WESTPORT PUBLIC SCHOOLS CONNECTICUT

REQUEST FOR PROPOSALS
FOR

STAPLES HIGH SCHOOL
REPLACEMENT OF EXISTING HOT WATER PUMPS, WATER BALANCING & REPLACEMENT OF CONTROL VALVES

WESTPORT, CT 06880

#25-011-RFP

Issued for Bid: March 25, 2025

REQUEST FOR PROPOSALS

FOR:

STAPLES HIGH SCHOOL

REPLACEMENT OF EXISTING HOT WATER PUMPS, WATER BALANCING & REPLACEMENT OF CONTROL VALVES

RFP # 25-011

The deadline for submission of proposals is Friday**, April 18, 2025, at 2:00 p.m. EST.** Submit one (1) sealed paper copy and one (1) electronic copy (on flash drive) of the proposal to:

Elio Longo
Chief Financial Officer
Westport Public Schools
110 Myrtle Avenue
Westport, CT 06880

LATE OR INCOMPLETE BIDS WILL NOT BE ACCEPTED

Mark in left hand corner of envelope:

RFP: **#25-011 RFP**

Due: **April 18, 2025, at 2:00 p.m. EST**

Submitted by: _____

The designated contact for this RFP is listed below. All questions regarding this RFP must be submitted in writing to the designated contact within the timeframes set forth in the RFP Schedule. Copies of questions and responses will be issued to all respondents as an Addendum to this RFP as set forth in the RFP Schedule.

Designated contact: Theodore Hunyadi, Director of Facilities, (thunyadi@westportps.org)

I. RESERVATION OF RIGHTS:

A. The Town of Westport reserves the right to qualify multiple respondents.

B. The Town of Westport reserves the right to reject any and all proposals submitted in response to this Request for Proposals ("RFP").

C. The Town of Westport reserves the right to terminate this RFP process at any time.

D. The Town of Westport reserves the right to waive any non-conformity with the requirements of this RFP.

E. The Town of Westport reserves the right to seek clarification from a respondent at any time throughout the RFP process for the purpose of resolving ambiguities or questioning information presented in the proposal.

F. The Town of Westport reserves the right to apportion the award among one or more respondents.

II. RFP SCHEDULE:

RFP Issued:	Tuesday, March 25, 2025
Site Review -**Mandatory**:	Wednesday, April 2, 2025 at 3:15 p.m.
(Meet at the front of Staples High School-Door #1 at Main Lobby)	
Deadline for Questions:	Thursday, April 10, 2025 at 1:00 p.m.
Answers Issued By Addendum:	Monday, April 14, 2025 by 2:00 p.m.
Proposals Due:	Friday, April 18, 2025 at 2:00 p.m.

III. INTRODUCTION

A. The Town of Westport is looking to have a design firm perform a thorough review and provide drawings and specifications to address the replacement of five (5) inline hydronic pumps located at the Staples High School. The current inlet piping of each pump was not installed per manufacturers instructions, causing cavitation issues and damage to pump components.

B. The existing controllers for hydronic pumps located throughout Area J of the school are outdated and the system differential pressure for several hot water loops is unreliable. Control components have also been reported to be failed and there is currently hot water flow issues in Area H of the school reported from previous review with the district.

C. The hot water distribution system is suspected to be out of balance and it was reported that balancing valves are fully open on several devices.

D. The fan coil units are equipped with cartridge type valves which have poor design and 30% valves fail every year.

E. Staples High School is located at 70 North Avenue in Westport, Connecticut.

F. The Town of Westport is seeking design proposals from architectural and/or engineering firms who are qualified in the provision of drawings and specifications for the work referenced within this request for proposal.

G. A mandatory site review meeting is scheduled for 3:15 p.m. (following student dismissal) on Wednesday, April 2, 2025. Meet at the front of the school and we will proceed as a group to the location within the facility.

H. The Town of Westport presently intends to schedule this scope of work beginning in the summer of 2026 (once school is dismissed-approximately June 14) and anticipates the scope of work to last approximately ten weeks.

IV. SCOPE OF BASIC SERVICES

A. The following services are required of the architect and/or engineer:

- The selected firm shall provide the necessary drawings and specifications to address the following:
  1. The assessment, inlet re-piping and replacements of the following existing hydronic inline pumps

Unit ID	Area Served	Remarks
P-3-8	South Fin Tube Radiation	
P-3-9	East Fin Tube Radiation	Inlet piping has been re-piped to manufacturer's instructions
P-3-10	North Fin Tube Radiation	
P-3-11	West Fin Tube Radiation	
P-3-12	Greenhouse	

  2. The necessary replacement of all outdated controllers serving pumps located in Area J mechanical spaces of the school and provide controls sequences to integrate with existing controls on school campus.
  3. Evaluate, design and specification to replace all cartridge type valves serving fan coil units (FCUs) with direct digital control (DDC) valves throughout the school.
  4. Investigate flow issues reported in Area H of the school and provide water side balancing for the schools heating hot water system.
  5. Pricing from a professional estimating agency to implement the project broken down by labor and material costs per task.
- The selected firm shall provide all associated drawings, specifications and bid package documentation required of the contractor to perform the work.
- Note that the project will be subject to Prevailing Wage Rates.

B. Attached are exhibits, as part of this RFP for reference and additional information,

- Exhibit 3 – Mechanical schedule
- Exhibit 4 – FCU Controls and Schedule

C. The following systems are to be incorporated into the pumps and controls upgrades and design based on a prior review with the district:

- Inline hydronic pump design of inlet re-piping and any necessary pump replacements
- Pump Power and Control System. Update old pump controllers
- Water side balancing. Investigation of hot water flow issues and remedial recommendations.
- Heating Hot Water System Balancing
- Design FCU valve replacement with DDC valves.

V. PROPOSAL REQUIREMENTS

In order to be considered, proposals submitted in response to this RFP shall include the following information, which shall be presented in the below established format:

- A narrative introduction to your firm's experience and history in providing these design services for similar stage rigging and lighting replacement systems.

- An in depth narrative of your firm's applicable experience on relevant projects including detail on: a) the project scope and size, b) value of the resulting construction and/or renovation work, c) the identification of any involved sub-consultants and/or joint-venture partners, particularly those that were/are certified Minority ("MBE") or Woman Owned Business Enterprises ("WBE"), d) contact information for at least one Owner Representative per project, and e) a description of related Auditorium project experience with a school district project owner.

- Current resumes of all personnel that will be assigned to this project if your firm is selected to provide these design services. In addition, explain what role will be played by each member of your proposed team for these design services.

- Respondent's proposed organizational chart for this design proposal, identifying the specific roles of each team members.

- Disclose whether any shareholder, director, officer or employee is currently employed by the Town of Westport or was an employee of the Town of Westport during the two (2) year period preceding the date of the proposal.

- The following criteria, not listed in priority order, shall be considered in evaluating and selecting the proposing firms based upon qualifications and written proposal submissions:

    1. Quality of proposal
    2. Experience of firm with similar projects
    3. Success of completed projects
    4. Fee for services

VI. COMPENSATION

- Compensation for the proposed services shall be based on a combination of a lump sum fee for the defined "Basic Services" and forecasted costs associated with the defined "Reimbursable Services & Expenses".

- Compensation for travel time incurred to and from the site, reimbursements, meals, etc., whether associated with the provision of Basic or Reimbursable Services, shall **NOT** be considered or reimbursed.

- Reimbursable expenses shall be billed at cost with no markup.

- Any desired additional services beyond the defined scope shall be mutually agreed to in writing and shall be based upon mutually agreed to hourly rates.

VII. QUESTIONS

All questions shall be submitted in writing to Mr. Ravi Chavan, Sr. Project Manager for Commissioning via email to ravi.chavan@collierseng.com with a copy to Mr. John Koplas, Sr. Project Manager via email to john.koplas@collierseng.com and a copy to Mr. Elio Longo, Chief Financial Officer, elongo@westportps.org by 1:00 p.m. on Thursday, April 10, 2025. Addenda will be prepared and posted to the district bidding website by 2:00 p.m. on Monday, April 14, 2025.

VIII INSURANCE REQUIREMENTS

The successful respondent shall furnish a certificate of insurance to the Board for the following insurance coverage within ten (10) days from contract execution. The certificate of insurance shall contain the project description and name the Board as an additional insured. All insurance coverage shall be written with an insurance company licensed to conduct business in the State of Connecticut. Insurance coverage shall remain in full force for the duration of the contract term including any and all extensions. Such certificate of insurance shall specify that the Board will receive thirty (30) days' notice of any cancellation, non-renewal or reduction in coverage and limits originally provided.

1. General Liability with a combined single limit of $1,000,000 per occurrence, $2,000,000 aggregate for bodily injury and property damage.

2. Automobile Liability with a combined single limit of $1,000,000 per occurrence, $2,000,000 aggregate for owned, non-owned, and hired vehicles.

3. Workers Compensation with a minimum of $500,000 as required by the State of Connecticut.

4. Professional Liability with a combined single limit of $1,000,000 per occurrence, $2,000,000 aggregate.

5. Umbrella Liability with a combined single limit of $1,000,000 per occurrence, $2,000,000 aggregate for bodily injury and property damage.

IX. OTHER

- The Board reserves the right to reject any and all proposals when it deems such action is in the best interests of the Board and also to select a respondent that the Board determines best meets its needs.

- Costs and fees contained in the proposal will remain valid for a period of ninety (90) days after the closing date for submission of proposals and may be extended beyond that time by mutual agreement between the Board and the respondent.

- The firm selected will be expected to execute the attached AIA B101 Contract and referenced AIA A201 Contract. Submitting firms shall provide any exceptions to the contract in writing with their proposal. Failure to do so will be considered full acceptance of the contract. Exceptions to the contract will also be considered in the evaluation of proposals.

X. EXHIBITS

1. Fee Proposal Form
2. Macro Schedule
3. Mechanical Schedule
4. FCU Controls and Schedule

EXHIBIT 1 – Fee Proposal Form

Westport Public Schools

Replacement of existing hot water pumps, water balancing & replacement of control valves@ Staples High School

RFP # 25-011

Scope of Work	Fee
Review existing conditions, documentation and operations.	$
Provide design selection for pump replacement including replacement of outdated controllers and control accessories	$
Provide design and specification for hot water balancing and investigate flow issues.	
Provide design and specification for replacement of control valves for Fan Coil Units with DDC valves.	$
Provide price estimate for the installation of the pumps.	$
Provide price estimate for water balancing and controls upgrade	$
Provide price estimate for replacement of Fan Coil Units control valves	$
Provide bid documentation, bid support and participate in contractor walk through.	$
Submit final report including design, specifications and construction documents.	$
Participate in review meetings with District Personnel and their representatives.	$
Total Fee	$
Reimbursable Expenses Not Included in Fees:	$

Print Name (Authorized Representative of Company)	Date
Signature (Authorized Representative of Company)	Date

EXHIBIT 2

Westport Public Schools
CIP Plan Project Schedule
Staples High School SHS-008
Replace pumps in Boiler Room

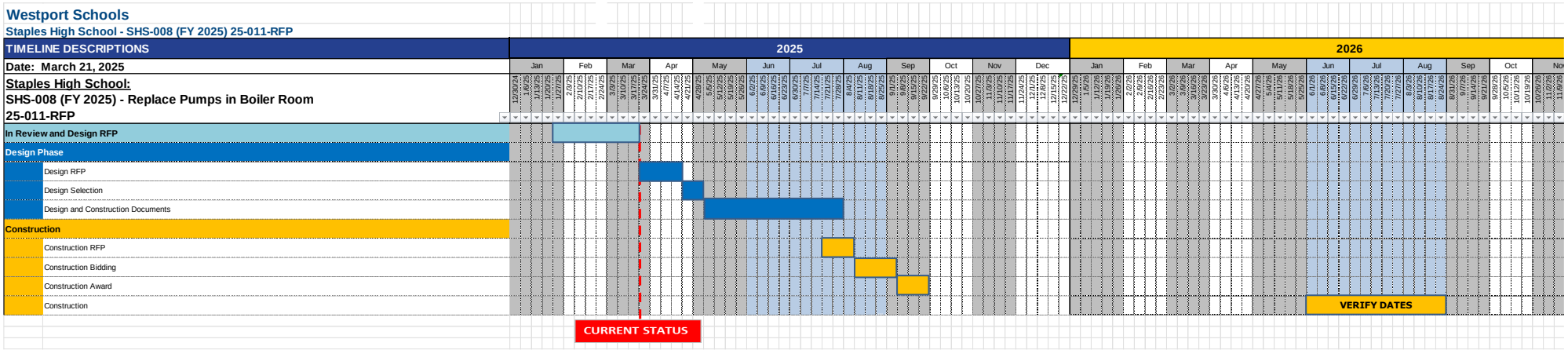

EXHIBIT 3: Staples High School SHS-008
Replace pumps in Boiler Room

CHILLERS

UNIT NO	LOCATION	TYPE	CAP TONS	EVAPORATOR GPM	EVAPORATOR EWT	EVAPORATOR LWT	EVAPORATOR PD	CONDENSER GPM	CONDENSER EWT	CONDENSER LWT	CONDENSER PD	ELECTRICAL KW	ELECTRICAL VOLTS	ELECTRICAL PH	ELECTRICAL RPM	MAKE/MODEL	REMARKS
CH-3-1	BUILDING 3 CELLAR	CENTRIF.	400	960	54	44	20.7'	1200	85	95	24.3'	227.7	480	3	3600	TRANE CVHF 485	
CH-3-2	BUILDING 3 CELLAR	ROTARY SCREW	100	240	54	44	19'	300	85	95	19'	77.6	480	3	3600	TRANE RTWA 90 LONG	

COOLING TOWERS

UNIT NO	LOCATION	WATER DATA GPM	WATER DATA EWT	WATER DATA LWT	WATER DATA HEAD	AIR DATA WB	AIR DATA CFM	FAN DATA SP	FAN DATA TYPE	ELECTRICAL HP	ELECTRICAL VOLTS	ELECTRICAL PH	ELECTRICAL RPM	ELECTRICAL HTR	OPER LBS	MAKE/MODEL	REMARKS
CT-3-1	UNIT 'E' ROOF	1500	95	85	15 FT	76 F	129,620	0 EXT	PROP.	2 @ 15	480	3	1750	AS REQ'D	25,020	BAC 15 245 * 2	VFD

