BEAVERTON SCHOOL DISTRICT

Business Services
Procurement and Contracting
16550 SW Merlo Road
Beaverton, OR 97003
(503) 356-4324

February 19, 2021

SOLICITATION ADDENDUM NO. 1
ITB 20-0023
Hiteon Elementary Controls and HVAC Upgrade

THE FOLLOWING CHANGES/ADDITIONS TO THE ABOVE CITED SOLICITATION ARE ANNOUNCED:

This Addendum modifies the Invitation to Bid (ITB) document(s) only to the extent indicated herein. All other areas not changed or otherwise modified by this Addendum shall remain in full force and effect. This Addendum is hereby made an integral part of the ITB document. Bidder must be responsive to any requirements of this Addendum as if the requirements were set forth in the ITB. Failure to do so may result in Bid rejection. See the ITB regarding requests for clarification or change and protests of this Addendum, and the deadlines for the foregoing.

This addendum is to be acknowledged in the space provided on the Bidder Certification form supplied in the solicitation document. Failure to acknowledge receipt of this addendum may be cause to reject your offer.

The closing date **REMAINS UNCHANGED: March 2, 2021 at 2:00 PM Pacific Time**

CHANGES:

1) **The Drawing Sheets attached to this Addendum 1 hereby added to the Solicitation. Any sheets included in the attached Drawings Sheets that reflect existing sheets in ATTACHMENT J Drawings, hereby replace such sheets.**

CLARIFICATONS:

Question: Is this the only project going on this summer here?

Answer: **No, there is a roofing project however it should not impact this project. There may be some coordination to workout in one penthouse but the roof project is on the other side of the building.**

Question: How are the electric wall heaters controlled?

Answer: **Currently they have a mix of local thermostatic and central pneumatic control via E/P transducers. The electric heaters should be fully controlled via the JCI DDC system as part of this project.**

Question: What is the engineers estimate?

Answer: **$350,000.00- $400,000.00**

Question: What are you doing for Covid Programming?

Answer: **For Covid programming, we are extending the run time, increasing the outside dampers, more air changes per hour, extending the run times. Whatever devices we add for this project we will need to add it to this programming.**

Question: What is the programming?

Answer: **It is BACnet**

Question: Raceways in classroom?

Answer: **All Raceway shall be mechanically fastened. Acceptable equipment is listed in sections 23 09 00 and 26 05 33 in the specification documents.**

Question: Are we touching anything in the newer wing?

Answer: **No.**

Question: When was the building built?

Answer: **There were many additions over multiple years.**

Question: Is there an allowance for replacing leaking control valves and actuator vs. just control valve actuators?

Answer: **No, there is not.**

Question: Is there a requirement to convert the boiler room control panel from N2 to BACnet?

Answer: **No. Please see the attached supporting documentation for more information. It is up to the control contractor to decide whether it is easier to keep the N2 controllers and modify the programming or to put in a new controller. The N2 trunk only shows 3 active controllers. Two override panel and one for "zones". The zones UNT will go away because this is used to hit the pneumatic relays to start systems and after new controls, the panel should be hitting the systems direct.**

Question: Has asbestos been identified in the school? If so who will be required for the abatement?

Answer: **All complete asbestos survey and additional information for this project is included at the end of the project Specifications documentation provided. The section is titled Asbestos Abatement Contractor and the document is titled, Limited Supplemental Asbestos Survey Report. There are asbestos containing materials in the building however the survey of the impacted spaces for this project did not identify any obvious impacts for this project. However, if suspected materials are discovered during the construction process, it would be the responsibility of the contractor to work with the District to verify, coordinate and complete any needed abatement work. This additional work would be processed via change order. Please refer to the Specifications for more details.**

Question: Existing VAVs are designed to relief to the ceiling plenum on damper shut off. If we are adding VFDs to ramp down the AHU's fans how are we to control airflow**?**

Answer: **Please see the attached, supporting documentation for more information. A& C Wing VAV boxes don't have coils in them, the cooling and heating is through the heat pump (on roof). For the volume as requested on th the SF/RF and VAV boxes, refer to Section 23 05 93 Testing, Adjusting and Balancing for HVAC. Per Section 3.2,D, they are to measure the maximum cooling and heating air volumes. See page 39. Boxes have pick up tubes but they won't be utilized.**

Question: Please provide an up to date set of HVAC Johnson Control System AS-Builts. We question whether the "Supporting Documents" provided accurately reflect the current control system.

Answer: **We have provided the most recent control as-built documentation that we have available, which may or may not reflect the current situation 100% correctly. The current DDC was installed in 2008. Final UI and graphics should be a consistent system with all areas. Not an old and new. Old graphics do not need to be replaced.**

We have a current space tree with relationships. All 3 of the approved Metasys contractors have the ability to log into the Metasys system and see what is currently there.

Question: Are all the pneumatics going to be replaced?

Answer: **Yes, this is a major part of the project.**

Question: What is the pneumatic actuator box position?

Answer: **We have provided what O&M manual information we have, please see the Supporting Documentation for reference.**

Question: VAV Box Questions on Pick up tubes, CFM values? Please clarify?

Answer: **A & C -Wing VAV boxes don't have coils in them, the cooling and heating is through the HP (on roof).**

For the volume as requested on the SF/RF and VAV boxes, refer to Section 23 05 93 Testing, Adjusting and Balancing for HVAC. Per Section 3.2, D, they are to measure the maximum cooling and heating air volumes. See page 39. Boxes have pick up tubes but won't be utilized.

Question: Are you retrofitting the valve on Radiators in C-wing?

Answer: **Yes, see notes in detail #1 on new valves; sheet M1.02**

Question: Is Wire Mold the preference over conduit?

Answer: **Yes but both are acceptable as per the Specifications (see sections 23 09 00 and 26 05 33.) All wire mold must be mechanically fastened.**

Question: Access to the existing VAV boxes was not provided during the job walk. Specifically, we would like to know, the type of damper shaft (plunger vs rotational dampers), what kind of flow ring is existing, and spacing to be able to install a VAV controller. Pictures would be helpful.

Answer: **There is plenty of room to work; to replace the rotational dampers for the VAV controllers, additional information is available to review in the supplied O&M manuals.**

Question: There are a handful of UNT's (N2 devices) in the building, including for the HVAC override switch panel in the boiler room. Please confirm how many of these are present and if any/all are to remain as is or be replaced with new BACnet controllers?

Answer: **The intent is for the building to be a complete system with a functional override panel. It is up to the control contractor to decide whether it is easier to keep the N2 controllers and modify the programming or to put in a newer controller. The N2 trunk only shows three (3) active controllers, two (2) override panels, and one for "zones". The zones UNT will go away because this is used to hit the pneumatic relays to start systems and after new controls are put in place, the panel should be hitting the systems directly.**

Question: For demo of existing pneumatic control devices, does the district want any items back?

Answer: **No, the only item to remain is the main air compressor.**

Question: For control valve replacement is there any documentation available on flow rates for these coils?

