3). COORDINATE DIFFUSER AND BRANCH DUCTWORK LOCATIONS WITH REFLECTED CEILING PLAN TO MAINTAIN ACCURACY.

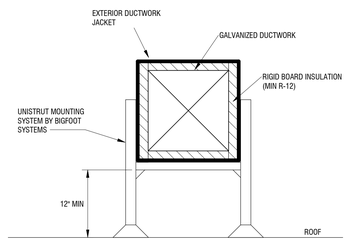
7 M501 — DUCT - AT - DIFFUSER DETAIL
NOT TO SCALE



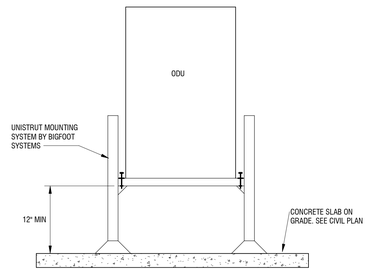
8 M501 — DUCT - AT - RETURN GRILLE W/ SOUND/LIGHT TRAP
NOT TO SCALE



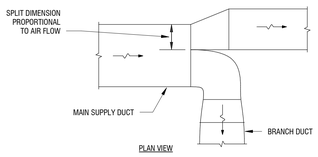
12 M501 — PIPE THROUGH EXTERIOR WALL DETAIL
N.T.S.

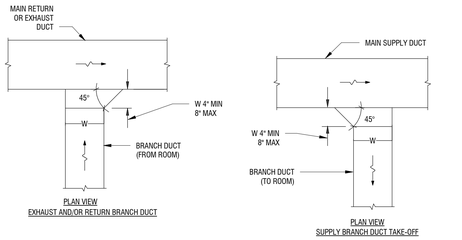


9 M501 — EXTERIOR DUCTWORK DETAIL
N.T.S.

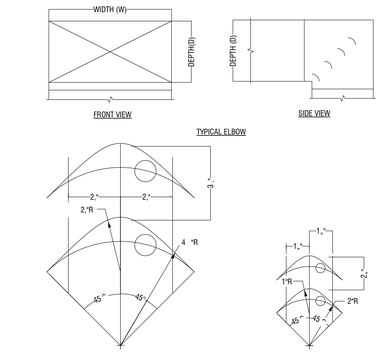


13 M501 — OUTDOOR UNIT MOUNTING DETAIL
N.T.S.





10 M501 — DUCT - TYPICAL DUCTWORK DETAILS
NOT TO SCALE



NOTES:
1. ALL SQUARE OR RECTANGULAR ELBOWS SHALL HAVE ONE OF THE TWO TYPES OF TURNING VANES SHOWN ABOVE. SINGLE VANE ELBOWS SHALL NOT BE PERMITTED.
2. CONSTRUCT, SUPPORT, AND FASTEN ALL VANES AS RECOMMENDED BY SMACNA.
3. ALL SQUARE OR RECTANGULAR ELBOWS SHOWN ON PLANS FOR EXHAUST OR RETURN DUCT MAY BE MADE RADIUS ELBOWS, PROVIDED THAT SPACE PERMITS RADIUS INSTALLATION.
4. ALL SQUARE OR RECTANGULAR ELBOWS SHOWN ON PLANS FOR SUPPLY DUCT MAY BE MADE RADIUS ELBOWS, PROVIDED THAT SPACE PERMITS RADIUS INSTALLATION AND/OR THERE IS NO OUTLET OR TAKE-OFF WITHIN 5D ON THE DOWNSTREAM SIDE OF THE ELBOW.

11 M501 — DUCT - SQUARE OR RECTANGULAR ELBOWS
NOT TO SCALE

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NO:	DATE:	DESCRIPTION:
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S.E.D. NUMBER: 44-16-00-01-0-035-014
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

MECHANICAL DETAILS

DRAWING NUMBER:

M501

VRF HEAT PUMP INDOOR UNIT

TAG	SERVED BY	TYPE	AIRFLOW (H/M/L)	HEATING CAPACITY (BTU/H)	TOTAL COOLING CAPACITY (BTU/H)	SENSIBLE COOLING CAPACITY (BTU/H)	DIMENSIONS (H X W X D)	WEIGHT (LBS)	VOLTAGE/PHASE	MCA	MOP	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL NUMBER	NOTES
IDU-1.01	ODU-1	WALL MOUNTED	260/160	8,700	7,500	6,000	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.3	15	DAIKIN	FXAQ07PVJU	1,2
IDU-1.02	ODU-1	WALL MOUNTED	260/160	8,700	7,500	6,000	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.3	15	DAIKIN	FXAQ07PVJU	1,2
IDU-1.03	ODU-1	WALL MOUNTED	290/180	14,000	12,000	8,700	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ12PVJU	1,2
IDU-1.04	ODU-1	WALL MOUNTED	290/180	14,000	12,000	8,700	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ12PVJU	1,2
IDU-1.05	ODU-1	WALL MOUNTED	290/180	14,000	12,000	8,700	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ12PVJU	1,2
IDU-1.06	ODU-1	WALL MOUNTED	290/180	14,000	12,000	8,700	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ12PVJU	1,2
IDU-1.07	ODU-1	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2
IDU-1.08	ODU-1	WALL MOUNTED	260/160	8,700	7,500	6,000	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.3	15	DAIKIN	FXAQ07PVJU	1,2
IDU-2.01	ODU-2	WALL MOUNTED	434/311/247	13,400	13,300	10,600	11-1/4" X 30-5/16" X 8-3/4"	18	208V/1PH	0.4	15	DAIKIN	FTX12NMVJU	1,2
IDU-2.02	ODU-2	WALL MOUNTED	434/311/247	13,400	13,300	10,600	11-1/4" X 30-5/16" X 8-3/4"	18	208V/1PH	0.4	15	DAIKIN	FTX12NMVJU	1,2
IDU-2.03	ODU-2	WALL MOUNTED	434/311/247	13,400	13,300	10,600	11-1/4" X 30-5/16" X 8-3/4"	18	208V/1PH	0.4	15	DAIKIN	FTX12NMVJU	1,2
IDU-3.01	ODU-3	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2
IDU-3.02	ODU-3	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2
IDU-3.03	ODU-3	DUCTED CONCEALED	600/512/406	20,840	18,000	13,300	9-5/8"X21-11/16"X31-1/2"	77	208V/1PH	1.6	15	DAIKIN	FXSQ18TAVJU	
IDU-4.01-ALT	ODU-4-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-4.02-ALT	ODU-4-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-4.03-ALT	ODU-4-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-4.04-ALT	ODU-4-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-4.05-ALT	ODU-4-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-5.01-ALT	ODU-5-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-5.02-ALT	ODU-5-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-5.03-ALT	ODU-5-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-5.04-ALT	ODU-5-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-6.01-ALT	ODU-6-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-6.02-ALT	ODU-6-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-6.03-ALT	ODU-6-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-6.04-ALT	ODU-6-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.01-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.02-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.03-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.04-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.05-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.06-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.01-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.02-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.03-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.04-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.05-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-9.01-ALT	ODU-9-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-9.02-ALT	ODU-9-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-9.03-ALT	ODU-9-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-9.04-ALT	ODU-9-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-9.05-ALT	ODU-9-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-9.06-ALT	ODU-9-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-10.01	ODU-10	WALL MOUNTED	635/470	26,500	24,000	18,000	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FXAQ24PVJU	1,2
IDU-10.02	ODU-10	WALL MOUNTED	635/470	26,500	24,000	18,000	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FXAQ24PVJU	1,2
IDU-10.03	ODU-10	WALL MOUNTED	635/470	26,500	24,000	18,000	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FXAQ24PVJU	1,2
IDU-10.04	ODU-10	WALL MOUNTED	635/470	26,500	24,000	18,000	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FXAQ24PVJU	1,2
IDU-10.05	ODU-10	WALL MOUNTED	635/470	8,500	7,500	6,300	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FXAQ07PVJU	1,2
IDU-11.01	ODU-11	WALL MOUNTED	316/247/132	N/A	12,000	10,900	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FTK12B	1,2

NOTES:

1. PROVIDE CONDENSATE PUMP
2. INTEGRATE INTO BACNET BMS SYSTEM (SEE CONTROLS DRAWINGS)
3. PROPOSED AS AN ADD/ALTERNATE.

UNIT VENTILATOR

TAG	SERVED BY	SUPPLY FAN: AIRFLOW (CFM)	SUPPLY FAN: OA (CFM)	COOLING: TOT. CAP. (BTU/H)	COOLING: SENS. CAP. (BTU/H)	COOLING: EAT DB (°F)	COOLING: EAT WB (°F)	COOLING: LAT DB (°F)	COOLING: LAT WB (°F)	REFRIGERANT TYPE	HEATING: TOT. CAP (BTU/H)	HEATING: EAT DB (°F)	HEATING: LAT DB (°F)	HEATING: COIL ROWS	HEATING: FLOW (GPM)	HEATING: EWT (°F)	HEATING: LWT (°F)	ELECTRICAL: VOLT/HZ/PHASE	ELECTRICAL: MCA (A)	ELECTRICAL: MOCP (A)	UNIT SIZE: L	UNIT SIZE: W	UNIT SIZE: H	WEIGHT (LB)	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL	NOTES
UV-1	ODU-12	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-2	ODU-12	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-2C	ODU-12	750	210	25635	15482	80 °F	67 °F	61 °F	56 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-3	ODU-12	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-4	ODU-12	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-5	ODU-13	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-6	ODU-13	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-7	ODU-14	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-8	ODU-13	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-9A	ODU-13	750	210	25635	15482	80 °F	67 °F	61 °F	56 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-9B	ODU-13	750	210	25635	15482	80 °F	67 °F	61 °F	56 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-10	ODU-13	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-11	ODU-14	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-12	ODU-14	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-13	ODU-14	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-14	ODU-14	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-15	ODU-14	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-17	ODU-15	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-109	ODU-20	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-110	ODU-20	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-120	ODU-15	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-121	ODU-15	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-122	ODU-18	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-123	ODU-15	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-124	ODU-21	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-125A	ODU-15	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-125B	ODU-15	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-126A	ODU-21	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-126B	ODU-21	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-127	ODU-18	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-129	ODU-18	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-131A	ODU-18	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-131B	ODU-18	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-133	ODU-18	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-135A	ODU-21	750	210	25635	15482	80 °F	67 °F	61 °F	56 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-135B	ODU-21	750	210	25635	15482	80 °F	67 °F	61 °F	56 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-137	ODU-21	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-139	ODU-20	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-141	ODU-20	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-220	ODU-17	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-221	ODU-16	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-222	ODU-17	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-223	ODU-16	1250	250	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-224	ODU-17	750	210	25635	15482	80 °F	67 °F	61 °F	56 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-225	ODU-16	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-226	ODU-19	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-227	ODU-17	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-227A	ODU-16	1500	470	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-228	ODU-20	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-229	ODU-17	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-231	ODU-19	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-233	ODU-19	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	
UV-235	ODU-19	1500	500	50656	34148	80 °F	67 °F	58 °F	56 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-237A	ODU-19	750	210	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	
UV-237B	ODU-19	750	210	25635	15482	80 °F	67 °F	61 °F	56 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-239	ODU-20	1250	420	40407	28022	80 °F	67 °F	59 °F	56 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	

NOTES:

1. PROVIDE PLENUM BACK
2. CUSTOM LOUVERS PROVIDED BY CONTRACTOR
3. CONTRACTOR TO PROVIDE 1/8" MINIMUM SPLITTER TO SEPERATE OA AND CONDENSOR AIR
4. ALL HYRDONIC CONNECTION ARE ON THE LEFT OF THE UNIT, CONTRACTOR TO ROUTE PIPING AS REQUIRED
5. PROVIDE A MERV-13 FILTER AND A BACKUP MERV 13 FILTER

AIR COOLED CONDENSING UNITS (ACCU)

TAG	SERVES	LOCATION	NOMINAL TONS	COMPRESSORS	STAGES	COOLING: MBH	COOLING: AMBIENT DB	COOLING: EER	SOUND LEVEL (dbA)	ELECTRICAL: SUPPLY VOLTAGE	ELECTRICAL: MCA	ELECTRICAL: MOP	WEIGHT (LBS)	REFRIGERANT TYPE	LINE SIZES (IN) SUCTION / LIQUID	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL NUMBER	NOTES
ACCU T-1	PLAYROOM WEST AND STAGE	ROOF	15	2	2	143	95	14.2		208V/3PH	53	80	647	R-410A	1.625 / 0.625	DAIKIN	TBD	1,2,3,4
ACCU T-2	PLAYROOM EAST	ROOF	12	1	2	115	95	11.2	84.7	208V/3PH	47.7	80	345	R-410A	1.625 / 0.625	DAIKIN	TBD	1,2,3,4
ACCU T-5	GYM	ROOF	20	3	4	253	95	12.3	86	208V/3PH	95.8	125	1891	R-410A	1.38 (2) / 0.62 (2)	DAIKIN	TBD	1,2,3,4
ACCU T-6	GYM	ROOF	20	3	4	253	95	12.3	86	208V/3PH	95.8	125	1891	R-410A	1.38 (2) / 0.62 (2)	DAIKIN	TBD	1,2,3,4

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NOTES:

1. COMPRESSOR WARRANTY - 5 YEARS
2. PARTS WARRANTY - 1 YEAR
3. LOW AMBIENT TO 45 DEGREES
4. PROVIDE ARR VALVE PER CIRCUIT
5. UNITS TO BE PRICED BASED ON 2025 NATIONAL EPA STANDARDS FOR REFRIGERANT. UNITS TO UTILIZE R-32 REFRIGERANT OR EQUAL.

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AIR-COOLED VRV HEAT PUMP CONDENSING UNIT

TAG	NOMINAL HEATING CAPACITY (BTU/H)	NOMINAL COOLING CAPACITY (BTU/H)	REFRIGERANT: TYPE	REFRIGERANT: FACTORY CHARGE (LBS)	DIMENSIONS (L X W X H)	WEIGHT (LBS)	ELECTRICAL: VOLTAGE/PHASE	ELECTRICAL: RLA	ELECTRICAL: MCA	ELECTRICAL: MOP	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL NUMBER	NOTES
ODU-1	73,000	69,000	R-410A	13.0	66-11/16" X 36-11/16" X 30-3/16"	496	208V/3PH	11.1	27.3	30	DAIKIN	RXYQ72AATJA	
ODU-2.01	13,400	10,600	R-410A	2.09	21-5/8" X 26-9/16" X 11-3/16"	70	208V/1PH	12.0	13.0	15	DAIKIN	RXL12QMVJU9	
ODU-2.02	13,400	10,600	R-410A	2.09	21-5/8" X 26-9/16" X 11-3/16"	70	208V/1PH	12.0	13.0	15	DAIKIN	RXL12QMVJU9	
ODU-2.03	13,400	10,600	R-410A	2.09	21-5/8" X 26-9/16" X 11-3/16"	70	208V/1PH	12.0	13.0	15	DAIKIN	RXL12QMVJU9	
ODU-3	52,000	48,000	R-410A	7.5	39" X 36.6 X 12-5/8"	176	208V/1PH	19	29.1	35	DAIKIN	RXTQ48TBVJUA	
ODU-4-ALT	57,000	57,500	R-410A	7.9	53.0" x 35.4" x 12.6"	225	208V/1PH	23.2	29.1	35	DAIKIN	RXTQ60TBVJUA	1
ODU-5-ALT	52,000	48,000	R-410A	7.5	39" X 37" X 12-5/8"	176	208V/1PH	19	29.1	35	DAIKIN	RXTQ48TBVJUA	1
ODU-6-ALT	52,000	48,000	R-410A	7.5	39" X 37" x 12-5/8"	176	208V/1PH	19	29.1	35	DAIKIN	RXTQ48TBVJUA	1
ODU-7-ALT	73,000	69,000	R-410A	13.0	65.4" x 36.6" x 30.1"	496	208V/3PH	11.1	27.3	30	DAIKIN	RXYQ72AATJA	1
ODU-8-ALT	57,000	57,500	R-410A	7.9	53.0" x 35.4" x 12.6"	225	208V/1PH	23.2	29.1	35	DAIKIN	RXTQ60TBVJUA	1
ODU-9-ALT	73,000	69,000	R-410A	13.0	66-11/16" X 36-11/16" X 30-3/16"	496	208V/3PH	11.1	27.3	30	DAIKIN	RXYQ72AATJA	1
ODU-10	108,000	96,000	R-410A	22.7	66-11/16" X 36-11/16" X 30-3/16"	525	208V/3PH	23.8	36.3	45	DAIKIN	RXYQ96AATJA	
ODU-11	N/A	13,300	R-410A	2.09	21-11/16" X 26-1/2" X 11-3/16"	60	208V/1PH	2.9	4	15	DAIKIN	RK12BXVJU	
ODU-12	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	25.8	47.8	50	DAIKIN	RXYQ264AATJA	
ODU-13	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	25.8	47.8	50	DAIKIN	RXYQ264AATJA	
ODU-14	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	25.8	47.8	50	DAIKIN	RXYQ264AATJA	
ODU-15	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	25.8	47.8	50	DAIKIN	RXYQ264AATJA	
ODU-16	216,000	192,000	R-410A	25.8	68 7/8" X 30 1/8" X 65 3/8"	904	208V/3PH	16.6 + 16.6 A	59.8	60	DAIKIN	RXYQ192AATJA	
ODU-17	189,000	168,000	R-410A	25.8	48 13/16" X 30 1/8" X 35 3/8"	750	208V/3PH	12.5 + 20.0 A	54.9	60	DAIKIN	RXYQ168AATJA	
ODU-18	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	25.8	47.8	50	DAIKIN	RXYQ264AATJA	
ODU-19	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	25.8	47.8	50	DAIKIN	RXYQ264AATJA	
ODU-20	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	25.8	47.8	50	DAIKIN	RXYQ264AATJA	
ODU-21	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	25.8	47.8	50	DAIKIN	RXYQ264AATJA	

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NOTES:

1. PROPOSED AS AN ADD/ALTERNATE.

AIR HANDLING UNITS

TAG	LOCATION	SERVES	AREA	FAN: TOTAL CFM	FAN: OA CFM	FAN: MIN OA	FAN ESP (IN WG)	HW HEATING: GPM	HW HEATING: EAT	HW HEATING: LAT	HW HEATING: EWT	HW HEATING: LWT	HW HEATING: PD (FT)	HW HEATING: MBH	DX COOLING: EA (DB/WB)	DX COOLING: LA (DB/WB)	DX COOLING: SENSIBLE COOLING (MBH)	DX COOLING: TOTAL COOLING (MBH)	ELECTRICAL: V/PH	ELECTRICAL: MOTOR HP	ELECTRICAL: FLA	ELECTRICAL: BHP	ELECTRICAL: MCA	ELECTRICAL: MOP	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL NUMBER	NOTES
T-1	STAGE	PLAYROOM WEST AND STAGE	3130	3600	1746	349	0.8	13.7	36.6	87.3	180	150	15.64	200	84.8 / 71.9	60.9 / 59.8	93.9	150.3	208V/3PH	2 @ 4.42	20.8	1.27	26	35	DAIKIN	BCHE0401	1,2,3,4
T-2	STAGE	PLAYROOM EAST	1885	2600	1320	264	0.8	10.1	34.9	87.0	180	150	10.33	148.1	85.8 / 72.0	60.8 / 59.6	71.1	111	208V/3PH	4.42	11.5	0.96	14.4	25	DAIKIN	BCHE0301	1,2,3,4
T-5	GYM	GYM	3312.5	5130	2480	496	0.8	16.8	37.2	83.2	180	150	4	257.9	84.9 / 70.3	57.0 / 55.5	156.5	245	208V/3PH	2 @ 2.1	11.4	2.8	12.8	15	DAIKIN	CAH015GDCM	1,3,4
T-6	GYM	GYM	3312.5	5130	2480	496	0.8	16.8	37.2	83.2	180	150	4	257.9	84.9 / 70.3	57.0 / 55.5	156.5	245	208V/3PH	2 @ 2.1	11.4	2.8	12.8	15	DAIKIN	CAH015GDCM	1,3,4

NOTES:

1. CONTROLS BY PROJECT CONTROLS CONTRACTOR
2. UNITS HAVE LENGTH LIMITATIONS, TBD
3. HORIZONTAL UNITS WITH END SUPPLY, END OA, AND BOTTOM RA
4. PROVIDE MIXING BOX AND MERV 13 FILTERS
5. HORIZONTAL UNITS WITH END SUPPLY, TOP OA, AND BOTTOM RA
6. PROVIDE BACKUP MERV 13 FILTER