PUMPS

UNIT NO	LOCATION	SYSTEM SERVED	FLUID	GPM	MAX TEMP	HEAD FT	MAX BHP	ELECTRICAL HP	ELECTRICAL VOLTS	ELECTRICAL PH	ELECTRICAL RPM	TYPE	MAKE/MODEL	REMARKS
P-3-1	BUILDING 3 CELLAR	HOT WATER	WATER	600	200	30	5.8	7 1/2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 5A	VFD
P-3-2	BUILDING 3 CELLAR	HOT WATER	WATER	600	200	30	5.8	7 1/2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 5A	VFD
P-3-3	BUILDING 3 CELLAR	CHILLED WATER	WATER	600	70	70	14.5	15	480	3	1750	HORIZONTAL SPLITCASE	BELL & GOSSETT HSC-S 4x6x10M	VFD
P-3-4	BUILDING 3 CELLAR	CHILLED WATER	WATER	600	70	70	14.5	15	480	3	1750	HORIZONTAL SPLITCASE	BELL & GOSSETT HSC-S 4x6x10M	VFD
P-3-5	BUILDING 3 CELLAR	CHILLED/CONDENSER WATER SPARE	WATER	750	100	100	24.3	25	480	3	1750	HORIZONTAL SPLITCASE	BELL & GOSSETT HSC-S 4x6x12M	VFD
P-3-6	BUILDING 3 CELLAR	CONDENSER WATER	WATER	750	100	100	24.3	25	480	3	1750	HORIZONTAL SPLITCASE	BELL & GOSSETT HSC-S 4x6x12M	
P-3-7	BUILDING 3 CELLAR	CONDENSER WATER	WATER	750	100	100	24.3	25	480	3	1750	HORIZONTAL SPLITCASE	BELL & GOSSETT HSC-S 4x6x12M	
P-3-8	BUILDING 3 CELLAR	FIN TUBE RADIATION SOUTH EXPOSURE	WATER	17	200	50	0.59	3/4	480	3	1750	INLINE	BELL & GOSSETT 90 1-1/2 A	VFD
P-3-9	BUILDING 3 CELLAR	FIN TUBE RADIATION EAST EXPOSURE	WATER	37	200	80	1.71	2	480	3	1750	INLINE	BELL & GOSSETT 1-1/2x1-1/2x9-1/2	VFD
P-3-10	BUILDING 3 CELLAR	FIN TUBE RADIATION NORTH EXPOSURE	WATER	17	200	50	0.59	3/4	480	3	1750	INLINE	BELL & GOSSETT 90 1-1/2 A	VFD
P-3-11	BUILDING 3 CELLAR	FIN TUBE RADIATION WEST EXPOSURE	WATER	43	200	80	1.86	2	480	3	1750	INLINE	BELL & GOSSETT 1-1/2x1-1/2x9-1/2	VFD
P-3-12	BUILDING 3 CELLAR	GREENHOUSE	WATER	5	200	20	0.13	1/4	120	1	1725	INLINE	BELL & GOSSETT 90 1AA	VFD
P-3-13	BUILDING 3 CELLAR	SYSTEM WATER (FAN COILS)	WATER	360 (CLG) 250 (HTG)	200	80	9.49	10	480	3	1750	END SUCTION	BELL & GOSSETT 1510 3BC	VFD
P-3-15	BUILDING 3 CELLAR	GLYCOL HOT WATER	GLYCOL	370	200	50	6.0	7 1/2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 3BC	VFD
P-3-16	BUILDING 3 CELLAR	GLYCOL HOT WATER	GLYCOL	370	200	60	6.0	7 1/2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 3BC	VFD
P-3-17	UNIT "D" CELLAR	HOT WATER	WATER	600	200	30	5.8	7 1/2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 5A	VFD
P-3-18	UNIT "D" CELLAR	HOT WATER	WATER	600	200	30	5.8	7 1/2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 5A	VFD
P-3-19	UNIT "D" CELLAR	HOT WATER	WATER	120	200	50	2.39	5	480	3	1750	END SUCTION	BELL & GOSSETT 1510 2BC	VFD
P-3-20	UNIT "D" CELLAR	HOT WATER	WATER	120	200	50	2.39	5	480	3	1750	END SUCTION	BELL & GOSSETT 1510 2BC	VFD
P-3-21	UNIT "D" CELLAR	HOT WATER	WATER	290	200	45	4.84	5	480	3	1750	END SUCTION	BELL & GOSSETT 1510 2-1/2 BB	VFD
P-3-22	UNIT "D" CELLAR	HOT WATER	WATER	290	200	45	4.84	5	480	3	1750	END SUCTION	BELL & GOSSETT 1510 2-1/2 BB	VFD
P-3-23	UNIT "D" CELLAR	HOT WATER	WATER	600	200	75	13.8	15	480	3	1750	END SUCTION	BELL & GOSSETT 1510 4BC	VFD
P-3-24	UNIT "D" CELLAR	HOT WATER	WATER	600	200	75	13.8	15	480	3	1750	END SUCTION	BELL & GOSSETT 1510 4BC	VFD
P-3-25	UNIT "D" CELLAR	GLYCOL HOT WATER	GLYCOL	94	200	40	1.82	2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 1 1/2 AC	VFD
P-3-26	UNIT "D" CELLAR	GLYCOL HOT WATER	GLYCOL	94	200	40	1.82	2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 1 1/2 AC	VFD
P-3-27	BLDG 3 CELLAR	BOILER	WATER	200	200	20	1.65	2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 3AC	
P-3-28	BLDG 3 CELLAR	BOILER	WATER	200	200	20	1.65	2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 3AC	
P-3-29	BLDG 3 CELLAR	BOILER	WATER	200	200	20	1.65	2	480	3	1750	END SUCTION	BELL & GOSSETT 1510 3AC	
P-3-30	BLDG "D" MER 3	BOILER	WATER	405	200	20	3.14	5	480	3	1750	BASE MOUNTED	BELL & GOSSETT SERIES 80 6x6x7	
P-3-31	BLDG "D" MER 3	BOILER	WATER	405	200	20	3.14	5	480	3	1750	BASE MOUNTED	BELL & GOSSETT SERIES 80 6x6x7	
P-3-32	BLDG "D" MER 3	GENERATOR	50% PROP. GLYCOL	80	200	30	0.96	1 1/2	480	3	1750	INLINE	BELL & GOSSETT SERIES 60 1.5x1.5x6.25	
FOP-1	UNIT "J" CELLAR	FUEL OIL	#2 OIL	282 GPH	-	50 PSIG	-	3/4	480	3	1750	POS. DISP.	PREFERRED LO-105A	PART OF PUMP SET
FOP-2	UNIT "J" CELLAR	FUEL OIL	#2 OIL	282 GPH	-	50 PSIG	-	3/4	480	3	1750	POS. DISP.	PREFERRED LO-105A	PART OF PUMP SET

OUT PCS 5/4/04

BOILERS

UNIT NO	LOCATION	TYPE	GROSS MBH	NET MBH	FUEL	FIRING RATE	OPER PRESS	ELECTRICAL HP	ELECTRICAL VOLTS	ELECTRICAL PH	ELECTRICAL RPM	MAKE/MODEL	REMARKS
B-3-1	UNIT J CELLAR	CAST-IRON	2232	1941	OIL/ GAS	19.6/ 2836	-	1-1/2	480	3	1750	H.B. SMITH 28 A-W-9	
B-3-2	UNIT J CELLAR	CAST-IRON	2232	1941	OIL/ GAS	19.6/ 2836	-	1-1/2	480	3	1750	H.B. SMITH 28 A-W-9	
B-3-3	UNIT J CELLAR	CAST-IRON	2232	1941	OIL/ GAS	19.6/ 2836	-	1-1/2	480	3	1750	H.B. SMITH 28 A-W-9	
B-3-4	UNIT J CELLAR	CAST-IRON	2232	1941	OIL/ GAS	19.6/ 2836	-	1-1/2	480	3	1750	H.B. SMITH 28 A-W-9	FUTURE
B-1-1	UNIT B BASEMENT MER3	CAST-IRON	4629	4025	OIL/ GAS	40.5/ 5862	-	5	480	3	1750	H.B. SMITH 28 A-W-18	
B-1-2	UNIT B BASEMENT MER3	CAST-IRON	4629	4025	OIL/ GAS	40.5/ 5862	-	5	480	3	1750	H.B. SMITH 28 A-W-18	

HEAT EXCHANGER

UNIT NO	LOCATION	SYSTEM SERVED	HOT WATER (SHELL) EWT	HOT WATER (SHELL) LWT	HOT WATER (SHELL) GPM	HOT WATER (SHELL) PD	HOT WATER (SHELL) FOUL'G	50% PROP. GLYCOL (TUBES) EWT	50% PROP. GLYCOL (TUBES) LWT	50% PROP. GLYCOL (TUBES) GPM	50% PROP. GLYCOL (TUBES) PD	50% PROP. GLYCOL (TUBES) FOUL'G	MAKE/MODEL	REMARKS
HX-1	UNIT J BOIER ROOM	GLYCOL HEAT SYSTEM	180	160	342	11.5 FT	.0005	138	158	370	12.5 FT	.0005	BELL & GOSSETT WU16 9-48	327.5 SQ FT
HX-2	UNIT B BOILER ROOM	GLYCOL HEAT SYSTEM	180	160	87	2.8 FT	.0005	138	158	94	5.4 FT	.0005	BELL & GOSSETT WU10 8-45	115.5 SQ FT

FANS

UNIT NO	LOCATION	SYSTEM SERVED	TYPE	CFM	SP	MAX BHP	FAN RPM	TIP SPEED	SOUND dBA	ELECTRICAL HP	ELECTRICAL VOLTS	ELECTRICAL PH	ELECTRICAL RPM	MAKE/MODEL	REMARKS
EF-1-1	UNIT "F" ROOF	MACHINE ROOM EXHAUST	CENT. ROOF EXH.	22,000	0.5	4.4	591	8,355	36 SONES	5	480	3	1750	LOREN COOK 541E11B	VFD
EF-1-2	UNIT "F" ROOF	TOILET/ JAN. CL. EXHAUST	CENT. ROOF EXH.	850	0.25	0.131	1,684	4,408	10.4 SONES	0.167	120	1	1750	LOREN COOK 100 ACEB	
EF-1-3	UNIT "E" ROOF	TOILET EXHAUST	CENT. ROOF EXH.	665	0.25	.091	1387	3631	7.7 SONES	.167	120	1	1750	LOREN COOK 100 ACEB	
EF-1-4	UNIT "F" ROOF	POT WASH EXHAUST	CENT. ROOF EXH.	600	0.35	0.075	1,370	3,586	7.5 SONES	0.167	120	1	1750	LOREN COOK 100 ACEB	
EF-1-5	UNIT "F" ROOF	POT WASH EXHAUST	CENT. ROOF EXH.	600	0.35	0.075	1,370	3,586	7.5 SONES	0.167	120	1	1750	LOREN COOK 100 ACEB	
EF-1-6	UNIT "C" ROOF	KITCHEN HOOD EXHAUST	CENT. ROOF EXH.	6,300	2.25	3.61	872	8,332	21 SONES	5	480	3	1750	LOREN COOK 365 VCR-HP	
EF-1-7	UNIT "C" ROOF	KITCHEN HOOD EXHAUST	CENT. ROOF EXH.	6,300	2.25	3.61	872	8,332	21 SONES	5	480	3	1750	LOREN COOK 365 VCR-HP	
EF-1-8	UNIT "F" ROOF	LAUNDRY ROOM EXHAUST	CENT. ROOF EXH.	180	0.25	0.107	1,514	4,013	7.2 SONES	0.167	120	1	1750	LOREN COOK 60 ACEB	
EF-1-9	UNIT "F" ROOF	TOILET ROOM EXHAUST	CENT. ROOF EXH.	100	0.25	0.029	976	2,587	2.6 SONES	0.029	120	1	1750	LOREN COOK 70 ACEB	
EF-1-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EF-1-11	UNIT "E" ROOF	TOILET ROOM EXHAUST	CENT. ROOF EXH.	100	0.25	0.036	976	2555	3.0 SONES	0.167	120	1	1750	LOREN COOK 70 ACEB	
EF-1-12	UNIT "E" ROOF	TOILET ROOM EXHAUST	CENT. ROOF EXH.	700	0.35	0.119	1,509	3,950	8.7 SONES	1/6	120	1	1750	LOREN COOK 100 ACEB	
EF-1-13	UNIT "C" ROOF	CONDENSATE HOOD	CENT. ROOF EXH.	1,200	1.0	0.34	1620	5244	18 SONES	1/3	120	1	1750	LOREN COOK 120 VCR	
EF-1-14	BLDG.1 UNIT "E"	TRASH RM.	CENT. ROOF EXH.	2,500	3/8	0.4	1053	4548	-	1/2	480	3	1750	LOREN COOK 165 ACE-B	
EF-1-15	BLDG.1 UNIT "E"	RECIVING RM.	CENT. ROOF EXH.	750	3/8	0.07	997	3132	-	1/6	120	1	1750	LOREN COOK 120 ACE-B	
EF-1-16	BLDG.1 UNIT "E"	KITCHEN HOOD EXH.	CENT. ROOF EXH.	4,725	2.98	3.0	899	9142	-	3	480	3	1750	LOREN COOK 300 VCR-XP	
EF-1-17	BLDG.1 UNIT "E"	KITCHEN HOOD EXH.	CENT. ROOF EXH.	3,375	2.25	1.99	1196	8454	-	2	480	3	1750	LOREN COOK 270 VCR-XP	
EF-1-18	BLDG.1 UNIT "E"	KITCHEN HOOD EXH.	CENT. ROOF EXH.	3,900	2.25	2.42	1287	9097	-	3	480	3	1750	LOREN COOK 270 VCR-XP	
EF-1-19	UNIT "C" ROOF	CUSTODIAL EXHAUST	CENT. ROOF EXH.	100	0.25	0.029	976	2,587	2.6 SONES	0.029	120	1	1750	LOREN COOK 70 ACEB	
EF-1-20	UNIT "F" ROOF	TOILET EXHAUST	INLINE CENT.	600	.75	0.189	1687	4416	-	1/4	120	1	1750	LOREN COOK 90 SQIB	
EF-1-21	BLDG.1 UNIT "E"	CUSTODIAL LOCKER ROOM	CENT. ROOF EXH.	400	3/8	.082	1338	3546	-	1/6	120	1	1750	LOREN COOK 70 ACE-B	
EF-1-22	UNIT "C" ROOF	REST ROOM EXHAUST	CENT. ROOF EXH.	850	1/4	0.16	1684	4408	-	1/6	120	1	1750	LOREN COOK 100 ACE-B	
EF-1-23	UNIT "C" ROOF	STORAGE EXHAUST	CENT. ROOF EXH.	4800	1/4	1.07	1075	5487	-	1	480	3	1750	LOREN COOK 195 ACE-B	
EF-1-24	UNIT "C" ROOF	GENERAL EXHAUST	CENT. ROOF EXH.	140	1/4	0.05	1058	2769	-	1/6	120	1	1750	LOREN COOK 70 ACE-B	
EF-1-25	UNIT "C" ROOF	TOILET EXHAUST	CENT. ROOF EXH.	800	1/4	0.06	744	2629	-	1/6	120	1	1750	LOREN COOK 135 ACE-B	
EF-1-26	UNIT "A" ROOF	LOCKER ROOM EXHAUST	CENT. ROOF EXH.	400	1/4	0.04	1031	2699	-	1/6	120	1	1750	LOREN COOK 100 ACE-B	
EF-1-27	UNIT "D" ROOF	GYMNASIUM EXHAUST	CENT. ROOF EXH.	14,000	1/4	3.55	642	5546	-	5	480	3	1750	LOREN COOK 330 ACE-B	
EF-1-28	UNIT "D" ROOF	GYMNASIUM EXHAUST	CENT. ROOF EXH.	14,000	1/4	3.55	642	5546	-	5	480	3	1750	LOREN COOK 330 ACE-B	
EF-1-29	UNIT "D" ROOF	MAINT/STORAGE EXHAUST	CENT. ROOF EXH.	1,070	1/4	0.1	877	3099	-	1/6	120	1	1750	LOREN COOK 135 ACE-B	
EF-1-30	UNIT "D" ROOF	LOCKER ROOM EXHAUST	CENT. ROOF EXH.	2,400	1/4	0.24	620	3165	-	1/4	120	1	1750	LOREN COOK 195 ACE-B	
EF-1-31	UNIT "D" ROOF	LOCKER ROOM EXHAUST	CENT. ROOF EXH.	2,000	1/4	0.17	557	2843	-	1/6	120	1	1750	LOREN COOK 195 ACE-B	
EF-1-32	UNIT "F" ROOF	STORAGE EXHAUST	CENT. ROOF EXH.	490	1/4	0.05	1135	2971	-	1/6	120	1	1750	LOREN COOK 100 ACE-B	
EF-1-33	UNIT "F" ROOF	SCENERY EXHAUST	CENT. ROOF EXH.	4,100	1/8	0.64	905	4620	-	3/4	480	3	1750	LOREN COOK 195 ACE-B	
EF-1-34	GYM MECH ROOM E	AC-2-7 EXHAUST	INLINE CENT.	4,000	0.5	0.746	624	4370	-	3/4	480	3	1750	LOREN COOK 210 SQIB	
EF-1-35	GYM MECH ROOM E	AC-2-8 EXHAUST	INLINE CENT.	4,000	0.5	0.746	624	4370	-	3/4	480	3	1750	LOREN COOK 210 SQIB	
EF-2-1	BUILDING 2 ROOF	TOILET/JAN.	CENT. ROOF EXH.	815	.25	.167	983	3025	-	1/4	120	1	1750	LOREN COOK 120 ACEB	
EF-2-2	BUILDING 2 ROOF	TOILET EXH.	CENT. ROOF EXH.	160	.2	.167	1348	3573	-	1/4	120	1	1750	LOREN COOK 60 ACEB	
EF-2-3	BUILDING 2 ROOF	COPY RM. EXH.	CENT. ROOF EXH.	175	.2	.167	1435	3803	-	1/4	120	1	1750	LOREN COOK 60 ACEB	
EF-2-4	BUILDING 2 ROOF	MER EXH.	CENT. ROOF EXH.	500	1/4	0.05	1135	2971	-	1/6	120	1	1750	LOREN COOK 100 ACE-B	
EF-2-5	UNIT "G" MER	ELECTRIC RM. EXHAUST	INLINE CENT.	1,900	1/2	0.76	2,187	6,870	22.0	1	480	1	1750	LOREN COOK 120 SQIB	
RF-2-1	BLDG.2 PENTHOUSE	AH-19	UTILITY SET	13,940	1.0	6.8	1205	8517	-	7-1/2	480	3	1750	LOREN COOK 270 CPA-A	
RF-2-2	BLDG.2 PENTHOUSE	AH-20	INLINE CENT.	2,200	1.0	1.22	2635	8278	-	1-1/2	480	3	1750	LOREN COOK 120 SQIB	
RF-2-3	BLDG.2 PENTHOUSE	AH-21	INLINE CENT.	5,690	1.0	2.51	1617	7619	-	3	480	3	1750	LOREN COOK 100 SQIB	
RF-2-4	BLDG.2 PENTHOUSE	AH-22	INLINE CENT.	4,370	1.0	2.55	2009	8678	-	3	480	3	1750	LOREN COOK 165 SQIB	
RF-2-5	BLDG.2 PENTHOUSE	AH-23	INLINE CENT.	3,150	1.0	1.27	1557	6725	-	1-1/2	480	3	1750	LOREN COOK 165 SQIB	
EF-1-36	UNIT "D" BOILER RM	GENERATOR RM	CENT.	11,500	3/4	4.69	1188	7615	-	5	480	3	1750	LOREN COOK 245 SQIB	
EF-1-37	UNIT "E" ROOF	KITCHENETTE	CENT. ROOF EXH.	850	0.25	0.131	1684	4408	-	0.167	120	1	1750	LOREN COOK 100 ACEB	

RADIATION

UNIT NO	LOCATION	EWT	LWT	OUTPUT BTU/FT	ENCL HGT	NO TIER	TUBE SIZE	TUBE MATL	FINS SIZE	FINS MATL	FINS /FT	ENCLOSURE TYPE	MAKE/MODEL	REMARKS
A	VARIES	180	160	1000		1	1 1/4"	CU	3 1/4" SQ	ALUM.	50	BY OTHER DIVISION	STERLING BARE FIN	
B	VARIES	180	160	1040		1	1 1/4"	CU	3 1/4" SQ	ALUM.	50	SLOPE TOP	STERLING TYPE S	CONTINUOUS WALL TO WALL ENCLOSURE.
C	VARIES	180	160	1040		1	1 1/4"	CU	3 1/4" SQ	ALUM.	50	INVERTED SLOPE TOP	STERLING TYPE S	MOUNTED AT CLG W/ SAFETY LATCH
D	VARIES	180	160	730		1	1 1/4"	CU	3 1/4" SQ	ALUM.	40	CUSTOM SLOPE TOP *	STERLING CUSTOM	PROVIDE COVERS AND TRIM PIECES TO CONCEAL PIPE/FITTINGS/VALVING
E	GREENHOUSE	180	160	640		1	1 1/4"	STEEL	3 1/4" SQ	STEEL	32	SLOPE TOP	STERLING TYPE S	MOUNTED ON WALL
F	VARIES	180	160	1,080		1	1 1/4"	CU	4 1/4" SQ	ALUM.	40	CUSTOM SLOPE TOP *	STERLING CUSTOM	PROVIDE COVERS AND TRIM PIECES TO CONCEAL PIPE/FITTINGS/VALVING
G	VARIES	180	160	1,430		1	1"	CU	4 1/4" SQ	ALUM.	50	SLOPE TOP	STERLING TYPE S	CONTINUOUS WALL TO WALL ENCLOSURE.