Answer: **The flow rates were not available in the record documents.**

CONSTRUCTION DEVELOPMENT SET

BEAVERTON SCHOOL DISTRICT

OCTOBER 08, 2020

MECHANICAL UPGRADE: HITEON ELEMENTARY SCHOOL

13800 SW BROCKMAN RD.; BEAVERTON, OREGON 97008

CONTACTS

OWNER

BEAVERTON SCHOOL DISTRICT
16550 SW MERLO ROAD
BEAVERTON, OREGON 97006
503.591.4575 FAX: 503.591.4469

MECHANICAL

SYSTEM DESIGN CONSUTANTS, INC
333 SE SECOND AVENUE, SUTIE 100
PORTLAND, OREGON 97214
503.248.0227 FAX: 503.248.0240

ELECTRICAL

SYSTEM DESIGN CONSUTANTS, INC
333 SE SECOND AVENUE, SUTIE 100
PORTLAND, OREGON 97214
503.248.0227 FAX: 503.248.0240

STANDARD SYMBOLS

N	NORTH ARROW	1	REVISION TAG
0	GRID BUBBLE & GRID LINE	ROOM NAME 101	FLOOR PLAN ROOM LABEL & NUMBER

DRAWING INDEX

C0.00 COVER PAGE

MECHANICAL SCHEDULES

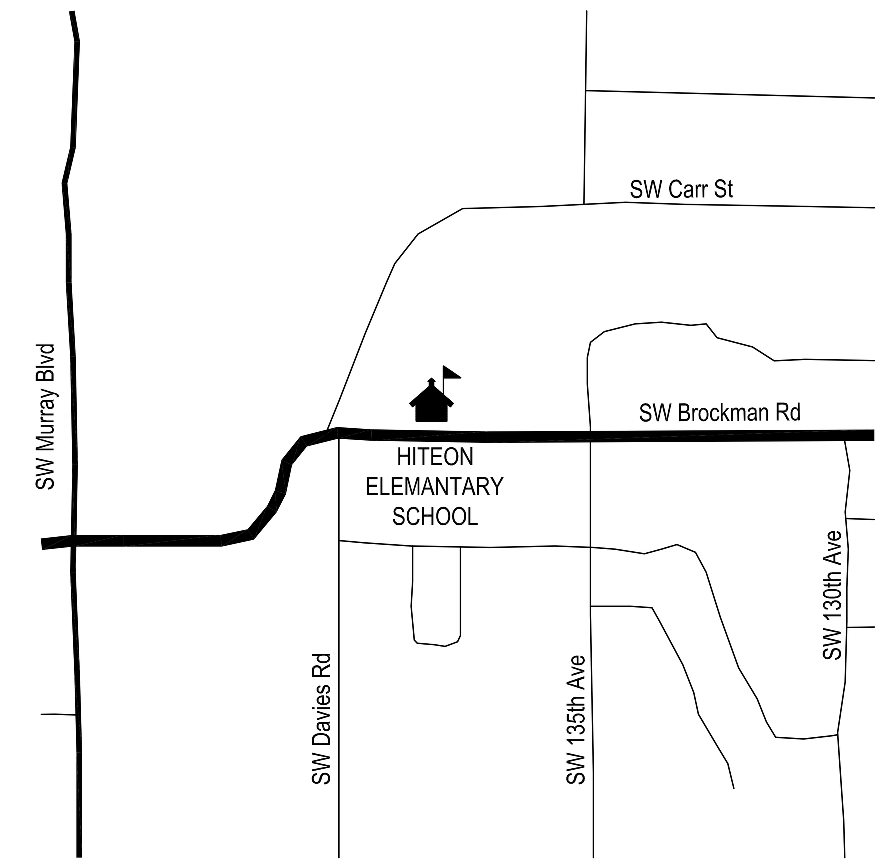
M1.00 MECHANICAL SCHEDULE, DETAILS AND CONTROLS
M1.01 MECHANICAL SCHEDULE, DETAILS AND CONTROLS
M1.02 MECHANICAL SCHEDULE, DETAILS AND CONTROLS
M2.00 A-WING FLOOR PLAN
M2.01 B-WING FLOOR PLAN
M2.02 C-WING FLOOR PLAN

ELECTRICAL SCHEDULES

E2.00 A-WING FLOOR PLAN - ELECTRICAL
E2.01 B-WING FLOOR PLAN - ELECTRICAL
E2.02 C-WING FLOOR PLAN - ELECTRICAL

GENERAL NOTES

1. COORDINATE ALL WORK WITH THE DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTOR AND SUB-CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS, LOCATIONS, AND PROJECT REQUIREMENTS PRIOR TO SUBMITTING A BID.
4. CONTRACTOR AND SUB-CONTRACTORS SHALL FIELD VERIFY DIMENSIONS, AND FAMILIARIZE THEMSELVES WITH PROJECT REQUIREMENTS PRIOR TO COMMENCING WITH THE WORK. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO ARCHITECT.
5. WORK SHALL INCLUDE ALL REQUIRED TRADE PERMITS, LABOR, MATERIALS, AND EQUIPMENT TO COMPLETE ALL WORK INDICATED ON DRAWINGS AND SPECIFICATIONS.
6. PROVIDE TEMPORARY DUST-PROOF PARTITIONS AS REQUIRED TO PROTECT ALL EXISTING AREAS AND EQUIPMENT FROM DAMAGE DUE TO DEMOLITION OR NEW CONSTRUCTION ACTIVITIES. COORDINATE LOCATIONS AND REQUIREMENTS WITH OWNER.
7. GENERAL CONTRACTOR TO PATCH, REPAIR AND PAINT (REFINISH) SURFACES AND BUILDING ELEMENTS DAMAGED BY MECHANICAL, ELECTRICAL, AND PLUMBING WORK AND WHERE ITEMS ARE REMOVED, RELOCATED OR ADDED.
8. REPAIR FLOORS WHERE DAMAGED BY THE WORK OF THIS PROJECT.
9. PATCH AND REPAIR ALL SURFACES TO MATCH EXISTING WHERE ITEMS ARE REMOVED OR ALTERED - FIELD VERIFY EXTENT REQUIRED.
10. CONTRACTOR IS RESPONSIBLE FOR FINAL CLEANUP OF WORK AREA AND ALL EXPOSED BUILDING SURFACES AT SUBSTANTIAL COMPLETION.
11. ALL TRASH AND TOOLS SHALL BE REMOVED FROM PREMISES EACH DAY AND THE AREA LEFT CLEAN WHENEVER UNATTENDED. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP. COORDINATE WITH OWNER IF SECURE STORAGE IS NEEDED ONSITE.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO FINISHED SURFACES, EQUIPMENT, FURNITURE, EXISTING MATERIALS OR FINISHES, CAUSED AS A RESULT OF HIS WORK. REPAIR OR REPLACE DAMAGED ITEMS AS DIRECTED BY BEAVERTON SCHOOL DISTRICT
13. ALL WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.
14. WORK SHALL BE DONE BY THOSE SKILLED AND EXPERIENCED IN THEIR RESPECTIVE TRADES. WORK SHALL BE OF THE HIGHEST QUALITY WORKMANSHIP.



1 M1.00 VICINITY MAP
NTS

BEAVERTON SCHOOL DISTRICT
2020 MECHANICAL UPGRADE HITEON ELEMENTRAY SCHOOL

SYSTEM DESIGN CONSULTANTS INC.
333 SE SECOND AVE, SUITE 100
PORTLAND OREGON 97214
503-248-0227 FAX 248-0240

BEAVERTON SCHOOL DISTRICT
HITEON ELEMENTARY SCHOOL - CONTROLS UPGRADE
13800 SW BROCKMAN STREET, BEAVERTON, OR 97007

Drawn:
Date: 10.09.2020
Check:
Job No: BSD2001

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDA 2	01/19/21

Sheet Title
COVER SHEET

NOT FOR CONSTRUCTION

C0.00
CONSTRUCTION DEVELOPMENT

EQUIPMENT CONTROL FUNCTIONS

EQUIPMENT	CONTROL FUNCTION	BSD SYMBOL	DI	DO	AI	AO	ALARM
ASU-1, ASU-2	SPACE TEMPERATURE	ZN-T			X		
(2 UNITS TOTAL)	HIGH TEMPERATURE ALARM						X
	LOW TEMPERATURE ALARM						X
	DISCHARGE AIR TEMPERATURE	DA-T			X		
	SMOKE DETECTOR ALARM	SA-SMK	X				
	SMOKE DETECTOR ACTIVATED						X
	SUPPLY FAN START / STOP	SF-O		X			
	SUPPLY FAN STATUS	SF-C	X				
	RUN STATUS						X
	SUPPLY FAN SPEED	SF-S				X	
	OUTSIDE AIR DAMPER POSITION	DPR-O				X	
ASU-1 ONLY	MIN. OSA AIR DAMPER POSITION	DPR-O		X			
	RETURN AIR DAMPER POSITION	DPR-O				X	
ASU-1 ONLY	EXHAUST AIR DAMPER POSITION	DPR-O				X	
	RETURN FAN START / STOP	SF-O		X			
	RETURN FAN STATUS	SF-C	X				
	RUN STATUS						X
	RETURN FAN SPEED	SF-S				X	
	CO2 SENSOR	CO2-LVL			X		
	HIGH CO2 LEVEL						X
	SMOKE DETECTOR ALARM	RA-SMK	X				
	SMOKE DETECTOR ACTIVATED						X
SF-1 / RF-1	SPACE TEMPERATURE	ZN-T			X		
	HIGH TEMPERATURE ALARM						X
	LOW TEMPERATURE ALARM						X
	CO2 SENSOR	CO2-LVL			X		
	HIGH CO2 LEVEL						X
	DISCHARGE AIR TEMPERATURE	DA-T			X		
	SMOKE DETECTOR ALARM	SA-SMK	X				
	SMOKE DETECTOR ACTIVATED						X
	SUPPLY FAN START / STOP	SF-O		X			
	SUPPLY FAN STATUS	SF-C	X				
	RUN STATUS						X
	SUPPLY FAN SPEED	SF-S				X	
	COOLING VALVE POSITION	CLG-O				X	
	DRAIN PAN OVERFLOW SWITCH		X				X
	HEATING VALVE POSITION	HTG-O				X	
	MIXED AIR LOW LIMIT (FREEZE)	MA-LL	X				
	LOW TEMPERATURE						X
	OUTSIDE AIR DAMPER POSITION	DPR-O				X	
	RETURN AIR DAMPER POSITION	DPR-O				X	
	EXHAUST AIR DAMPER POSITION	DPR-O				X	
	RETURN FAN START / STOP	SF-O		X			
	RETURN FAN STATUS	SF-C	X				
	RUN STATUS						X
	RETURN FAN SPEED	SF-S				X	
	SMOKE DETECTOR ALARM	RA-SMK	X				
	SMOKE DETECTOR ACTIVATED						X
SF-2, SF-4	SPACE TEMPERATURE	ZN-T			X		
(2 UNITS TOTAL)	HIGH TEMPERATURE ALARM						X
	LOW TEMPERATURE ALARM						X
	DISCHARGE AIR TEMPERATURE	DA-T			X		
	SMOKE DETECTOR ALARM	SA-SMK	X				
	SMOKE DETECTOR ACTIVATED						X
	SUPPLY FAN START / STOP	SF-O		X			
	SUPPLY FAN STATUS	SF-C	X				
	RUN STATUS						X
	SUPPLY FAN SPEED	SF-S				X	
	COOLING VALVE POSITION	CLG-O				X	
	DRAIN PAN OVERFLOW SWITCH		X				X
	HEATING VALVE POSITION	HTG-O				X	
	MIXED AIR LOW LIMIT (FREEZE)	MA-LL	X				
	LOW TEMPERATURE						X
	OUTSIDE AIR DAMPER POSITION	DPR-O				X	
	RETURN AIR DAMPER POSITION	DPR-O				X	
	CO2 SENSOR	CO2-LVL			X		
	HIGH CO2 LEVEL						X
	SMOKE DETECTOR ALARM	RA-SMK	X				
	SMOKE DETECTOR ACTIVATED						X
	RELIEF AIR DAMPER POSITION	DPR-O		X			