EXHAUST FAN

TAG	SERVES	TYPE	AIRFLOW CFM	TSP IN.WG	DRIVE	DIMENSIONS	RPM	MOTOR HP	FLA	MOP	VOLTAGE/PHASE	NOISE (SONES)	CONTROL	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL NUMBER	NOTES
EF-18	PLAYROOM	ROOF DOWNBLAST	1700	0.25	DIRECT	22" x 22"		1/2	6.6	15	115V/1PH	9	0-10 vdc	GREENHECK	G-140-VG	1,2,3,5
EF-19	PLAYROOM	ROOF DOWNBLAST	1600	0.25	DIRECT	22" x 22"		1/2	6.6	15	115V/1PH	9	0-10 vdc	GREENHECK	G-140-VG	1,2,3,5
EF-21	GYM	ROOF DOWNBLAST	4455	0.25	BELT	40" x 40"		1/2	9.8	20	115V/1PH	6.4	VFD	GREENHECK	GB-300-314OXQD DRI	1,2,3,4
EF-22	GYM	ROOF DOWNBLAST	4455	0.25	BELT	40" x 40"		1/2	9.8	20	115V/1PH	6.4	VFD	GREENHECK	GB-300-314OXQD DRI	1,2,3,4
EF-33	KITCHEN	ROOF DOWNBLAST	5600	0.25	BELT	41.5" x 41.5"	460	1.0	8.8	15	208V/1PH	8.2	VFD	GREENHECK	GB-300-15140X3Q D-DR1	1,2,3,4

NOTES:

1. PROVIDE 12 INCH INSULATED ROOF CURB
2. PROVIDE BACKDRAFT DAMPER
3. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH
4. PROVIDE VFD TO BE MOUNTED INDOORS
5. ECM MOTOR

DIFFUSER SCHEDULE

No.	DESCRIPTION	NECK SIZE	MOUNTING	FINISH	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL	NOTES
A	SUPPLY DIFFUSER, STEEL	18" Ø	SURFACE	BY ARCH	PRICE	RID	

DUCTED HEATING COIL

TAG	CFM	EAT / LAT	CAPACITY	EWT/LWT	FLOWRATE	FACE AREA	FACE VELOCITY (FPM)	# ROWS	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL NUMBER	NOTES
HC-H1	3250	58F / 90F	112,320 BTUH	160/140	11.2 GPM	6.5 SQFT	500	1			
HC-H2	3250	58F / 90F	112,320 BTUH	160/140	11.2 GPM	6.5 SQFT	500	1			
HC-H3	1500	58F / 90F	51,840 BTUH	160/140	5.2 GPM	3.0 SQFT	500	1			
HC-H4	4500	58F / 90F	155,520 BTUH	160/140	15.5 GPM	9.0 SQFT	500	1			

PACKAGED COOLING ROOFTOP UNIT WITH ENERGY RECOVERY WHEEL SCHEDULE

TAG	LOCATION	SERVICE	TOTAL CFM	OA CFM	ESP	EER/IEER	DX COOLING: TOTAL CAPACITY	DX COOLING: SENSIBLE CAPACITY	DX COOLING: REFIGERANT	DX COOLING: EAT DB/WB	DX COOLING: LAT DB/WB	HOT GAS REHEAT: CAPACITY	HOT GAS REHEAT: LAT DB/WB	ERW SUMMER: OA DB/WB EAT	ERW SUMMER: RA DB/WB EAT	ERW SUMMER: MIXED AIR DB/WB LAT	ERW SUMMER: REMOVED CAPACITY	ERW SUMMER EFFECTIVENESS: TOTAL	ERW SUMMER EFFECTIVENESS: SENSIBLE	ERW WINTER: OA DB/WB EAT	ERW WINTER: RA DB/WB EAT	ERW WINTER: MIXED AIR DB/WB LAT	ERW WINTER: REMOVED CAPACITY	ERW WINTER EFFECTIVENESS: TOTAL	ERW WINTER EFFECTIVENESS: SENSIBLE	DIMENSIONS (LxHxW)	WEIGHT (LBS)	ELECTRICAL: V/PH	ELECTRICAL: FLA	ELECTRICAL: MCA	ELECTRICAL: MOP	BASIS OF DESIGN: MANUFACTURER	BASIS OF DESIGN: MODEL NUMBER	NOTES
RTU-H-1	ROOF	STAGE	3250	1535	1.0"	12.0/21.7	96,476 BTUH	81,395 BTUH	R32	76.8F/63.5F	53F/53F	60,398 BTUH	70F/59F	95F/75F	75F/62F	78.5F/63.5F	57,020 BTUH	0.78	0.8	0F/0F	75F/50F	58.8F/43.9F	108,662 BTUH	0.8	0.81	121.6 X 85.9 X 73.4	2299	208V/3PH	64.9	75.4	110	DAIKIN	DPSC07B	
RTU-H-2	ROOF	CAFETERIA	3250	1535	1.0"	12.0/21.7	96,476 BTUH	81,395 BTUH	R32	76.8F/63.5F	53F/53F	60,398 BTUH	70F/59F	95F/75F	75F/62F	78.5F/63.5F	95	0.78	0.8	0F/0F	75F/50F	58.8F/43.9F	108,662 BTUH	0.8	0.81	121.6 X 85.9 X 73.4	2299	208V/3PH	64.9	75.4	110	DAIKIN	DPSC07B	
RTU-H-3	ROOF	CAFETERIA	1500	572	0.75"	14.1/20.28	37,774 BTUH	35,059 BTUH	R32	76.8F/63.5F	54F/54F	25,734 BTUH	70F/60F	95F/75F	75F/62F	78.5F/63.5F	95	0.75	0.78	0F/0F	75F/50F	58.8F/43.9F	38,504 BTUH	0.77	0.78	103 X 69.5 X 53.3	1447	208V/3PH	30.8	35.5	50	DAIKIN	DPSC03B	
RTU-H-4	ROOF	KITCHEN	4500	2250	1.0"	12.4/21.3	124,934 BTUH	108,741 BTUH	R32	77.5F/64F	54F/54F	76,271 BTUH	70F/60F	95F/75F	75F/62F	78.5F/63.5F	95	0.73	0.74	0F/0F	75F/50F	58.8F/43.9F	144,599 BTUH	0.74	0.75	121.6 X 85.9 X 73.4	2452	208V/3PH	73.7	73.7	125	DAIKIN	DPSC10B	

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CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 018281
LAND SURVEYING: 017976
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT

124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH
ENLARGED CITY SCHOOL DISTRICT

MEADOW HILL GEM SCHOOL

124 MEADOW HILL ROAD
NEWBURGH, NY 12550

NO:	DATE:	DESCRIPTION:
2	9/3/2024	ADDENDUM#2

Revisions

S.E.D. NUMBER: 44-16-00-01-0-035-014

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME:

MECHANICAL SCHEDULES

DRAWING NUMBER:

M601

HALLWAY SPLIT SYSTEM - POINTS LIST

POINT #	POINT DESCRIPTION	READ POINTS	READ/WRITE POINTS	SOFTWARE POINTS SCHEDULE	ALARM	TREND	NOTES
1	SYSTEM ENABLE/DISABLE		X				
2	OCCUPIED HEATING SETPOINT		X				
3	UNOCCUPIED HEATING SETPOINT		X				
4	OCCUPIED COOLING SETPOINT		X				
5	UNOCCUPIED COOLING SETPOINT		X				
6	GENERAL ALARM		X		X		
7	SPACE TEMPERATURE	X			X	X	

OFFICE SPLIT SYSTEM - POINTS LIST

POINT #	POINT DESCRIPTION	READ POINTS	READ/WRITE POINTS	SOFTWARE POINTS SCHEDULE	ALARM	TREND	NOTES
1	SYSTEM ENABLE/DISABLE		X				
2	OCCUPIED MODE		X	X			
3	UNOCCUPIED MODE		X	X			
4	GENERAL ALARM		X		X		
5	SPACE TEMPERATURES	X			X	X	PROVIDE USER ADJUSTABLE THERMOSTATS IN EACH SPACE

NOTES:
1. CONTRACTOR TO PROGRAM DEFAULT HEATING AND COOLING SETPOINTS
2. CONTRACTOR TO PROGRAM SETPOINT ADJUSTMENT RANGE +/- 2 DEG. F
3. SCHEDULES SHALL BE PROGRAMMED IN BMS OR SPLIT SYSTEM CONTROLLER

ACCUS - POINTS LIST

POINT #	POINT DESCRIPTION	READ POINTS	READ/WRITE POINTS	SOFTWARE POINTS SCHEDULE	ALARM	TREND	NOTES
1	SYSTEM ENABLE/DISABLE		X				
2	COMPRESSOR STATUS	X			X		
3	MODEL SELECT (HEATING/COOLING)		X			X	
4	GENERAL ALARM				X		
5	COMPRESSOR START/STOP (2)		X			X	

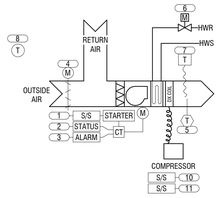
NOTES:
1. CONTRACTOR TO PROGRAM DEFAULT HEATING AND COOLING SETPOINTS
2. CONTRACTOR TO PROGRAM SETPOINT ADJUSTMENT RANGE +/- 2 DEG. F
3. SCHEDULES SHALL BE PROGRAMMED IN BMS OR SPLIT SYSTEM CONTROLLER

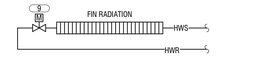
SELF CONTAINED DX UNIT VENTILATOR - POINTS LIST

ABBREVIATION KEY:
AI = ANALOG INPUT, AO = ANALOG OUTPUT, DI = DIGITAL INPUT, DO = DIGITAL OUTPUT, AV = ANALO...
DV = DIGITAL VALUE

NOTES:

POINT #	POINT DESCRIPTION	HARWARE POINTS AI	AO	DI	DO	SOFTWARE POINTS AV	DV	SCHED	ALARM	TREND	NOTES
1	FAN MOTOR START/STOP				X			X			
2	FAN MOTOR STATUS			X						X	
3	FAN MOTOR ALARM			X					X		
4	DA/RA DAMPER		X			X		X			
5	SUPPLY TEMPERATURE	X							X		
6	HEATING COIL CONTROL VALVE		X							X	
7	LOW LIMIT FREEZESTAT			X					X		
8	SPACE TEMPERATURE	X							X	X	
9	FIN TUBE CONTROL VALVE		X							X	
10	COMPRESSOR START/STOP				X						
11	COMPRESSOR STATUS	X							X		





NOTE: FIN RADIATION CONTROL IS NOT PRESENT IN ALL SPACES.

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

OCCUPIED MODE: THE UNIT SHALL MAINTAIN A 70°F (ADJ.) HEATING SETPOINT, 74°F COOLING SETPOINT.

UNOCCUPIED MODE: (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A 60°F (ADJ.) HEATING SETPOINT, 80°F COOLING SETPOINT.

SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE SPACE TEMPERATURE HEATING SETPOINT AT THE SPACE SENSOR.

F/B DAMPER AND HEATING COIL VALVE:
WHENEVER THE SPACE TEMPERATURE FALLS BELOW THE HEATING SETPOINT, MODULATE THE FACE AND BYPASS DAMPER TO MAINTAIN SETPOINT. THE HOT WATER COIL VALVE SHALL BE OPEN WHENEVER THE OAT <65°F. HEATING SHALL BE ENABLED.

ECONOMIZER MODE WHEN OUTSIDE AIR IS ABOVE 55ºF (ADJ.):

WHENEVER THE SPACE TEMPERATURE RISES ABOVE SPACE SETPOINT, THE HOT WATER COIL SHALL CLOSE. UPON FURTHER RISE IN TEMPERATURE, THE OUTSIDE AIR DAMPER SHALL MODULATE OPEN TO MAINTAIN THE SPACE TEMPERATURE.

IF THE SPACE TEMPERATURE RISES 2 DEGREES ABOVE THE SETPOINT, THE ECONOMIZER DAMPER SHALL RETURN TO MINIMUM POSITION AND THE COMPRESSOR SHALL CYCLE TO MAINTAIN THE SPACE TEMPERATURE.

DISCHARGE AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

OUTSIDE AIR DAMPER:
THE OUTSIDE AIR DAMPER SHALL OPEN TO ITS MINIMUM OUTSIDE AIR POSITION WHENEVER:
-THE UNIT IS IN OCCUPIED MODE AND
-THE FAN IS ON.
-THE UNIT IS IN COOLING MODE

EXISTING BUILDING CONTROLS: WHEN OA DAMPERS OPEN, EXG. RELIEF AIR DAMPERS SHALL OPEN AND RELIEF AIR EXHAUST FANS SHALL RUN.

FAN:
DURING OCCUPIED MODE THE SUPPLY FAN WILL RUN AT A CONSTANT, MANUALLY DESIGNATED SPEED (LOW/MED/HIGH).
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS:
- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).
- HIGH SPACE TEMPERATURE: IF THE SPACE TEMPERATURE IS GREATER THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT.
- LOW SPACE TEMPERATURE: IF THE SPACE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT.
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

FIN RADIATION HEATING VALVE (IF EXISTING IN PLACE):
WHERE EXISTING, THE FIN RADIATION SHALL:
-PROVIDE THE FIRST STAGE OF HEATING.
-PROVIDE UNOCCUPIED MODE HEATING.
-BE DISABLED WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 55 DEG F (ADJ.)

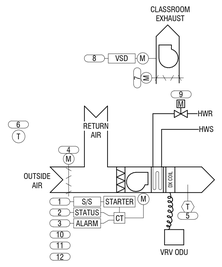
1 SELF CONTAINED DX UNIT VENTILATOR CONTROLS SCHEMATIC
M701 NOT TO SCALE

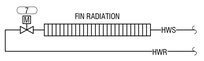
VRF UNIT VENTILATOR - POINTS LIST

ABBREVIATION KEY:
AI = ANALOG INPUT, AO = ANALOG OUTPUT, DI = DIGITAL INPUT, DO = DIGITAL OUTPUT, AV =...
DV = DIGITAL VALUE

NOTES:

POINT #	POINT DESCRIPTION	HARWARE POINTS AI	AO	DI	DO	SOFTWARE POINTS AV	DV	SCHED	ALARM	TREND	NOTES
1	FAN MOTOR START/STOP				X						
2	FAN MOTOR STATUS				X					X	
3	FAN MOTOR ALARM				X				X		
4	OA/RA DAMPER		X			X					
5	SUPPLY TEMPERATURE	X							X		
6	SPACE TEMPERATURE	X							X	X	
7	FIN TUBE CONTROL VALVE		X							X	
7	EF DAMPER				X				X		
8	FAN SPEED		X								
9	HEATING COIL CONTROL VALVE		X							X	
10	FACE/BYPASS DAMPER		X							X	
11	MODE TO VRV SYSTEM					X				X	
12	VRV ODU TEMP. SENSOR (EACH CLASSROOM)	X							X	X	





NOTE: FIN RADIATION CONTROL IS NOT PRESENT IN ALL SPACES.

OCCUPIED MODE: THE UNIT SHALL MAINTAIN A 70°F (ADJ.) HEATING SETPOINT, 74°F COOLING SETPOINT.

UNOCCUPIED MODE: (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A 60°F (ADJ.) HEATING SETPOINT, 80°F COOLING SETPOINT.

SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE SPACE TEMPERATURE HEATING SETPOINT AT THE SPACE SENSOR.

F/B DAMPER AND HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE SPACE TEMPERATURE. WHENEVER THE SPACE TEMPERATURE FALLS BELOW THE HEATING SETPOINT, MODULATE THE FACE AND BYPASS DAMPER TO MAINTAIN SETPOINT. THE HOT WATER COIL VALVE SHALL BE OPEN.
HEATING SHALL BE ENABLED WHENEVER:
-OUTSIDE AIR TEMPERATURE IS LESS THAN 50°F (ADJ.) AND OAT<40F - COIL 100% OPEN AND MODULATE F/B DAMPER TO MAINTAIN TEMPERATURE OR OAT>.40F - F/B FULL FACE AND MODULATE COIL TO MAINTAIN TEMPERATURE
-THE SPACE TEMPERATURE IS BELOW HEATING SETPOINT.

ECONOMIZER MODE WHEN OUTSIDE AIR IS ABOVE 60ºF (ADJ.):

WHENEVER THE F/B DAMPER IS IN FULL BYPASS POSITION AND THE SPACE TEMPERATURE RISES ABOVE SPACE SETPOINT, THE HOT WATER COIL SHALL CLOSE. UPON FURTHER RISE IN TEMPERATURE, THE OUTSIDE AIR DAMPER SHALL OPEN TO 100% TO ALLOW FOR ECONOMIZER COOLING.

DISCHARGE AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

OUTSIDE AIR DAMPER:
THE OUTSIDE AIR DAMPER SHALL OPEN TO ITS MINIMUM OUTSIDE AIR POSITION WHENEVER:
-THE UNIT IS IN OCCUPIED MODE AND
-THE FAN IS ON.

EXISTING BUILDING CONTROLS: WHEN OA DAMPERS OPEN, EXG. RELIEF AIR DAMPERS SHALL OPEN AND RELIEF AIR EXHAUST FANS SHALL RUN.

FAN:
DURING OCCUPIED MODE THE SUPPLY FAN WILL RUN AT A CONSTANT, MANUALLY DESIGNATED SPEED (LOW/MED/HIGH).
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS:
- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).
- HIGH SPACE TEMPERATURE: IF THE SPACE TEMPERATURE IS GREATER THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT.
- LOW SPACE TEMPERATURE: IF THE SPACE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT.
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

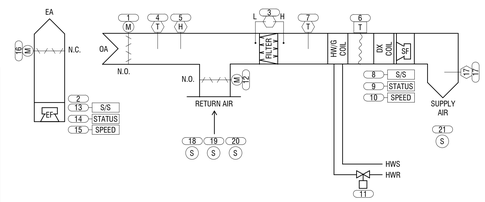
FIN RADIATION HEATING VALVE (IF EXISTING IN PLACE):
WHERE EXISTING, THE FIN RADIATION SHALL:
-PROVIDE THE SECOND STAGE OF HEATING.
-PROVIDE UNOCCUPIED MODE HEATING.
-BE DISABLED WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 60 DEG F (ADJ.)

EXISTING CLASSROOM RELIEF SYSTEM:
EXISTING RELIEF SYSTEM SHALL OPERATE DURING OCCUPIED MODES AND BE OFF DURING UNOCCUPIED MODE.

3 VRF UNIT VENTILATOR CONTROLS SCHEMATIC
M701 1/8" = 1'-0"

ROOF TOP UNIT CONTROLS - POINTS LIST

Point #	Point Description	HARDWARE POINTS AI	AO	DI	DO	AV	SOFTWARE POINTS DV	SCHED	ALARM	TREND	GRAPHIC	NOTES
1	OUTSIDE AIR DAMPER		X								X	
2	OUTDOOR AIR FILTER CHANGE							X			X	
3	OUTDOOR AIR FILTER DIFFERENTIAL PRESSURE			X						X	X	
4	OUTSIDE AIR TEMPERATURE	X								X	X	
5	OUTSIDE AIR HUMIDITY	X								X	X	
6	FREEZESTAT - ELECTRIC MULTIPLE CONTACT			X					X		X	
7	MIXED AIR TEMPERATURE	X								X	X	
8	SUPPLY FAN START/STOP				X							
9	SUPPLY FAN STATUS (CURRENT SENSING SWITCH)			X						X		
10	SUPPLY FAN SPEED		X							X		
11	HOT WATER VALVE		X							X		
12	RETURN AIR DAMPER		X								X	
13	EXHAUST FAN START/STOP				X					X		
14	EXHAUST FAN STATUS (CURRENT SENSING SWITCH)			X								
15	EXHAUST FAN SPEED		X									
16	EXHAUST AIR DAMPER				X						X	
17	DISCHARGE AIR TEMP	X								X	X	
18	SPACE TEMPERATURE SENSOR	X								X		
19	SPACE HUMIDITY SENSOR	X								X		
20	CO2 SENSOR	X								X		
21	CO2 SENSOR	X								X		



SETPOINTS

OCCUPIED HEATING – 70ºF
OCCUPIED COOLING - 73ºF

UNOCCUPIED HEATING – 63ºF
UNOCCUPIED COOLING - 85ºF

FREEZE PROTECTION

THE FREEZE STAT SETPOINT SHALL BE 40 DEGF. IF THE FREEZE STAT TRIPS, THE FANS SHALL STOP, THE DAMPERS SHALL MODULATE TO FULL RETURN POSITION AND THE HEATING COIL VALVE SHALL OPEN 50%. AN ALARM SHALL BE SENT.