* CUSTOM ENCLOSURE, 7 1/2" WIDE AND 1'-2" HIGH, WITH FACTORY FINISHED BACK PLATE & FRONT TO MATCH ARCHITECTURAL SAMPLE.

SYMBOL LIST

SYMBOL	DESCRIPTION
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
CS	CONDENSER WATER SUPPLY
CR	CONDENSER WATER RETURN
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
SWS	SYSTEM (CHILLED/HOT) WATER SUPPLY
SWR	SYSTEM (CHILLED/HOT) WATER RETURN
PD	PUMP DISCHARGE
CD	CONDENSATE DRAIN
L	LIQUID REFRIGERANT
HG	HOT GAS
S	SUCTION
GHWS	GLYCOL HEATING WATER SUPPLY
GHWR	GLYCOL HEATING WATER RETURN
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BALANCING VALVE
	PNEUMATIC CONTROL VALVE
	THREE WAY VALVE
	PRESSURE RELIEF VALVE
	HOSE END DRAIN VALVE
LD, SD	[illegible] VALVE
LR, CR, TR, BR	MOTORIZED VALVE / [illegible] TOP, BOTTOM REGISTER
	MOTORIZED DAMPER
	SMOKE DAMPER
V.D., C.O.D.	VOLUME DAMPER, CABLE OPERATED DAMPER
	VOLUME DAMPER
	FIRE DAMPER
	COMBINATION FIRE/SMOKE DAMPER
N, NK	NECK
VE	VANE EXTRACTOR
FC	FLEXIBLE CONNECTION
RA	RETURN AIR
	RETURN OR EXHAUST AIR
OAI	OUTSIDE AIR INTAKE
AD	ACCESS DOOR
ID	INSIDE DIMENSION
FO	FLAT OVAL
12 X 8	LINED DUCT-SIZE IS CLEAR INSIDE DIM.
	EXISTING DUCT TO REMAIN
	EXISTING DUCT TO REMAIN
	EXISTING DUCT TO BE REMOVED
	ROUND
2	LOUVERED DOOR NUMBER DENOTES FREE AREA (SQ.FT.)
U	UNDERCUT DOOR
T	TEMPERATURE SENSOR
H	HUMIDITY SENSOR
C	CO_2 SENSOR
	DUCT MOUNTED SMOKE DETECTOR
	HEAT DETECTOR
SD	SMOKE DAMPER
FRE	FIRE RATED ENCLOSURE
BOD	BY OTHER DIVISION
	ELBOW UP
	ELBOW DN.

AltieriSeborWieber LLC
Consulting Engineers
Norwalk, Ct. 06851

PCO-028

STATE OF CONNECTICUT PHILIP C. STEINER LICENSED PROFESSIONAL ENGINEER
ORIGINAL SIGNATURE & SEAL IS BLUE

D.O.E. PROJECT NUMBER 158-0093EA - PHASE 2 OF 3

PROJECT TITLE
ALTERATIONS AND EXPANSION OF STAPLES HIGH SCHOOL
70 NORTH AVENUE
WESTPORT, CONNECTICUT 06880

DRAWING TITLE
SCHEDULE SHEET No. 1

DATE	ISSUED TO
10/24/03	ADDENDUM #2
9/02/03	BID
6/16/2003	SFU REVIEW

SCALE: NONE
DRAWN BY: PCS
CHECKED BY: PCS
DRAWING NO. M-401
FILE NO. 0046MS01

AIR HANDLING UNITS

FAN SECTION / ELECTRICAL

UNIT NO	LOCATION	SERVES	VENT AIR	CFM	TOTAL SP	WHEEL TYPE	FAN RPM	MAX BHP	HP	VOLTS	PH	RPM
OAU-1	BASEMENT - UNIT "J"	CLASSROOM VENTILATION	18,000	18,000	4.0	AF	1360	16.01	20.0	480	3	1750
OAU-2	BASEMENT - UNIT "J"	CLASSROOM VENTILATION	18,000	18,000	4.0	AF	1360	16.01	20.0	480	3	1750
AH-19	PENTHOUSE - UNIT "G"	LIBRARY	3,150	13,940	5.0	AF	1486	16.5	20.0	480	3	1750
AH-20	PENTHOUSE- UNIT "G"	CORRIDOR	-	2,200	4.0	FC	1984	2.4	3.0	480	3	1750
AH-21	PENTHOUSE- UNIT "G"	GUIDANCE AREA	1,845	5,690	4.0	AF	2400	7.2	7.5	480	3	1750
AH-22	PENTHOUSE- UNIT "G"	LIBRARY AREA	1,515	4,400	4.0	AF	3370	6.04	7.5	480	3	1750
AH-23	PENTHOUSE - UNIT "G"	CORRIDOR	-	3,150	4.0	FC	2010	3.7	5.0	480	3	1750
AC-1-1	BUILDING "E"	CORRIDOR SOUTH	225	8,400	4.0	AF	1712	8.0	10.0	480	3	1750
AC-1-2	BUILDING "E"	CAFETERIA ADDITION	9,495	15,260	3.5	AF	1535	17.8	20	480	3	1750
AC-1-3	BUILDING "E"	CORRIDOR EAST	225	6,250	4.0	AF	1980	6.4	7.5	480	3	1750
AC-1-4	BUILDING "F"	CHORAL ROOM	1,815	3,350	4.0	FC	1696	3.7	5.0	480	3	1750
AC-1-5	BUILDING "F"	ORCHESTRA ROOM	1,515	3,180	4.0	FC	1697	3.4	5.0	480	3	1750
AC-1-6	BUILDING "F"	BAND REHEARSAL	1,665	4,225	4.0	FC	1500	4.5	5.0	480	3	1750
AC-1-7	BUILDING "F"	BLACKBOX THEATER	3,525	6,100	4.0	FC	1443	7.9	10.0	480	3	1750
AC-1-8	BUILDING "F"	PRACTICE AREA	2,670	3,630	4.0	FC	1700	4.0	5.0	480	3	1750
AC-1-9	BUILDING "F"	TV RADIO STUDIOS	1,030	4,650	4.0	FC	1484	4.9	5.0	480	3	1750
AC-1-10A	BUILDING "F"	PREFUNCTION AREA	1,125	2,990	4.0	AF	2822	3.6	5.0	480	3	1750
AC-1-10B	BUILDING "F"	PREFUNCTION AREA	1,125	2,990	4.0	AF	2822	3.5	5.0	480	3	1750
AC-1-11A	BUILDING "F"	CORRIDOR 404B	-	1350	1.34	AF	1417	0.54	3/4	277	1	1750
AC-1-11B	BUILDING "F"	CORRIDOR 404B	-	1350	1.34	AF	1417	0.54	3/4	277	1	1750
AC-1-14	BUILDING "I"	PED. WALKWAY 1021A	-	2200	1.47	CENTRIF.	981	0.9	1.0	480	3	1750
AC-1-15	BUILDING "C"	TRANSFORMER RM/ OFFICE	-	2,250	1.5	CENTRIF.	1076	1.1	1.5	480	3	1750
AC-2-1	BUILDING "D"	GYMNASIUM	2,815	7,000	2.0	AF	1171	6.60	7.5	480	3	1750
AC-2-2	BUILDING "D"	GYMNASIUM	2,815	7,000	2.0	AF	1171	6.60	7.5	480	3	1750
AC-2-3	BUILDING "D"	GYMNASIUM	2,815	7,000	2.0	AF	1171	6.60	7.5	480	3	1750
AC-2-4	BUILDING "D"	GYMNASIUM	2,815	7,000	2.0	AF	1171	6.60	7.5	480	3	1750
AC-2-5	BUILDING "D"	LOCKER ROOM	1,935	9,400	1.9	AF	864	7.90	7.5	480	3	1750
AC-2-6	BUILDING "D"	LOCKER ROOM	1,330	6,050	1.9	AF	1089	4.81	5.0	480	3	1750
AC-2-7	BUILDING "D"	FITNESS CENTER	1,035	4,000	2.0	AF	1273	2.98	3.0	480	3	1750
AC-2-8	BUILDING "D"	FITNESS CENTER	1,035	4,000	2.0	AF	1273	2.98	3.0	480	3	1750
AC-3-1	BUILDING "J"	NURSES AREA/1ST.FLR.	2,200	2,200	2.0	AF	1031	1.04	1.5	480	3	1750
AC-3-2	BUILDING "J"	ADMINISTRATION/1ST.FLR.	780	2,200	1.9	AF	1080	1.12	1.5	480	3	1750
AC-3-3	BUILDING "J"	ADMINISTRATION/1ST.FLR.	300	1,000	2.1	AF	1588	0.7	3/4	480	3	1750
AC-3-4	BUILDING "J"	CONT.EDUCATION/1ST.FLR.	820	2,000	1.6	AF	995	0.9	1.0	480	3	1750
AC-3-5	BUILDING "J"	OFFICES/2ND.FLR.	860	3,700	2.3	AF	1274	2.9	3	480	3	1750
AC-3-6	BUILDING "K"	GREENHOUSE	-	7,200	2.5	AF	1192	6.3	7.5	480	3	1750
AC-3-7	BUILDING "K"	DEP.WORLD LANG.	520	2,300	2.0	AF	1095	1.2	1.5	480	3	1750
AC-3-8	BUILDING "K"	DEP.MATH	660	2,200	2.0	AF	1089	1.15	1.5	480	3	1750

CHILLED WATER COIL

UNIT NO	CAP MBH	AIR DATA EAT	AIR DATA LAT	WATER DATA EWT	WATER DATA LWT	WATER DATA GPM	VEL FPM	AIR PD	WATER PD	ROWS FINS
OAU-1	1,121.0/651.9	84.0/71.0	51.3/51.2	45	55	224.2	518.6	1.12	12.6	6/165
OAU-2	1,121.0/651.9	84.0/71.0	51.3/51.2	45	55	224.2	518.6	1.12	12.6	6/165
AH-19	480.5/363.5	79.2/66.2	55.6/55.0	45	55	96.1	481.0	0.54	10.5	4/149
AH-20	59.4/51.9	78.4/64.5	56.9/55.6	45	55	11.9	376.0	0.30	1.6	4/100
AH-21	236.3/163.3	80.4/67.5	54.4/54.1	45	55	47.3	463.0	0.7	7.0	6/114
AH-22	178.8/122.0	79.1/67.0	54.0/53.8	45	55	35.8	456.0	0.68	6.3	6/125
AH-23	85.5/75.9	78.4/64.5	56.5/55.5	45	55	17.1	538.0	0.54	2.7	4/132
AC-1-1	256.6/231.9	81.0/64.6	55.0/54.4	45	55	51.3	500.0	0.55	5.3	4/157
AC-1-2	835.8/519	85.0/71.0	52.3/54.0	45	55	167.2	526.0	0.96	11.9	8/102
AC-1-3	235.0/208.8	84.8/66.0	54.2/53.5	45	55	47.0	508.0	0.60	11.2	4/159
AC-1-4	170.7/93.2	79.4/70.1	54.3/54.2	45	55	34.2	444.0	0.76	5.2	6/148
AC-1-5	150.9/85.9	78.9/69.3	54.5/54.4	45	55	30.5	422.0	0.66	4.2	6/137
AC-1-6	184.9/115.8	79.3/68.2	54.5/54.2	45	55	36.9	438.0	0.60	10.3	4/167
AC-1-7	318.6/175.9	80.3/70.4	54.3/54.2	45	55	63.8	496.0	0.80	12.0	6/132
AC-1-8	208.2/112.4	82.3/71.8	54.4/54.3	45	55	41.7	482.0	0.92	10.0	6/157
AC-1-9	180.5/132.2	78.8/65.8	53.0/52.9	45	55	36.1	482.0	0.80	6.4	6/144
AC-1-10A	170.9/94.6	79.7/69.8	53.0/52.9	45	55	34.2	424.0	0.63	10.3	6/122
AC-1-10B	170.7/94.6	79.7/69.8	53.0/52.9	45	55	34.2	424.0	0.63	10.3	6/122
AC-1-11A	46.2/34.7	80.0/67.0	56.7/56.2	45	55	9.3	500 MAX	-	5.6	4/-
AC-1-11B	46.2/34.7	80.0/67.0	56.7/56.2	45	55	9.3	500 MAX	-	5.6	4/-
AC-1-14	84.3/56.5	76.4/63.0	53.1/53.0	45	55	12.9	500 MAX	1.0 MAX	1.4	6 ROW
AC-1-15	89.0	80.0	67.0	DX-COIL			500 MAX	1.0 MAX	-	-
AC-2-1	-	-	-	-	-	-	-	-	-	-/-
AC-2-2	-	-	-	-	-	-	-	-	-	-/-
AC-2-3	-	-	-	-	-	-	-	-	-	-/-
AC-2-4	-	-	-	-	-	-	-	-	-	-/-
AC-2-5	-	-	-	-	-	-	-	-	-	-/-
AC-2-6	-	-	-	-	-	-	-	-	-	-/-
AC-2-7	-	-	-	-	-	-	-	-	-	-/-
AC-2-8	-	-	-	-	-	-	-	-	-	-/-
AC-3-1	5.4/3.0	52.0/51.0	50.8/50.0	45	55	5.8	500 MAX	0.45	0.7	4/-
AC-3-2	30.6/24.1	66.8/60.8	56.9/56.1	45	55	6.3	500 MAX	0.61	1.0	6/-
AC-3-3	15.2/11.8	68.0/61.0	54.4/55.8	45	55	4.2	500 MAX	0.8	2.4	4/-
AC-3-4	25.4/20.3	65.6/60.0	56.4/55.6	45	55	7.2	500 MAX	0.4	1.0	4/-
AC-3-5	59.3/49.5	69.7/62.0	57.6/56.6	45	55	10.6	500 MAX	0.9	1.5	6/-
AC-3-6	161.3/161.3	74.7/58.9	54.3/50.6	45	55	32.3	503	0.35	7.3	4/9
AC-3-7	36.8/31.4	69.8/62.0	57.4/56.6	45	55	6.6	500 MAX	0.63	1.2	6/-
AC-3-8	42.8/31.6	68.1/61.0	55.1/54.3	45	55	14.5	500 MAX	0.65	1.9	6/-

GLYCOL COIL (50% PROPYLENE)