EQUIPMENT	CONTROL FUNCTION	BSD SYMBOL	DI	DO	AI	AO	ALARM
SF-5, RF-3	SPACE TEMPERATURE	ZN-T			X		
	HIGH TEMPERATURE ALARM						X
	LOW TEMPERATURE ALARM						X
	CO2 SENSOR	CO2-LVL			X		
	HIGH CO2 LEVEL						X
	DISCHARGE AIR TEMPERATURE	DA-T			X		
	SMOKE DETECTOR ALARM	SA-SMK	X				
	SMOKE DETECTOR ACTIVATED						X
	SUPPLY FAN START / STOP	SF-O		X			
	SUPPLY FAN STATUS	SF-C	X				
	RUN STATUS						X
	COOLING VALVE POSITION	CLG-O				X	
	DRAIN PAN OVERFLOW SWITCH		X				X
	HEATING VALVE POSITION	HTG-O				X	
	MIXED AIR LOW LIMIT (FREEZE)	MA-LL	X				
	LOW TEMPERATURE						X
	OUTSIDE AIR DAMPER POSITION	DPR-O				X	
	EXHAUST AIR DAMPER POSITION	DPR-O				X	
	RETURN FAN START / STOP	SF-O		X			
	RETURN FAN STATUS	SF-C	X				
	RUN STATUS						X
	SMOKE DETECTOR ALARM	RA-SMK	X				
	SMOKE DETECTOR ACTIVATED						X
SF-6	SPACE TEMPERATURE	ZN-T			X		
	HIGH TEMPERATURE ALARM						X
	LOW TEMPERATURE ALARM						X
	DISCHARGE AIR TEMPERATURE	DA-T			X		
	SMOKE DETECTOR ALARM	SA-SMK	X				
	SMOKE DETECTOR ACTIVATED						X
	SUPPLY FAN START / STOP	SF-O		X			
	SUPPLY FAN STATUS	SF-C	X				
	RUN STATUS						X
	HEATING VALVE POSITION	HTG-O				X	
	MIXED AIR LOW LIMIT (FREEZE)	MA-LL	X				
	LOW TEMPERATURE						X
	OUTSIDE AIR DAMPER POSITION	DPR-O				X	
	RETURN AIR DAMPER POSITION	DPR-O				X	
	SMOKE DETECTOR ALARM	RA-SMK	X				
	SMOKE DETECTOR ACTIVATED						X
SF-7, SF-8	SPACE TEMPERATURE	ZN-T			X		
(2 UNITS TOTAL)	HIGH TEMPERATURE ALARM						X
	LOW TEMPERATURE ALARM						X
	DISCHARGE AIR TEMPERATURE	DA-T			X		
	SUPPLY FAN START / STOP	SF-O		X			
	SUPPLY FAN STATUS	SF-C	X				
	RUN STATUS						X
	HEATING VALVE POSITION	HTG-O				X	

MECHANICAL EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	AREA SERVED	ELECTRICAL
(E) ASU-1	AIR HANDLING UNIT - REPLACE SUPPLY AND RETURN FAN MOTORS WITH HIGH EFFICIENCY VFD COMPLIANT MOTORS AND ADD VARIABLE SPEED DRIVES TO BOTH FANS SUPPLY FAN: 8,030 CFM RETURN FAN: 7,830 CFM EEM #5	A-WING SOUTH	SUPPLY FAN 5 HP 208 V, 3 PH RETURN FAN 3 HP 208 V, 3 PH
(E) ASU-2	AIR HANDLING UNIT - REPLACE SUPPLY AND RETURN FAN MOTORS WITH HIGH EFFICIENCY VFD COMPLIANT MOTORS AND ADD VARIABLE SPEED DRIVES TO BOTH FANS SUPPLY FAN: 10,650 CFM RETURN FAN: 9,450 CFM EEM #5	A-WING NORTH	SUPPLY FAN 7-1/2 HP 208 V, 3 PH RETURN FAN 3 HP 208 V, 3 PH
(E) SF-1 (E) RF-1	AIR HANDLING UNIT - REPLACE SUPPLY AND RETURN FAN MOTORS WITH HIGH EFFICIENCY VFD COMPLIANT MOTORS AND ADD VARIABLE SPEED DRIVES TO BOTH FANS SUPPLY FAN: 21,300 CFM RETURN FAN: 19,000 CFM EEM #3	C-WING	SUPPLY FAN 15 HP 208 V, 3 PH RETURN FAN 5 HP 208 V, 3 PH
(E) SF-2	AIR HANDLING UNIT - REPLACE SUPPLY FAN MOTOR WITH HIGH EFFICIENCY VFD COMPLIANT MOTORS AND ADD VARIABLE SPEED DRIVES TO BOTH FANS SUPPLY FAN: 9,400 CFM EEM #3	B-WING GYM	SUPPLY FAN 5 HP 208 V, 3 PH
(E) SF-4	AIR HANDLING UNIT - REPLACE SUPPLY FAN MOTOR WITH HIGH EFFICIENCY VFD COMPLIANT MOTORS AND ADD VARIABLE SPEED DRIVES TO BOTH FANS SUPPLY FAN: 4,200 CFM EEM #3	B-WING CAFETERIA	SUPPLY FAN 3 HP 208 V, 3 PH

NOTE - ALL PNEUMATIC VALVE ACTUATORS, DAMPER ACTUATORS AND ASSOCIATED PNEUMATIC DEVICES AND CONTROL POINTS ARE TO BE REPLACED WITH DDC CONTROL DEVICES / POINTS - COORDINATE WITH THE CONTROL SCHEMATIC DIAGRAMS

EQUIPMENT	CONTROL FUNCTION	BSD SYMBOL	DI	DO	AI	AO	ALARM
TERMINAL UNITS	SPACE TEMPERATURE	ZN-T			X		
	HIGH SPACE TEMPERATURE						X
	LOW SPACE TEMPERATURE						X
	CO2 SENSOR	CO2-LVL			X		
	HIGH CO2 LEVEL						X
	SUPPLY AIR DAMPER POSITION	DPR-O				X	
HOT WATER CONVECTOR	SPACE TEMPERATURE	ZN-T			X		
	HIGH SPACE TEMPERATURE						X
	LOW SPACE TEMPERATURE						X
	HEATING VALVE POSITION	HTG-O				X	
ELECTRIC CONVECTOR	SPACE TEMPERATURE	ZN-T			X		
	HIGH SPACE TEMPERATURE						X
	LOW SPACE TEMPERATURE						X
	ENERGIZE COIL RELAY	HTG-O				X	
SPLIT SYSTEM	SPACE TEMPERATURE	ZN-T			X		
	HIGH SPACE TEMPERATURE						X
	LOW SPACE TEMPERATURE						X
	DISCHARGE AIR TEMPERATURE	DA-T			X		
	4 UNITS TOTAL						
	SYSTEM STATUS	SF-S	X				
	RUN STATUS						X
	SYSTEM FAN START / STOP	SF-C		X			
	DRAIN PAN OVERFLOW SWITCH		X				X
	4 UNITS TOTAL						
EXHAUST FAN -TIME SCHEDULE	EXHAUST FAN START / STOP	SF-C		X			
	EXHAUST FAN STATUS	SF-S	X				
	RUN STATUS						X
EXHAUST FAN -THERMOSTAT	SPACE TEMPERATURE	ZN-T			X		
	HIGH SPACE TEMPERATURE						X
	EXHAUST FAN STATUS	SF-S	X				
	RUN STATUS						X

ABBREVIATIONS

8Ø	ROUND DUCT DIAMETER, INCHES	OSA	OUTSIDE AIR
12X8	RECTANGULAR DUCT SIZE, INCHES	PLEN	PLENUM
M	MOTORIZED DAMPER	RA	RETURN AIR
DN	DOWN	SA	SUPPLY AIR
EA	EXHAUST AIR	TYP	TYPICAL
N.C.	NORMALLY CLOSED	W.C.	WATER COLUMN
N.O.	NORMALLY OPEN	MAV	MANUAL AIR VENT
OBD	OPPOSED BLADE DAMPER		

SYMBOLS

(A)	ABANDON	(P)	CAP OR PLUG
(C)	CONNECT TO EXISTING	(X)	REMOVE EXISTING
(E)	EXISTING TO REMAIN		

CONTROL SCHEMATIC LEGEND

GENERAL NOTE - PROVIDE ALL DEVICES AND POINTS REQUIRED IN ADDITION TO THOSE NOTED TO ACCOMPLISH THE SEQUENCE OF OPERATION NOTED IN THE SPECIFICATIONS