HEATING MODE

THE HEATING CONTROL VALVE SHALL MODULATE TO MAINTAIN THE HEATING SETPOINT TEMPERATURE

ECONOMIZER MODE

IF THE OUTDOOR ENTHALY IS LESS THAN THE INDOOR INTHALPY AND THE SPACE TEMPERATURE IS ABOVE THE COOLING SETPOINT, ECONOMIZER COOLING SHALL BE ENABLED. THE MIXED AIR DAMPERS SHALL USE OUTSIDE AIR TO MAINTAIN THE COOLING SETPOINT. THE EXHAUST FAN SHALL MODULATE IN SYNC WITH THE OUTSIDE AIR DAMPER POSITION TO MAINTAIN SPACE PRESSURE BALANCE.

COOLING MODE

THE MIXED DAMPERS SHALL BE AT THE MINIMUM OCCUPIED POSITION OR THE POSITION DICTATED BY THE DCV CONTROL, WHICHEVER IS GREATER. THE ACCU SHALL START AND MODULATE TO MAINTAIN THE SPACE TEMPERATURE. THE MINIMUM SUPPLY AIR TEMPERATURE SHALL BE 50ºF.

DCV CONTROL

OCCUPIED MODE

THE MIXED AIR DAMPERS SHALL MODULATE TO MAINTAIN A CO2 SETPOINT OF 800 PPM (ADJ). THE MIXED AIR DAMPERS SHALL BEGIN TO MODULATE OPEN WHEN THE INDOOR CO2 LEVEL IS 100 PPM OVER THE OUTDOOR CO2 LEVEL.

THE MINIMUM POSITION OF THE OA DAMPER SHALL BE SET BY THE AIR BALANCER TO MAINTAIN THE MINIMUM AIR FLOW SHOWN ON THE SCHEDULE.

PURGE MODE

PRE-OCCUPANCY – THERE SHALL BE A 30 MINUTE PRE-OCCUPANCY PURGE WITH THE OUTSIDE DAMPERS SET TO THE MAXIMUM AIR FLOW POSITION SHOWN ON THE SCHEDULE AS SET BY THE AIR BALANCER.

POST-OCCUPANCY FLUSH - THE POST-OCCUPANCY FLUSH SHALL OPERATE UNTIL CO2 LEVELS ARE REDUCED TO 450 PPM. DURING POST-OCCUPANCY FLUSH THE DAMPERS SHALL BE IN THE MINIMUM VENTILATION POSITION AS SHOWN ON THE AHU SCHEDULE.

SENSOR FAILURE

IF A CO2 SENSOR FAILS, THE MIXED AIR DAMPERS SHALL OPEN TO THE MAXIMUM POSITION.

COMMISSIONING AND RECORD KEEPING REQUIREMENTS

THE CO2 SENSOR CALIBRATION SHALL BE CHECKED ONE YEAR AFTER INITIAL COMMISSIONING IS COMPLETED.
CO2 CONCENTRATION READINGS SHALL BE LOGGED BY THE BMS ON A 15-MINUTE INTERVAL. RECORDS MUST BE KEPT FOR A MINIMUM OR THREE YEARS.

SAFETIES

ALARMS SHALL BE PROVIDED AS FOLLOWS:

AN ALARM SHALL BE GENERATED BY EACH OF THE ALARMS SHOWN ON THE POINTS LIST.
- IF ANY DIGITAL STATUS POINT DISAGREES WITH THE COMMAND FOR MORE THAN 5 MINUTES AN ALARM SHALL BE GENERATED
- IF ANY TEMPERATURE SETPOINT IS MORE THAN 4 DEGREES FROM THE SETPOINT FOR MORE THEN 10 MINUTES, AN ALARM SHALL BE GENERATED
- FILTER CHANGE NOTIFICATION: FILTER DIFFERENTIAL PRESSURE EXCEEDS SETPOINT (ADJ.).
- FAN SHUTDOWN UPON DUCT SMOKE DETECTOR ACTIVATION

FAN OPERATION

OCCUPIED MODE
THE SUPPLY FAN SHALL BE RUN CONTINUOUSLY UNLESS SHUTDOWN BY SAFETIES. THE SUPPLY AIR FANS SPEED SHALL BE OPTIMIZED IN THE FIELD DURING SYSTEM BALANCING TO DELIVER THE SCHEDULED SUPPLY AIRFLOW.

THE OA AND RA DAMPERS SHALL BE POSITIONED TO DELIVER THE APPROPRIATE AMOUNT OF OUTSIDE AIR AS DESCRIBED BELOW.

THE EXHAUST FAN SHALL RUN CONTINUOUSLY. THE SPEED SHALL BE MODULATED ACCORDING TO THE OUTSIDE AIR DAMPER POSITION. THE MODULATION SCHEDULE SHALL BE SET BY THE AIR BALANCER.

UNOCCUPIED MODE

GIDNEY SEQUENCE

- THE SUPPLY FAN AND EXHAUST FAN SHALL BE OFF. EXISTING FINNED TUBE RADIATION SHALL MAINTAIN THE UNOCCUPIED SPACE TEMPERATURE.

HILLS SEQUENCE-

THE SUPPLY FAN AND EXHAUST FAN SHALL BE OFF. IF THE SETPONT TEMPERATURE DROPS TWO DEGREES BELOW THE UNOCCUPIED SETPOINT, THE SUPPLY FAN SHALL START AND THE HEATING COIL SHALL OPEN TO 50% POSITION UNTIL THE SPACE TEMPERATURE IS 2 DEGREES ABOVE THE SETPOINT. THE FANS SHALL STOP AND THE HEATING VALVE SHALL CLOSE.

2 ROOF TOP UNIT CONTROLS
M701 1/8" = 1'-0"

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CERTIFICATE OF AUTHORIZATION NUMBER:
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LAND SURVEYING: 017976
GEOLOGICAL: 018750

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NEWBURGH
ENLARGED CITY SCHOOL DISTRICT

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NO:	DATE:	DESCRIPTION:
2	9/3/2024	ADDENDUM#2
Revisions		

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MECHANICAL CONTROLS

DRAWING NUMBER:

M701

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DRAWING SYMBOLS

CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
GHR	GLYCOL HOT WATER RETURN
GHS	GLYCOL HOT WATER SUPPLY
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
C	CONDENSATE
CTR	COOLING TOWER RETURN
CTS	COOLING TOWER SUPPLY
	DIRECTION OF FLOW
DN	DIRECTION OF PITCH
R	REFRIGERANT
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
RG	REFRIGERANT GAS
SV	STEAM VENT
HPLR	HEAT PUMP LOOP RETURN
HPLS	HEAT PUMP LOOP SUPPLY
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
MU	MAKE-UP WATER
NG	NATURAL GAS
PC	PUMPED CONDENSATE
VAC	VACUUM
IW	INDIRECT WASTE

EXISTING DUCTWORK, PIPE, EQUIPMENT

NEW DUCTWORK, PIPE, EQUIPMENT

DUCTWORK, PIPE, EQUIPMENT TO BE REMOVED

PIPE TURNED UP

PIPE TURNED DOWN

BRANCH OFF TOP OF PIPE

BRANCH OFF BOTTOM OF PIPE

REDUCER

PIPE BREAK

BALL VALVE

BUTTERFLY VALVE

GATE VALVE

SHUT OFF VALVE (GATE, BALL, OR BUTTERFLY - REFER TO SPECS)

CHECK VALVE

BALANCE VALVE

ANGLE VALVE

PRESSURE REDUCING VALVE

STEAM TRAP

MOTOR OR SOLENOID CONTROL VALVE

MOTOR OR SOLENOID CONTROL VALVE (3-WAY)

TRIPLE DUTY VALVE

RELIEF VALVE

STRAINER

UNION

PRESSURE GAUGE

PUMP

EQUIPMENT TO BE REMOVED

VRF FAN COIL CASSETTE UNIT

REMOVE TO THIS POINT)

NEW CONNECTION TO EXISTING

A / M-2 — SECTION CALLOUT

A / M-2 — DETAIL NUMBER

1 — DEMOLITION KEYNOTE

1 — KEYNOTE

RETURN AIR

SUPPLY AIR

18/8 — DUCT (DIMENSIONS SHOWN IN DUCT. DIMENSIONS IN INCHES.)

18/8 — DUCT (DIMENSIONS SHOWN BY LEADER. DIMENSIONS IN INCHES.)

FLEX DUCT

DUCT SECTION - SUPPLY AIR

DUCT SECTION - EXHAUST AIR

DUCT SECTION - RETURN AIR

VOLUME DAMPER

14" Ø — 14" ROUND DUCT

18/8 — 18" x 8" FLAT OVAL DUCT

NOTE:
NOT ALL SYMBOLS, ABBREVIATIONS AND EQUIPMENT DESIGNATIONS MAY APPLY TO THIS PARTICULAR PROJECT. ANY ADDITIONS OR OMISSIONS FROM THIS LEGEND SHEET DOES NOT IMPLY INCLUSION AND/ OR EXCLUSIONS OF ANY PARTICULAR ITEM FROM THIS PROJECT.

18/8 — LINED DUCT (DIM. IS INTERNAL)

MITERED ELBOW W/ TURNING VANES

WALL OR DUCT MOUNTED SUPPLY GRILLE

WALL OR DUCT MOUNTED RETURN OR EXHAUST GRILLE

FD / AD — FIRE DAMPER ACCESS DOOR TO BE LOCATED ON MOST ACCESSIBLE SIDE OF DUCT

SD / AD — SMOKE DAMPER ACCESS DOOR TO BE LOCATED ON MOST ACCESSIBLE SIDE OF DUCT

F/S / AD — COMBINATION FIRE / SMOKE DAMPER ACCESS DOOR TO BE LOCATED ON MOST ACCESSIBLE SIDE OF DUCT

M — MOTOR OPERATED DAMPER

T — TEMPERATURE SENSOR

S — SENSOR

H — HUMIDISTAT

CO2 — CARBON DIOXIDE SENSOR

EXHAUST GRILLE

SUPPLY DIFFUSER

RETURN GRILLE

8 / 750 — REGISTER OR GRILLE - TOP NUMBER REPRESENTS TAG, SEE SCHEDULE: BOTTOM NUMBER REPRESENTS CFM.

A / 125 — DIFFUSER - LETTER REPRESENTS TAG, SEE SCHEDULE: NUMBER REPRESENTS CFM

GENERAL NOTES

DUCTWORK GENERAL NOTES

1 HVAC CONTRACTOR TO PROVIDE CRANE AND NECESSARY EQUIPMENT TO HOIST ROOF MOUNTED HVAC EQUIPMENT FROM SITE TO FINAL ROOF LOCATION. GENERAL CONTRACTOR TO PROVIDE ALL ROOF PENETRATIONS REQUIRED TO ACCOMMODATE HVAC EQUIPMENT OPENINGS AND SET CURBS. HVAC CONTRACTOR TO COORDINATE EXACT LOCATION OF PENETRATIONS WITH G.C. AND SHALL ASSIST WITH SETTING ALL HVAC EQUIPMENT ROOF CURBS. HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY CAP OF ALL ROOF PENETRATIONS IN INTERIM FROM TIME PENETRATIONS ARE COMPLETE TO TIME EQUIPMENT IS SET ON ROOF CURBS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FLASHING ALL EQUIPMENT CURBS AND OTHER HVAC RELATED ROOF PENETRATIONS. HVAC CONTRACTOR SHALL REMOVE AND DISPOSE OF TEMPORARY CAP WHEN EQUIPMENT IS SET IN PLACE.

2 PROVIDE 45 DEGREE SHOE-TAP FITTING AND VOLUME DAMPER AT ALL BRANCH DUCT TAKE-OFFS (TOP, SIDE AND BOTTOM) FOR SUPPLY, RETURN AND EXHAUST AIR, UNLESS SHOWN OR NOTED OTHERWISE. VOLUME DAMPERS SHALL BE OMITTED FROM VAV INLET BRANCH DUCTWORK.

3 COORDINATE HVAC INSTALLATION WITH STRUCTURE, CEILING, LIGHTING, CONDUIT, HEATING AND DOMESTIC PIPING, STORM AND SANITARY DRAIN PIPING (ALL TRADES). PREPARE AND SUBMIT FULL COORDINATION DRAWINGS FOR APPROVAL BY ENGINEER PRIOR TO ORDERING MATERIALS AND/OR BEGINNING CONSTRUCTION.

4 INSULATE OR LINE DUCTWORK AS SPECIFIED IN THE MECHANICAL INSULATION AND METAL DUCTS SPECIFICATIONS OR NOTED ON DRAWINGS. NOTE THAT DUCT SIZES SHOWN ON DRAWINGS ARE INSIDE NET CLEAR DIMENSIONS.

5 ALL 90 DEGREE RECTANGULAR ELBOWS AND DUCTWORK TEES SHALL BE HARD MITERED WITH FACTORY TURNING VANES. TURNING VANES SHALL BE OMITTED FROM AIR TRANSFER DUCT ELBOWS.

6 ALL DUCTWORK PASSING THROUGH NON-FIRE RATED WALLS TO BE SEALED AROUND PERIMETER (BOTH SIDES) WITH DRYWALL JOINT COMPOUND OR APPROVED EQUAL.

7 INLET OF VAV BOX TO BE ARRANGED SUCH THAT THERE IS NO RESTRICTION OF AIRFLOW. THERE SHALL BE A MINIMUM OF THREE DUCT DIAMETERS OF STRAIGHT DUCT (FLEX DUCT WILL NOT BE PERMITTED) UPSTREAM OF THE INLET. INLET DUCT SIZE TO BE SAME SIZE AS VAV BOX INLET COLLAR UNLESS NOTED OTHERWISE. REFER TO VAV BOX INSTALLATION DETAIL FOR ADDITIONAL REQUIREMENTS.

8 HVAC CONTRACTOR TO PROVIDE ALL WALL & ROOF PENETRATIONS 8"x8" OR SMALLER. ALL PENETRATIONS LARGER THAN 8"x8" IS THE RESPONSIBILITY OF THE G.C. COORDINATE ALL 8"x8" OR LARGER PENETRATION LOCATIONS WITH G.C. LINTELS (BY G.C.) REFER TO STRUCTURAL DRAWINGS FOR LINTEL SCHEDULE. PENETRATIONS AND LINTEL LOCATIONS TO BE COORDINATED WITH G.C. AND DOCUMENTED ON COORDINATION DRAWINGS.

9 BALANCING CONTRACTOR TO SET MINIMUM OUTSIDE AIR DAMPER POSITION TO MEET VENTILATION AIR QUANTITIES REQUIRED AS SHOWN ON PLANS OR LISTED IN EQUIPMENT SCHEDULES.

10 NATURAL GAS PIPING WHERE REQUIRED SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR, WHICH SHALL INCLUDE FINAL CONNECTIONS TO HVAC EQUIPMENT. COORDINATE ALL EQUIPMENT LOCATIONS THAT REQUIRE NATURAL GAS WITH THE PLUMBING CONTRACTOR.

11 ALL SUPPORT OF EQUIPMENT, DUCTWORK AND ASSOCIATED DISTRIBUTION SERVICES SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE BUILDING CODE OF NEW YORK STATE. THE DISCIPLINE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE STRUCTURAL STEEL WHERE REQUIRED IN ORDER TO SUPPORT EQUIPMENT, DUCTWORK AND ASSOCIATED DISTRIBUTION SERVICES WHERE THE BUILDING STRUCTURE SPACING IS TOO GREAT TO ALLOW DIRECT SUPPORT. THE DISCIPLINE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMATION OF ALL SUPPORTS AND SHALL OBTAIN THE PROFESSIONAL SERVICE OF A STRUCTURAL ENGINEER LICENSED IN THE STATE OF NEW YORK AND FURNISH SEALED DRAWINGS AND DETAILS ILLUSTRATING SUCH SUPPORTS AND COMPLIANCE METHODS.

12 INSULATE ALL DUCTWORK PER NYS ENERGY CODE.

APPLICABLE CODES

1 BUILDING CODE OF NEW YORK STATE
2 ENERGY CODE OF NEW YORK STATE
3 MECHANICAL CODE OF NEW YORK STATE
4 FIRE CODE OF NEW YORK STATE
5 PLUMBING CODE OF NEW YORK STATE
6 ENERGY CONSERVATION CODE OF NEW YORK STATE
7 ACCESSIBLE AND USABLE BUILDING AND FACILITIES-CABO/ANSI A117.1
8 NATIONAL ELECTRIC CODE
9 NATIONAL FIRE CODE NFPA 13

EQUIPMENT DESIGNATIONS

ACU	AIR CONDITIONING UNIT
AHU	AIR HANDLING UNIT
AD	ACCESS DOOR
AS	AIR SEPARATOR
BDD	BACK DRAFT DAMPER
B	BOILER
CA	AIR COMPRESSOR
CAV	CONSTANT AIR VOLUME BOX
CC	COOLING COIL
CFP	CHEMICAL FEED PUMP
CH	CHILLER
CHP	CHILLED WATER PUMP
CP	CONDENSATE PUMP
CRAC	COMPUTER ROOM UNIT
CRU	CONDENSATE RETURN UNIT
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
DHW	DOMESTIC WATER HEATER
EF	EXHAUST FAN
ET	EXPANSION TANK
FCU	FAN COIL UNIT
FP	FIRE PUMP
FT	FINNED TUBE
HC	HEATING COIL
HP	HEAT PUMP
HU	HUMIDIFIER
HWP	HOT WATER PUMP
HX	HEAT EXCHANGER
L	LOUVER
MAU	MAKE UP AIR UNITS
MD	MOTORIZED DAMPER
P	PUMP
PHC	PREHEAT COIL
PPU	PUMPING PACKAGED UNIT
PRG	GAS PRESSURE REGULATOR
PRV	PRESSURE REDUCING VALVE
R	REGISTER
RCP	RADIANT CEILING PANEL
RTU	ROOF TOP UNIT
UH	UNIT HEATER
UV	UNIT VENTILATOR
VAV	VARIABLE AIR VOLUME BOX
VD	VOLUME DAMPER
VFD	VARIABLE SPEED DRIVE
WU-G	WINDOW UNIT MOUNTED IN GLASS
WU-W	WINDOW UNIT MOUNTED IN WALL
WS	WATER SOFTENER

NOTE:
SOME ABBREVIATIONS MAY NOT BE USED ON DRAWINGS

ABBREVIATIONS

%	PERCENT
AC	ALTERNATING CURRENT
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
AMB	AMBIENT
AMP	AMPERE (AMP, AMPS)
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
APPROX	APPOROXIAMTE (LY)
AVG	AVERAGE
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BO	BOTTOM OF
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BV	BALANCING VALVE
CAP	CAPACITY
CIP	CAST IRON PIPE
CLG	CEILING
CLR	CLEAR
CO	CLEANOUT or CARBON MONOXIDE
COL	COLUMN
CONN	CONNECTION
CONC	CONCRETE
CONT	CONTINUOUS
CU FT	CUBIC FEET
CV	VALVE FLOW COEFFICIENT
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DCV	DETECTOR CHECK VALVE
DCW	DOMESTIC COLD WATER
DEMO	DEMOLISH or DEMOLITION
DHW	DOMESTIC HOT WATER
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DWH	DOMESTIC WATER HEATER
DWV	DRAIN, WASTE, & VENT
DWG	DRAWING
(E)	EXISTING
ENGR	ENGINEER
EQ	EQUAL
EST	ESTIMATED
ETR	EXISTING TO REMAIN
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
°F	DEGREES FAHRENHEIT
FA	FREE AREA
FIN	FINISHED
FL	FLOOR
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FOOT OR FEET
FUT	FUTURE
GA	GAGE OR GAUGE
GAL	GALLONS
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
HD	HEAD
HG	MERCURY
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HR	HOUR
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HZ	FREQUENCY
ID	DIAMTER, INSIDE
IN	INCH
INSUL	INSULATION
INT	INTERIOR
IPS	IRON PIPE SIZE
INV	INVERT
KW	KILOWATT
KWH	KILOWATT HOUR
LBS	POUNDS
LF	LINEAR FEET
LG	LENGTH
LOC	LOCATION
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MATL	MATERIAL
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MECH	MECHANICAL
MFG	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MOCP	MAXIMUM OVERCURRENT PROTECTION
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MTG	MOUNTING
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPT	NATIONAL PIPE TREAD
NRS	NON-RISING STEM
NTS	NOT TO SCALE
OC	ON CENTER
OD	DIAMETER, OUTSIDE
OS&Y	OUTSIDE SCREW AND YOKE
PC	PLUMBING CONTRACTOR
PLBG	PLUMBING
PH	PHASE (ELECTRICAL)
PRESS	PRESSURE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	PSI GUAGE
PRV	PRESSURE REDUCING VALVE
RCVR	RECEIVER
RECIRC	RECIRCULATE
RHW	HOT WATER RE-CIRCULATION
RO	ROUGH OPENING
RPDA	REDUCED-PRESSURE DETECTOR ASSY.
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED-PRESSURE ZONE
SCH	STEAM CAPTURE HOOD
SPEC	SPECIFICATION
SPLY	SUPPLY
SQ	SQUARE
SQ FT	SQUARE FOOT (FEET)
SQ IN	SQUARE INCH (INCHES)
STD	STANDARD
SUCT	SUCTION
TSTAT	THERMOSTAT
TBD	TO BE DETERMINED
TC	TEMPERATURE CONTROL CONTRACTOR
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TO	TOP OF
TYP	TYPICAL
V	VOLT
VAC	VACUUM
VAR	VARIABLE
VEL	VELOCITY
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WATT
W/	WITH
W/O	WITH OUT
WCO	WALL CLEANOUT
WHA	WATER HAMMER ARRESTER
WM	WATER METER
WPD	WATER PRESSURE DROP
WT	WEIGHT
WWP	WORKING WATER PRESSURE