UNIT NO	CAP MBH	AIR DATA EAT	AIR DATA LAT	WATER DATA EWT	WATER DATA LWT	WATER DATA GPM	VEL FPM	AIR PD	WATER PD	ROWS FINS
OAU-1	1,639.8	6.0	90.0	158	138	185	490.0	0.26	14.0	2/160
OAU-2	1,639.8	6.0	90.0	158	138	185	490.0	0.26	14.0	2/160
AH-19	-	-	-	-	-	-	-	-	-	-
AH-20	-	-	-	-	-	-	-	-	-	-
AH-21	-	-	-	-	-	-	-	-	-	-
AH-22	-	-	-	-	-	-	-	-	-	-
AH-23	-	-	-	-	-	-	-	-	-	-
AC-1-1	-	-	-	-	-	-	-	-	-	-
AC-1-2	711.2	26.8	70	158	138	80	645.9	0.22	2.8	2/105
AC-1-3	-	-	-	-	-	-	-	-	-	-
AC-1-4	-	-	-	-	-	-	-	-	-	-
AC-1-5	-	-	-	-	-	-	-	-	-	-
AC-1-6	-	-	-	-	-	-	-	-	-	-
AC-1-7	-	-	-	-	-	-	-	-	-	-
AC-1-8	-	-	-	-	-	-	-	-	-	-
AC-1-9	-	-	-	-	-	-	-	-	-	-
AC-1-10A	-	-	-	-	-	-	-	-	-	-
AC-1-10B	-	-	-	-	-	-	-	-	-	-
AC-1-11A	-	-	-	-	-	-	-	-	-	-
AC-1-11B	-	-	-	-	-	-	-	-	-	-
AC-1-14	-	-	-	-	-	-	-	-	-	-
AC-1-15	-	-	-	-	-	-	-	-	-	-
AC-2-1	-	-	-	-	-	-	-	-	-	-
AC-2-2	-	-	-	-	-	-	-	-	-	-
AC-2-3	-	-	-	-	-	-	-	-	-	-
AC-2-4	-	-	-	-	-	-	-	-	-	-
AC-2-5	-	-	-	-	-	-	-	-	-	-
AC-2-6	-	-	-	-	-	-	-	-	-	-
AC-2-7	-	-	-	-	-	-	-	-	-	-
AC-2-8	-	-	-	-	-	-	-	-	-	-
AC-3-1	-	-	-	-	-	-	-	-	-	-
AC-3-2	-	-	-	-	-	-	-	-	-	-
AC-3-3	-	-	-	-	-	-	-	-	-	-
AC-3-4	-	-	-	-	-	-	-	-	-	-
AC-3-5	-	-	-	-	-	-	-	-	-	-
AC-3-6	-	-	-	-	-	-	-	-	-	-
AC-3-7	-	-	-	-	-	-	-	-	-	-
AC-3-8	-	-	-	-	-	-	-	-	-	-

HOT WATER COIL

UNIT NO	CAP MBH	AIR DATA EAT	AIR DATA LAT	WATER DATA EWT	WATER DATA LWT	WATER DATA GPM	VEL FPM	AIR PD	WATER PD	ROWS FINS	MAKE/MODEL	REMARKS
OAU-1	-	-	-	-	-	-	-	-	-	-	TRANE MCC 80	REDUNDANT TO
OAU-2	-	-	-	-	-	-	-	-	-	-	TRANE MCC 80	REDUNDANT TO
AH-19	729.9	52.4	100.0	180	160	73.0	516.0	0.14	10.9	1/143	TRANE MCC 30	AH-19
AH-20	93.8	60.7	100.0	180	160	9.4	430.0	0.10	0.6	1/128	TRANE MCC 06	AH-20
AH-21	330.2	46.5	100.0	180	160	32.9	460.0	0.12	3.0	1/151	TRANE MCC 12	AH-21
AH-22	247.2	48.2	100.0	180	160	24.7	470.0	0.13	2.0	1/152	TRANE MCC 10	AH-22
AH-23	134.3	60.7	100.0	180	160	13.4	617.0	0.20	2.0	1/151	TRANE MCC 06	AH-23
AC-1-1	187.1	60.7	81.3	180	160	11.3	525.0	0.10	0.4	1/80	TRANE MCC 17	AC-1-1
AC-1-2	-	-	-	-	-	-	-	-	-	-/-	TRANE MCC 30	AC-1-2
AC-1-3	319.9	52.8	100.0	180	160	31.9	505.0	0.14	2.9	1/148	TRANE MCC 12	AC-1-3
AC-1-4	232.5	36.0	100	180	160	23.2	444.0	0.13	1.7	2/100	TRANE MCC 08	AC-1-4
AC-1-5	210.4	39.0	100	180	160	21.0	421.0	0.12	1.4	2/93	TRANE MCC 08	AC-1-5
AC-1-6	256.5	44.0	100	180	160	25.6	438.0	0.12	2.2	2/85	TRANE MCC 10	AC-1-6
AC-1-7	437.3	33.9	100	180	160	43.7	495.0	0.17	2.9	2/104	TRANE MCC 12	AC-1-7
AC-1-8	216.5	45.0	100	180	160	21.6	482.0	0.15	1.5	2/93	TRANE MCC 08	AC-1-8
AC-1-9	204.6	62.0	103	180	160	20.4	482.0	0.13	1.4	2/72	TRANE MCC 10	AC-1-9
AC-1-10A	135.3	36.0	75	180	160	13.5	437.0	0.10	0.6	1/97	TRANE MCC 08	AC-1-10A
AC-1-10B	135.3	36.0	75	180	160	13.5	437.0	0.10	0.6	1/97	TRANE MCC 08	AC-1-10B
AC-1-11A	63.7	54.0	97	180	160	7.2	500 MAX	0.1	1.82	1/-	TRANE BCHC036	AC-1-11A
AC-1-11B	63.7	54.0	97	180	160	7.2	500 MAX	0.1	1.82	1/-	TRANE BCHC036	AC-1-11B
AC-1-14	80.4	68.0	101.0	180	150	5.36	500 MAX	-	0.47	1 ROW	TRANE BCHC072	AC-1-12
AC-1-15	-	-	-	-	-	-	-	-	-	-/-	MAGIC-AIRE 60-BHX-3	AC-1-13
AC-2-1	432.7	43.1	95	180	160	43.2	569.1	0.21	2.5	2/102	MCC 12	AC-2-1
AC-2-2	432.7	43.1	95	180	160	43.2	569.1	0.21	2.5	2/102	TRANE MCC 12	AC-2-2
AC-2-3	432.7	43.1	95	180	160	43.2	569.1	0.21	2.5	2/102	TRANE MCC 12	AC-2-3
AC-2-4	432.7	43.1	95	180	160	43.2	569.1	0.21	2.5	2/102	TRANE MCC 12	AC-2-4
AC-2-5	448.6	56.2	95	180	160	44.8	568	0.18	5.31	1/153	TRANE MCC 17	AC-2-5
AC-2-6	295.3	55.3	95	180	160	29.5	488.9	0.12	2.43	1/139	TRANE MCC 12	AC-2-6
AC-2-7	208.2	52.7	95	180	160	20.8	547.0	0.17	2.43	1/155	TRANE MCC 08	AC-2-7
AC-2-8	208.2	52.7	95	180	160	20.8	547.0	0.17	2.43	1/155	TRANE MCC 08	AC-2-8
AC-3-1	108.0	54.0	100	180	150	7.0	500 MAX	0.1	20.0	1/-	TRANE BCHB072	AC-3-1
AC-3-2	88.0	68.0	105	180	160	4.4	500 MAX	0.1	8.7	1/-	TRANE BCHB072	AC-3-2
AC-3-3	43.1	50.0	90	180	150	3.0	500 MAX	0.2	6.5	1/-	TRANE BCHB024	AC-3-3
AC-3-4	101.2	50.0	97	180	140	5.4	500 MAX	0.1	12.0	1/-	TRANE BCHB072	AC-3-4
AC-3-5	142.0	50.0	86	180	130	5.0	500 MAX	0.2 MAX	6.9 MAX	-/-	TRANE BCHB090	AC-3-5
AC-3-6	189.0	65.8	90.0	180	140	9.9	502	0.1	0.4	1/9	TRANE LPCAE14F1	AC-3-6
AC-3-7	97.0	50.0	89	180	130	3.5	500 MAX	0.1	5.6	1/-	TRANE BCHB072	AC-3-7
AC-3-8	105.0	50.0	95.0	180	140	11.8	500 MAX	0.1 MAX	11.7 MAX	1/-	TRANE BCHB072	AC-3-8

THE SOUND DATA OF THE EQUIPMENT LISTED ABOVE MUST NOT BE EXCEEDED BY THE SUBSTITUTED EQUIPMENT OF THIS OR OTHER ACEPTABLE MANUFACTURERS

PACKAGED GAS/ELECTRIC ROOFTOP UNIT

FAN SECTION / ELECTRICAL

UNIT NO	LOCATION	SERVES	VENT AIR	CFM	TOTAL SP	WHEEL TYPE	FAN RPM	MAX BHP	HP	VOLTS	PH	RPM	MOPC	MCA
AC-1-11	BLDG. C	HEALTH CLASSROOMS	975	4,800	2.0	CENTRIF.	1035	3.6	5.0	480	3	1750	50.0A	37.0A
AC-1-12	BLDG. C	KITCHEN/CLASS 182/ DINING 183	1185	4,000	2.0	CENTRIF.	1027	3.0	5.0	480	3	1750	40.0A	31.0A
AC-1-13	BLDG. C	KITCHEN/CLASS 184/ DINING 183	700	3,400	2.0	CENTRIF.	1180	3.29	5.0	480	3	1750	35.0A	28.9A
MUA-1-1	BLDG. C	KITCHEN/CLASS 182 HOOD	5,040	5,040	2.12	CENTRIF.	1069	3.9	5.0	480	3	1750	-	-
MUA-1-2	BLDG. C	KITCHEN/CLASS 184 HOOD	5,040	5,040	2.12	CENTRIF.	1069	3.9	5.0	480	3	1750	-	-
MUA-1-3	BLDG. E	KITCHEN 302 HOOD	3,820	3,820	2.0	CENTRIF.	1217	2.7	3.0	480	3	1750	-	-
MUA-1-4	BLDG. E	KITCHEN 302 HOOD	2,900	2,900	1.95	CENTRIF.	1150	1.7	2.0	480	3	1750	-	-
MUA-1-5	BLDG. E	COOKING 303 HOOD	3,120	3,120	1.25	CENTRIF.	1160	1.9	2.0	480	3	1750	-	-

POWER EXHAUST ELECTRICAL / DIRECT EXPANSION COIL

UNIT NO	VOLTS	PH	RPM	HP	FLA	LRA	CAP MBH	AIR DATA EAT	AIR DATA LAT	REFRIG SST	REFRIG TYPE	-	VEL FPM	AIR PD	WATER PD	ROWS FINS
AC-1-11	480	1	1040	3/4	3.2A	8.4A	179.5	78.3	66.7				500 MAX	1.0 MAX	10.0 MAX	-/-
AC-1-12	480	1	1040	3/4	3.2A	8.4A	152.7	80.0	67.3	-	-	-	500 MAX	1.0 MAX	10.0 MAX	-/-
AC-1-13	480	1	1075	0.87	3.3A	6.8A	118.7	79.0	65.8	-	-	-	500 MAX	1.0 MAX	10.0 MAX	-/-
MUA-1-1	-	-			-	-	-	-	-	-	-	-	-	-	-	-/-
MUA-1-2	-	-			-	-	-	-	-	-	-	-	-	-	-	-/-
MUA-1-3	-	-			-	-	-	-	-	-	-	-	-	-	-	-/-
MUA-1-4	-	-			-	-	-	-	-	-	-	-	-	-	-	-/-
MUA-1-5	-	-			-	-	-	-	-	-	-	-	-	-	-	-/-

GAS SECTION

UNIT NO	CAP MBH	AIR DATA EAT	AIR DATA LAT	GAS DATA ENT MBH		VEL FPM	AIR PD	MAKE/MODEL	REMARKS
AC-1-11	203.0	54.0	93.4	250.0		500 MAX	1.0 MAX	TRANE YCD 180	
AC-1-12	122.0	50.0	78.6	150.0		500 MAX	1.0 MAX	TRANE YCD 150	
AC-1-13	121.5	55.0	82.3	150.0		500 MAX	1.0 MAX	TRANE YSC 120	
MUA-1-1	366.7	0	65	398.6		500 MAX	1.0 MAX	GREENHECK DG-115	MAKE-UP AIR
MUA-1-2	366.7	0	65	398.6		500 MAX	1.0 MAX	GREENHECK DG-115	MAKE-UP AIR
MUA-1-3	270.4	0	65	293.9		500 MAX	1.0 MAX	GREENHECK DG-112	MAKE-UP AIR
MUA-1-4	205.3	0	65	223.1		500 MAX	1.0 MAX	GREENHECK DG-112	MAKE-UP AIR
MUA-1-5	219.0	0	65	219.0		500 MAX	1.0 MAX	GREENHECK DG-112	MAKE-UP AIR

GLYCOL FEED PUMPS

UNIT NO	LOCATION	SYSTEM SERVED	RECEIVER GALLONS	RECEIVER MATL	PUMP DATA GPM	PUMP DATA PSI	PUMP DATA QUAN	ELECTRICAL HP	ELECTRICAL VOLTS	ELECTRICAL PH	ELECTRICAL RPM	MAKE/MODEL	REMARKS
GF-1	BOILER ROOM UNIT J	GLYCOL FILL	15	CI	1.5	40	1	1/3	115	1	1750	SKIDMORE VCS-11	
GF-2	BOILER ROOM UNIT B	GLYCOL FILL	15	CI	1.5	40	1	1/3	115	1	1750	SKIDMORE VCS-11	

CONDENSATE PUMPS

UNIT NO	LOCATION	SYSTEM SERVED	RECEIVER GALLONS	RECEIVER MATL	PUMP DATA GPM	PUMP DATA PSI	PUMP DATA QUAN	ELECTRICAL HP	ELECTRICAL VOLTS	ELECTRICAL PH	ELECTRICAL RPM	MAKE/MODEL	REMARKS
CP-3-1	FIRST FLOOR UNIT H	FAN COIL UNIT	1	CI	1	9	1	148 WATTS	115	1	1750	LITTLE GIANT VCL-24	
CP-3-2	FIRST FLOOR UNIT H	FAN COIL UNIT	1	CI	1	9	1	148 WATTS	115	1	1750	LITTLE GIANT VCL-24	
CP-3-3	FIRST FLOOR UNIT H	FAN COIL UNIT	1	CI	1	9	1	148 WATTS	115	1	1750	LITTLE GIANT VCL-24	
CP-3-4	FIRST FLOOR UNIT H	FAN COIL UNIT	1	CI	1	9	1	148 WATTS	115	1	1750	LITTLE GIANT VCL-24	

FILE:0046ms02 REV:10/24/03 11:16

FILE:0046TB REV:03/25/03 16:38

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PCO-028

ORIGINAL SIGNATURE & SEAL IS BLUE

D.O.E. PROJECT NUMBER: 158-0093EA - PHASE 2 OF 3

PROJECT TITLE
ALTERATIONS AND EXPANSION OF STAPLES HIGH SCHOOL
70 NORTH AVENUE
WESTPORT, CONNECTICUT 06880

DRAWING TITLE
SCHEDULE SHEET No. 2

DATE	ISSUED TO
10/24/03	ADDENDUM #2
09/02/03	BID
6/16/2003	SFU REVIEW

SCALE: NONE
DRAWN BY: PCS
CHECKED BY: PCS
DRAWING NO.: M-402
FILE NO.: 0046MS02

FANS

UNIT NO	LOCATION	SYSTEM SERVED	TYPE	CFM	SP	MAX BHP	FAN RPM	TIP SPEED	SOUND SONES	ELECTRICAL HP	VOLTS	PH	RPM	MAKE/MODEL	REMARKS
RF-3-1	BLDG. 3 UNIT "H"	RM. 3001	INLINE	1500	1.0	0.901	3005	7867	24	1	480	3	1750	LOREN COOK 90SQIB	
RF-3-2	BLDG. 3 UNIT "H"	RM. 3002	INLINE	1750	1.0	0.751	2219	6971	22	1	480	3	1750	LOREN COOK 120SQIB	
RF-3-3	BLDG. 3 UNIT "H"	RM. 3005	INLINE	1650	1.0	0.678	2139	6719	20	3/4	480	3	1750	LOREN COOK 120SQIB	
RF-3-4	BLDG. 3 UNIT "H"	RM. 3006	INLINE	1700	1.0	0.901	3005	7867	21	1	480	3	1750	LOREN COOK 120SQIB	
RF-3-5	BLDG. 3 UNIT "H"	RM. 3010	INLINE	1900	1.0	0.895	2362	7420	24	1	480	3	1750	LOREN COOK 120SQIB	
RF-3-6	BLDG. 3 UNIT "J"	RM. 3028	INLINE	1750	1.0	0.751	2219	6971	22	1	480	3	1750	LOREN COOK 120SQIB	
RF-3-7	BLDG. 3 UNIT "J"	RM. 3029	INLINE	1750	1.0	0.751	2219	6971	22	1	480	3	1750	LOREN COOK 120SQIB	
RF-3-8	BLDG. 3 UNIT "J"	RM. 3032	INLINE	1750	1.0	0.751	2219	6971	22	1	480	3	1750	LOREN COOK 120SQIB	
RF-3-9	BLDG. 3 UNIT "J"	RM. 3034	INLINE	1750	1.0	0.751	2219	6971	22	1	480	3	1750	LOREN COOK 120SQIB	