M	MOTORIZED DAMPER ACTUATOR	T	WALL SENSOR / THERMOSTAT
D / I	A / D - ANALOG / DIGITAL 1 / O - INPUT / OUTPUT	T	CEILING SENSOR / THERMOSTAT
Ms	MOTOR STARTER	S	DDC TEMPERATURE SENSOR
R	RELAY		CONTROL VALVE
Ct	CURRENT TRANSFORMER		MOTORIZED DAMPER
SF	SUPPLY FAN		SENSOR
RF	RETURN FAN	SMK	DUCT MOUNTED SMOKE DETECTOR
EF	EXHAUST FAN	CO2	CARBON DIOXIDE SENSOR

TERMINAL UNIT SCHEDULE

SYMBOL	DESIGN AIR VOLUME (CFM)	DESIGN AIR MINIMUM VOLUME (CFM)
A-WING		
TU-1	1230	XXX
TU-2	670	XXX
TU-3	1750	XXX
TU-4	580	XXX
TU-5	830	XXX
TU-6	1750	XXX
TU-7	580	XXX
TU-8	1230	XXX
TU-C1	1100	XXX
TU-D2	1025	XXX
TU-B3	470	XXX
TU-C4	825	XXX
TU-B5	490	XXX
TU-D6	980	XXX
TU-D7	910	XXX

TERMINAL UNIT SCHEDULE

SYMBOL	DESIGN AIR VOLUME (CFM)	DESIGN AIR MINIMUM VOLUME (CFM)
A-WING		
TU-C8	UNIT DELETED	
TU-C9	740	XXX
TU-B10	580	XXX
TU-D11	1100	XXX
TU-D12	1160	XXX
TU-B13	580	XXX
TU-D14	1100	XXX
C-WING		
TU-1 2 TOTAL	1500	XXX
TU-2 2 TOTAL	1000	XXX

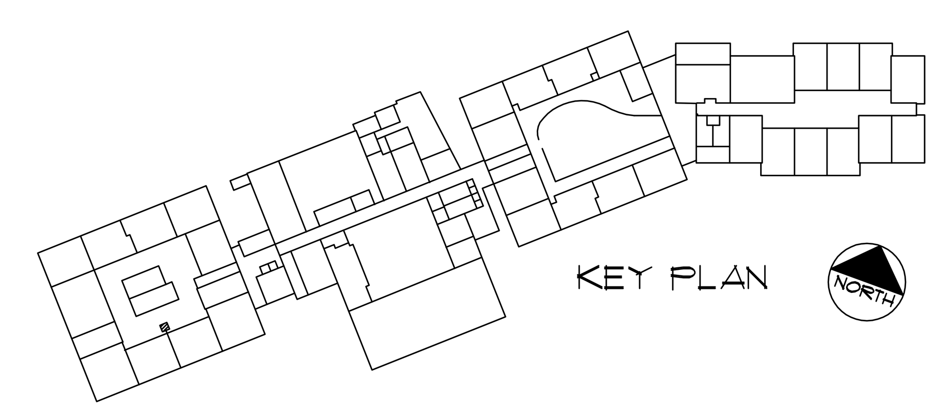
NOTES

ALL TERMINAL UNITS ARE EXISTING

ALL PNEUMATIC VALVE ACTUATORS, DAMPER ACTUATORS AND ASSOCIATED PNEUMATIC DEVICES AND CONTROL POINTS ARE TO BE REPLACED WITH DDC CONTROL DEVICES / POINTS - COORDINATE WITH THE CONTROL SCHEMATIC DIAGRAMS

1 VERIFY AT SITE

COVID-19 - ENTIRE SCHOOL IS TO HAVE 2 HR BEFORE AND 2 HR AFTER SCHOOLS TO HAVE A FLUSH SET UP. VERIFY WITH FACILITIES PRIOR TO SET UP.



SYSTEM DESIGN CONSULTANTS INC.
333 SE SECOND AVE, SUITE 100
PORTLAND, OREGON 97214
503-248-0227 FAX 248-0240
CONTACT: GARY BARNES

BEAVERTON SCHOOL DISTRICT

HITEON ELEMENTARY SCHOOL - CONTROLS UPGRADE

13800 SW BROCKMAN STREET, BEAVERTON, OR 97007

Drawn:	GCB
Date:	10.09.2020
Check:	GCB
Job No:	BSD2001

REVISIONS

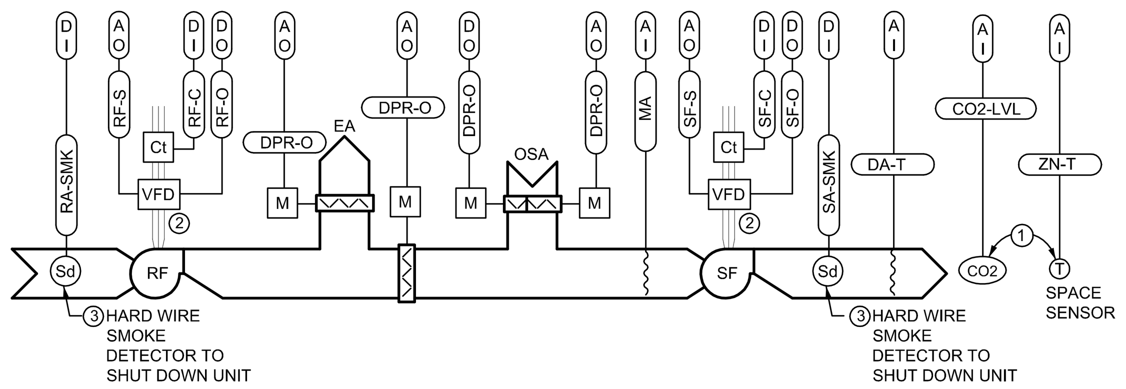
NO.	DESCRIPTION	DATE
1	ADDENDA 2	01/19/21

Sheet Title
MECHANICAL SCHEDULE, DETAILS AND CONTROLS

NOT FOR CONSTRUCTION

M1.00

CONSTRUCTION DEVELOPMENT

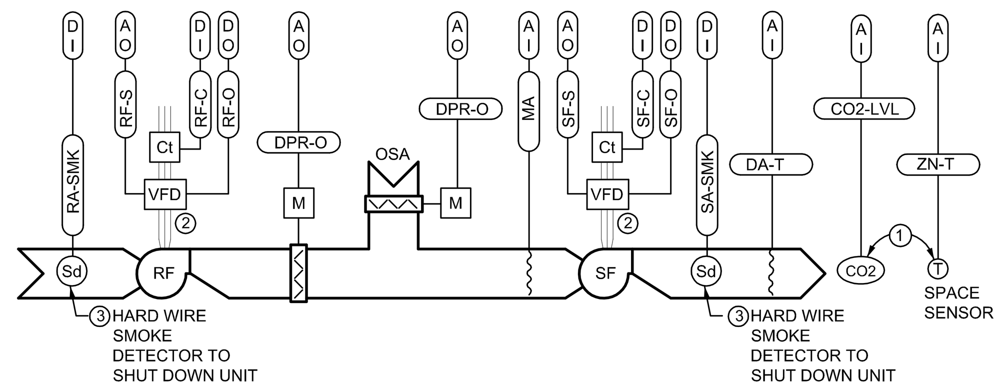


CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
CO2 SENSOR	AI
DISCH. AIR TEMPERATURE	AI
SMOKE DETECTOR ALARM	DI
SUPPLY FAN START / STOP	DO
SUPPLY FAN STATUS	DI
SUPPLY FAN SPEED	AO

CONTROL FUNCTION	POINT
MIXED AIR TEMPERATURE	AI
OUTSIDE AIR DAMPER POSITION	AO
MINIMUM OUTSIDE AIR DAMPER POSITION	DO
EXHAUST AIR DAMPER POSITION	AO
RETURN AIR DAMPER POSITION	AO
RETURN FAN START / STOP	DO
RETURN FAN STATUS	DI
RETURN FAN SPEED	AO
SMOKE DETECTOR ALARM	DI

1. FUNCTIONS MAY BE COMBINED IN A SINGLE DEVICE
2. NEW MOTORS AND VARIABLE FREQUENCY DRIVES
3. INSTALL ADDRESSABLE SMOKE DETECTOR FURNISHED BY THE FIRE ALARM CONTRACTOR

1 ASU-1 CONTROL SCHEMATIC
M1.01
DIAGRAMMATIC

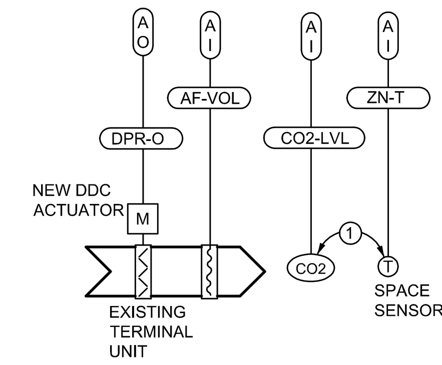


CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
CO2 SENSOR	AI
DISCH. AIR TEMPERATURE	AI
SMOKE DETECTOR ALARM	DI
SUPPLY FAN START / STOP	DO
SUPPLY FAN STATUS	DI
SUPPLY FAN SPEED	AO