NOTE:
SOME ABBREVIATIONS MAY NOT BE USED ON DRAWINGS

MECHANICAL SHEET LIST

Sheet Number	Sheet Name	Drawn By	Approved By
M001	MECHANICAL LEGEND SHEET	DRM	MB
M002	VENTILATION TABLE	DRM	MB
MD101	FIRST FLOOR DEMOLITION PLAN	DRM	MB
MD102	SECOND FLOOR DEMOLITION PLAN	DRM	MB
MD103	ROOF DEMOLITION PLAN	DRM	MB
M101	FIRST FLOOR DUCTWORK PLAN	DRM	MB
M102	SECOND FLOOR DUCTWORK PLAN	DRM	MB
M103	ROOF EQUIPMENT PLAN	DRM	MB
M201	FIRST FLOOR PIPING	DRM	MB
M202	SECOND FLOOR PIPING	DRM	MB
MS01	MECHANICAL DETAILS	DRM	MB
M601	MECHANICAL SCHEDULES	DRM	MB
M701	MECHANICAL CONTROLS	DRM	MB

Grand total: 13

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NEWBURGH ENLARGED CITY SCHOOL DISTRICT

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M001

12/2/2024 5:35:41 PM

Room Name	Unit	Square Footage	Type	Occupancy Density/1000sf	Max Occupancy	OA/person	CFM/SF	Code OA (cfm)	Provided OA (cfm)
1 - Kindergarten	UV-1	986	Classroom	25	25	10	0.12	368.32	500
2 - Kindergarten	UV-2	370	Classroom	25	10	10	0.12	144.4	500
2A - Classroom	UV-2A	990	Classroom	25	25	10	0.12	368.8	210
3 - Kindergarten	UV-3	986	Classroom	25	25	10	0.12	368.32	500
4 - Kindergarten	UV-4	986	Classroom	25	25	10	0.12	368.32	500
5 - Kindergarten	UV-5	880	Classroom	25	22	10	0.12	325.6	500
6 - Kindergarten	UV-6	880	Classroom	25	22	10	0.12	325.6	500
7 - Kindergarten	UV-7	820	Classroom	25	21	10	0.12	308.4	470
8 - 1st Grade	UV-8	850	Classroom	25	22	10	0.12	322	470
9B - 1st Grade	UV-9A & UV-9B	1125	Classroom	25	29	10	0.12	425	470
10 - 1st Grade	UV-10	840	Classroom	25	21	10	0.12	310.8	470
11 - 1st Grade	UV-11	840	Classroom	25	21	10	0.12	310.8	470
12 - 1st Grade	UV-12	840	Classroom	25	21	10	0.12	310.8	470
13 - 1st Grade	UV-13	840	Classroom	25	21	10	0.12	310.8	470
14 - 1st Grade	UV-14	840	Classroom	25	21	10	0.12	310.8	470
15 - 1st Grade	UV-15	830	Classroom	25	21	10	0.12	309.6	420
17 - Teacher's Dining	UV-17	621	Conference Room	50	32	5	0.06	197.26	470
26 - Music/Vocal	UV-109	986	Classroom	25	25	10	0.12	368.32	420
30 - Music Room 2	UV-110	1170	Classroom	25	30	10	0.12	440.4	500
42 - Classroom	UV-42	670	Classroom	25	17	10	0.12	250.4	470
51 - Cafetorium	RTU-H-2 & RTU-H-3 & RTU-H-4	4910	Café	70	300	7.5	0.18	3133.8	6500
51-Stage	RTU-H-1	1100	Stage	70	50	10	0.06	566	1500
52 - Gym	T-5 & T-6	6625	Multi-Use Assembly	100	600	7.5	0.06	4897.5	10260
120 - Art Room 1	UV-120	1090	Art Room	20	22	10	0.18	416.2	420
121 - 2nd Grade	UV-121	780	Classroom	25	20	10	0.12	293.6	420
122 - Art Room 2	UV-122	1010	Art Room	20	21	10	0.18	391.8	420
123 - 2nd Grade	UV-123	780	Classroom	25	20	10	0.12	293.6	470
124 - 3rd Grade	UV-124	775	Classroom	25	20	10	0.12	293	470
125A - 4th/3rd Grade	UV-125A	780	Classroom	25	20	10	0.12	293.6	470
125B - 4th/3rd Grade	UV-125B	780	Classroom	25	20	10	0.12	293.6	470
126A - 4th Grade	UV-126A	780	Classroom	25	20	10	0.12	293.6	470
126B - 4th Grade	UV-126B	780	Classroom	25	20	10	0.12	293.6	470
127 - 2nd Grade	UV-127	780	Classroom	25	20	10	0.12	293.6	470
128 - Primary Play Room	T-1 & T-2	5015	Multi-Use Assembly	100	315	7.5	0.06	2663.4	3066
129 - 2nd Grade	UV-129	780	Classroom	25	20	10	0.12	293.6	470
131A - 2nd Grade	UV-131A	780	Classroom	25	20	10	0.12	293.6	470
131B - 2nd Grade	UV-131B	780	Classroom	25	20	10	0.12	293.6	470
133 - 2nd Grade	UV-133	785	Classroom	25	20	10	0.12	294.2	470
135A - 4th Grade	UV-135A	420	Classroom	25	11	10	0.12	160.4	210
135B - 4th Grade	UV-135B	420	Classroom	25	11	10	0.12	160.4	210
137 - 4th Grade	UV-137	775	Classroom	25	20	10	0.12	293	470
139 - 3rd Grade	UV-139	775	Classroom	25	20	10	0.12	293	470
141 - 3rd Grade	UV-141	775	Classroom	25	20	10	0.12	293	470
220 - 5th Grade	UV-220	900	Classroom	25	23	10	0.12	338	420
221 - 5th Grade	UV-221	785	Classroom	25	20	10	0.12	294.2	470
222 - 4th Grade	UV-222	800	Classroom	25	20	10	0.12	296	500
223 - 5th Grade	UV-223	785	Classroom	25	20	10	0.12	294.2	470
224 - Music Room	UV-227	760	Classroom	25	19	10	0.12	281.2	420
225 - 5th Grade	UV-225	780	Classroom	25	20	10	0.12	293.6	470
226 -3rd Grade	UV-226	780	Classroom	25	20	10	0.12	293.6	470
227 - 5th Grade	UV-227A	1020	Classroom	25	26	10	0.12	382.4	500
228 - 3rd Grade	UV-228	790	Classroom	25	20	10	0.12	294.8	470
229 - 4th Grade	UV-229	790	Classroom	25	20	10	0.12	294.8	470
229A - 7th Grade	UV-229A	1000	Classroom	25	25	10	0.12	370	500
231 - 5th Grade	UV-231	1000	Classroom	25	25	10	0.12	370	500
233 - 3rd Grade	UV-233	1030	Classroom	25	26	10	0.12	383.6	500
235A - Special Education	UV-235A	580	Classroom	25	15	10	0.12	219.6	210
235B - Special Education	UV-235B	580	Classroom	25	15	10	0.12	219.6	210
237 - Classroom	UV-237	1250	Home-Ec	20	25	7.5	0.12	337.5	500
239 - 6th Grade	UV-239	800	Classroom	25	20	10	0.12	296	500
Resource	UV-224	375	Classroom	25	10	10	0.12	145	210
Classroom	UV-20	411	Classroom	25	11	10	0.12	159.32	470
Classroom	UV-21	416	Classroom	25	11	10	0.12	159.92	470

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NEWBURGH ENLARGED CITY SCHOOL DISTRICT
124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH
ENLARGED CITY SCHOOL DISTRICT

TEMPLE HILL ACADEMY
525 UNION AVENUE
NEW WINDSOR, NY 12553

NO.	DATE:	DESCRIPTION:
2	09-03-2024	ADDENDUM #2
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-036-015
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

VENTILATION TABLE

DRAWING NUMBER:

M002

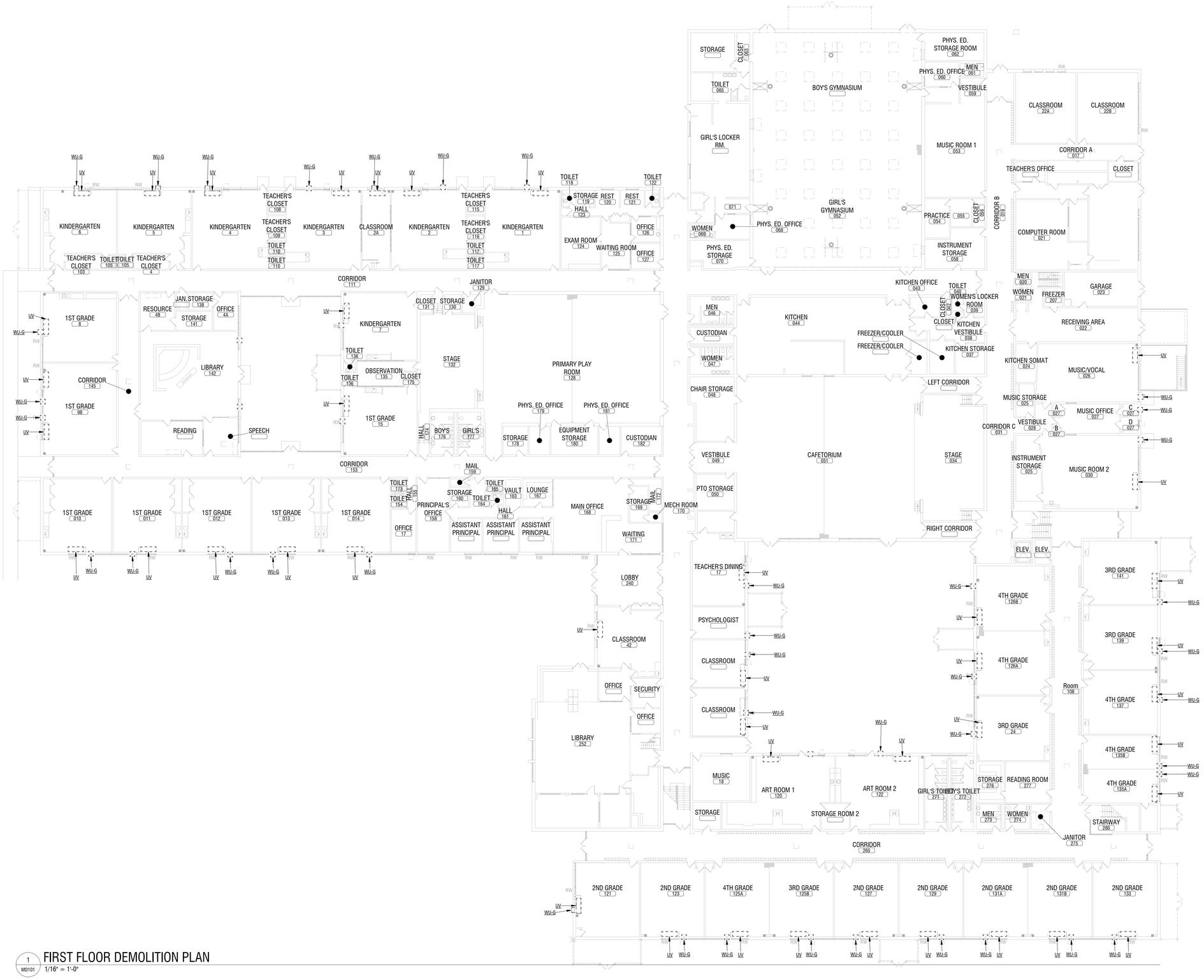
12/2/2024 5:35:41 PM

MECHANICAL NOTES:

1. REMOVE UNIT VENTILATOR IN ITS ENTIRETY. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING OUTSIDE AIR LOUVER TO REMAIN FOR RECONNECTION.
2. REMOVE EXISTING WINDOW AIR CONDITIONING UNIT IN ITS ENTIRETY.

KEY NOTES:

1. REMOVE EXISTING AIR HANDLING UNIT. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING OUTSIDE AIR DUCTWORK TO REMAIN FOR RECONNECTION.
2. REMOVE EXISTING AIR HANDLING UNIT IN ITS ENTIRETY. REMOVE EXISTING HWS/HWR PIPING AND ASSOCIATED VALVES BACK TO PIPING MAINS AND CAP. REMOVE EXISTING OUTSIDE AIR DUCTWORK UP TO LOUVER/ROOF PENTHOUSE AND CAP.
3. REMOVE EXISTING AIR HANDLING UNIT. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK TO REMAIN FOR RECONNECTION.



1 MD101 FIRST FLOOR DEMOLITION PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:35:45 PM

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LAND SURVEYING: 017976
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT
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NEWBURGH ENLARGED CITY SCHOOL DISTRICT

TEMPLE HILL ACADEMY
525 UNION AVENUE
NEW WINDSOR, NY 12553

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-036-015
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

FIRST FLOOR DEMOLITION PLAN

DRAWING NUMBER:

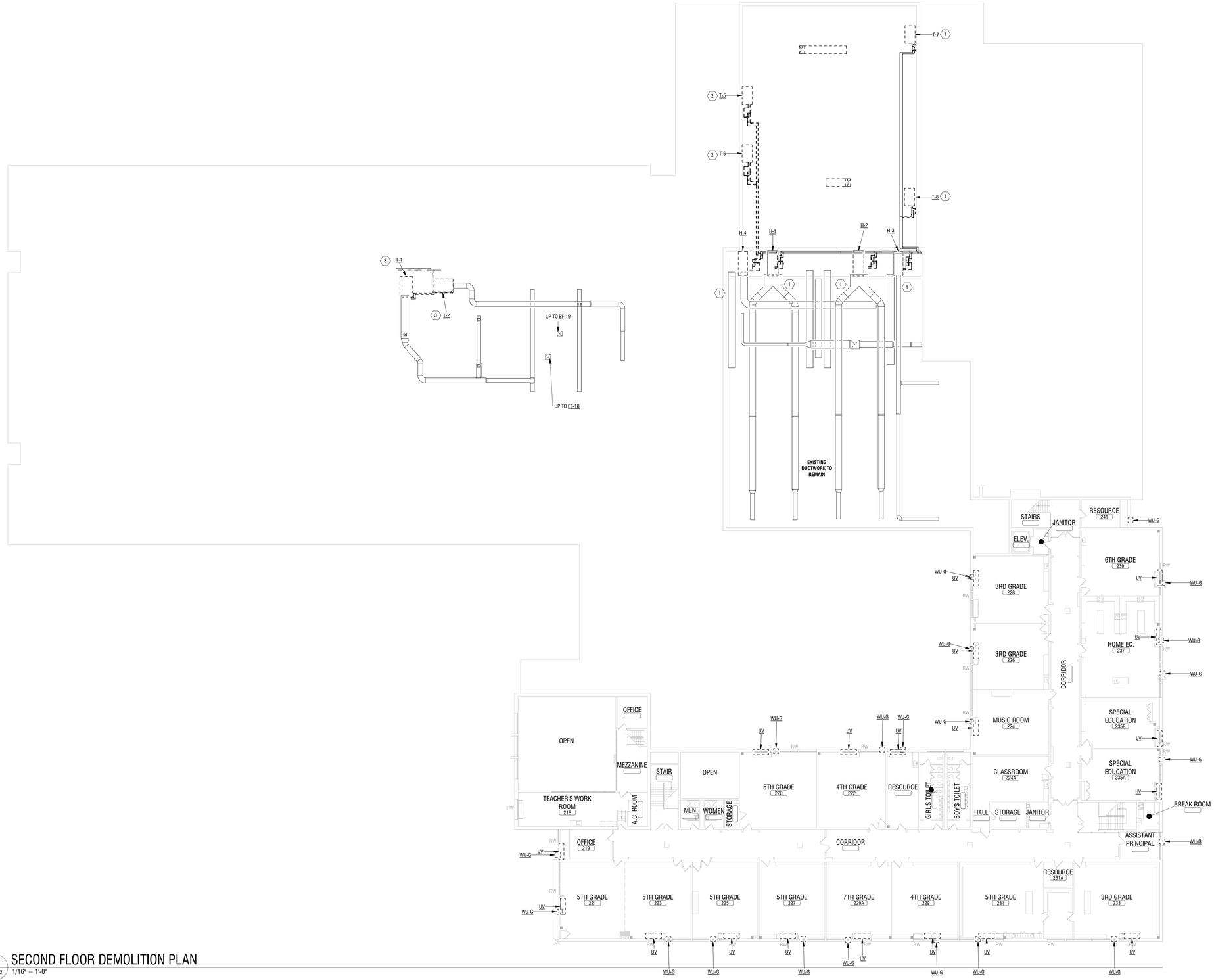
MD101

MECHANICAL NOTES:

1. REMOVE UNIT VENTILATOR IN ITS ENTIRETY. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING OUTSIDE AIR LOUVER TO REMAIN FOR RECONNECTION.
2. REMOVE EXISTING WINDOW AIR CONDITIONING UNIT IN ITS ENTIRETY.

KEY NOTES:

(1) REMOVE EXISTING AIR HANDLING UNIT. DISCONNECT EXISTING HWS/HWR PIPING AND MAINTAIN ROUGH-INS FOR RECONNECTION. EXISTING OUTSIDE AIR DUCTWORK TO REMAIN FOR RECONNECTION.