VOLUME BOXES

UNIT NO	CFM DES	CFM MIN	SP	DUCT CONN INLET	DUCT CONN OUTLET	REHEAT COIL MBH	EAT	LAT	PD	EWT	LWT	GPM	PD	PIPE CONN.	MAKE/MODEL
A a	200	50	0.4	4"	12x8	5.7	50	80	.15"	190	160	0.4	5'	3/4"	TITUS DESV
B b	300	100	0.4	5"	12x8	9.7	50	80	.15	190	160	0.7	5'	3/4"	TITUS DESV
C c	450	135	0.4	6"	12x8	14.6	50	80	.15	190	160	1.0	5'	3/4"	TITUS DESV
D d	600	180	0.4	7"	12x10	19.4	50	80	.15	190	160	1.3	5'	3/4"	TITUS DESV
E e	850	250	0.4	8"	12x10	27.5	50	80	.15	190	160	2.0	5'	3/4"	TITUS DESV
F f	1000	300	0.4	9"	14x12 1/2	32.4	50	80	.15	190	160	2.35	5'	3/4"	TITUS DESV
G g	1250	375	0.4	10"	14x12 1/2	40.5	50	80	.15	190	160	2.75	5'	3/4"	TITUS DESV
H h	1750	585	0.4	12"	16x15	56.7	50	80	.15	190	160	3.8	5'	1"	TITUS DESV
J j	2950	885	0.4	16"	24x18	95.6	50	80	.15	190	160	6.4	5'	1"	TITUS DESV
K k	3250	975	0.4	24"x16"	38x18	105.3	50	80	.15	190	160	7.1	5'	1-1/4"	TITUS DESV

* BOXES LABELED ON DRAWINGS IN CAPS – WITH REHEAT COILS

CABINET & UNIT HEATERS

UNIT NO	LOCATION	CFM	MBH	AIR DATA EAT	LAT	WATER DATA GPM	EWT	LWT	PD	ELECTRICAL HP	VOLTS	PH	RPM	MAKE/MODEL	REMARKS
CUH-A	VARIES	385	34.8	60	140	3.5	180	160	10' MAX	0.12	120	1	-	TRANE FORCE-FLO MODEL E – SIZE 4	CEILING MTD. HORIZONTAL RECESSED
CUH-B	VARIES	260	24.8	60	140	2.5	180	160	10' MAX	0.12	120	1	-	TRANE FORCE-FLO MODEL F – SIZE 3	WALL HUNG
CUH-D	VESTIBULE B015B	260	24.8	60	140	2.5	180	160	10' MAX	0.12	120	1	-	TRANE FORCE-FLO MODEL D – SIZE 3	CEILING MTD. HORIZONTAL CABINET
UH-1	VARIES	480	32.4	60	120	3.2	180	160	10' MAX	1/47	120	1	-	STERLING HS-36	
UH-2	VARIES	480	56.1	60	105	6.2	158	138	10' MAX	1/20	120	1	-	STERLING HS-120	SELECTED FOR GLYCOL SYSTEM

△1

SOUND ATTENUATORS

UNIT NO	LOCATION	SERVES	CFM	DIMEN W-H-L	DIR	VEL FPM	PD	INSERTION LOSS DB re 10^{-12}W 63	125	250	500	1000	2000	4000	8000	MAKE/MODEL	REMARKS
SA-1	1ST. FLR. UNIT "G"	AH-19	13,940	48x36x60	+	2000	0.06	3	8	15	28	30	21	14	10	IAC 5ML	
SA-2	1ST. FLR. UNIT "G"	AH-19	13,940	54x42x60	–	2000	0.06	4	8	15	28	32	18	11	9	IAC 5ML	
SA-3	1ST. FLR. UNIT "E"	AC-1-2	7,280	30x30x60	+	2000	0.18	6	10	18	30	42	34	23	14	IAC 5MS	
SA-4	1ST. FLR. UNIT "E"	AC-1-2	7,280	30x30x60	–	2000	0.18	8	11	18	32	42	33	22	11	IAC 5MS	
SA-5	1ST. FLR. UNIT "G"	AC-3-5	3,700	36x12x60	+	2000	0.06	3	8	15	28	30	21	14	10	IAC 5ML	
SA-6	1ST. FL. UNIT "F"	AC-1-6	4,225	(3) 15x12x36 (1)7 1/2x12x36	+	975	0.09	4	7	12	19	23	23	18	11	IAC 3MS	△1
SA-7	1ST. FL. UNIT "F"	AC-1-5	3,180	30x48x36	+	318	0.05	4	7	12	19	23	23	18	11	IAC 3MS	
SA-8	1ST. FL. UNIT "F"	AC-1-4	3,350	30x48x36	+	335	0.05	4	7	12	19	23	23	18	11	IAC 3MS	
SA-9	PREFUNCTION 404A	AC-1-10A	2,990	30x24x36	+	341	0.05	4	7	12	19	23	23	18	11	IAC 3MS	
SA-10	PREFUNCTION 404A	AC-1-10B	2,990	30x24x36	+	341	0.05	4	7	12	19	23	23	18	11	IAC 3MS	

△2

REGISTERS, GRILLES & DIFFUSERS

SYM	SERVICE	TYPE	MAKE	MODEL	MATERIAL FINISH	REMARKS	SYM	SERVICE	TYPE	MAKE	MODEL	MATERIAL FINISH	REMARKS
A	SUPPLY	CD	TITUS	DAT	ALUMINUM AS SEL. BY ARCH.	2 SLOT	B	RETURN/EXH.	CR	TITUS	55FL	ALUMINUM AS SEL. BY ARCH.	
C	SUPPLY	LD	TITUS	FL-10	ALUMINUM AS SEL. BY ARCH.		D	RETURN/EXH.	CR, TR	TITUS	4FL	ALUMINUM AS SEL. BY ARCH.	
E	SUPPLY	CD	TITUS	TMRA-AA	ALUMINUM AS SEL. BY ARCH.		F	SUPPLY	LD	TITUS	CT581	ALUMINUM AS SEL. BY ARCH.	
G	SUPPLY	LD	TITUS	ML-39	ALUMINUM AS SEL. BY ARCH.		H	SUPPLY	CD	TITUS	TDCA-AA	ALUMINUM AS SEL. BY ARCH.	
I	RETURN	CD	TITUS	DAT	ALUMINUM AS SEL. BY ARCH.	3 SLOT	J	SUPPLY	TR	TITUS	271-FL	ALUMINUM AS SEL. BY ARCH.	
K	SUPPLY	FG	TITUS	CT480	ALUMINUM AS SEL. BY ARCH.	FRAME 6 FLOOR GRILLE	L	RETURN	LD	TITUS	CT580	ALUMINUM AS SEL. BY ARCH.	

FAN COIL UNITS

UNIT NO	CFM	EXT SP	COOLING MBH	EAT	LAT	EWT	LWT	GPM	PD	HEATING MBH	EAT	LAT	EWT	LWT	GPM	PD	ELECTRICAL HP	VLT	PH	RPM	MAKE/MODEL	REMARKS	PLENUM SIZE (SEE NOTE 2) W	L	H
FCU-A	1230	0.2"	SEE NOTE 1			45	55	SEE NOTE 1	10 FT MAX.	SEE NOTE 1		130	180	150	SEE NOTE 1	10 FT MAX.	1/4	277	1	–	TRANE UNITRANE 10	HORIZONTAL CONCEALED	24	62	12
FCU-B	1350	0.2"				45	55		10 FT MAX.			130	180	150		10 FT MAX.	1/4	277	1	–	TRANE UNITRANE 12	HORIZONTAL CONCEALED	24	62	12
FCU-C	886	0.2"				45	55		10 FT MAX.			130	180	150		10 FT MAX.	1/4	277	1	–	TRANE UNITRANE 8	HORIZONTAL CONCEALED	24	44	12
FCU-D	256	0.2"				45	55		10 FT MAX.			130	180	150		10 FT MAX.	1/4	277	1	–	TRANE UNITRANE 3	VERTICAL CONCEALED	24	22	12
FCU-E	668	0.2"				45	55		10 FT MAX.			130	180	150		10 FT MAX.	1/4	277	1	–	TRANE UNITRANE 6	HORIZONTAL CONCEALED	24	36	12
FCU-F	780	0.2"				45	55		10 FT MAX.			130	180	150		10 FT MAX.	1/4	277	1	–	TRANE UNITRANE 6	HORIZONTAL CONCEALED	24	36	12
FCU-G	484	0.2"				45	55		10 FT MAX.			130	180	150		10 FT MAX.	1/4	277	1	–	TRANE UNITRANE 4	HORIZONTAL CONCEALED	24	26	12
FCU-H	343	0.2"				45	55		10 FT MAX.			130	180	150		10 FT MAX.	1/4	277	1	–	TRANE UNITRANE 3	HORIZONTAL CONCEALED	24	22	12
FCU-I	256	0.2"	7.2	80	67	45	55	1.49	10 FT MAX.	10.3	70	130	180	150	0.7	10 FT MAX.	1/4	277	1	–	TRANE UNITRANE 3	VERTICAL CONCEALED	20	22	12

NOTES: 1) FOR SPECIFIED FAN COIL UNIT PERFORMANCE, REFER TO SPEC. SECTION 15500.
2) PLENUM SIZE LISTED IS NOMINAL, INSIDE, CLEAR DIMENSION. ADJUST PLENUM SIZE FOR INDIVIDUAL FAN COIL(S) AS REQUIRED TO SUIT CONNECTING DUCT SIZES. REFER TO FLOOR PLANS FOR FAN COIL(S) THAT ARE TO BE PROVIDED WITH PLENA.

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FANS

UNIT NO	LOCATION	SYSTEM SERVED	TYPE	CFM	SP	MAX BHP	FAN RPM	TIP SPEED	SOUND dBA	ELECTRICAL HP	VOLTS	PH	RPM	MAKE/MODEL	REMARKS
EF-3-1	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	3,115	1/2	.62	834	4530	–	3/4	480	3	1750	LOREN COOK 210 ACE-B	VFD
EF-3-2	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1,250	3/4	.248	1066	4186	–	1/2	480	3	1750	LOREN COOK 150 CPA-A	EXPLOSION PROOF
EF-3-3	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1,250	3/4	.248	1066	4186	–	1/2	480	3	1750	LOREN COOK 150 CPA-A	EXPLOSION PROOF
EF-3-4	BUILDING 3 ROOF	SCIENCE ROOM EXHAUST	CENT. ROOF EXH.	7,620	1/2	1.68	1598	7476	15 SONES	2	480	3	1750	LOREN COOK 270 ACE-B	VFD
EF-3-5	BUILDING 3 ROOF	SCIENCE ROOM EXHAUST	CENT. ROOF EXH.	4,780	1/2	1.15	1121	5722	–	1 1/2	480	3	1750	LOREN COOK 195 ACE-B	VFD
EF-3-6	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	3,420	1/2	.562	881	4497	–	3/4	480	3	1750	LOREN COOK 195 ACE-B	VFD
EF-3-7	BUILDING 3 ROOF	KILN ROOM EXHAUST	CENT. ROOF EXH.	500	1/2	.095	1402	3670	–	1/6	120	1	1750	LOREN COOK 100 ACE-B	
EF-3-8	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1,250	3/4	.248	1066	4186	–	1/2	480	3	1750	LOREN COOK 150 CPA-A	EXPLOSION PROOF
EF-3-9	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1,250	3/4	.248	1066	4186	–	1/2	480	3	1750	LOREN COOK 150 CPA-A	EXPLOSION PROOF
EF-3-10	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	3,275	1/2	.539	858	4380	–	3/4	480	3	1750	LOREN COOK 195 ACE-B	VFD
EF-3-11	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1,250	3/4	.248	1066	4186	–	1/2	480	3	1750	LOREN COOK 150 CPA-A	EXPLOSION PROOF
EF-3-12	BUILDING 3 ROOF	KILN ROOM EXHAUST	CENT. ROOF EXH.	500	1/2	.257	1402	3670	–	1/6	120	1	1750	LOREN COOK 100 ACE-B	
EF-3-13	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	1,860	1/2	.559	901	3892	–	1/2	480	3	1750	LOREN COOK 165 ACE-B	VFD
EF-3-14	BUILDING 3 ROOF	KILN ROOM EXHAUST	CENT. ROOF EXH.	500	1/2	.095	1402	3670	–	1/6	120	1	1750	LOREN COOK 100 ACE-B	
EF-3-15	BUILDING 3 ROOF	TOILET EXHAUST	CENT. ROOF EXH.	3,800	1/2	.707	943	4814	13.4 SONES	3/4	480	3	1750	LOREN COOK 195 ACE-B	
EF-3-16	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	2,430	1/2	.428	1066	4604	–	1/2	480	3	1750	LOREN COOK 165 ACE-B	VFD
EF-3-17	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1,250	3/4	.248	1066	4186	–	1/2	480	3	1750	LOREN COOK 150 CPA-A	EXPLOSION PROOF
EF-3-18	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1,250	3/4	.248	1066	4186	–	1/2	480	3	1750	LOREN COOK 150 CPA-A	24 HOUR/7 DAY EXPLOSION PROOF
EF-3-19	BUILDING 3 ROOF	NURSE'S SUITE	CENT. ROOF EXH.	2,100	1/2	.472	1569	5545	–	1/2	480	3	1750	LOREN COOK 135 ACE-B	
EF-3-20	BUILDING 3 ROOF	PREP ROOM EXHAUST	CENT. ROOF EXH.	750	3/8	.084	1012	3179	–	1/6	120	1	1750	LOREN COOK 120 ACE-B	24 HOUR/7 DAY OPERATION
EF-3-21 EF-3-22	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1,250	3/4	.248	1066	4186	–	1/2	480	3	1750	LOREN COOK 150 CPA-A	EXPLOSION PROOF
EF-3-23	BUILDING 3 ROOF	SCIENCE ROOM EXHAUST	CENT. ROOF EXH.	7,800	3/8	1.66	691	4884	–	2	480	3	1750	LOREN COOK 270 ACE-B	VFD
EF-3-24	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	5,330	1/2	1.22	1008	5541	–	1 1/2	480	3	1750	LOREN COOK 210 ACE-B	VFD
EF-3-25	BUILDING 3 ROOF	SCIENCE ROOM EXHAUST	CENT. ROOF EXH.	2,600	3/8	.457	1075	4643	–	1/2	480	3	1750	LOREN COOK 165 ACE-B	VFD
EF-3-26	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1,250	3/4	.248	1066	4186	–	1/2	480	3	1750	LOREN COOK 150 CPA-A	EXPLOSION PROOF
EF-3-27	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	2,320	1/2	.39	1033	4462	–	1 1/2	480	3	1750	LOREN COOK 165 ACE-B	VFD
EF-3-28	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1,250	3/4	.248	1066	4186	–	1/2	480	3	1750	LOREN COOK 150 CPA-A	EXPLOSION PROOF
EF-3-29	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	4,555	1/2	.874	896	4926	–	1	480	3	1750	LOREN COOK 210 ACE-B	VFD
EF-3-30	BUILDING 3 ROOF	TOILET EXHAUST	CENT. ROOF EXH.	2,980	1/2	.582	986	4646	8.6 SONES	3/4	480	3	1750	LOREN COOK 180 ACE-B	
EF-3-31	BUILDING 3 ROOF	PREP ROOM EXHAUST	CENT. ROOF EXH.	750	3/8	.084	1012	3179	–	1/6	120	1	1750	LOREN COOK 120 ACE-B	24 HOUR/7 DAY OPERATION
EF-3-32	BUILDING 3 ROOF	GREENHOUSE EXHAUST	CENT. ROOF EXH.	3,000	1/2	.614	990	4665	–	3/4	480	3	1750	LOREN COOK 180 ACE-B	VFD
EF-3-33	BUILDING 3 ROOF	COPY ROOM EXHAUST	CENT. ROOF EXH.	115	1/2	.082	1338	3546	–	1/6	120	1	1750	LOREN COOK 70 ACE-B	
EF-3-34	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	6,645	1/2	1.28	641	4530	–	1 1/2	480	3	1750	LOREN COOK 270 ACE-B	VFD
EF-3-35	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	5,805	1/2	1.2	734	4707	–	1 1/2	480	3	1750	LOREN COOK 245 ACE-B	VFD
EF-3-36	BUILDING 3 ROOF	CLASS ROOM EXHAUST	CENT. ROOF EXH.	4,695	1/2	.93	916	5035	–	1 1/2	480	3	1750	LOREN COOK 210 ACE-B	VFD
EF-3-37	BUILDING 3 ROOF	TOILET EXHAUST	CENT. ROOF EXH.	2,805	1/2	.611	1180	5097	–	3/4	480	3	1750	LOREN COOK 165 ACE-B	
EF-3-38	BUILDING 3 CELLAR	MER EXHAUST	INLINE CENT.	2200	3/4	.69	1450	–	–	3/4	480	3	1750	LOREN COOK 150 SQI-B	
EF-3-39	BUILDING 3 CELLAR	EMERG GEN ROOM EXHAUST	INLINE CENT.	720	3/4	.2	1791	–	–	1/3	120	1	1750	LOREN COOK 90 SQI-B	
EF-3-40	BUILDING 3 CELLAR	EMER SWGR ROOM EXHAUST	INLINE CENT.	460	3/4	.13	1625	–	–	1/4	120	1	1750	LOREN COOK 90 SQI-B	
EF-3-41 SF-3-41	BUILDING 3 CELLAR	BOILER ROOM EXHAUST:SUPPLY	INLINE CENT.	2360	3/4	.63	1218	–	–	3/4	480	3	1750	LOREN COOK 165 SQI-B	
EF-3-42	BUILDING 3 CELLAR	ELEC SVC ROOM EXHAUST	INLINE CENT.	1,130	3/4	.45	1871	5875	–	3/4	480	3	1750	LOREN COOK 120 SQI-B	
EF-3-43	BUILDING 3 CELLAR	CHILLER ROOM EXHAUST	INLINE CENT. △1	2260 1130	3/4	.69	1492	–	–	1	480	3	1750/875	LOREN COOK 150 SQI-B	2 SPEED, 2 WINDING
EF-3-44	BUILDING 3 CELLAR	GAS/WATER RM EXHAUST	INLINE CENT.	500	3/4	.14	1639	–	–	1/4	120	1	1750	LOREN COOK 90 SQI-B	EXPLOSION PROOF
EF-3-45	BUILDING 3 ROOF	FUME HOOD	UTILITY SET	1350	3/4	.288	1103	4331	74	1/2	480	3	1750	LOREN COOK 150 CPA-A	24 HOUR/7 DAY EXPLOSION PROOF
EF-3-46	BLDG.3 UNIT "J"	ELEV. M.RM.	INLINE CENT.	200	.375	134W	1200	–	–	1/4	120	1	1750	LOREN COOK 90SQI-12D	
EF-3-47	BLDG.3 UNIT "J"	TRANSFORMER RM. B012	INLINE CENT.	5,680	3/4	2.23	1564	7370	–	3	480	3	1750	LOREN COOK 180 SQI-B	
EF-3-48	BLDG.3 UNIT "H"	ELECT.RM. 1015	INLINE CENT.	380	1/2	230 W	1550	–	–	1/6	120	1	1750	LOREN COOK 80SQI-15D	
EF-3-49	BLDG.3 UNIT "J"	ELECT.RM. 303B	INLINE CENT.	1,400	3/4	.45	1871	5875	–	3/4	480	3	1750	LOREN COOK 120 SQI-B	
EF-3-50	BLDG.3 UNIT "J"	ELECT.RM. 2039B	INLINE CENT.	1,400	3/4	.45	1871	5875	–	3/4	480	3	1750	LOREN COOK 120 SQI-B	
EF-3-51	BLDG.3 UNIT "J"	ELECT.RM. 1032	INLINE CENT.	380	1/2	230 W	1550	–	–	1/6	120	1	1750	LOREN COOK 80SQI-15D	
EF-3-52	BLDG.3 UNIT "K"	ELECT.RM. 3057	INLINE CENT.	1,400	3/4	.45	1871	5875	–	3/4	480	3	1750	LOREN COOK 120 SQI-B	
EF-3-53	BLDG.3 UNIT "K"	ELECT.RM. 2052	INLINE CENT.	1,400	3/4	.45	1871	5875	–	3/4	480	3	1750	LOREN COOK 120 SQI-B	
EF-3-54	BLDG.3 UNIT "K"	ELECT.RM. 1044	INLINE CENT.	1,800	3/4	.72	2209	6936	–	1	480	3	1750	LOREN COOK 120 SQI-B	
EF-3-55	BLDG.3 UNIT "J"	ELEV MACH RM.	CENT. ROOF EXH.	200	1/2	.07	1395	–		1/4	120	1	1750	GREENHECK GB-071-4	
EF-3-56	NOT USED														
EF-3-57	BLDG.3 UNIT "H"	DARK RM. 1007B	INLINE CENT.	150	1/4	110 W	1550	2840	–	.05	120	1	1750	LOREN COOK 70 SQI-15D	