CONTROL FUNCTION	POINT
MIXED AIR TEMPERATURE	AI
OUTSIDE AIR DAMPER POSITION	AO
RETURN AIR DAMPER POSITION	AO
RETURN FAN START / STOP	DO
RETURN FAN STATUS	DI
RETURN FAN SPEED	AO
SMOKE DETECTOR ALARM	DI

1. FUNCTIONS MAY BE COMBINED IN A SINGLE DEVICE
2. NEW MOTORS AND VARIABLE FREQUENCY DRIVES
3. INSTALL ADDRESSABLE SMOKE DETECTOR FURNISHED BY THE FIRE ALARM CONTRACTOR

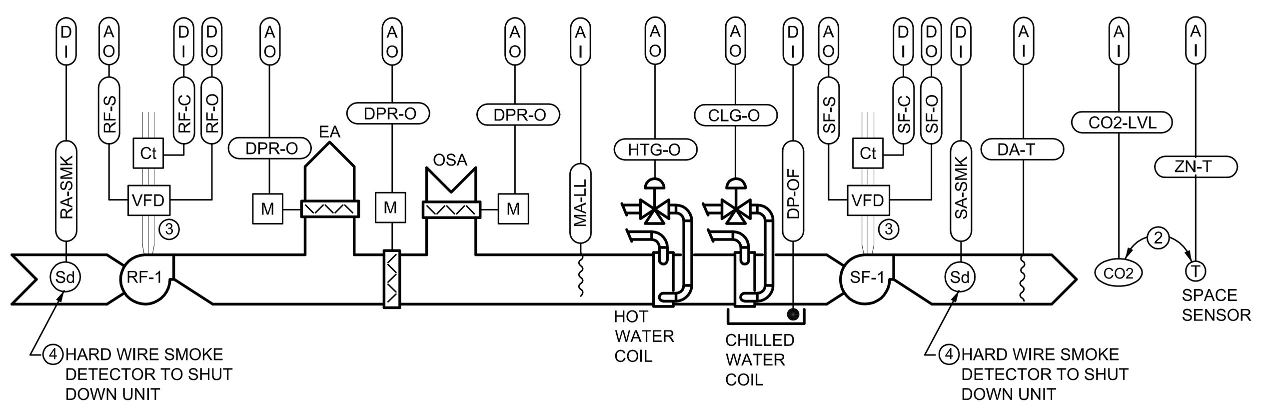
2 ASU-2 CONTROL SCHEMATIC
M1.01



CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
CO2 SENSOR	AI
AIRFLOW VOLUME	AI
AIR DAMPER POSITION	AO

1. FUNCTIONS MAY BE COMBINED IN A SINGLE DEVICE

3 VAV TERMINAL UNIT CONTROL SCHEMATIC
M1.01
DIAGRAMMATIC
TYPICAL FOR EXISTING TERMINAL UNITS

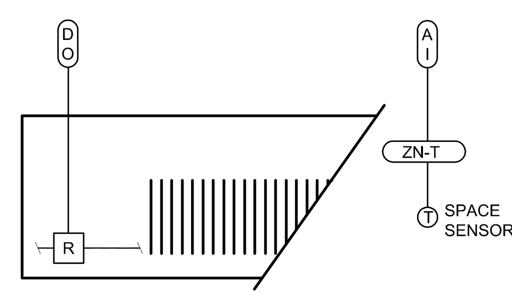


CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
CO2 SENSOR	AI
DISCH. AIR TEMPERATURE	AI
SMOKE DETECTOR ALARM	DI
SUPPLY FAN START / STOP	DO
SUPPLY FAN STATUS	DI
SUPPLY FAN SPEED	AO
DRAIN PAN OVERFLOW	DI
(1) COOLING VALVE POSITION	AO

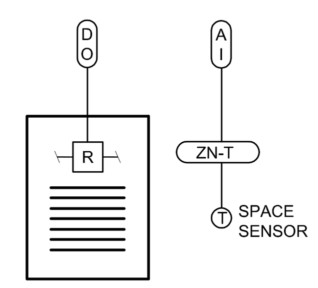
CONTROL FUNCTION	POINT
(1) HEATING VALVE POSITION	AO
MIXED AIR LOW LIMIT (FREEZE)	AI
OUTSIDE AIR DAMPER POSITION	AO
RETURN AIR DAMPER POSITION	AO
EXHAUST AIR DAMPER POSITION	AO
RETURN FAN START / STOP	DO
RETURN FAN STATUS	DI
RETURN FAN SPEED	AO
SMOKE DETECTOR ALARM	DI

1. EXISTING VALVE TO REMAIN - ACTUATOR TO BE REPLACED FOR DDC OPERATION
2. FUNCTIONS MAY BE COMBINED IN A SINGLE DEVICE
3. NEW MOTORS AND VARIABLE FREQUENCY DRIVES
4. INSTALL ADDRESSABLE SMOKE DETECTOR FURNISHED BY THE FIRE ALARM CONTRACTOR

4 SF-1, RF-1 (CLASSROOMS) CONTROL SCHEMATIC
M1.01
DIAGRAMMATIC

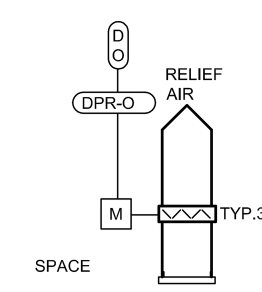


CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
ENERGIZE ELECTRIC CONVECTOR	DO



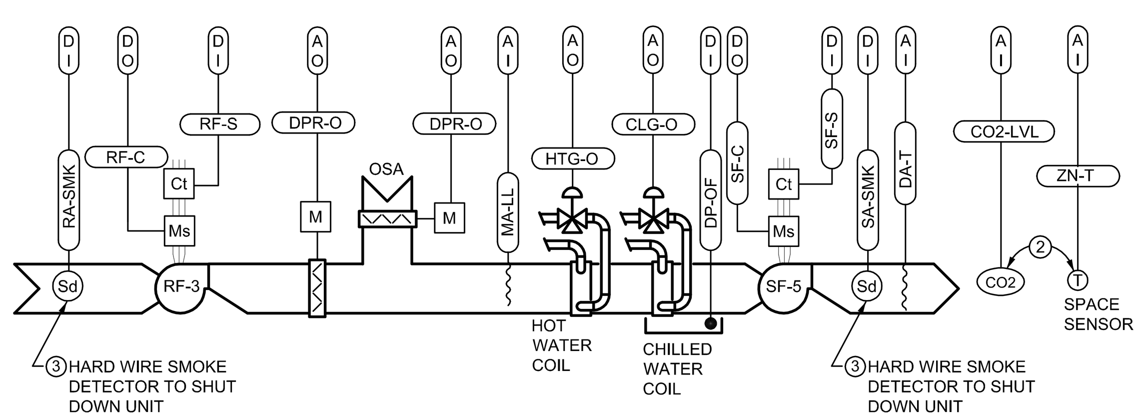
CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
ENERGIZE ELECTRIC UNIT HEATER	DO

5 ELECTRIC CONVECTOR / UNIT HEATER CONTROL SCHEMATIC
M1.01
DIAGRAMMATIC
TYPICAL - ALL ELECTRIC BASEBOARD / CONVECTORS / UNIT HEATERS



CONTROL FUNCTION	POINT
DAMPER POSITION	DO

6 ROOF RELIEF VENT CONTROL SCHEMATIC
M1.01
DIAGRAMMATIC

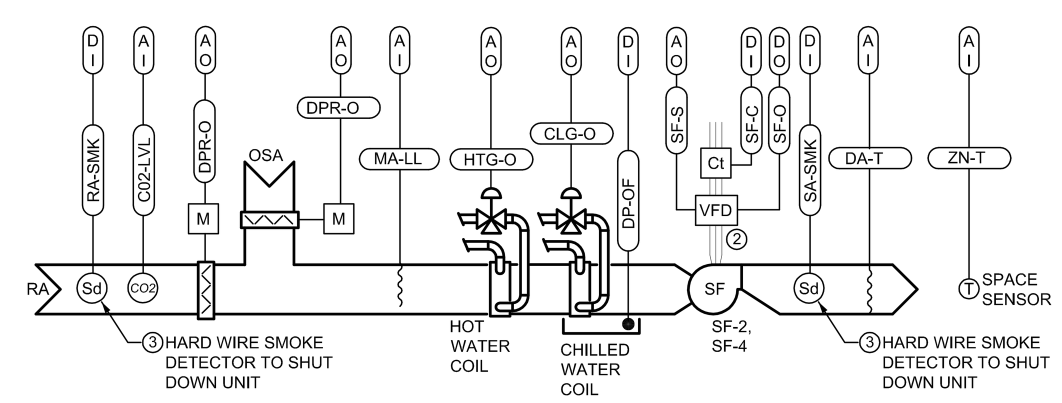


CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
DISCH. AIR TEMPERATURE	AI
CO2 SENSOR	AI
SMOKE DETECTOR ALARM	DI
SUPPLY FAN STATUS	DI
SUPPLY FAN STOP/START	DO
DRAIN PAN OVERFLOW	DI
(1) COOLING VALVE POSITION	AO