1 MD102 SECOND FLOOR DEMOLITION PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:33:47 PM

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GEOLOGICAL: 018750

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NEWBURGH ENLARGED CITY SCHOOL DISTRICT

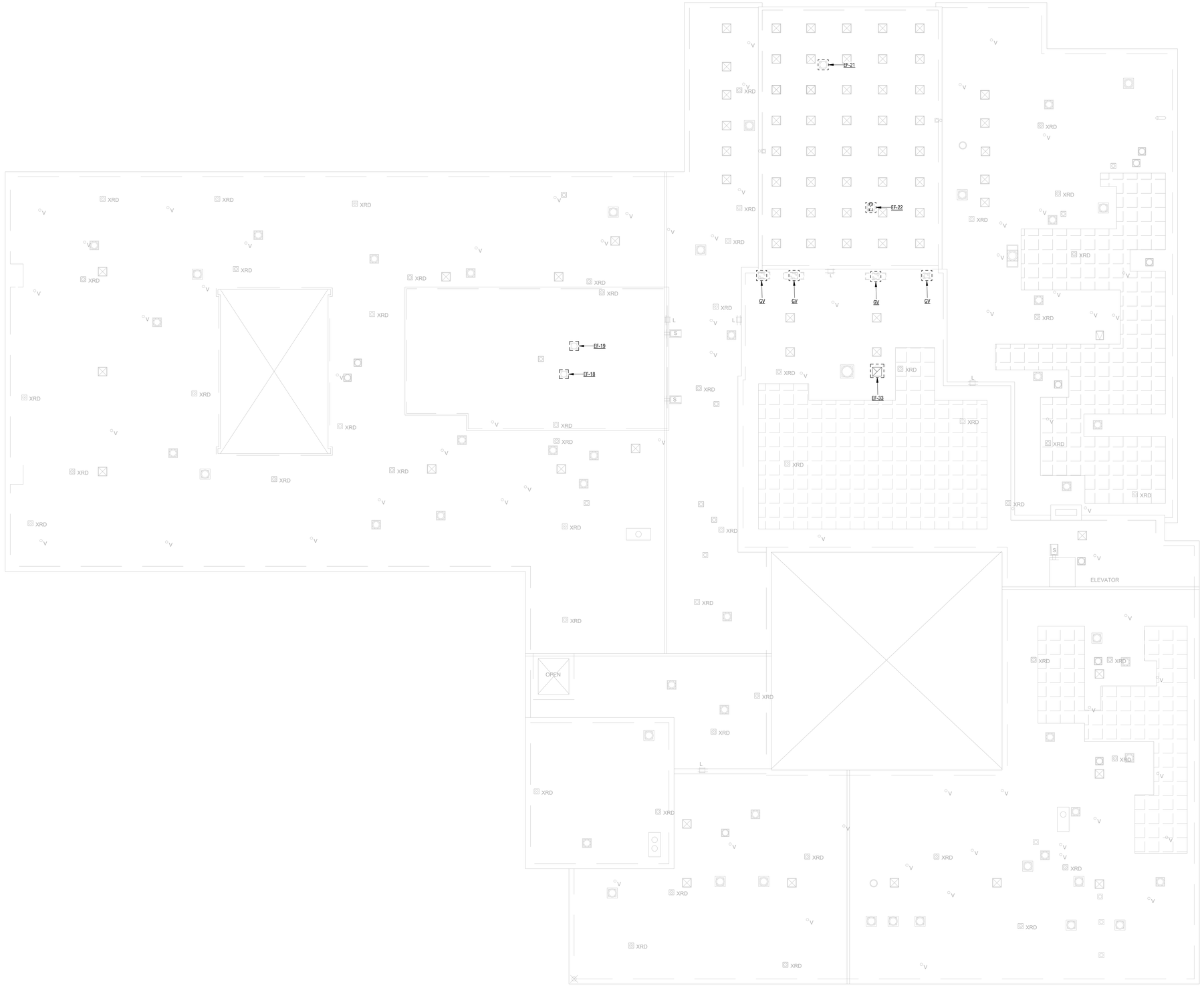
TEMPLE HILL ACADEMY
525 UNION AVENUE
NEW WINDSOR, NY 12553

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-036-015
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME: SECOND FLOOR DEMOLITION PLAN
DRAWING NUMBER: MD102

MECHANICAL NOTES:

1. REMOVE EXHAUST. MAINTAIN EXISTING ROOFCURB AND DUCTWORK FOR RECONNECTION.



1 MD103 ROOF MECHANICAL DEMOLITION PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:35:47 PM

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NEWBURGH ENLARGED CITY SCHOOL DISTRICT

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525 UNION AVENUE
NEW WINDSOR, NY 12553

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-036-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME: ROOF DEMOLITION PLAN

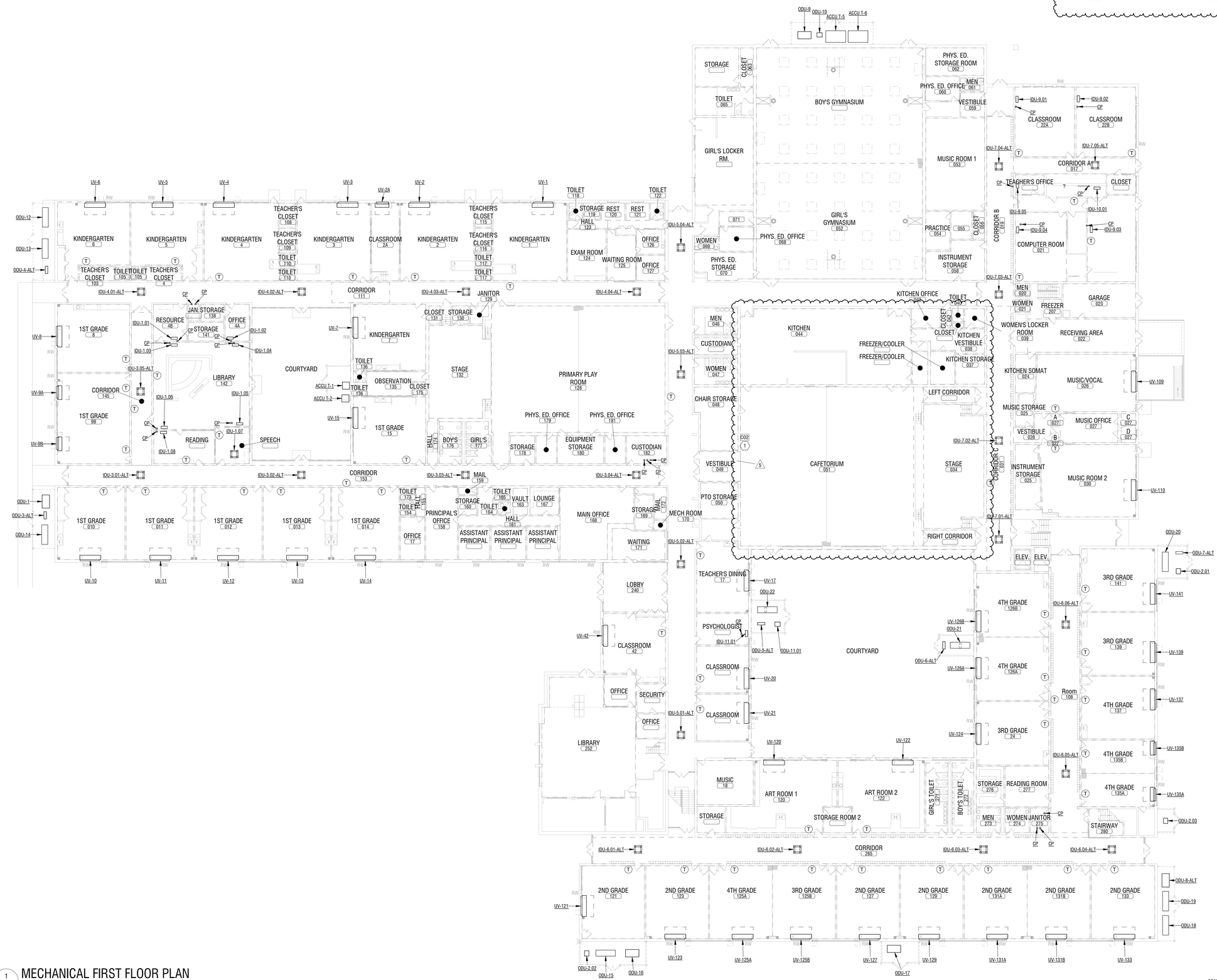
DRAWING NUMBER: MD103

MECHANICAL NOTES:

1. PROVIDE TEMPERATURE SENSOR AND TIE BACK TO BMS SYSTEM (TYP.)
2. RECONNECT AHUs TO EXISTING HWS/HWR PIPING ROUGH-INS. PROVIDE VALVES AND ACCESSORIES AS DETAILED. RECONNECT TO EXISTING DUCTWORK. PROVIDE REFRIGERANT PIPING PER MANUFACTURERS

KEY NOTES:

5 — 1 CO2 SENSOR TO BE LOCATED 54" A.F.F. IN BREATHING ZONE FOR DCV; REDUNDANT CO2 SENSOR TO BE INSTALLED AT EACH LOCATION (TYP). PROVIDE PROTECTIVE COVER FOR EACH SENSOR INSTALLED.



1 M101 MECHANICAL FIRST FLOOR PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:35:50 PM

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GEOLOGICAL: 018750

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NEWBURGH ENLARGED CITY SCHOOL DISTRICT

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NEW WINDSOR, NY 12553

NO:	DATE:	DESCRIPTION:
5	10-04-2024	ADDENDUM #5
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-036-015

PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

FIRST FLOOR DUCTWORK PLAN

DRAWING NUMBER:

M101

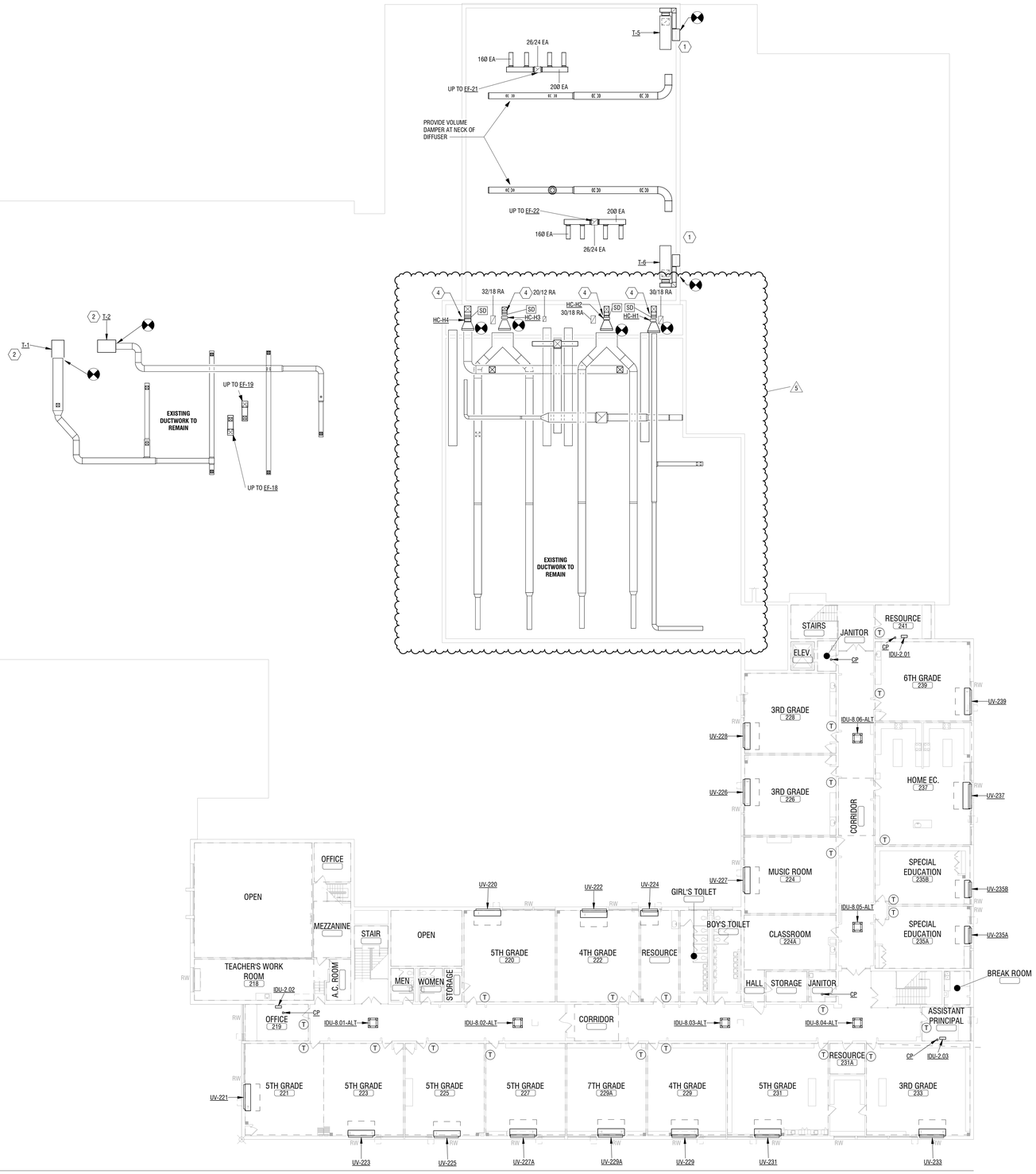
MECHANICAL NOTES:

1. PROVIDE TEMPERATURE SENSOR AND TIE BACK TO BMS SYSTEM (TYP.)
2. PROVIDE AHU AS SCHEDULED. RECONNECT TO EXISTING HWS/HWR PIPING ROUGH-INS. PROVIDE VALVES AND ACCESSORIES AS DETAILED. RECONNECT TO EXISTING DUCTWORK. PROVIDE REFRIGERANT PIPING PER MANUFACTURERS

KEY NOTES:

5

1. PROVIDE ANGLE BRACKETS AND PLATFORM MOUNTING SYSTEM TO HANG AHU FROM EXISTING WALL STRUCTURE
2. PROVIDE UNISTRUT MOUNTING SYSTEM TO HANG AHU FROM CEILING
3. DISCONNECT AND RECONNECT HOT WATER PIPING. RE-USE EXISTING CONTROL VALVE.
4. PROVIDE DUCT MOUNTED SMOKE DETECTOR RATED FOR VELOCITY OF CORRESPONDING SUPPLY DUCT (TYP).



1 / M102 MECHANICAL SECOND FLOOR PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:35:51 PM

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LAND SURVEYING: 017976
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT
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NEWBURGH ENLARGED CITY SCHOOL DISTRICT

TEMPLE HILL ACADEMY
525 UNION AVENUE
NEW WINDSOR, NY 12553

NO:	DATE:	DESCRIPTION:
5	10-04-2024	ADDENDUM #5
4	09-20-2024	ADDENDUM #4
3	09-13-2024	ADDENDUM #3
2	09-03-2024	ADDENDUM #2

Revisions

S.E.D. NUMBER: 44-16-00-01-0-036-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM
REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME:

SECOND FLOOR DUCTWORK PLAN

DRAWING NUMBER:

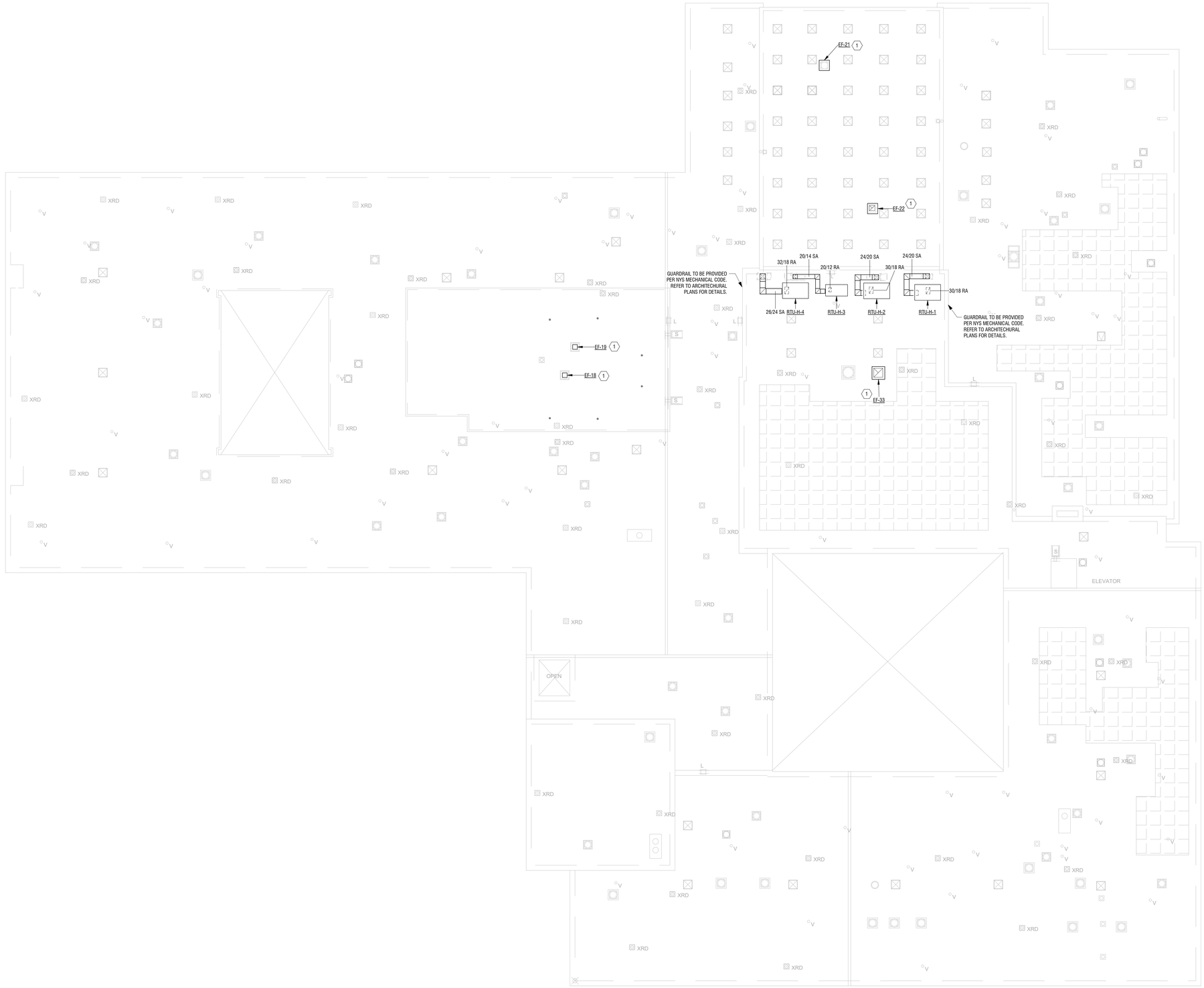
M102

MECHANICAL NOTES:

1. PROVIDE TEMPERATURE SENSOR AND TIE BACK TO BMS SYSTEM (TYP.)
2. PROVIDE AHU AS SCHEDULED. RECONNECT TO EXISTING HWS/HWR PIPING ROUGH-INS. PROVIDE VALVES AND ACCESSORIES AS DETAILED. RECONNECT TO EXISTING DUCTWORK. PROVIDE REFRIGERANT PIPING PER MANUFACTURERS

KEY NOTES:

1 RECONNECT TO EXISTING DUCTWORK BELOW ROOF, REUSE EXISTING ROOF CURB. PROVIDE ROOF CURB ADAPTOR AS REQUIRED.



1 M103 ROOF MECHANICAL PLAN
1/16" = 1'-0"

GRAPHIC SCALE
SCALE: 1/16" = 1'-0"
0 16' 32' 48' 64'

12/2/2024 5:35:52 PM

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LAND SURVEYING: 017976
GEOLOGICAL: 018750

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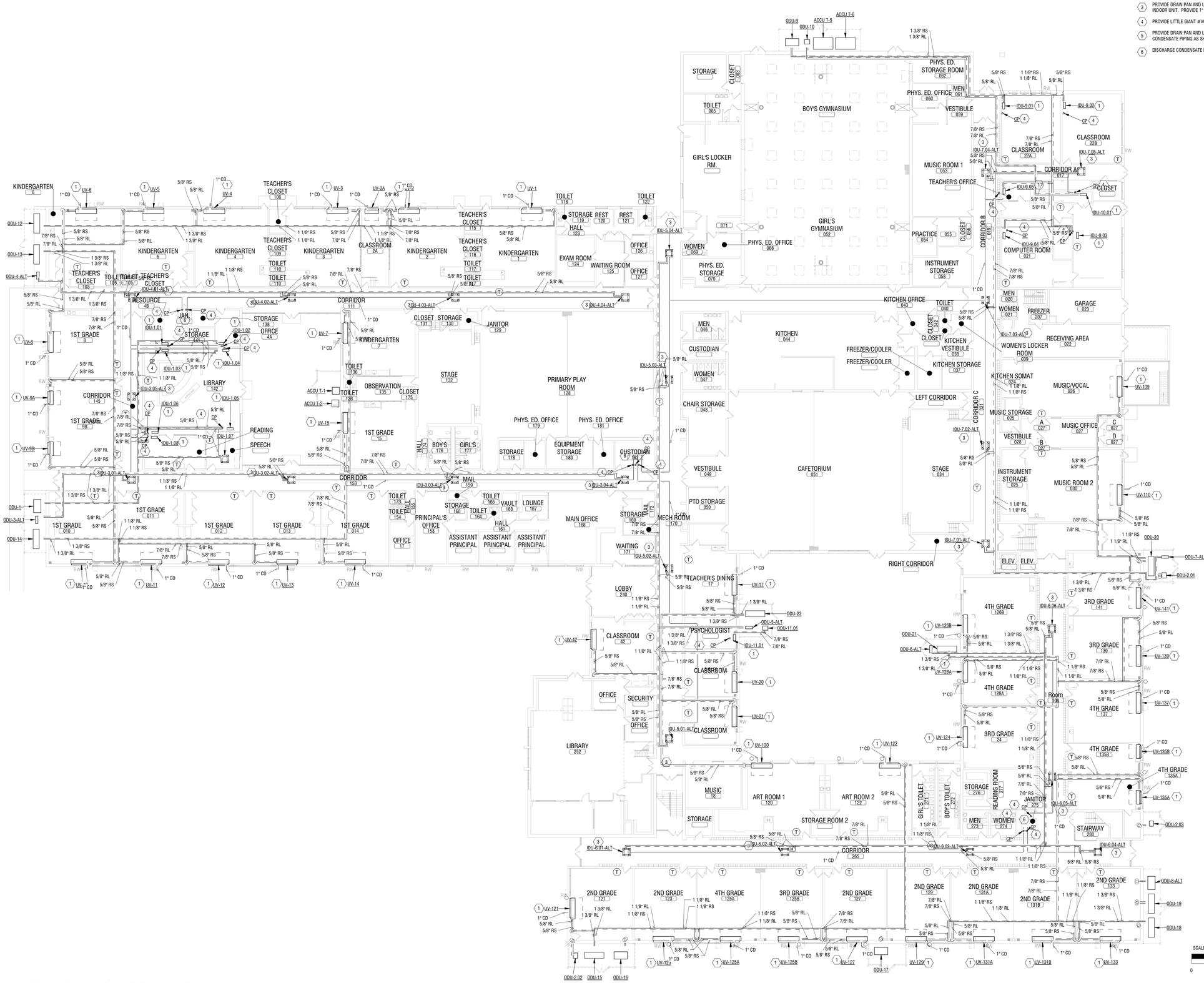
NEWBURGH ENLARGED CITY SCHOOL DISTRICT

TEMPLE HILL ACADEMY
525 UNION AVENUE
NEW WINDSOR, NY 12553

NO:	DATE:	DESCRIPTION:
2	09-03-2024	ADDENDUM #2
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-036-015
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME: ROOF EQUIPMENT PLAN
DRAWING NUMBER: M103



MECHANICAL NOTES:

1. CONTRACTOR TO PROVIDE PIPE EXPANSION AS REQUIRED.

KEY NOTES:

1. RECONNECT EXISTING 1" HWS/HWR PIPING TO HOT WATER COIL WITHIN UV. PROVIDE A SHUT OFF VALVE ON THE HWS PIPE CONNECTION. PROVIDE A SHUT OFF VALVE AND BALANCING VALVE ON THE HWR PIPE CONNECTION. PROVIDE REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO REFRIGERANT COIL WITHIN UV AS SIZED AND DIRECTED BY MANUFACTURER. PROVIDE 1" CONDENSATE PIPE DISCHARGE TO THE EXTERIOR WALL, DRAINED BY GRAVITY.
2. PROVIDE REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO REFRIGERANT COIL WITHIN UV AS SIZED AND DIRECTED BY MANUFACTURER. PROVIDE 1" CONDENSATE PIPING TO THE CLOSEST EXTERIOR WALL, DRAINED BY GRAVITY.
3. PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH CONDENSATE LINE CONNECTION AT INDOOR UNIT. PROVIDE 1" CONDENSATE LINE AS SHOWN.
4. PROVIDE LITTLE GIANT #VCMA CONDENSATE PUMP WITH DRAIN PAIN AND LEAK DETECTION SYSTEM.
5. PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH DUCTED DX COIL. PROVIDE 1" CONDENSATE PIPING AS SHOWN.
6. DISCHARGE CONDENSATE INDIRECTLY TO MOP SINK.