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HOT WATER REHEAT COILS

UNIT NO	LOCATION	SERVES	CAP MBH	AIR DATA CFM	EAT	LAT	VEL	PD	WATER DATA EWT	LWT	GPM	PD	SIZE	ROW/FIN	MAKE/MODEL	REMARKS
RH-1	BUILDING "E" MER	AC-1-2	169.2	5,200	70	100.0	800 MAX	0.8"	180	160	16.9	0.35'	26"W x 24"H	2 ROWS 125 FINS/FT	TRANE DELTA FLO H	
RH-2	BUILDING "E" MER	AC-1-2	236.9	7,280	70	100.0	800 MAX	0.8"	180	160	23.7	0.74'	36"W x 24"H	2 ROWS 113 FINS/FT	TRANE DELTA FLO H	
RH-3	BUILDING "E" MER	AC-1-2	90.5	2,780	70	100.0	800 MAX	0.6"	180	160	9.0	0.1'	20"W x 21"H	2 ROWS 123 FINS/FT	TRANE PRIMA-FLO H	

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Consulting Engineers
31 Knight Street
Norwalk, CT 06851

FULLER AND D'ANGELO P.C.
ARCHITECTS AND PLANNERS
45 KNOLLWOOD ROAD
ELMSFORD, NEW YORK 10523

PCO-109a

ALTERATIONS AND EXPANSION OF STAPLES HIGH SCHOOL
70 NORTH AVENUE
WESTPORT, CONNECTICUT 06880

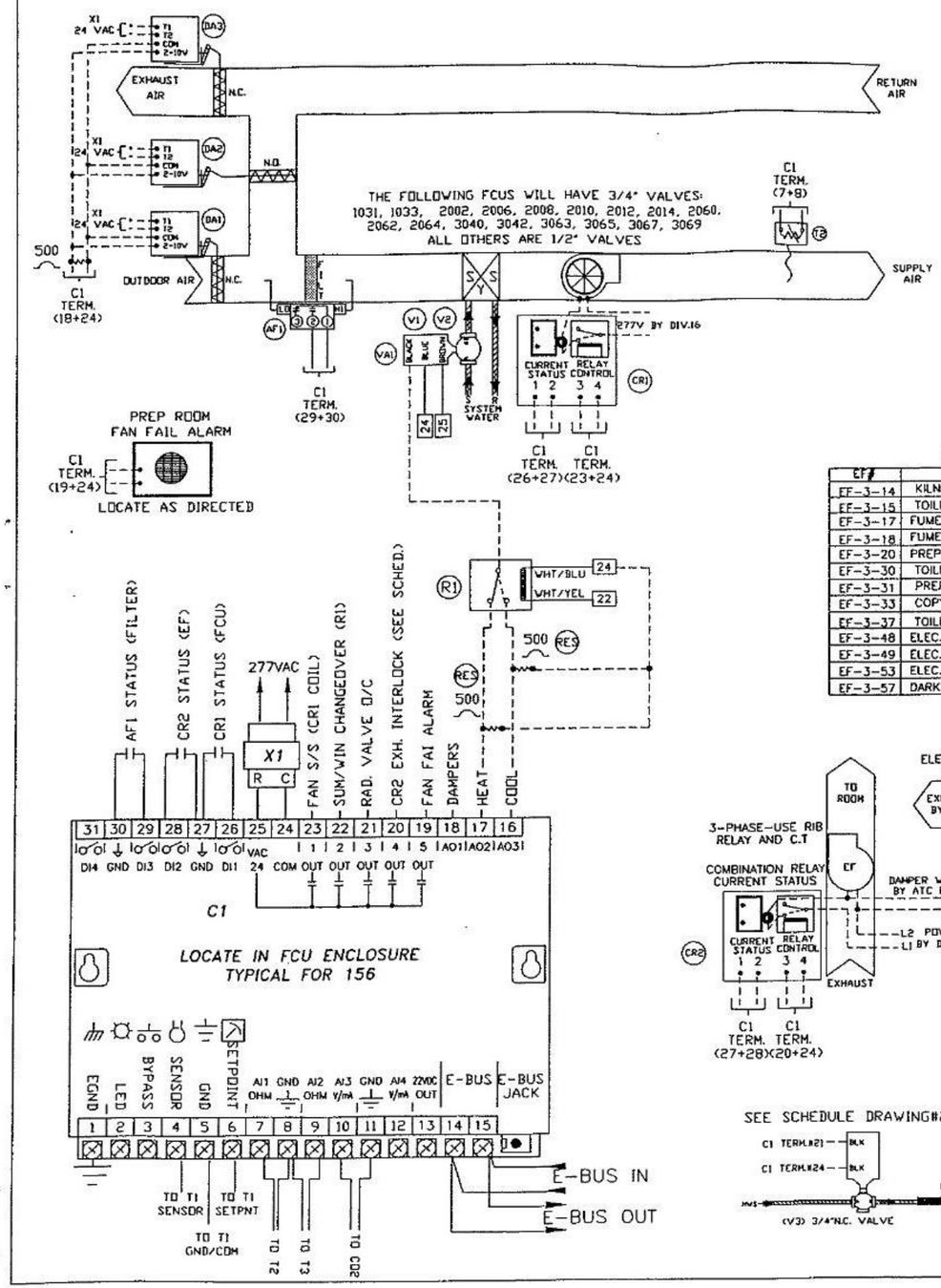
SCHEDULE SHEET No. 3

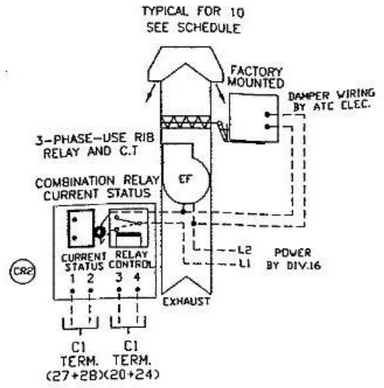
DATE	ISSUED TO
01/30/2004	BULLETIN #2
10/24/03	ADDENDUM #2
09/02/03	BID
6/16/2003	SFU REVIEW

SCALE: NONE
DRAWN BY: PCS
CHECKED BY: PCS
DRAWING NO.: M-403
FILE NO.: 0046MS03

CLASSROOM FCU

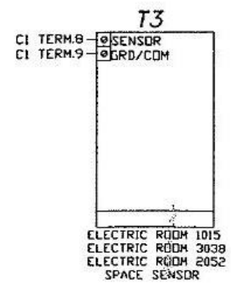
TYPICAL FOR 156-NON SCIENCE ROOM FCUS
SEE SCHEDULE ON DRAWING#22
M.D.F. MECH. RM. WILL BE DX COOLING

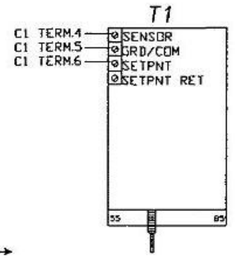


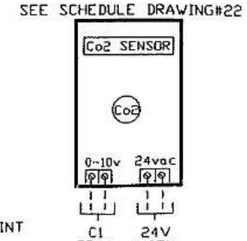


EXHAUST SCHEDULE

EF#	AREA SERVED	FCU INTERLOCK	
EF-3-14	KILN ROOM 10128	DDC#122	
EF-3-15	TOILET EXHAUST 1ST-3RD 'H'	DDC#126	
EF-3-17	FUME HOOD CHEM.PREP 3026	DDC#134	
EF-3-18	FUME HOOD CHEM.PREP 3026	DDC#135	3-PHASE
EF-3-20	PREP RM. 3029A 24/7	DDC#138	
EF-3-30	TOILET EXHAUST 1ST-3RD 'J'	DDC#150	3-PHASE
EF-3-31	PREP.ROOM 3034A 24/7	DDC#151	3-PHASE
EF-3-33	COPY ROOM 3RD.FLR.'K'	DDC#161	3-PHASE
EF-3-37	TOILET EXHAUST 1ST-3RD 'K'	DDC#171	3-PHASE
EF-3-48	ELEC.ROOM 1015 1ST.FLR. 'H'	DDC#18	
EF-3-49	ELEC.ROOM 3038 3RD.FLR. 'J'	DDC#153	3-PHASE
EF-3-53	ELEC.ROOM 2052 2ND.FLR. 'K'	DDC#96	3-PHASE
EF-3-57	DARK RM. 10078 1ST.FLR.'H'	DDC#9	







SEQUENCE OF OPERATION-FAN COIL UNITS

A. THE FAN COILS SHALL BE STARTED AUTOMATICALLY BY THE EMS IN ACCORDANCE WITH THE BUILDING'S OPERATING SCHEDULE.

B. THE EMS OPERATING SCHEDULE PROGRAM SHALL CONTROL THE OPERATION OF THE OUTSIDE AIR DAMPER. THE SYSTEM SHALL OPERATE ON 100% RECIRCULATION DURING THE "UNOCCUPIED" PERIODS.

C. THE ROOM SENSORS SHALL MODULATE THE UNIT CONTROL VALVE TO MAINTAIN SETPOINT. IN WINTER, IF SETPOINT IS BEING EXCEEDED WITH THE UNIT CONTROL VALVE CLOSED, THE RADIATION CONTROL VALVE SHALL MODULATE TO MAINTAIN SETPOINT. IF THE SETPOINT IS STILL BEING EXCEEDED WITH RADIATION CONTROL VALVE CLOSED, THE OUTDOOR AIR UNITS (DAU-1,2) SHALL BE COMMANDED TO REDUCE DISCHARGE TEMPERATURE.

D. THE OUTSIDE AIR DAMPERS AND EXHAUST AIR DAMPERS SHALL BE INTERLOCKED WITH THE FAN COIL SUPPLY FAN. DURING UNOCCUPIED CYCLE, THE SYSTEM SUPPLY FAN SHALL RUN WITH 100% RECIRCULATION TO MAINTAIN SPACE TEMPERATURE ABOVE 60°F.

E. OUTSIDE AIR QUANITIES (FROM THE VENTILATION UNITS) SHALL BE MODULATED BY THE OUTSIDE AIR DAMPER, BASED ON THE MEASURED CARBON DIOXIDE (CO2) LEVELS IN THE SPACE SERVED. OUTSIDE AIR USAGE SHALL BE MINIMIZED, AND SHALL BE INCREASED TO MAINTAIN A MAXIMUM CO2 LEVEL OF 1,500 PPM (ADJ.).

F. MORNING WARM-UP: AN HOUR BEFORE NORMAL OCCUPANCY SCHEDULE THROUGH DDC SYSTEM, SYSTEM SHALL START UNDER NORMAL START SEQUENCE EXCEPT OUTSIDE AIR AND SPILL DAMPERS SHALL REMAIN CLOSED. COIL CONTROL VALVE SHALL BE MODULATED UNTIL SPACE TEMPERATURE REACHES SETPOINT. WHEN SETPOINT IS ACHIEVED, THE SYSTEM SHALL BE SWITCHED TO NORMAL OCCUPIED MODE.

SEQUENCE OF OPERATION-ART ROOM WALL FCUS

A. IF THE SPACE SENSOR IS CALLING FOR COOLING, AND THE CONTROL VALVE FOR THE CEILING MOUNTED FAN COIL UNIT IS WIDE OPEN, THE WALL MOUNTED FAN COIL SHALL BE ENERGIZED, AND IT'S CONTROL VALVE SHALL MODULATE TO MEET SPACE TEMPERATURE REQUIREMENTS. THE CEILING MOUNTED FAN COIL CONTROL VALVE SHALL REMAIN OPEN WHILE THE WALL MOUNTED FAN COIL IS OPERATING. AS THE SPACE TEMPERATURE IS SATISFIED, THE WALL MOUNTED UNIT FAN COIL CONTROL VALVE SHALL MODULATE CLOSED, AND UPON DROP IN SPACE TEMPERATURE BELOW SETPOINT, THE WALL MOUNTED FAN COIL UNIT SHALL BE DE-ENERGIZED AFTER AN ADJUSTABLE TIME PERIOD.

SEQUENCE OF OPERATION-TOILET/GENERAL EXHAUST

A. CENTRAL EXHAUST SYSTEMS SHALL BE STARTED AND STOPPED FROM THE DDC PANEL, IN ACCORDANCE WITH THE EMS OPERATING SCHEDULE. SINGLE EXHAUST SYSTEMS SHALL BE INTERLOCKED WITH THE LIGHT SWITCH FOR THE TOILETS THEY SERVE. THE MOTORIZED BACK DRAFT DAMPER SHALL BE INTERLOCKED TO OPEN WHEN THE FAN RUNS.

SEQUENCE OF OPERATION-ELECTRICAL CLOSET EXHAUST

A. EXHAUST FANS SHALL BE STARTED AND STOPPED FROM THE DDC, AS REQUIRED BY THE SPACE TEMPERATURE SENSOR. WHEN THE EXHAUST FAN IS ENERGIZED, THE BYPASS DAMPER SHALL CLOSE, AND THE INLET AND EXHAUST DAMPERS TO THE ELECTRIC CLOSET SHALL OPEN. WHEN THE EXHAUST FAN IS DE-ENERGIZED, THE BYPASS DAMPER SHALL OPEN, AND THE INLET AND EXHAUST DAMPERS TO THE ELECTRIC CLOSET SHALL CLOSE.

SEQUENCE OF OPERATION-PREP ROOM EXHAUST SYSTEMS

A. PREP ROOM EXHAUST FANS (INCLUDING FUME HOOD FANS WHERE FUME HOODS ARE LOCATED IN PREP ROOMS) SHALL OPERTE CONTINUOUSLY. (24/7). A CURRENT SENSOR SHALL ALARM LOCALLY AND AT WORKSTATION, IF FAN FAILS.