CONTROL FUNCTION	POINT
(1) HEATING VALVE POSITION	AO
MIXED AIR LOW LIMIT (FREEZE)	AI
OUTSIDE AIR DAMPER POSITION	AO
RETURN AIR DAMPER POSITION	AO
RETURN FAN STATUS	DI
RETURN FAN STOP/START	DO
SMOKE DETECTOR ALARM	DI

1. EXISTING VALVE TO REMAIN - ACTUATOR TO BE REPLACED FOR DDC OPERATION
2. FUNCTIONS MAY BE COMBINED IN A SINGLE DEVICE
3. INSTALL ADDRESSABLE SMOKE DETECTOR FURNISHED BY THE FIRE ALARM CONTRACTOR

7 SF-5, RF-3 (MUSIC ROOM) CONTROL SCHEMATIC
M1.01
DIAGRAMMATIC

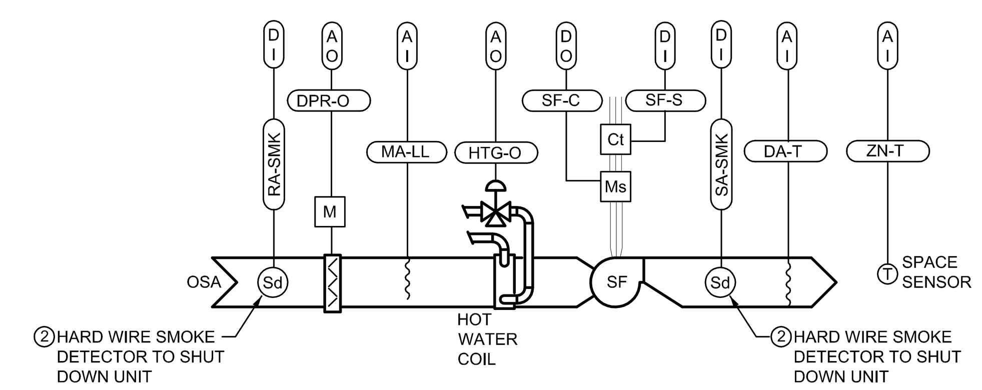


CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
DISCHARGE AIR TEMPERATURE	AI
SMOKE DETECTOR ALARM	DI
SUPPLY FAN START / STOP	DO
SUPPLY FAN STATUS	DI
SUPPLY FAN SPEED	AO
DRAIN PAN OVERFLOW	DI
(1) COOLING VALVE POSITION	AO

CONTROL FUNCTION	POINT
(1) HEATING VALVE POSITION	AO
MIXED AIR LOW LIMIT (FREEZE)	DI
OUTSIDE AIR DAMPER POSITION	AO
RETURN AIR DAMPER POSITION	AO
CO2 SENSOR	AI
SMOKE DETECTOR ALARM	DI

1. EXISTING VALVE TO REMAIN - ACTUATOR TO BE REPLACED FOR DDC OPERATION
2. NEW MOTORS AND VARIABLE FREQUENCY DRIVES
3. INSTALL ADDRESSABLE SMOKE DETECTOR FURNISHED BY THE FIRE ALARM CONTRACTOR

8 SF-2 (GYMNASIUM), SF-4 CAFETERIA) CONTROL SCHEMATIC
M1.01
DIAGRAMMATIC

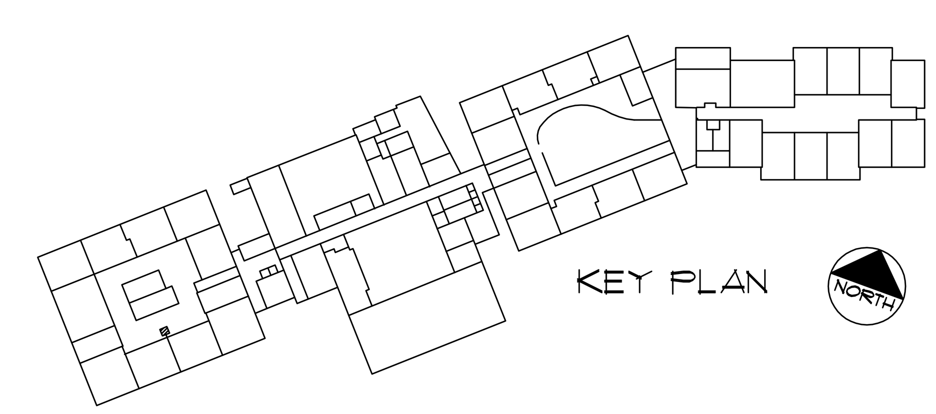


CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
DISCHARGE AIR TEMPERATURE	AI
SMOKE DETECTOR ALARM	DI
SUPPLY FAN STATUS	DI
SUPPLY FAN STOP/START	DO

CONTROL FUNCTION	POINT
(1) HEATING VALVE POSITION	AO
MIXED AIR LOW LIMIT (FREEZE)	DI
OUTSIDE AIR DAMPER POSITION	AO
SMOKE DETECTOR ALARM	DI

1. EXISTING VALVE TO REMAIN - ACTUATOR TO BE REPLACED FOR DDC OPERATION
2. INSTALL ADDRESSABLE SMOKE DETECTOR FURNISHED BY THE FIRE ALARM CONTRACTOR

9 SF-6 (KITCHEN) CONTROL SCHEMATIC
M1.01
DIAGRAMMATIC



KEY PLAN

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13800 SW BROCKMAN STREET, BEAVERTON, OR 97007

Drawn: GCB
Date: 10.09.2020
Check: GCB
Job No: BSD2001

REVISIONS

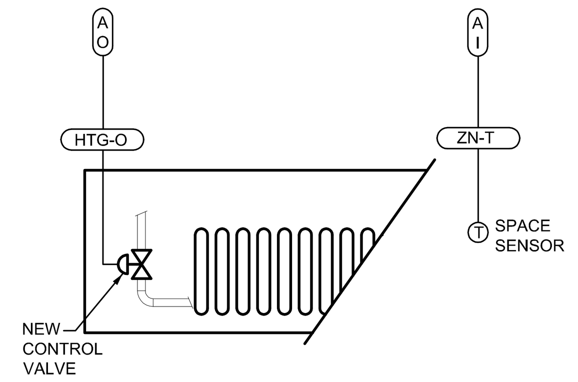
NO.	DESCRIPTION	DATE
1	ADDENDA 2	01/19/21

Sheet Title
MECHANICAL SCHEDULE, DETAILS AND CONTROLS

NOT FOR CONSTRUCTION

M1.01

CONSTRUCTION DEVELOPMENT

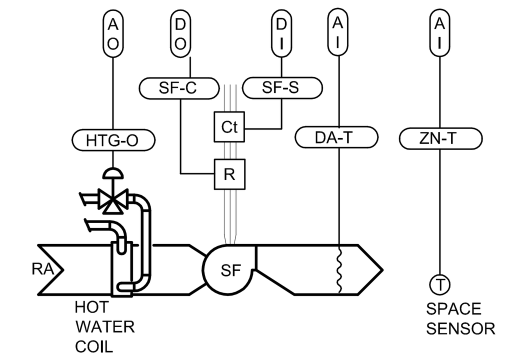


CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
HOT WATER VALVE POSITION	AO

EXISTING CONTROL VALVES:
POWERS MODEL 1L2BS
8 POUND SPRING
1/2 INCH NPT STRAIGHT

1 M1.02 HOT WATER CONVECTOR CONTROL SCHEMATIC

DIAGRAMMATIC — TYPICAL - ALL HOT WATER CONVECTORS / FIN PIPE

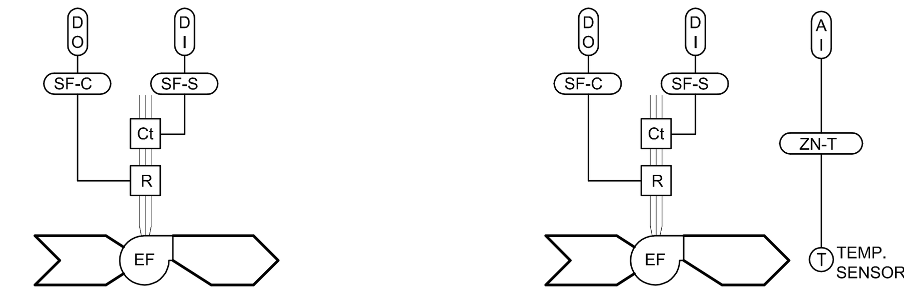


CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
DISCH. AIR TEMPERATURE	AI
SUPPLY FAN STATUS	DI
SUPPLY FAN STOP/START	DO
(1) HEATING VALVE POSITION	AO