GRAPHIC SCALE
SCALE: 1/4" = 1'-0"
0 4' 8' 12' 16'

1 M201 MECHANICAL FIRST FLOOR PIPING PLAN
1/16" = 1'-0"

12/2/2024 5:35:56 PM

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CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 018281
LAND SURVEYING: 017976
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT
124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH
ENLARGED CITY SCHOOL DISTRICT

TEMPLE HILL ACADEMY
525 UNION AVENUE
NEW WINDSOR, NY 12553

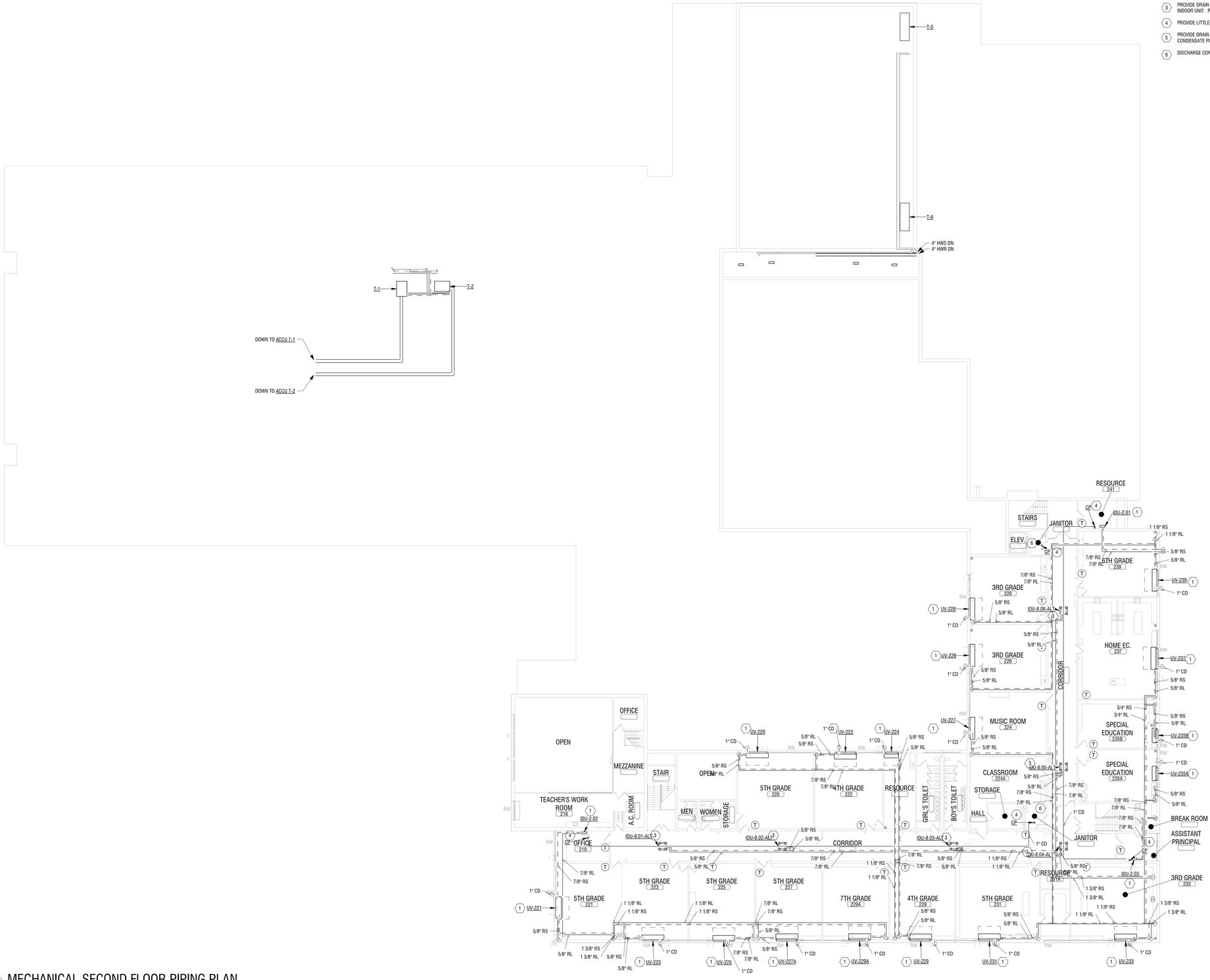
NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-036-015
PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME:

FIRST FLOOR PIPING

DRAWING NUMBER:

M201



1 M202 MECHANICAL SECOND FLOOR PIPING PLAN

1/16" = 1'-0"

MECHANICAL NOTES:

1. CONTRACTOR TO PROVIDE PIPE EXPANSION AS REQUIRED.

KEY NOTES:

1. RECONNECT EXISTING 1" HWS/HWR PIPING TO HOT WATER COIL WITHIN UV. PROVIDE A SHUT OFF VALVE ON THE HWS PIPE CONNECTION. PROVIDE A SHUT OFF VALVE AND BALANCING VALVE ON THE HWR PIPE CONNECTION. PROVIDE REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO REFRIGERANT COIL WITHIN UV AS SIZED AND DIRECTED BY MANUFACTURER. PROVIDE 1" CONDENSATE PIPE DISCHARGE TO THE EXTERIOR WALL, DRAINED BY GRAVITY.
2. PROVIDE REFRIGERANT PIPING FROM OUTDOOR CONDENSING UNIT TO REFRIGERANT COIL WITHIN UV AS SIZED AND DIRECTED BY MANUFACTURER. PROVIDE 1" CONDENSATE PIPING TO THE CLOSEST EXTERIOR WALL, DRAINED BY GRAVITY.
3. PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH CONDENSATE LINE CONNECTION AT INDOOR UNIT. PROVIDE 1" CONDENSATE LINE AS SHOWN.
4. PROVIDE LITTLE GIANT #VCMA CONDENSATE PUMP WITH DRAIN PAIN AND LEAK DETECTION SYSTEM.
5. PROVIDE DRAIN PAN AND LEAK DETECTION SYSTEM UNDER EACH DUCTED DX COIL. PROVIDE 1" CONDENSATE PIPING AS SHOWN.
6. DISCHARGE CONDENSATE INDIRECTLY TO MOP SINK.

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CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 018281
LAND SURVEYING: 017976
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT

124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH ENLARGED CITY SCHOOL DISTRICT

TEMPLE HILL ACADEMY

525 UNION AVENUE
NEW WINDSOR, NY 12553

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-036-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

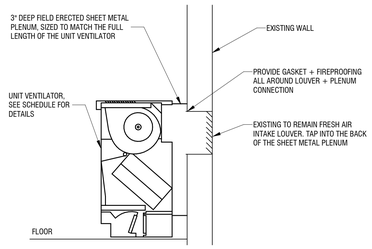
DRAWING NAME:

SECOND FLOOR PIPING

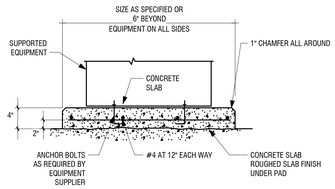
DRAWING NUMBER:

M202

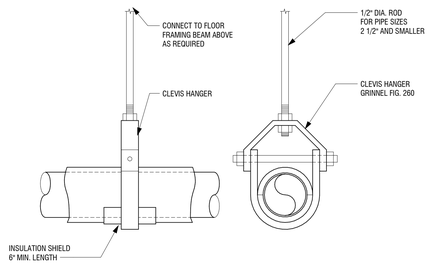
12/2/2024 5:35:57 PM



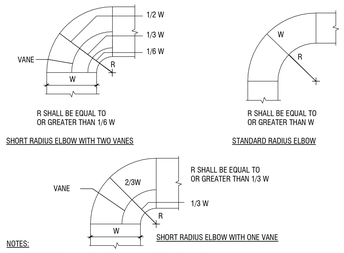
1 M501 UNIT VENTILATOR PLENUM DETAIL
NOT TO SCALE



2 M501 S - HOUSEKEEPING PAD DETAIL
NOT TO SCALE



3 M501 PIPE - PIPE SUPPORT DETAIL
NOT TO SCALE

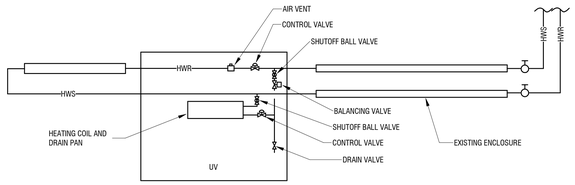


NOTES:

1. MAKE THE INTERIOR SURFACE OF ALL RADIUS ELBOWS ROUND.

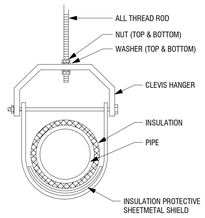
2. MAKE ALL STANDARD RADIUS ELBOWS SHOWN ON PLANS SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS HAVE VANES, AND VANES ARE CONSTRUCTED, SUPPORTED AND FASTENED IN ACCORDANCE WITH SMACNA.

4 M501 DUCT - TYPICAL RADIUS ELBOWS
NOT TO SCALE

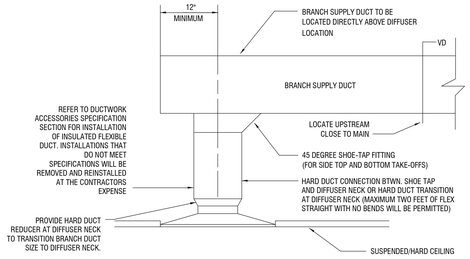


NOTES:
SEPERATE CONTROL FOR UV AND FTR. CONFIGURATIONS MAY VARY. PROVIDE ALLOWANCE OF INSTALLATION OF 10 FEET OF ADDITIONAL 1" COPPER PIPING PER CLASSROOM TO ALLOW FOR OTHER CONFIGURATIONS. CONTRACTOR TO PROVIDE SHOP DRAWING FOR EACH CLASSROOM CONFIGURATION TYPE.

5 M501 VRV UNIT VENTILATOR PIPING DETAIL
3/16" = 1'-0"



6 M501 PIPE - PIPE CLEVIS HANGER DETAIL
NOT TO SCALE



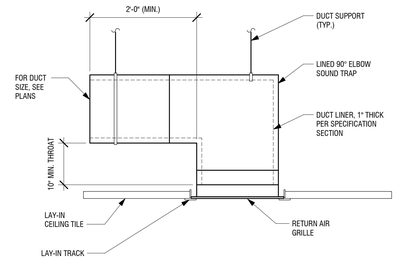
NOTES:

1). ALL DUCTWORK AND DIFFUSER CONNECTIONS SHALL MEET SMACNA STANDARDS.

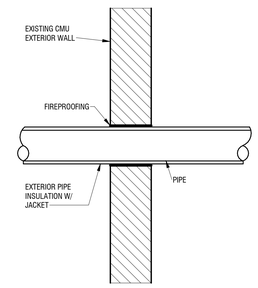
2). EXCESSIVE USE OF FLEX DUCTWORK AND OFFSETS IN EXCESS OF 45 DEGREES WILL BE REJECTED AT TIME OF PROJECT INSPECTION AND RE-INSTALLED AT THE CONTRACTORS EXPENSE.

3). COORDINATE DIFFUSER AND BRANCH DUCTWORK LOCATIONS WITH REFLECTED CEILING PLAN TO MAINTAIN ACCURACY.

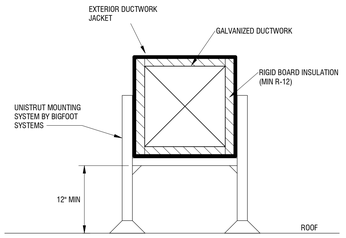
7 M501 DUCT - AT - DIFFUSER DETAIL
NOT TO SCALE



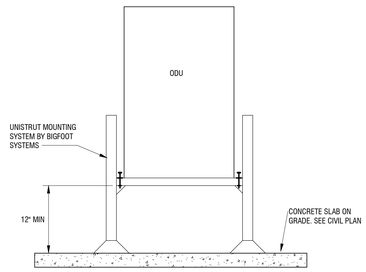
8 M501 DUCT - AT - RETURN GRILLE W/ SOUND/LIGHT TRAP
NOT TO SCALE



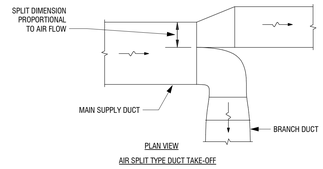
13 M501 PIPE THROUGH EXTERIOR WALL DETAIL
N.T.S.

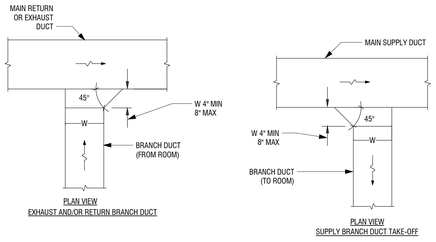


9 M501 EXTERIOR DUCTWORK DETAIL
N.T.S.

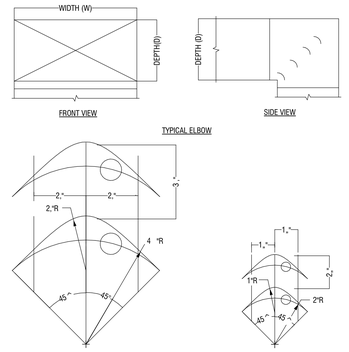


12 M501 OUTDOOR UNIT MOUNTING DETAIL
N.T.S.





10 M501 DUCT - TYPICAL DUCTWORK DETAILS
NOT TO SCALE



NOTES:

1. ALL SQUARE OR RECTANGULAR ELBOWS SHALL HAVE ONE OF THE TWO TYPES OF TURNING VANES SHOWN ABOVE. SINGLE VANE ELBOWS SHALL NOT BE PERMITTED.

2. CONSTRUCT, SUPPORT, AND FASTEN ALL VANES AS RECOMMENDED BY SMACNA.

3. ALL SQUARE OR RECTANGULAR ELBOWS SHOWN ON PLANS FOR EXHAUST OR RETURN DUCT MAY BE MADE RADIUS ELBOWS, PROVIDED THAT SPACE PERMITS RADIUS INSTALLATION.

4. ALL SQUARE OR RECTANGULAR ELBOWS SHOWN ON PLANS FOR SUPPLY DUCT MAY BE MADE RADIUS ELBOWS, PROVIDED THAT SPACE PERMITS RADIUS INSTALLATION AND/OR THERE IS NO OUTLET OR TAKE-OFF WITHIN 5D ON THE DOWNSTREAM SIDE OF THE ELBOW.

11 M501 DUCT - SQUARE OR RECTANGULAR ELBOWS
NOT TO SCALE

LaBella
Powered by partnership.

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Latham, NY 12110
(518) 273-0055
labellapc.com

CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 018281
LAND SURVEYING: 017976
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT
124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH ENLARGED CITY SCHOOL DISTRICT

TEMPLE HILL ACADEMY
525 UNION AVENUE
NEW WINDSOR, NY 12553

NO:	DATE:	DESCRIPTION:
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-036-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME: MECHANICAL DETAILS

DRAWING NUMBER: M501

12/2/2024 5:35:58 PM

UNIT VENTILATOR

TAG	SERVED BY	SUPPLY FAN AIRFLOW (CFM)	SUPPLY FAN OA (CFM)	COOLING TOT. CAP. (BTU/H)	COOLING SENS. CAP. (BTU/H)	COOLING EAT DB (°F)	COOLING EAT WB (°F)	COOLING LAT DB (°F)	COOLING LAT WB (°F)	REFRIGERANT TYPE	HEATING TOT. CAP (BTU/H)	HEATING EAT DB (°F)	HEATING LAT DB (°F)	HEATING COIL ROWS	HEATING FLOW (GPM)	HEATING EWT (°F)	HEATING LWT (°F)	ELECTRICAL VOLT/HZ/PHASE	ELECTRICAL MCA (A)	ELECTRICAL MOCP (A)	UNIT SIZE L	UNIT SIZE W	UNIT SIZE H	WEIGHT (LB)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
UV-1	ODU-12	1500	500	50656	34148	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-2	ODU-12	1500	500	50656	34148	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-2A	ODU-12	750	210	25635	15482	80.0 °F	67.0 °F	60.9 °F	55.9 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-3	ODU-12	1500	500	50656	34148	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-4	ODU-12	1500	500	50656	34148	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-5	ODU-13	1500	500	50656	34148	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-6	ODU-13	1500	500	50656	34148	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-7	ODU-14	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-8	ODU-13	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-9A	ODU-13	750	210	25635	15482	80.0 °F	67.0 °F	60.9 °F	55.9 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-9B	ODU-13	750	210	25635	15482	80.0 °F	67.0 °F	60.9 °F	55.9 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-10	ODU-13	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-11	ODU-14	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-12	ODU-14	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-13	ODU-14	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-14	ODU-14	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-15	ODU-14	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-17	ODU-22	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-20	ODU-22	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-21	ODU-22	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-42	ODU-22	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-109	ODU-20	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-110	ODU-20	1500	500	50656	34148	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	98	22	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-120	ODU-22	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-121	ODU-15	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-122	ODU-15	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-123	ODU-15	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-124	ODU-21	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-125A	ODU-15	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-125B	ODU-15	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-126A	ODU-21	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-126B	ODU-21	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-127	ODU-15	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-129	ODU-18	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-131A	ODU-18	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-131B	ODU-18	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-133	ODU-18	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-135A	ODU-18	750	210	25635	15482	80.0 °F	67.0 °F	60.9 °F	55.9 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-135B	ODU-18	750	210	25635	15482	80.0 °F	67.0 °F	60.9 °F	55.9 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-137	ODU-21	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-139	ODU-21	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-141	ODU-20	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-220	ODU-17	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-221	ODU-16	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-222	ODU-17	1500	500	51223	47563	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	110	28	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-223	ODU-16	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-224	ODU-17	750	210	25635	15482	80.0 °F	67.0 °F	60.9 °F	55.9 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-225	ODU-17	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-226	ODU-20	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-227	ODU-19	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-227A	ODU-16	1500	500	51223	47563	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	110	28	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-228	ODU-20	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL
UV-229	ODU-17	1500	500	51223	47563	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	110	28	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-229A	ODU-16	1500	500	51223	47563	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	110	28	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-231	ODU-19	1500	500	51223	47563	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	110	28	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-233	ODU-19	1500	500	51223	47563	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	110	28	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-235A	ODU-19	750	210	25635	15482	80.0 °F	67.0 °F	60.9 °F	55.9 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-235B	ODU-19	750	210	25635	15482	80.0 °F	67.0 °F	60.9 °F	55.9 °F	R-410A	46057	51 °F	108 °F	2	2.0	180 °F	134 °F	208 V/60 Hz/1	4	15	62	22	30	370	DAIKIN APPLIED	UAVS9V07	ALL
UV-237	ODU-19	1500	500	51223	47563	80.0 °F	67.0 °F	58.2 °F	55.6 °F	R-410A	76026	47 °F	96 °F	2	2.0	180 °F	104 °F	208 V/60 Hz/1	4	15	110	28	30	600	DAIKIN APPLIED	UAVS9V15	ALL
UV-239	ODU-20	1250	420	40407	28022	80.0 °F	67.0 °F	58.7 °F	56.2 °F	R-410A	76598	41 °F	99 °F	2	2.0	180 °F	129 °F	208 V/60 Hz/1	4	15	86	22	30	975	DAIKIN APPLIED	UAVS9V13	ALL