MATERIAL

ITEM NO	MODEL	DESCRIPTION	QUAN	
AF1	DPS-10	DYNACON AIR FLOW SWITCH	156	
ALM	SC628A	KELE AUDIBLE ALARM	1	
C1	W7750C	CONSTANT VOLUME DDC CONTROLLER	156	
CR1,2	RIBXLCA	COMBINATION REMOTE RELAY AND C.T.	166	
(3-PHASE) CT1	RIBXKF	CURRENT SENSING SWITCH	7	
CO2	ACI/CO2/VDC/R	SPACE CO2 SENSOR	134	2
DA1-3	ML7161A2008	MODULATING DAMPER ACTUATOR	429	
DA4	ML4125A1008	2-POSITION 110V DAMPER ACTUATOR	6	
R1	RIB-1UC	REMOTE SWITCHING RELAY	167	
T1	JG/20K/RS	SPACE TEMPERATURE SENSOR	156	
T2	JG/20K-D18	DUCT TEMPERATURE SENSOR	156	
T3	JG/20K/R	SPACE TEMPERATURE SENSOR	3	
V1	VCZAA1100	1/2" 2-WAY SYSTEM VALVE CV=3.5	139	
V2	VCZAM1100	3/4" 2-WAY SYSTEM VALVE CV=4.6	17	
VA1	VC7934Z211	MODULATING VALVE ACTUATOR	156	
V3	VI2313AH13A000	3/4" 2-WAY RADIATOR VALVE CV=3.5	125	
X1	TR50VA006	277-24v 50VA CONTROL TRANSFORMER	156	

AN INDUSTRY LEADER IN TEMPERATURE CONTROL AND BUILDING AUTOMATION SYSTEMS
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SERVICE, QUALITY & INTEGRITY

JOHNSON-GOODYER INC.
199 TERMINAL LANE
NEW HAVEN, CT. 06519
203-777-3424

REVISIONS		
DATE	CHANGES	
6-1-04	REVISE AND	1
	RESUBMIT	
7-28-04	ADD CO2	2
	CORRIDORS	
4/5/07	AS-BUILTS	

JOB NAME: STAPLES HIGH SCHOOL
LOCATION: 70 NORTH AVE. WESTPORT, CT.
ARCHITECT: FULLER AND D'ANGELO P.C.
ENGINEER: ALTERI, SEBOR AND WIEBOR
CONTRACTOR: M.J. DALY
DRAWN BY: WRC
CHECKED BY: KK
DATE: 12-17-03
DRAWING NO.: 03-4108
21 OF 34

CLASSROOM FCU SCHEDULE

FCU SCHEDULE

DDC NO	FLR./SECTION	COMMENTS	CO2	LOCATION	RAD. VLV.	EF INTRLK
FCU-1	FIRST 'G'	100% R.A.-NO DAMPER	NO	VESTIBULE 517		
FCU-2	FIRST 'H'		YES	TEACHER OFF. 1002	3/4"(V3)	
FCU-3	FIRST 'H'		YES	DIGITAL MUSIC 1003	3/4"(V3)	
FCU-4	FIRST 'H'		YES	DIGITAL MUSIC 1003		
FCU-5	FIRST 'H'	ADDITIONAL WALL FCU	YES	ART STUDIO 1004	3/4"(V3)	
FCU-6	FIRST 'H'		YES	CORRIDOR 1013	3/4"(V3)	
FCU-7	FIRST 'H'		YES	TEACHERS OFF. 1006		
FCU-8	FIRST 'H'		YES	KILN ROOM 1008B	3/4"(V3)	
FCU-9	FIRST 'H'		YES	PHOTO CLASS 1007	3/4"(V3)(2)	EF-3-57
FCU-10	FIRST 'H'	ADDITIONAL WALL FCU	YES	ART STUDIO 1008	3/4"(V3)	
FCU-11	FIRST 'H'	ADDITIONAL WALL FCU	YES	ART STUDIO 1009	3/4"(V3)	
FCU-12	FIRST 'H'	ONE SENSOR	YES	ART CLASSRM. 1010	3/4"(V3)	
FCU-13	FIRST 'H'		NO	ART CLASSRM. 1010		
FCU-14	FIRST 'H'		NO	STORAGE 1010A	3/4"(V3)	
FCU-15	FIRST 'H'		YES	OFFICE 1011A		
FCU-16	FIRST 'H'		YES	CHILD DEVELOP.1011	3/4"(V3)(2)	
FCU-17	FIRST 'H'	ADDITIONAL WALL FCU	YES	ART STUDIO 1012	3/4"(V3)	
FCU-18	FIRST 'H'	100% O.A.-1 DAMPER	NO	TOILETS 1019	3/4"(V3)(3)	EF-3-48
FCU-19	FIRST 'H'		YES	JEWELRY 1012A	3/4"(V3)	
FCU-20	FIRST 'I'	100% R.A.-NO DAMPER	NO	ART EXHIBIT 1021D	3/4"(V3)	
FCU-21	FIRST 'I'	100% R.A.-NO DAMPER	NO	ART EXHIBIT 1021C	3/4"(V3)	
FCU-22	FIRST 'I'		NO	ART EXHIBIT 1021B	3/4"(V3)	
FCU-23	FIRST 'I'	100% R.A.-NO DAMPER	NO	MAIN LOBBY 1021	3/4"(V3)	
FCU-24	FIRST 'J'		YES	CORRIDOR 1039		
FCU-25	FIRST 'J'		YES	COMMUNITY ROOM 1027	3/4"(V3)	
FCU-26	FIRST 'J'		YES	COMPUTER LAB 1029		
FCU-27	FIRST 'J'		YES	COMPUTER LAB 1029	3/4"(V3)	
FCU-28	FIRST 'J'		YES	COMPUTER TEACH. 1031	3/4"(V3)	
FCU-29	FIRST 'J'		YES	COMPUTER LAB 1033		
FCU-30	FIRST 'J'		YES	COMPUTER LAB 1033	3/4"(V3)	
FCU-31	FIRST 'J'		YES	LANGUAGE CLASSRM.1034	3/4"(V3)	
FCU-32	FIRST 'J'		YES	LANGUAGE CLASSRM.1036	3/4"(V3)	
FCU-33	FIRST 'J'		YES	CORRIDOR 1039	3/4"(V3)	
FCU-34	FIRST 'J'	100% O.A.-1 DAMPER	NO	TOILETS 1037		
FCU-35	FIRST 'K'		YES	WORLD LANGUAGE 1049	3/4"(V3)	
FCU-36	FIRST 'K'		YES	SPEC. ED 1050		
FCU-37	FIRST 'K'		YES	CORRIDOR 1063		
FCU-38	FIRST 'K'		YES	WORLD LANGUAGE 1047	3/4"(V3)	
FCU-39	FIRST 'K'		YES	LIFE SKILLS 1045	3/4"(V3)(2)	
FCU-40	FIRST 'K'	ADD. RAD. RM.1041	YES	SOUTH LOBBY 1042	3/4"(V3)	
FCU-41	FIRST 'K'	ADD. RAD. RM.1042B	YES	SOUTH LOBBY 1042	3/4"(V3)	
FCU-42	FIRST 'K'		YES	MAINTENANCE 1040	3/4"(V3)	
FCU-43	FIRST 'K'		YES	WORLD LANGUAGE 1051	3/4"(V3)	
FCU-44	FIRST 'K'		YES	WORLD LANGUAGE 1052	3/4"(V3)	
FCU-45	FIRST 'K'		YES	CORRIDOR 1061		
FCU-46	FIRST 'K'		YES	WORLD LANGUAGE 1054	3/4"(V3)	
FCU-47	FIRST 'K'		YES	SPEC.ED. 1053	3/4"(V3)	
FCU-48	FIRST 'K'		YES	WORLD LANGUAGE 1055	3/4"(V3)	
FCU-49	FIRST 'K'	100% O.A.-1 DAMPER	NO	TOILETS 1059	3/4"(V3)	
FCU-50	2ND. 'H'		YES	CORRIDOR 2025	3/4"(V3)	
FCU-51	2ND. 'H'		YES	ENGLISH 2002	3/4"(V3)	
FCU-52	2ND. 'H'		YES	SOCIAL STUDIES 2001	3/4"(V3)	
FCU-53	2ND. 'H'		YES	SPEC.ED. 2004	3/4"(V3)	
FCU-54	2ND. 'H'		YES	SOCIAL STUDIES 2005	3/4"(V3)	
FCU-55	2ND. 'H'		YES	ENGLISH 2006	3/4"(V3)	
FCU-56	2ND. 'H'		YES	SOCIAL STUDIES 2007	3/4"(V3)	
FCU-57	2ND. 'H'		YES	ENGLISH 2008	3/4"(V3)	
FCU-58	2ND. 'H'		YES	SOCIAL STUDIES 2009	3/4"(V3)	
FCU-59	2ND. 'H'		YES	ENGLISH 2010	3/4"(V3)	
FCU-60	2ND. 'H'		YES	SPEC.ED. 2011	3/4"(V3)	
FCU-61	2ND. 'H'		YES	ENGLISH 2012	3/4"(V3)	
FCU-62	2ND. 'H'		YES	ENGLISH 2015	3/4"(V3)	
FCU-63	2ND. 'H'		YES	SOCIAL STUDIES 2014	3/4"(V3)(2)	
FCU-64	2ND. 'H'		NO	BOOK STORAGE 2017	3/4"(V3)	
FCU-65	2ND. 'H'	100% O.A.-1 DAMPER	NO	TOILETS 2023	3/4"(V3)(2)	
FCU-66	2ND. 'I'	100% R.A.-NO DAMPER	NO	ALCOVE 2026A	3/4"(V3)	
FCU-67	2ND. 'I'	100% R.A.-NO DAMPER	NO	CORRIDOR 2026		
FCU-68	2ND. 'I'		YES	CORRIDOR 2026	3/4"(V3)	
FCU-69	2ND. 'I'	100% R.A.-NO DAMPER	NO	ALCOVE 2026B		
FCU-70	2ND. 'I'		YES	SOCIAL STUDIES 2028	3/4"(V3)(2)	
FCU-71	2ND 'J'		YES	ENGLISH 2030	3/4"(V3)	
FCU-72	2ND 'J'		YES	CORRIDOR 2039		
FCU-73	2ND 'J'		YES	SPEC.ED. 2029	3/4"(V3)	
FCU-74	2ND 'J'		YES	WRITING CENTER 2032	3/4"(V3)	
FCU-75	2ND 'J'		YES	WRITING CENTER 2032		
FCU-76	2ND 'J'		YES	ENGLISH 2031	3/4"(V3)	
FCU-77	2ND 'J'		YES	WRITING CENTER 2034	3/4"(V3)	
FCU-78	2ND 'J'		YES	WRITING CENTER 2034		
FCU-79	2ND 'J'		YES	SOCIAL STUDIES 2033	3/4"(V3)	
FCU-80	2ND 'J'		YES	BOOK STORAGE 2035A	3/4"(V3)	

FCU SCHEDULE

DDC NO	FLR./SECTION	COMMENTS	CO2	LOCATION	RAD. VLV.	EF INTRLK
FCU-81	2ND. 'J'		YES	SOCIAL STUDIES 2035	3/4"(V3)(2)	
FCU-82	2ND. 'J'		YES	SOC.STUD. CHAIR 2035D	3/4"(V3)(2)	
FCU-83	2ND. 'J'		YES	CONFERENCE RM. 2035G		
FCU-84	2ND. 'J'		YES	ENG./S.S. SUPPORT 2036	3/4"(V3)	
FCU-85	2ND. 'J'		YES	ENG./S.S. SUPPORT 2038		
FCU-86	2ND. 'J'		YES	BOOK STORAGE 2040	3/4"(V3)	
FCU-87	2ND. 'J'	100% O.A.-1 DAMPER	NO	STAFF TOILET 2043		
FCU-88	2ND. 'K'		YES	SOCIAL STUDIES 2059	3/4"(V3)	
FCU-89	2ND. 'K'		YES	ENGLISH 2060	3/4"(V3)	
FCU-90	2ND. 'K'		YES	ENGLISH 2057	3/4"(V3)	
FCU-91	2ND. 'K'		YES	WORLD LANGUAGE 2058	3/4"(V3)	
FCU-92	2ND. 'K'		YES	ACAD. SUPPORT 2055	3/4"(V3)	
FCU-93	2ND. 'K'		YES	SPEC. ED. 2056	3/4"(V3)	
FCU-94	2ND. 'K'		YES	CORRIDOR 2066		
FCU-95	2ND. 'K'		YES	WORLD LANGUAGE 2049	3/4"(V3)	
FCU-96	2ND. 'K'		YES	WORLD LANGUAGE 2048	3/4"(V3)	EF-3-53
FCU-97	2ND. 'K'		YES	WORLD LANGUAGE 2047	3/4"(V3)	
FCU-98	2ND. 'K'		YES	WORLD LANGUAGE 2046	3/4"(V3)	
FCU-99	2ND. 'K'		YES	SOCIAL STUDIES 2061	3/4"(V3)	
FCU-100	2ND. 'K'		YES	ENGLISH 2062	3/4"(V3)	
FCU-101	2ND. 'K'		YES	ENGLISH 2064	3/4"(V3)	
FCU-102	2ND. 'K'		YES	SOCIAL STUDIES 2063	3/4"(V3)	
FCU-103	2ND. 'K'	100% O.A.-1 DAMPER	NO	TOILETS 2069	3/4"(V3)	
FCU-104	2ND. 'K'		YES	SOCIAL STUDIES 2065	3/4"(V3)	
FCU-105	2ND. 'K'		YES	CORRIDOR 2066		
FCU-106	3RD. 'H'		YES	CORRIDOR 3019	3/4"(V3)	
FCU-107	3RD. 'H'					
FCU-108	3RD. 'H'					
FCU-109	3RD. 'H'			SCIENCE SEE DRW#23		
FCU-110	3RD. 'H'					
FCU-111	3RD. 'H'		YES	TEACHERS OFFICE 3004	3/4"(V3)	
FCU-112	3RD. 'H'		YES	TEACHERS OFFICE 3003	3/4"(V3)	
FCU-113	3RD. 'H'					
FCU-114	3RD. 'H'					
FCU-115	3RD. 'H'			SCIENCE SEE DRW#23		
FCU-116	3RD. 'H'					
FCU-117	3RD. 'H'					
FCU-118	3RD. 'H'					
FCU-119	3RD. 'H'		YES	SCIENCE 5 3007	3/4"(V3)	
FCU-120	3RD. 'H'			SCIENCE SEE DRW.#23		
FCU-121	3RD. 'H'		YES	SCIENCE 5 3007		
FCU-122	3RD. 'H'		YES	TEACHERS OFFICE 3013	3/4"(V3)	EF-3-14
FCU-123	3RD. 'H'		YES	TEACHERS OFFICE 3009	3/4"(V3)	
FCU-124	3RD. 'H'		YES	SCIENCE 4 3011		
FCU-125	3RD. 'H'		YES	SCIENCE 4 3011	3/4"(V3)	
FCU-126	3RD. 'H'	100% O.A.-1 DAMPER	NO	TOILETS 3016	3/4"(V3)	EF-3-15
FCU-127	3RD. 'I'		YES	SPEC.ED. 3020A	3/4"(V3)	
FCU-128	3RD. 'I'		YES	MATH 3021	3/4"(V3)	
FCU-129	3RD. 'I'		YES	SPEC.ED. 3020		
FCU-130	3RD. 'I'		YES	MATH 3023	3/4"(V3)	
FCU-131	3RD. 'I'		YES	CORRIDOR 3024		
FCU-132	3RD. 'I'		YES	TECHNOLOGY 3022		
FCU-133	3RD. 'I'		YES	MATH 3025	3/4"(V3)	
FCU-134	3RD. 'I'		YES	TECHNOLOGY 3022	3/4"(V3)	EF-3-17
FCU-135	3RD. 'I'		YES	CHEM. PREP 3026	3/4"(V3)	EF-3-18
FCU-136	3RD. 'J'			SCIENCE SEE DRW.#23		
FCU-137	3RD. 'J'		YES	CORRIDOR 3043		
FCU-138	3RD. 'J'		YES	PREP RM.3029A		EF-20 24/7
FCU-139	3RD. 'J'					
FCU-140	3RD. 'J'			SCIENCE SEE DRW.#23		
FCU-141	3RD. 'J'		YES	TEACHERS OFFICE 3030	3/4"(V3)	
FCU-142	3RD. 'J'					
FCU-143	3RD. 'J'			SCIENCE SEE DRW.#23		
FCU-144	3RD. 'J'		YES	TEACHERS OFFICE 3031	3/4"(V3)	
FCU-145	3RD. 'J'		YES	SCIENCE 9 3033		
FCU-146	3RD. 'J'			SCIENCE SEE DRW.#23		
FCU-147	3RD. 'J'		YES	SCIENCE 9 3033		
FCU-148	3RD. 'J'					
FCU-149	3RD. 'J'			SCIENCE SEE DRW.#23		
FCU-150	3RD. 'J'		YES	SPEC.ED. 3037		EF-3-30
FCU-151	3RD. 'J'		YES	TEACHERS OFFICE 3036	3/4"(V3)	EF31 24/7
FCU-152	3RD. 'J'		YES	SPEC.ED. 3039	3/4"(V3)	
FCU-153	3RD. 'J'		YES	CORRIDOR 3043	3/4"(V3)	EF-3-49
FCU-154	3RD. 'J'		YES	MATH 4 3040	3/4"(V3)	
FCU-155	3RD. 'J'		YES	MATH 5 3042		
FCU-156	3RD. 'J'		YES	MATH 5 3042	3/4"(V3)	
FCU-157	3RD. 'J'	100% O.A.-1 DAMPER	NO	TOILETS 3048		
FCU-158	3RD. 'K'		YES	MATH 8 3065	3/4"(V3)	
FCU-159	3RD. 'K'		YES	MATH 7 3063	3/4"(V3)	
FCU-160	3RD. 'K'		YES	SPEC. ED. 3061	3/4"(V3)	