(1) EXISTING VALVE TO REMAIN - ACTUATOR TO BE REPLACED FOR DDC OPERATION

2 M1.02 SF-7 (BOYS2), SF-8 (GIRLS2) CONTROL SCHEMATIC

DIAGRAMMATIC

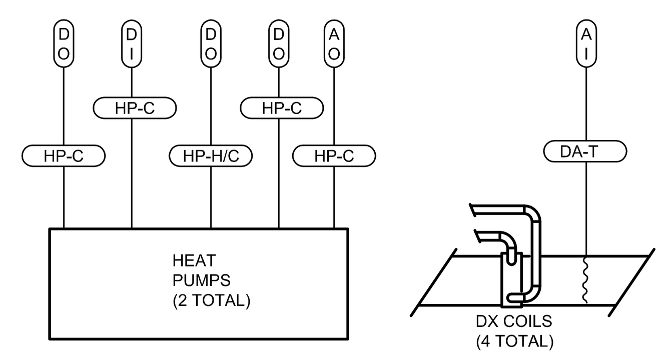


CONTROL FUNCTION	POINT
FAN STATUS	DI
FAN START / STOP	DO

CONTROL FUNCTION	POINT
SPACE TEMPERATURE	AI
FAN STATUS	DI
FAN START / STOP	DO

3 M1.02 EXHAUST FAN CONTROL SCHEMATICS

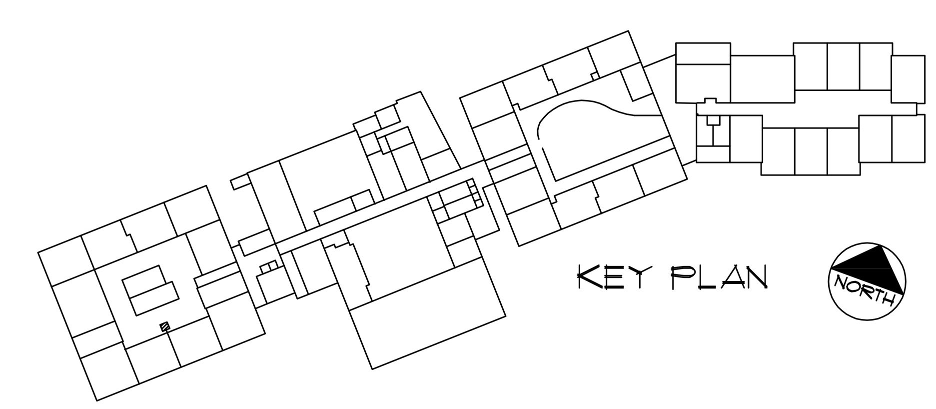
DIAGRAMMATIC



CONTROL FUNCTION	POINT
COIL DISCHARGE AIR TEMPERATURE	AI
HEAT PUMP CAPACITY MODULATION	AO
HEAT PUMP STOP / START	DO
HEAT PUMP HEAT / COOL MODE	DO
HEAT PUMP UNIT STATUS	DI
HEAT PUMP UNIT DEFROST	DO

4 M1.02 HEAT PUMP / COIL CONTROL SCHEMATIC

DIAGRAMMATIC — TYPICAL HEAT PUMP / DX COILS



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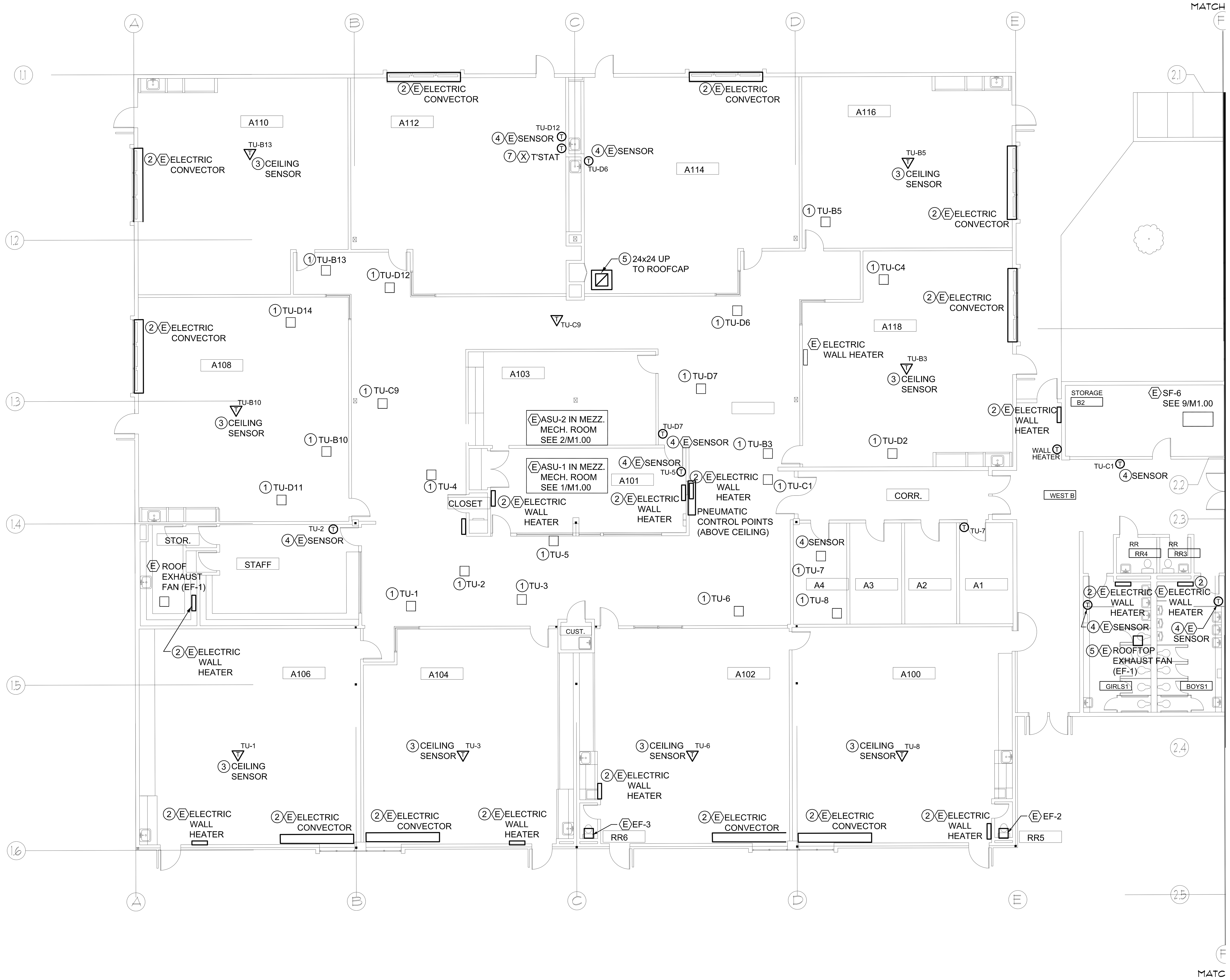
MECHANICAL SCHEDULE, DETAILS AND CONTROLS

NOT FOR CONSTRUCTION

M1.02
CONSTRUCTION DEVELOPMENT



1 A-WING FLOOR PLAN

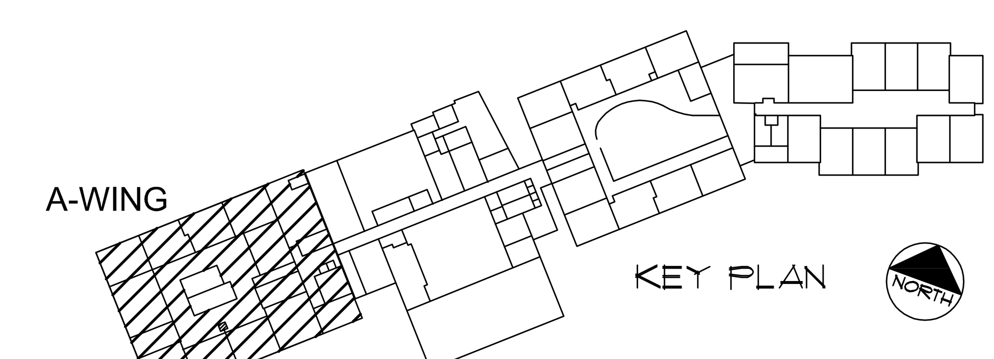
SCALE: 1/8"=1'-0"

GENERAL NOTES

ALL SENSORS LOCATED IN HALLWAYS, CORRIDORS, TOILET ROOMS AND OTHER COMMON SPACES TO HAVE METAL PROTECTIVE PLATES

SHEET NOTES

1. REPLACE EXISTING TERMINAL UNIT CONTROL ACTUATOR WITH DDC ACTUATOR - SEE DETAIL 3/M1.01 AND THE TERMINAL UNIT SCHEDULE ON SHEET M1.00
2. SEE DETAIL 5/M1.01 FOR DDC CONTROL SCHEMATIC
3. REPLACE EXISTING CEILING THERMOSTAT WITH DDC PENDANT TYPE CEILING SENSOR
4. REPLACE EXISTING WALL THERMOSTAT WITH DDC WALL SENSOR
5. SEE DETAIL 6/M1.01 FOR DDC CONTROL
7. REMOVE EXISTING CONTROL DEVICE AND PATCH WALL TO MATCH EXISTING CONDITIONS