NOTES:

1. PROVIDE PLENUM BACK
2. CUSTOM LOUVERS PROVIDED BY CONTRACTOR
3. CONTRACTOR TO PROVIDE 1/8" MINIMUM SPLITTER TO SEPERATE OA AND CONDENSOR AIR
4. ALL HYRDONIC CONNECTION ARE ON THE LEFT OF THE UNIT, CONTRACTOR TO ROUTE PIPING AS REQUIRED
5. PROVIDE MERV-13 FILTER AND A BACKUP MERV 13 FILTER

INDOOR AIR HANDLING UNITS

TAG	LOCATION	SERVES	AREA	FAN TOTAL CFM	FAN OA CFM	FAN MIN OA	FAN ESP (IN WG)	HW HEATING GPM	HW HEATING EAT	HW HEATING LAT	HW HEATING EWT	HW HEATING LWT	HW HEATING PD (FT)	HW HEATING MBH	DX COOLING EA (DB/WB)	DX COOLING LA (DB/WB)	DX COOLING SENSIBLE COOLING (MBH)	DX COOLING TOTAL COOLING (MBH)	ELECTRICAL V/PH	ELECTRICAL MOTOR HP	ELECTRICAL FLA	ELECTRICAL BHP	ELECTRICAL MCA	ELECTRICAL MOP	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
T-1	STAGE	PLAYROOM WEST AND STAGE	3130	3600	1746	349	0.8	13.7	36.6	87.3	180	150	15.64	200	84.8 / 71.9	60.9 / 59.8	93.9	150.3	208V/3PH	2 @ 4.42		1.27	26	35	DAIKIN	TBD	1,2,3,4
T-2	STAGE	PLAYROOM EAST	1885	2600	1320	264	0.8	10.1	34.9	87.0	180	150	10.33	148.1	85.8 / 72.0	60.8 / 59.6	71.1	111	208V/3PH	4.42		0.96	14.4	25	DAIKIN	TBD	1,2,3,4
T-5	GYM	GYM	3312.5	5130	2480	496	0.8	16.8	37.2	83.2	180	150	4	257.9	84.9 / 70.3	57.0 / 55.5	156.5	245	208V/3PH	2 @ 2.1	11.4	2.8	12.8	15	DAIKIN	TBD	1,3,4
T-6	GYM	GYM	3312.5	5130	2480	496	0.8	16.8	37.2	83.2	180	150	4	257.9	84.9 / 70.3	57.0 / 55.5	156.5	245	208V/3PH	2 @ 2.1	11.4	2.8	12.8	15	DAIKIN	TBD	1,3,4

NOTES:

1. CONTROLS BY PROJECT CONTROLS CONTRACTOR
2. UNITS HAVE LENGTH LIMITATIONS, TBD
3. HORIZONTAL UNITS WITH END SUPPLY, END OA, AND BOTTOM RA
4. PROVIDE MXING BOX AND MERV 13 FILTERS
5. HORIZONTAL UNITS WITH END SUPPLY, TOP OA, AND BOTTOM RA

AIR COOLED CONDENSING UNITS (ACCU)

TAG	SERVES	LOCATION	NOMINAL TONS	COMPRESSORS	STAGES	COOLING MBH	COOLING AMBIENT DB	COOLING EER	SOUND LEVEL (dbA)	ELECTRICAL SUPPLY VOLTAGE	ELECTRICAL MCA	ELECTRICAL MOP	WEIGHT (LBS)	REFRIGERANT TYPE	LINE SIZES (IN) SUCTION / LIQUID	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
ACCU T-1	PLAYROOM WEST AND STAGE	ROOF	15	2	2	143	95	14.2		208V/3PH	53	80	647	R-410A	1.625 / 0.625	DAIKIN	RCS10H150C	1,2,3,4
ACCU T-2	PLAYROOM EAST	ROOF	12	1	2	115	95	11.2	84.7	208V/3PH	47.7	80	345	R-410A	1.625 / 0.625	DAIKIN	DX14XA1203A	1,2,3,4
ACCU T-5	GYM	ROOF	20	3	4	253	95	12.3	86	208V/3PH	95.8	125	1891	R-410A	1.38 (2) / 0.62 (2)	DAIKIN	RCS020D	1,2,3,4
ACCU T-6	GYM	ROOF	20	3	4	253	95	12.3	86	208V/3PH	95.8	125	1891	R-410A	1.38 (2) / 0.62 (2)	DAIKIN	RCS020D	1,2,3,4

NOTES:

1. COMPRESSOR WARRANTY - 5 YEARS
2. PARTS WARRANTY - 1 YEAR
3. LOW AMBIENT TO 45 DEGREES
4. PROVIDE ARR VALVE PER CIRCUIT
5. UNITS TO BE PRICED BASED ON 2025 NATIONAL EPA STANDARDS FOR REFRIGERANT. UNITS TO UTILIZE R-32 REFRIGERANT OR EQUAL.

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EXHAUST FAN

TAG	SERVES	TYPE	AIRFLOW CFM	TSP IN.WG	DRIVE	DIMENSIONS	RPM	MOTOR HP	FLA	MOP	VOLTAGE/PHASE	NOISE (SONES)	CONTROL	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
EF-18	PLAYROOM	ROOF DOWNBLAST	1700	0.25	DIRECT	22" x 22"		1/2	6.6	15	115V/1PH	9	0-10 vdc	GREENHECK	G-140-VG	1,2,3,5
EF-19	PLAYROOM	ROOF DOWNBLAST	1600	0.25	DIRECT	22" x 22"		1/2	6.6	15	115V/1PH	9	0-10 vdc	GREENHECK	G-140-VG	1,2,3,5
EF-21	GYM	ROOF DOWNBLAST	4455	0.25	BELT	40" x 40"		1/2	9.8	20	115V/1PH	6.4	VFD	GREENHECK	GB-300-314OXQDDRI	1,2,3,4
EF-22	GYM	ROOF DOWNBLAST	4455	0.25	BELT	40" x 40"		1/2	9.8	20	115V/1PH	6.4	VFD	GREENHECK	GB-300-314OXQDDRI	1,2,3,4
EF-33	KITCHEN	ROOF DOWNBLAST	5600	0.25	BELT	41.5" x 41.5"	460	1.0	8.8	15	208V/1PH	8.2	VFD	GREENHECK	GB-300-15140X3QD-DR1	1,2,3,4

NOTES:

1. PROVIDE 12 INCH INSULATED ROOF CURB
2. PROVIDE BACKDRAFT DAMPER
3. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH
4. PROVIDE VFD TO BE MOUNTED INDOORS
5. ECM MOTOR

DUCTED HEATING COIL

TAG	CFM	EAT / LAT	CAPACITY	EWT/LWT	FLOWRATE	FACE AREA	FACE VELOCITY (FPM)	# ROWS	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
HC-H1	3250	58F / 90F	112,320 BTUH	160/140	11.2 GPM	6.5 SQFT	500	1			
HC-H2	3250	58F / 90F	112,320 BTUH	160/140	11.2 GPM	6.5 SQFT	500	1			
HC-H3	1500	58F / 90F	51,840 BTUH	160/140	5.2 GPM	3.0 SQFT	500	1			
HC-H4	4500	58F / 90F	155,520 BTUH	160/140	15.5 GPM	9.0 SQFT	500	1			

PACKAGED COOLING ROOFTOP UNIT WITH ENERGY RECOVERY WHEEL

TAG	LOCATION	SERVICE	TOTAL CFM	OA CFM	ESP	EER/IEER	DX COOLING TOTAL CAPACITY	DX COOLING SENSIBLE CAPACITY	DX COOLING REFIGERANT	DX COOLING EAT DB/WB	DX COOLING LAT DB/WB	HOT GAS REHEAT CAPACITY	HOT GAS REHEAT LAT DB/WB	ERW SUMMER OA DB/WB EAT	ERW SUMMER RA DB/WB EAT	ERW SUMMER MIXED AIR DB/WB LAT	ERW SUMMER REMOVED CAPACITY	ERW SUMMER EFFECTIVENESS TOTAL	ERW SUMMER EFFECTIVENESS SENSIBLE	ERW WINTER OA DB/WB EAT	ERW WINTER RA DB/WB EAT	ERW WINTER MIXED AIR DB/WB LAT	ERW WINTER REMOVED CAPACITY	ERW WINTER EFFECTIVENESS TOTAL	ERW WINTER EFFECTIVENESS SENSIBLE	DIMENSIONS (LxHxW)	WEIGHT (LBS)	ELECTRICAL V/PH	ELECTRICAL FLA	ELECTRICAL MCA	ELECTRICAL MOP	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
RTU-H-1	ROOF	STAGE	3250	1535	1.0"	12.0/21.7	96,476 BTUH	81,395 BTUH	R32	76.8F/63.5F	53F/53F	60,398 BTUH	70F/59F	95F/75F	75F/62F	78.5F/63.5F	57,020 BTUH	0.78	0.8	0F/0F	75F/50F	58.8F/43.9F	108,662 BTUH	0.8	0.81	121.6 X 85.9 X 73.4	2299	208V/3PH	64.9	75.4	110	DAIKIN	DPSC07B	
RTU-H-2	ROOF	CAFETERIA	3250	1535	1.0"	12.0/21.7	96,476 BTUH	81,395 BTUH	R32	76.8F/63.5F	53F/53F	60,398 BTUH	70F/59F	95F/75F	75F/62F	78.5F/63.5F	95	0.78	0.8	0F/0F	75F/50F	58.8F/43.9F	108,662 BTUH	0.8	0.81	121.6 X 85.9 X 73.4	2299	208V/3PH	64.9	75.4	110	DAIKIN	DPSC07B	
RTU-H-3	ROOF	CAFETERIA	1500	572	0.75"	14.1/20.28	37,774 BTUH	35,059 BTUH	R32	76.8F/63.5F	54F/54F	25,734 BTUH	70F/60F	95F/75F	75F/62F	78.5F/63.5F	95	0.75	0.78	0F/0F	75F/50F	58.8F/43.9F	38,504 BTUH	0.77	0.78	103 X 69.5 X 53.3	1447	208V/3PH	30.8	35.5	50	DAIKIN	DPSC03B	
RTU-H-4	ROOF	KITCHEN	4500	2250	1.0"	12.4/21.3	124,934 BTUH	108,741 BTUH	R32	77.5F/64F	54F/54F	76,271 BTUH	70F/60F	95F/75F	75F/62F	78.5F/63.5F	95	0.73	0.74	0F/0F	75F/50F	58.8F/43.9F	144,599 BTUH	0.74	0.75	121.6 X 85.9 X 73.4	2452	208V/3PH	73.7	73.7	125	DAIKIN	DPSC10B	

AIR-COOLED VRV HEAT PUMP CONDENSING UNIT SCHEDULE

TAG	NOMINAL HEATING CAPACITY (BTU/H)	NOMINAL COOLING CAPACITY (BTU/H)	REFRIGERANT TYPE	REFRIGERANT FACTORY CHARGE (LBS)	DIMENSIONS (L X W X H)	WEIGHT (LBS)	ELECTRICAL VOLTAGE/PHASE	ELECTRICAL RLA	ELECTRICAL MCA	ELECTRICAL MOP	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
ODU-1	73,000	69,000	R-410A	13.0	65-2/5" X 36-11/16" X 30-3/16"	496	208V/3PH	11.1	27.3	30	DAIKIN	RXYQ72AATJA	
ODU-2.01	13,400	10,600	R-410A	2.09	21-5/8" X 26-9/16" X 11-3/16"	70	208V/1PH	12.0	13.0	15	DAIKIN	RXL12QMVJU9	
ODU-2.02	13,400	10,600	R-410A	2.09	21-5/8" X 26-9/16" X 11-3/16"	70	208V/1PH	12.0	13.0	15	DAIKIN	RXL12QMVJU9	
ODU-2.03	13,400	10,600	R-410A	2.09	21-5/8" X 26-9/16" X 11-3/16"	70	208V/1PH	12.0	13.0	15	DAIKIN	RXL12QMVJU9	
ODU-3-ALT	57,000	57,500	R-32	7.5	34-1/4" X 18-1/8" X 43-5/16"	220	208V/1PH	-	34.6	35	DAIKIN	RXTA60AAVJU	1
ODU-4-ALT	52,000	48,000	R-32	7.5	34-1/4" X 18-1/8" X 43-5/16"	220	208V/1PH	-	29.4	30	DAIKIN	RXT48AAVJU	1
ODU-5-ALT	73,000	69,000	R-410A	13.0	66-11/16" X 36-11/16" X 30-3/16"	496	208V/3PH	11.1	27.3	30	DAIKIN	RXYQ72AATJA	1
ODU-6-ALT	52,000	48,000	R-32	7.5	34-1/4" X 18-1/8" X 43-5/16"	220	208V/1PH	-	29.4	30	DAIKIN	RXT48AAVJU	1
ODU-7-ALT	57,000	57,500	R-32	7.5	34-1/4" X 18-1/8" X 43-5/16"	220	208V/1PH	-	34.6	35	DAIKIN	RXTA60AAVJU	1
ODU-8-ALT	73,000	69,000	R-410A	13.0	66-11/16" X 36-11/16" X 30-3/16"	496	208V/3PH	11.1	27.3	30	DAIKIN	RXYQ72AATJA	1
ODU-9	108,000	96,000	R-410A	22.7	66-11/16" X 36-11/16" X 30-3/16"	525	208V/3PH	23.8	36.3	45	DAIKIN	RXYQ96AATJA	
ODU-10	N/A	13,300	R-410A	2.09	21-11/16" X 26-1/2" X 11-3/16"	60	208V/1PH	2.9	4	15	DAIKIN	RK12BXVJU	
ODU-11.01	13,400	10,600	R-410A	2.09	21-5/8" X 26-9/16" X 11-3/16"	70	208V/1PH	12.0	13.0	15	DAIKIN	RXL12QMVJU9	
ODU-12	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	21.3	36.5	40	DAIKIN	RXYQ264AATJA	
ODU-13	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	21.3	36.5	40	DAIKIN	RXYQ264AATJA	
ODU-14	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	21.3	36.5	40	DAIKIN	RXYQ264AATJA	
ODU-15	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	21.3	36.5	40	DAIKIN	RXYQ264AATJA	
ODU-16	73,000	69,000	R-410A	13.0	66-11/16" X 36-11/16" X 30-3/16"	496	208V/3PH	11.1	27.3	30	DAIKIN	RXYQ72AATJA	
ODU-17	73,000	69,000	R-410A	13.0	48-13/16" X 30-1/8" X 30-3/16"	496	208V/3PH	11.1	27.3	30	DAIKIN	RXYQ72AATJA	
ODU-18	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	21.3	36.5	40	DAIKIN	RXYQ264AATJA	
ODU-19	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	21.3	36.5	40	DAIKIN	RXYQ264AATJA	
ODU-20	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	21.3	36.5	40	DAIKIN	RXYQ264AATJA	
ODU-21	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	21.3	36.5	40	DAIKIN	RXYQ264AATJA	
ODU-22	297,000	264,000	R-410A	25.4 + 25.8	97 5/8" X 30 1/8" X 65 3/8"	1433	208V/3PH	21.3	36.5	40	DAIKIN	RXYQ264AATJA	

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NOTES:

1. PROVIDED AS AN ADD/ALTERNATE.

VRF HEAT PUMP INDOOR UNIT

TAG	SERVED BY	TYPE	AIRFLOW (H/M/L)	HEATING CAPACITY (BTU/H)	TOTAL COOLING CAPACITY (BTU/H)	SENSIBLE COOLING CAPACITY (BTU/H)	DIMENSIONS (H X W X D)	WEIGHT (LBS)	VOLTAGE/PHASE	MCA	MOP	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NUMBER	NOTES
IDU-1.01	ODU-1	WALL MOUNTED	260/160	8,700	7,500	6,000	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ07PVJU	1,2
IDU-1.02	ODU-1	WALL MOUNTED	260/160	8,700	7,500	6,000	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ07PVJU	1,2
IDU-1.03	ODU-1	WALL MOUNTED	290/180	14,000	12,000	8,700	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ12PVJU	1,2
IDU-1.04	ODU-1	WALL MOUNTED	290/180	14,000	12,000	8,700	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ12PVJU	1,2
IDU-1.05	ODU-1	WALL MOUNTED	290/180	14,000	12,000	8,700	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ12PVJU	1,2
IDU-1.06	ODU-1	WALL MOUNTED	290/180	14,000	12,000	8,700	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ12PVJU	1,2
IDU-1.07	ODU-1	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2
IDU-1.08	ODU-1	WALL MOUNTED	260/160	8,700	7,500	6,000	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ07PVJU	1,2
IDU-2.01	ODU-2	WALL MOUNTED	434/311/247	13,400	13,300	10,600	11-1/4" X 30-5/16" X 8-3/4"	18	208V/1PH	0.4	15	DAIKIN	FTX12NMVJU	1,2
IDU-2.02	ODU-2	WALL MOUNTED	434/311/247	13,400	13,300	10,600	11-1/4" X 30-5/16" X 8-3/4"	18	208V/1PH	0.4	15	DAIKIN	FTX12NMVJU	1,2
IDU-2.03	ODU-2	WALL MOUNTED	434/311/247	13,400	13,300	10,600	11-1/4" X 30-5/16" X 8-3/4"	18	208V/1PH	0.4	15	DAIKIN	FTX12NMVJU	1,2
IDU-3.01-ALT	ODU-3-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-3.02-ALT	ODU-3-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-3.03-ALT	ODU-3-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-3.04-ALT	ODU-3-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-3.05-ALT	ODU-3-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-4.01-ALT	ODU-4-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-4.02-ALT	ODU-4-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-4.03-ALT	ODU-4-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-4.04-ALT	ODU-4-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-5.01-ALT	ODU-5-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-5.02-ALT	ODU-5-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-5.03-ALT	ODU-5-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-5.04-ALT	ODU-5-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-6.01-ALT	ODU-6-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-6.02-ALT	ODU-6-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-6.03-ALT	ODU-6-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-6.04-ALT	ODU-6-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-6.05-ALT	ODU-6-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-6.06-ALT	ODU-6-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.01-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.02-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.03-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.04-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-7.05-ALT	ODU-7-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.01-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.02-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.03-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.04-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.05-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-8.06-ALT	ODU-8-ALT	2X2 CASETTE	353/300/247	13,990	12,000	7,700	10-1/4" X 22-5/8" X 22-5/8"	36.4	208V/1PH	0.4	15	DAIKIN	FXZQ12TAVJU	2,3
IDU-9.01	ODU-9	WALL MOUNTED	635/470	26,500	24,000	18,000	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FXAQ24PVJU	1,2
IDU-9.02	ODU-9	WALL MOUNTED	635/470	26,500	24,000	18,000	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FXAQ24PVJU	1,2
IDU-9.03	ODU-9	WALL MOUNTED	635/470	26,500	24,000	18,000	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FXAQ24PVJU	1,2
IDU-9.04	ODU-9	WALL MOUNTED	635/470	26,500	24,000	18,000	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FXAQ24PVJU	1,2
IDU-9.05	ODU-9	WALL MOUNTED	635/470	8,500	7,500	6,300	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FXAQ07PVJU	1,2
IDU-10.01	ODU-10	WALL MOUNTED	316/247/132	N/A	12,000	10,900	10-1/4" X 22-5/8" X 22-5/8"	18	208V/1PH	0.4	15	DAIKIN	FTK12B	1,2
IDU-11.01	ODU-1	WALL MOUNTED	290/180	14,000	12,000	8,700	11-3/8"X31-1/4"X9-1/4"	26	208V/1PH	0.4	15	DAIKIN	FXAQ12PVJU	1,2

NOTES:

1. PROVIDE CONDENSATE PUMP
2. INTEGRATE INTO BACNET BMS SYSTEM
3. PROVIDED AS AN ADD/ALTERNATE

DIFFUSER

No.	DESCRIPTION	NECK SIZE	MOUNTING	FINISH	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
A	SUPPLY DIFFUSER, STEEL	18" Ø	SURFACE	BY ARCH	PRICE	RID	

LaBella
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Latham, NY 12110
(518) 273-0055
labellapc.com

CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 018281
LAND SURVEYING: 017976
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT

124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH
ENLARGED CITY SCHOOL DISTRICT

TEMPLE HILL ACADEMY

525 UNION AVENUE
NEW WINDSOR, NY 12553

NO:	DATE:	DESCRIPTION:
2	09-03-2024	ADDENDUM #2

Revisions

S.E.D. NUMBER: 44-16-00-01-0-036-015

PROJECT NUMBER: 2233600

DRAWN BY: DRM

REVIEWED BY: MB

ISSUED FOR: ADDENDUM 1

DATE: 12/03/2024

DRAWING NAME:

MECHANICAL SCHEDULES

DRAWING NUMBER:

M601

12/2/2024 5:35:58 PM

HALLWAY SPLIT SYSTEM - POINTS LIST

POINT #	POINT DESCRIPTION	READ POINTS	READ/WRITE POINTS	SOFTWARE POINTS SCHEDULE	ALARM	TREND	NOTES
1	SYSTEM ENABLE/DISABLE		X				
2	OCCUPIED HEATING SETPOINT		X				
3	UNOCCUPIED HEATING SETPOINT		X				
4	OCCUPIED COOLING SETPOINT		X				
5	UNOCCUPIED COOLING SETPOINT		X				
6	GENERAL ALARM		X		X		
7	SPACE TEMPERATURE	X			X	X	

OFFICE SPLIT SYSTEM - POINTS LIST

POINT #	POINT DESCRIPTION	READ POINTS	READ/WRITE POINTS	SOFTWARE POINTS SCHEDULE	ALARM	TREND	NOTES
1	SYSTEM ENABLE/DISABLE		X				
2	OCCUPIED MODE		X	X			
3	UNOCCUPIED MODE		X	X			
4	GENERAL ALARM		X		X		
5	SPACE TEMPERATURES	X			X	X	PROVIDE USER ADJUSTABLE THERMOSTATS IN EACH SPACE

NOTES:
1. CONTRACTOR TO PROGRAM DEFAULT HEATING AND COOLING SETPOINTS
2. CONTRACTOR TO PROGRAM SETPOINT ADJUSTMENT RANGE +/- 2 DEG. F
3. SCHEDULES SHALL BE PROGRAMMED IN BMS OR SPLIT SYSTEM CONTROLLER

ACCUS - POINTS LIST

POINT #	POINT DESCRIPTION	READ POINTS	READ/WRITE POINTS	SOFTWARE POINTS SCHEDULE	ALARM	TREND	NOTES
1	SYSTEM ENABLE/DISABLE		X				
2	COMPRESSOR STATUS	X			X		
3	MODEL SELECT (HEATING/COOLING)		X			X	
4	GENERAL ALARM				X		
5	COMPRESSOR START/STOP (2)		X			X	

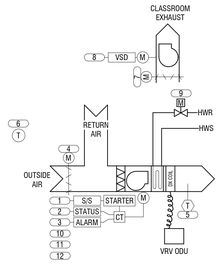
NOTES:
1. CONTRACTOR TO PROGRAM DEFAULT HEATING AND COOLING SETPOINTS
2. CONTRACTOR TO PROGRAM SETPOINT ADJUSTMENT RANGE +/- 2 DEG. F
3. SCHEDULES SHALL BE PROGRAMMED IN BMS OR SPLIT SYSTEM CONTROLLER

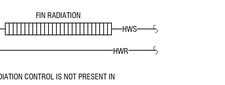
VRF UNIT VENTILATOR - POINTS LIST

ABBREVIATION KEY:
AI = ANALOG INPUT, AO = ANALOG OUTPUT, DI = DIGITAL INPUT, DO = DIGITAL OUTPUT, AV = ANALO...
DV = DIGITAL VALUE

NOTES:

POINT #	POINT DESCRIPTION	HARDWARE POINTS AI	AO	DI	DO	AV	DV	SOFTWARE POINTS SCHED	ALARM	TREND	NOTES
1	FAN MOTOR START/STOP				X						
2	FAN MOTOR STATUS			X						X	
3	FAN MOTOR ALARM			X					X		
4	OA/RA DAMPER		X			X					
5	SUPPLY TEMPERATURE	X							X		
6	SPACE TEMPERATURE	X							X	X	
7	FIN TUBE CONTROL VALVE		X							X	
7	EF DAMPER				X				X		
8	FAN SPEED		X								
9	HEATING COIL CONTROL VALVE		X							X	
10	FACE/BYPASS DAMPER		X							X	
11	MODE TO VRV SYSTEM						X			X	
12	VRV ODU TEMP. SENSOR (EACH CLASSROOM)	X							X	X	





NOTE: FIN RADIATION CONTROL IS NOT PRESENT IN ALL SPACES.

OCCUPIED MODE: THE UNIT SHALL MAINTAIN A 70°F (ADJ.) HEATING SETPOINT, 74°F COOLING SETPOINT.

UNOCCUPIED MODE: (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A 60°F (ADJ.) HEATING SETPOINT, 80°F COOLING SETPOINT.

SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE SPACE TEMPERATURE HEATING SETPOINT AT THE SPACE SENSOR.

F/B DAMPER AND HEATING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE SPACE TEMPERATURE. WHENEVER THE SPACE TEMPERATURE FALLS BELOW THE HEATING SETPOINT, MODULATE THE FACE AND BYPASS DAMPER TO MAINTAIN SETPOINT. THE HOT WATER COIL VALVE SHALL BE OPEN.
HEATING SHALL BE ENABLED WHENEVER:
-OUTSIDE AIR TEMPERATURE IS LESS THAN 50°F (ADJ.) AND OAT<40F - COIL 100% OPEN AND MODULATE F/B DAMPER TO MAINTAIN TEMPERATURE OR OAT>.40F - F/B FULL FACE AND MODULATE COIL TO MAINTAIN TEMEPERATURE
-THE SPACE TEMPERATURE IS BELOW HEATING SETPOINT.

ECONOMIZER MODE WHEN OUTSIDE AIR IS ABOVE 60ºF (ADJ.):

WHENEVER THE F/B DAMPER IS IN FULL BYPASS POSITION AND THE SPACE TEMPERATURE RISES ABOVE SPACE SETPOINT, THE HOT WATER COIL SHALL CLOSE. UPON FURTHER RISE IN TEMPERATURE, THE OUTSIDE AIR DAMPER SHALL OPEN TO 100% TO ALLOW FOR ECONOMIZER COOLING.

DISCHARGE AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

OUTSIDE AIR DAMPER:
THE OUTSIDE AIR DAMPER SHALL OPEN TO ITS MINIMUM OUTSIDE AIR POSITION WHENEVER:
-THE UNIT IS IN OCCUPIED MODE AND
-THE FAN IS ON.

EXISTING BUILDING CONTROLS: WHEN OA DAMPERS OPEN, EXG. RELIEF AIR DAMPERS SHALL OPEN AND RELIEF AIR EXHAUST FANS SHALL RUN.

FAN:
DURING OCCUPIED MODE THE SUPPLY FAN WILL RUN AT A CONSTANT, MANUALLY DESIGNATED SPEED (LOW/MED/HIGH).
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS:
- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).
- HIGH SPACE TEMPERATURE: IF THE SPACE TEMPERATURE IS GREATER THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT.
- LOW SPACE TEMPERATURE: IF THE SPACE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT.
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

FIN RADIATION HEATING VALVE (IF EXISTING IN PLACE):
WHERE EXISTING, THE FIN RADIATION SHALL:
-PROVIDE THE SECOND STAGE OF HEATING.
-PROVIDE UNOCCUPIED MODE HEATING.
-BE DISABLED WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 60 DEG F (ADJ.)

EXISTING CLASSROOM RELIEF SYSTEM:
EXISTING RELIEF SYSTEM SHALL OPERATE DURING OCCUPIED MODES AND BE OFF DURING UNOCCUPIED MODE.

ROOF TOP UNIT CONTROLS - POINTS LIST

Point #	Point Description	HARDWARE POINTS AI	AO	DI	DO	AV	DV	SOFTWARE POINTS SCHED	ALARM	TREND	GRAPHIC	NOTES
1	OUTSIDE AIR DAMPER		X								X	
2	OUTDOOR AIR FILTER CHANGE								X		X	
3	OUTDOOR AIR FILTER DIFFERENTIAL PRESSURE			X						X	X	
4	OUTSIDE AIR TEMPERATURE	X								X	X	
5	OUTSIDE AIR HUMIDITY	X								X	X	
6	FREEZESTAT - ELECTRIC MULTIPLE CONTACT			X					X		X	
7	MIXED AIR TEMPERATURE	X								X	X	
8	SUPPLY FAN START/STOP				X							
9	SUPPLY FAN STATUS (CURRENT SENSING SWITCH)			X						X		
10	SUPPLY FAN SPEED		X							X		
11	HOT WATER VALVE		X							X		
12	RETURN AIR DAMPER		X								X	
13	EXHAUST FAN START/STOP				X					X		
14	EXHAUST FAN STATUS (CURRENT SENSING SWITCH)			X								
15	EXHAUST FAN SPEED		X									
16	EXHAUST AIR DAMPER				X						X	
17	DISCHARGE AIR TEMP	X								X	X	
18	SPACE TEMPERATURE SENSOR	X								X		
19	SPACE HUMIDITY SENSOR	X								X		
20	CO2 SENSOR	X								X		
21	CO2 SENSOR	X								X		

SAFETIES

ALARMS SHALL BE PROVIDED AS FOLLOWS:

AN ALARM SHALL BE GENERATED BY EACH OF THE ALARMS SHOWN ON THE POINTS LIST.
- IF ANY DIGITAL STATUS POINT DISAGREES WITH THE COMMAND FOR MORE THAN 5 MINUTES AN ALARM SHALL BE GENERATED
- IF ANY TEMPERATURE SETPOINT IS MORE THAN 4 DEGREES FROM THE SETPOINT FOR MORE THEN 10 MINUTES, AN ALARM SHALL BE GENERATED
- FILTER CHANGE NOTIFICATION: FILTER DIFFERENTIAL PRESSURE EXCEEDS SETPOINT (ADJ.).
- FAN SHUTDOWN UPON DUCT SMOKE DETECTOR ACTIVATION

FAN OPERATION

OCCUPIED MODE
THE SUPPLY FAN SHALL BE RUN CONTINUOUSLY UNLESS SHUTDOWN BY SAFETIES. THE SUPPLY AIR FANS SPEED SHALL BE OPTIMIZED IN THE FIELD DURING SYSTEM BALANCING TO DELIVER THE SCHEDULED SUPPLY AIRFLOW.

THE OA AND RA DAMPERS SHALL BE POSITIONED TO DELIVER THE APPROPRIATE AMOUNT OF OUTSIDE AIR AS DESCRIBED BELOW.

THE EXHAUST FAN SHALL RUN CONTINUOUSLY. THE SPEED SHALL BE MODULATED ACCORDING TO THE OUTSIDE AIR DAMPER POSITION. THE MODULATION SCHEDULE SHALL BE SET BY THE AIR BALANCER.

UNOCCUPIED MODE

GIDNEY SEQUENCE

- THE SUPPLY FAN AND EXHAUST FAN SHALL BE OFF. EXISTING FINNED TUBE RADIATION SHALL MAINTAIN THE UNOCCUPIED SPACE TEMPERATURE.

HILLS SEQUENCE-

THE SUPPLY FAN AND EXHAUST FAN SHALL BE OFF. IF THE SETPONT TEMPERATURE DROPS TWO DEGREES BELOW THE UNOCCUPIED SETPOINT, THE SUPPLY FAN SHALL START AND THE HEATING COIL SHALL OPEN TO 50% POSITION UNTIL THE SPACE TEMPERATURE IS 2 DEGREES ABOVE THE SETPOINT. THE FANS SHALL STOP AND THE HEATING VALVE SHALL CLOSE.

SETPOINTS

OCCUPIED HEATING – 70ºF
OCCUPIED COOLING - 73ºF

UNOCCUPIED HEATING – 63ºF
UNOCCUPIED COOLING - 85ºF

FREEZE PROTECTION

THE FREEZE STAT SETPOINT SHALL BE 40 DEGF. IF THE FREEZE STAT TRIPS, THE FANS SHALL STOP, THE DAMPERS SHALL MODULATE TO FULL RETURN POSITION AND THE HEATING COIL VALVE SHALL OPEN 50%. AN ALARM SHALL BE SENT.

HEATING MODE

THE HEATING CONTROL VALVE SHALL MODULATE TO MAINTAIN THE HEATING SETPOINT TEMPERATURE

ECONOMIZER MODE

IF THE OUTDOOR ENTHALY IS LESS THAN THE INDOOR INTHALPY AND THE SPACE TEMPERATURE IS ABOVE THE COOLING SETPOINT, ECONOMIZER COOLING SHALL BE ENABLED. THE MIXED AIR DAMPERS SHALL USE OUTSIDE AIR TO MAINTAIN THE COOLING SETPOINT. THE EXHAUST FAN SHALL MODULATE IN SYNC WITH THE OUTSIDE AIR DAMPER POSITION TO MAINTAIN SPACE PRESSURE BALANCE.

COOLING MODE

THE MIXED DAMPERS SHALL BE AT THE MINIMUM OCCUPIED POSITION OR THE POSITION DICTATED BY THE DCV CONTROL, WHICHEVER IS GREATER. THE ACCU SHALL START AND MODULATE TO MAINTAIN THE SPACE TEMPERATURE. THE MINIMUM SUPPLY AIR TEMPERATURE SHALL BE 50ºF.

DCV CONTROL

OCCUPIED MODE

THE MIXED AIR DAMPERS SHALL MODULATE TO MAINTAIN A CO2 SETPOINT OF 800 PPM (ADJ). THE MIXED AIR DAMPERS SHALL BEGIN TO MODULATE OPEN WHEN THE INDOOR CO2 LEVEL IS 100 PPM OVER THE OUTDOOR CO2 LEVEL.

THE MINIMUM POSITION OF THE OA DAMPER SHALL BE SET BY THE AIR BALANCER TO MAINTAIN THE MINIMUM AIR FLOW SHOWN ON THE SCHEDULE.

PURGE MODE

PRE-OCCUPANCY – THERE SHALL BE A 30 MINUTE PRE-OCCUPANCY PURGE WITH THE OUTSIDE DAMPERS SET TO THE MAXIMUM AIR FLOW POSITION SHOWN ON THE SCHEDULE AS SET BY THE AIR BALANCER.

POST-OCCUPANCY FLUSH - THE POST-OCCUPANCY FLUSH SHALL OPERATE UNTIL CO2 LEVELS ARE REDUCED TO 450 PPM. DURING POST-OCCUPANCY FLUSH THE DAMPERS SHALL BE IN THE MINIMUM VENTILATION POSITION AS SHOWN ON THE AHU SCHEDULE.

SENSOR FAILURE

IF A CO2 SENSOR FAILS, THE MIXED AIR DAMPERS SHALL OPEN TO THE MAXIMUM POSITION.

COMMISSIONING AND RECORD KEEPING REQUIREMENTS

THE CO2 SENSOR CALIBRATION SHALL BE CHECKED ONE YEAR AFTER INITIAL COMMISSIONING IS COMPLETED.
CO2 CONCENTRATION READINGS SHALL BE LOGGED BY THE BMS ON A 15-MINUTE INTERVAL. RECORDS MUST BE KEPT FOR A MINIMUM OR THREE YEARS.

3 M701 VRV UNIT VENTILATOR CONTROLS SCHEMATIC
1/8" = 1'-0"

2 M701 ROOF TOP UNIT CONTROLS
1/8" = 1'-0"

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(518) 273-0055
labellapc.com

CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 018281
LAND SURVEYING: 017976
GEOLOGICAL: 018750

NEWBURGH ENLARGED CITY SCHOOL DISTRICT
124 GRAND ST. - NEWBURGH, NY 12550

NEWBURGH ENLARGED CITY SCHOOL DISTRICT

TEMPLE HILL ACADEMY
525 UNION AVENUE
NEW WINDSOR, NY 12553

NO:	DATE:	DESCRIPTION:
2	09-03-2024	ADDENDUM #2
Revisions		

S.E.D. NUMBER: 44-16-00-01-0-036-015

PROJECT NUMBER: 2233600
DRAWN BY: DRM
REVIEWED BY: MB
ISSUED FOR: ADDENDUM 1
DATE: 12/03/2024
DRAWING NAME: MECHANICAL CONTROLS
DRAWING NUMBER: M701

12/2/2024 5:36:00 PM

SECTION 001116 - INVITATION TO BID

Architect	Project Information
LaBella	Newburgh Enlarged City School District
21 Fox St	124 Grand Street
Poughkeepsie, New York 12601	Newburgh NY
PH: 845-454-3980	2019 Capital Project

The Owner, Newburgh Enlarged City School District, will receive sealed bids to furnish materials and labor to complete the HVAC upgrades and new installation and interior/exterior renovations work across schools specified within the 2019 Bond Project. Each bid shall be on a stipulated sum basis for the following contract:

Multiple Project Contract consisting of the following prime contracts:

1. Mechanical Construction
2. Electrical Construction
3. General Construction

Bids shall not include New York State sales and compensating use taxes on materials and supplies incorporated into the Work, the Owner being exempt therefrom. Two copies of sealed bids in an envelope on which is clearly stated the contract no. and title shall be submitted to the district address listed above and received by mail prior to **3:00 PM on December 18, 2024.** Bids received after this time will not be accepted and returned to the Bidder unopened. Bids will be opened publicly and read aloud after specified receipt time. All interested parties are invited to attend.

Bidding/Contract Document drawings and specifications may be examined on and after **November 18, 2024** free of charge at the following locations:

Architect	REV
LaBella	28 Church Street
21 Fox St	Unit 7
Poughkeepsie, New York 12601	Warwick, New York 10990

It is the intention of this Project to be both environmentally and fiscally conscious of paper use and consumption. Therefore, documents will be distributed as digital sets. Bidding Documents, Drawings

and Specifications, may be viewed online free of charge beginning **November 18, 2024,** at https://labella.biddyhq.com under Public Project. "public projects," or electronically downloaded for a non-refundable charge of one hundred dollars ($100.00.)

Complete sets of Bidding Documents, Drawings and Specifications, on compact disc (CD) in PDF format may be obtained from Labella, 4 British American Boulevard, Latham, New York 12110 Tel: (877) 272-0216 upon depositing the sum of one hundred dollars ($100.00) for each combined set of documents. Checks or money orders shall be made payable to Newburgh Enlarged City School District.

All bid addenda will be transmitted to registered plan holders via https://labella.biddyhq.com . Plan holders who have paid for hard copies of the bid documents will need to make the determination if hard copies of the addenda are required for their use and coordinate directly with the printer for hard copies of the addenda to be issued. There will be no charge for registered plan holders to obtain hard copies of the bid addenda.

Each Bidder must deposit a Bid Security in the amount and form per the conditions provided in Instructions to Bidders. All Bids will remain subject to acceptance for forty-five (45) days after the Bid opening. Owner may, in its sole discretion, release any Bid and return Bid Security prior to that date.

A full performance bond, together with labor and material payment bonds in a form acceptable to the Owner, shall be required of the successful Bidder for the full contract amount.

The award of the bid pursuant to this notice is subject to the appropriation of funds for this purpose in accordance with the applicable provisions of the General Municipal Law. All bids must meet the requirements of the General Municipal law of the State of New York and all other applicable statutes and have attached a statement of non-collusion. All documents submitted in connection with this bid will become the property of the Newburgh Enlarged City School District, and the district will not return bids or bid documents.

The contract will be awarded by the school district to the lowest responsible bidder. In cases where two or more responsible Bidders submit identical bids as to price, the school district may award the contract to either of such bidders. The school district reserves the right to reject all bids and re-advertise for new bids in its discretion and/or to waive any informality in any bid which it deems immaterial in nature.

Pre-Bid Conferences will be held on November 27, 2024 starting at 8:00 AM at Gidney School, and continue to Meadow Hill School at 9:00am, and end at Temple Hill School starting at 11:00am. Jacobs Construction Manager Warren Sackman will be the on-site Contact Person, he can be reached at (516) 353-8666. Use this page to verify identification as a Bidder at the school's Main Office. Attendance of this meeting is requested as the Owner, Architect and consultants will be present to discuss the Project. Attendees should anticipate a Q & A session followed by a walk-

through of the building and site. The Contractors are responsible for formally submitting RFIs regarding any questions that may arise during the walkthrough.

This project is publicly funded. The Bidders must comply with New York State Department of Labor Prevailing Wage Rate Schedule and conditions of employment.

The Newburgh Enlarged City School District reserves the right to waive any informalities or irregularities in the Bids received, or to reject all Bids without explanation.

By Order Of:

Newburgh Enlarged City School District

END OF SECTION 001116

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