FCU SCHEDULE

DDC NO	FLR./SECTION	COMMENTS	CO2	LOCATION	RAD. VLV.	EF INTRLK
FCU-161	3RD.'K'		YES	CORRIDOR 3062		EF-3-33
FCU-162	3RD.'K'		YES	SPEC. ED. 3055	3/4"(V3)	
FCU-163	3RD.'K'		YES	MATH 6 3053	3/4"(V3)	
FCU-164	3RD.'K'		YES	MATH/SCIENCE 3051	3/4"(V3)	
FCU-165	3RD.'K'		YES	MATH 9 3067	3/4"(V3)	
FCU-166	3RD.'K'		YES	MATH 12 3064	3/4"(V3)	
FCU-167	3RD.'K'		YES	MATH 12 3064		
FCU-168	3RD.'K'		YES	MATH 10 3069	3/4"(V3)	
FCU-169	3RD.'K'		YES	MATH 13 3066	3/4"(V3)	
FCU-170	3RD.'K'		YES	MATH 13 3066		
FCU-171	3RD.'K'	100% O.A.-1 DAMPER	NO	TOILETS 3069	3/4"(V3)	EF-3-37
FCU-172	3RD.'K'		YES	MATH 11 3071	3/4"(V3)	
FCU-173	3RD.'K'		YES	CORRIDOR 3062	3/4"(V3)	
FCU-174	BASE 'J'	OX COOLING	NO	M.D.F. MECH.RM.		
FCU-175	BASE 'J'		NO	HVAC WORKSHOP		

AN INDUSTRY LEADER IN TEMPERATURE CONTROL AND BUILDING AUTOMATION SYSTEMS

"SINCE 1946"

SERVICE, QUALITY & INTEGRITY

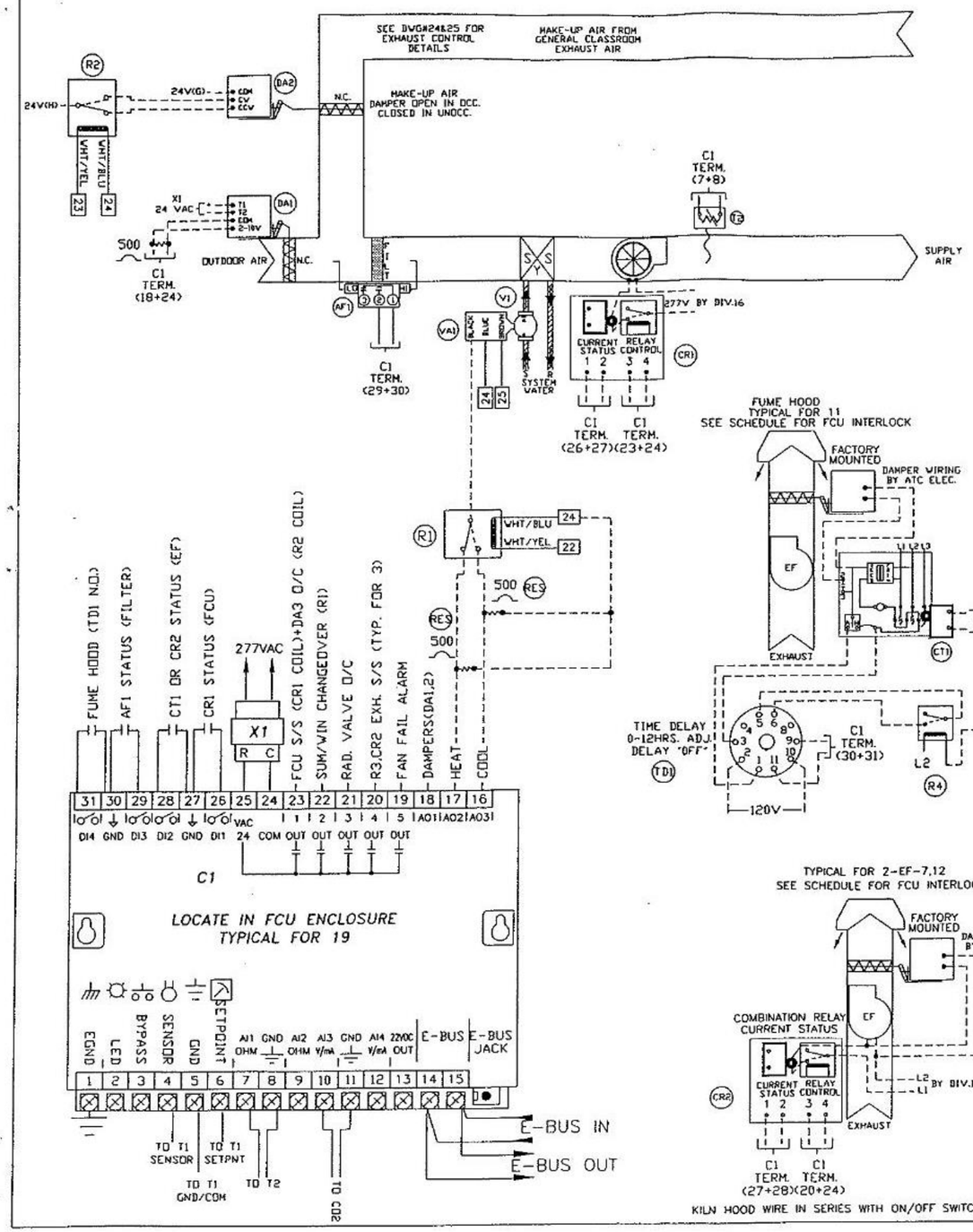
JOHNSON-GOODYER INC.
199 TERMINAL LANE
NEW HAVEN,CT.06519
203-777-3424

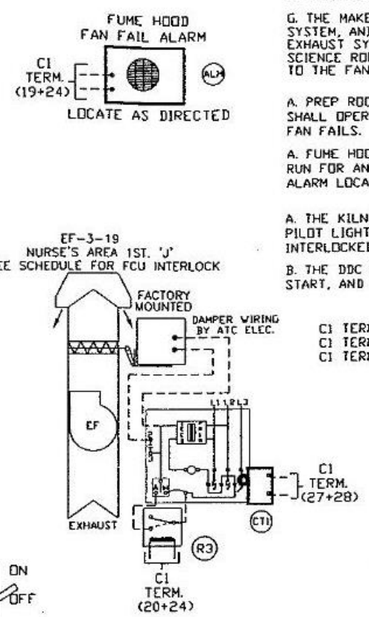
REVISIONS		
DATE	CHANGES	
6-1-04	REVISE AND RESUBMIT	1
7-28-04	ADD CO2 CORRIDORS	2
4/5/07	AS-BUILTS	

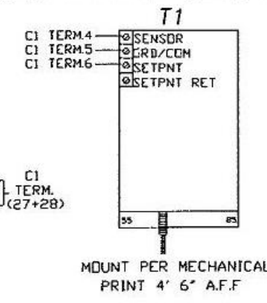
JOB NAME STAPLES HIGH SCHOOL
LOCATION 70 NORTH AVE. WESTPORT, CT.
ARCHITECT FULLER AND D'ANGELO P.C.
ENGINEER ALTERI, SEBOR AND WIEBOR
CONTRACTOR M.J. DALY
DRAWN BY WRC
CHECKED BY KK
DATE 12-17-03
DRAWING NO. 03-4108
22 OF 34

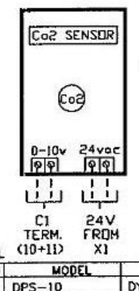
SCIENCE FCU

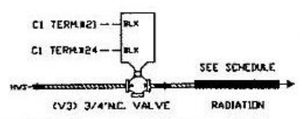
TYPICAL FOR 19
SEE SCHEDULE











SEQUENCE OF OPERATION-SCIENCE ROOM FCUS

A. THE FAN COILS SHALL BE STARTED AUTOMATICALLY BY THE EMS IN ACCORDANCE WITH THE BUILDING'S OPERATING SCHEDULE.

B. THE EMS OPERATING SCHEDULE PROGRAM SHALL CONTROL THE OPERATION OF THE OUTSIDE AIR DAMPER. THE SYSTEM SHALL NOT RECIRCULATE AIR WITHIN THE SCIENCE ROOMS DURING "OCCUPIED" OR "UNOCCUPIED".

C. THE ROOM SENSORS SHALL MODULATE THE UNIT CONTROL VALVE TO MAINTAIN SETPOINT. IN WINTER, IF SETPOINT IS BEING EXCEEDED WITH THE UNIT CONTROL VALVE CLOSED, THE RADIATION CONTROL VALVE SHALL MODULATE TO MAINTAIN SETPOINT. IF THE SETPOINT IS STILL BEING EXCEEDED WITH RADIATION CONTROL VALVE CLOSED, THE OUTDOOR AIR UNITS (DAU-1,2) SHALL BE COMMANDED TO REDUCE DISCHARGE TEMPERATURE.

D. THE OUTSIDE AIR DAMPERS AND MAKE-UP AIR DAMPERS SHALL BE INTERLOCKED WITH THE FAN COIL SUPPLY FAN. DURING UNOCCUPIED CYCLE, THE SYSTEM SUPPLY FAN SHALL BE DE-ENERGIZED.

E. OUTSIDE AIR QUANITIES (FROM THE VENTILATION UNITS) SHALL BE MODULATED BY THE OUTSIDE AIR DAMPER, BASED ON THE MEASURED CARBON DIOXIDE (CO2) LEVELS IN THE SPACE SERVED. OUTSIDE AIR USAGE SHALL BE MINIMIZED, AND SHALL BE INCREASED TO MAINTAIN A MAXIMUM CO2 LEVEL OF 1,500 PPM (ADJ.).

F. MORNING WARM-UP: AN HOUR BEFORE NORMAL OCCUPANCY SCHEDULE THROUGH DDC SYSTEM, RADIATION VALVE SHALL OPEN UNTIL SPACE TEMPERATURE REACHES SETPOINT. WHEN SETPOINT IS ACHIEVED, THE SYSTEM SHALL BE SWITCHED TO NORMAL OCCUPIED MODE.

G. THE MAKE-UP AIR TO THE FAN COIL UNITS SHALL BE OBTAINED FROM THE GENERAL CLASSROOM EXHAUST SYSTEM, AND SHALL BE ROUTED INTO THE INLET OF THE FAN COIL UNITS. A BYPASS DAMPER IN THE GENERAL EXHAUST SYSTEM SHALL BE MODULATED TO ENSURE DIVERSION OF AIR TO THE FAN COIL UNITS. WHEN THE SCIENCE ROOMS ARE IN THE UNOCCUPIED MODE, THE BYPASS DAMPER SHALL OPEN FULLY, AND THE DAMPER TO THE FAN COIL INLET SHALL FULLY CLOSE.

SEQUENCE OF OPERATION-PREP ROOM EXHAUST SYSTEMS

A. PREP ROOM EXHAUST FANS (INCLUDING FUME HOOD FANS WHERE FUME HOODS ARE LOCATED IN PREP ROOMS) SHALL OPERATE CONTINUOUSLY. (24/7). A CURRENT SENSOR SHALL ALARM LOCALLY AND AT WORKSTATION, IF FAN FAILS.

SEQUENCE OF OPERATION-FUME HOOD EXHAUST

A. FUME HOOD EXHAUST FANS SHALL BE STARTED MANUALLY THROUGH A SWITCH AT THE FUME HOOD, AND SHALL RUN FOR AN ADJUSTABLE PERIOD OF TIME AFTER TURNED OFF AT THE FUME HOOD. A CURRENT SENSOR SHALL ALARM LOCALLY AND AT THE BMS WORKSTATION, IF THE FAN FAILS.

SEQUENCE OF OPERATION-KILN HOOD EXHAUST

A. THE KILN HOOD EXHAUST FAN SHALL BE STARTED AND STOPPED FROM A LOCAL START/STOP SWITCH (WITH PILOT LIGHT), ONCE ENABLED THROUGH THE DDC SYSTEM. THE MOTORIZED BACKDRAFT DAMPER SHALL BE INTERLOCKED TO OPEN WHEN THE FAN RUNS.

B. THE DDC SYSTEM IN ACCORDANCE WITH THE SYSTEMS OPERATING SCHEDULE SHALL ENABLE THE FAN TO START, AND SHALL STOP THE FAN IF THE ADJUSTABLE TIME INTERVAL OF THE OPERATING SCHEDULE HAS ELAPSED.

SCIENCE FCU SCHEDULE

FCU DDC#	AREA SERVED	RF INTERLOCK	RAD
FCU-107,108	SCIENCE 1 ROOM 3002	RF-3-2	(1)3/4"
FCU-109,110	SCIENCE 7 ROOM 3001	RF-3-1	(1)3/4"
FCU-113,114	SCIENCE 2 ROOM 3006	RF-3-4	(1)3/4"
FCU-115,116	SCIENCE 6 ROOM 3005	RF-3-3	(1)3/4"
FCU-118,120	SCIENCE 3 ROOM 3010	RF-3-5	(1)3/4"
FCU-117	BIO. PREP. STORAGE 3008	100% O.A.	(1)3/4"
FCU-136,139	SCIENCE 10 ROOM 3028	RF-3-6	(1)3/4"
FCU-140,142	SCIENCE 8 ROOM 3029	RF-3-7	(1)3/4"
FCU-143,146	SCIENCE 11 ROOM 3032	RF-3-8	(1)3/4"
FCU-148,149	SCIENCE 12 ROOM 3034	RF-3-7	(1)3/4"

EXHAUST SCHEDULE

EF#	AREA SERVED	FCU INTERLOCK	
EF-3-2	FUME HOOD SCIENCE 3002	DDC#108	3-PHASE
EF-3-3	FUME HOOD SCIENCE 3001	DDC#109	3-PHASE
EF-3-7	KILN ROOM 1008B	DDC#114	
EF-3-8	FUME HOOD SCIENCE 3006	DDC#113	3-PHASE
EF-3-9	FUME HOOD SCIENCE 3005	DDC#115	3-PHASE
EF-3-11	FUME HOOD SCIENCE 3010	DDC#117	3-PHASE
EF-3-12	KILN ROOM 1010B	DDC#120	
EF-3-19	NURSE'S AREA 1ST. 'J'	DDC#137	3-PHASE ⚠1
EF-3-20	PREP.ROOM 3029A 24/7	DDC#138	
EF-3-21	FUME HOOD SCIENCE 3028	DDC#136	3-PHASE ⚠2
EF-3-22	FUME HOOD SCIENCE 3029	DDC#140	3-PHASE
EF-3-26	FUME HOOD SCIENCE 3032	DDC#143	3-PHASE
EF-3-28	FUME HOOD SCIENCE 3034	DDC#149	3-PHASE
EF-3-45	FUME HOOD SCIENCE 3010	DDC#118	3-PHASE

MATERIAL

ITEM NO	MODEL	DESCRIPTION	QUAN
AF1	DPS-10	DYNACON AIR FLOW SWITCH	19
ALM	SC628A	KELE AUDIBLE ALARM	1
C1	W7750C	CONSTANT VOLUME DDC CONTROLLER	19
CO2	ACI/CO2/VDC/R	SPACE CO2 SENSOR	19
CR1,2	RIBXLCA	COMBINATION REMOTE RELAY AND C.T.	21
CT1	RIBXXF	CURRENT SENSING SWITCH	11
DA1	ML7161A2008	MODULATING DAMPER ACTUATOR	19
DA2	ML6161A2009	FLOATING DAMPER ACTUATOR	19
R1-4	RIB-1UC	REMOTE SWITCHING RELAY	50
T1	JG/20K/RS	SPACE TEMPERATURE SENSOR	19
T2	JG/20K-018	DUCT TEMPERATURE SENSOR	19
TD1	RTE-P2-AF20	W/SR3P-06 SOCKET TIME DELAY RELAY	10
V1	VCZAA1100	1/2" 2-WAY SYSTEM VALVE CV=3.5	19
VA1	VC7934ZZ11	MODULATING VALVE ACTUATOR	19
V3	VT2313AH13A000	3/4" 2-WAY RADIATOR VALVE CV=3.5	10
X1	TR50VA006	277-24v 50VA, CONTROL TRANSFORMER	19

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JOHNSON-GOODYER INC.
199 TERMINAL LANE
NEW HAVEN,CT.06519
203-777-3424

REVISIONS		
DATE	CHANGES	
6-1-04	REVISE AND	
	RESUBMIT	
10-25-04	ADD RIB	
TO FUME	HOODS	
4/5/07	AS-BUILTS	

JOB NAME	STAPLES HIGH SCHOOL
LOCATION	70 NORTH AVE. WESTPORT, CT.
ARCHITECT	FULLER AND D'ANGELO P.C.
ENGINEER	ALTERI, SEBOR AND WIEBOR
CONTRACTOR	M.J. DALY
DRAWN BY	WRC
CHECKED BY	KK
DATE	12-17-03
DRAWING NO.	03-4108
	23 OF 34