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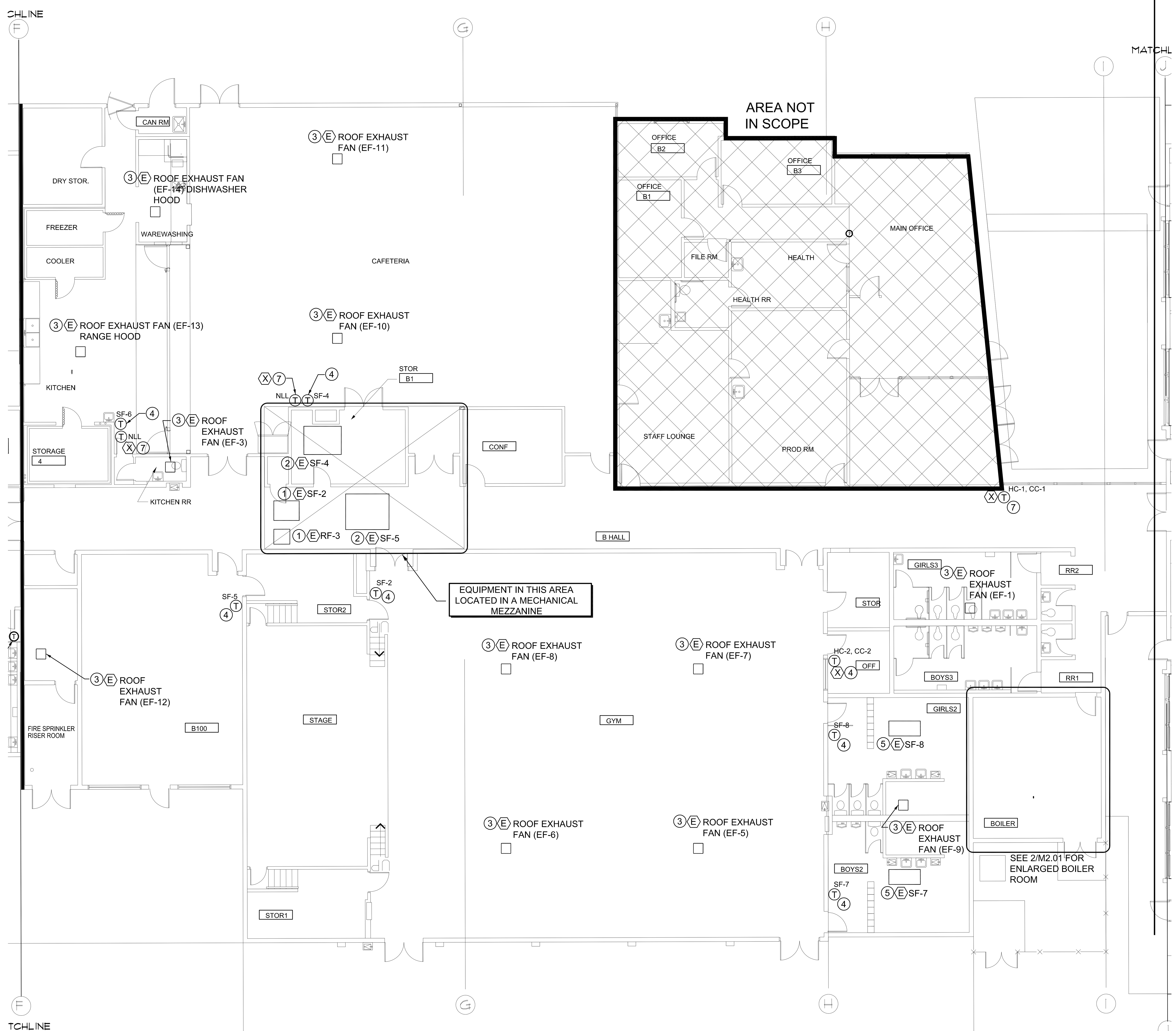
Sheet Title
A-WING
FLOOR PLAN

NOT FOR CONSTRUCTION

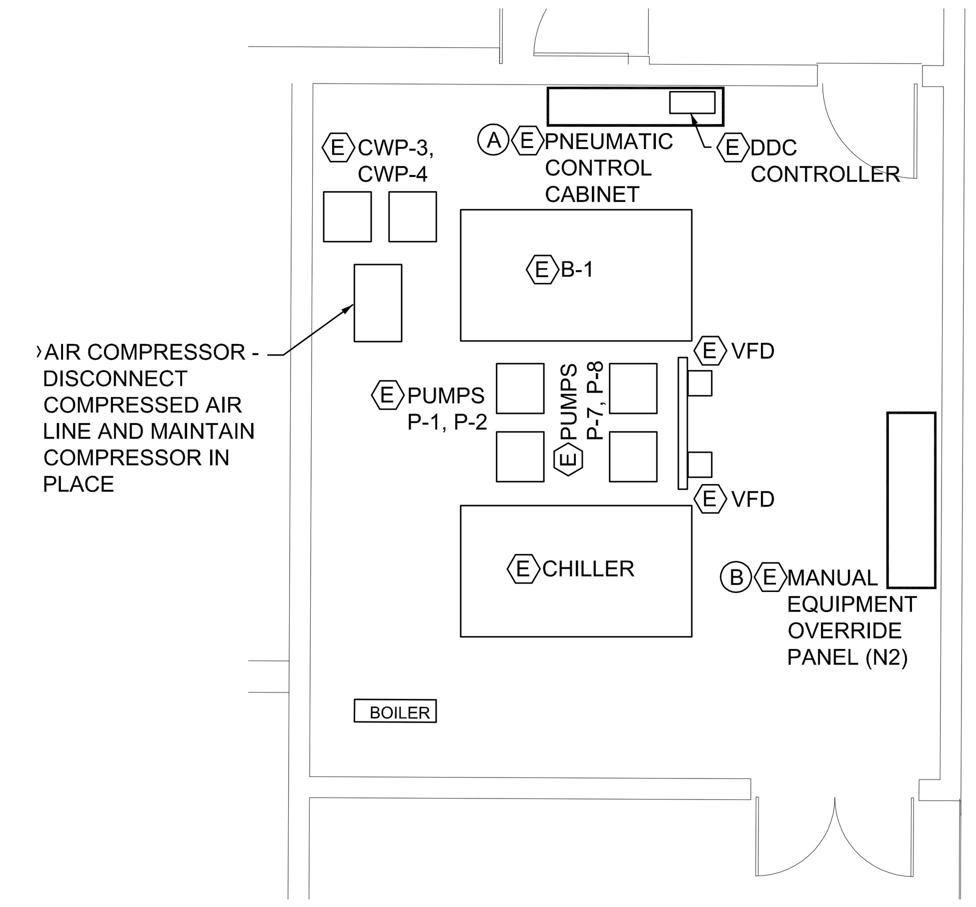
M2.00

CONSTRUCTION DEVELOPMENT



1 B-WING FLOOR PLAN

SCALE: 1/8"=1'-0"



PLAN NOTES

REMOVE ALL EXISTING PNEUMATIC CONTROL TUBING BACK TO BOILER ROOM WALL AND CAP

(A) REMOVE ALL PNEUMATIC CONTROLS AND TUBING FROM CONTROL CABINET - CABINET AND DDC CONTROLLER TO REMAIN IN PLACE AS EXISTING

(B) MAKE CONNECTIONS AS REQUIRED TO THE EXISTING N2 MANUAL OVERRIDE PANEL - VERIFY EXACT REQUIREMENTS AT THE SITE

2 ENLARGED BOILER ROOM

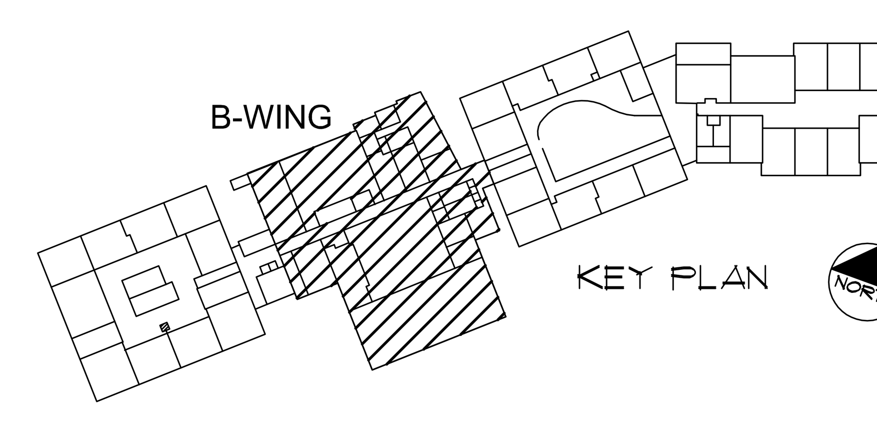
SCALE: 1/4"=1'-0"

GENERAL NOTES

ALL SENSORS LOCATED IN HALLWAYS, CORRIDORS, TOILET ROOMS AND OTHER COMMON SPACES TO HAVE METAL PROTECTIVE PLATES

SHEET NOTES

1. SEE DETAIL 7/M1.01 FOR DDC CONTROL SCHEMATIC
2. SEE DETAIL 8/M1.01 FOR DDC CONTROL SCHEMATIC
3. SEE DETAIL 3/M1.02 FOR DDC CONTROL SCHEMATIC
4. REPLACE EXISTING WALL THERMOSTAT WITH DDC WALL SENSOR - GYMNASIUM AND CAFETERIA SENSORS TO BE BEHIND PROTECTIVE METAL PLATE
5. SEE DETAIL 2/M1.02 FOR DDC CONTROL SCHEMATIC
6. SEE DETAIL 7/M1.01 FOR DDC CONTROL SCHEMATIC
7. REMOVE EXISTING CONTROL DEVICE AND PATCH WALL TO MATCH EXISTING CONDITIONS



KEY PLAN

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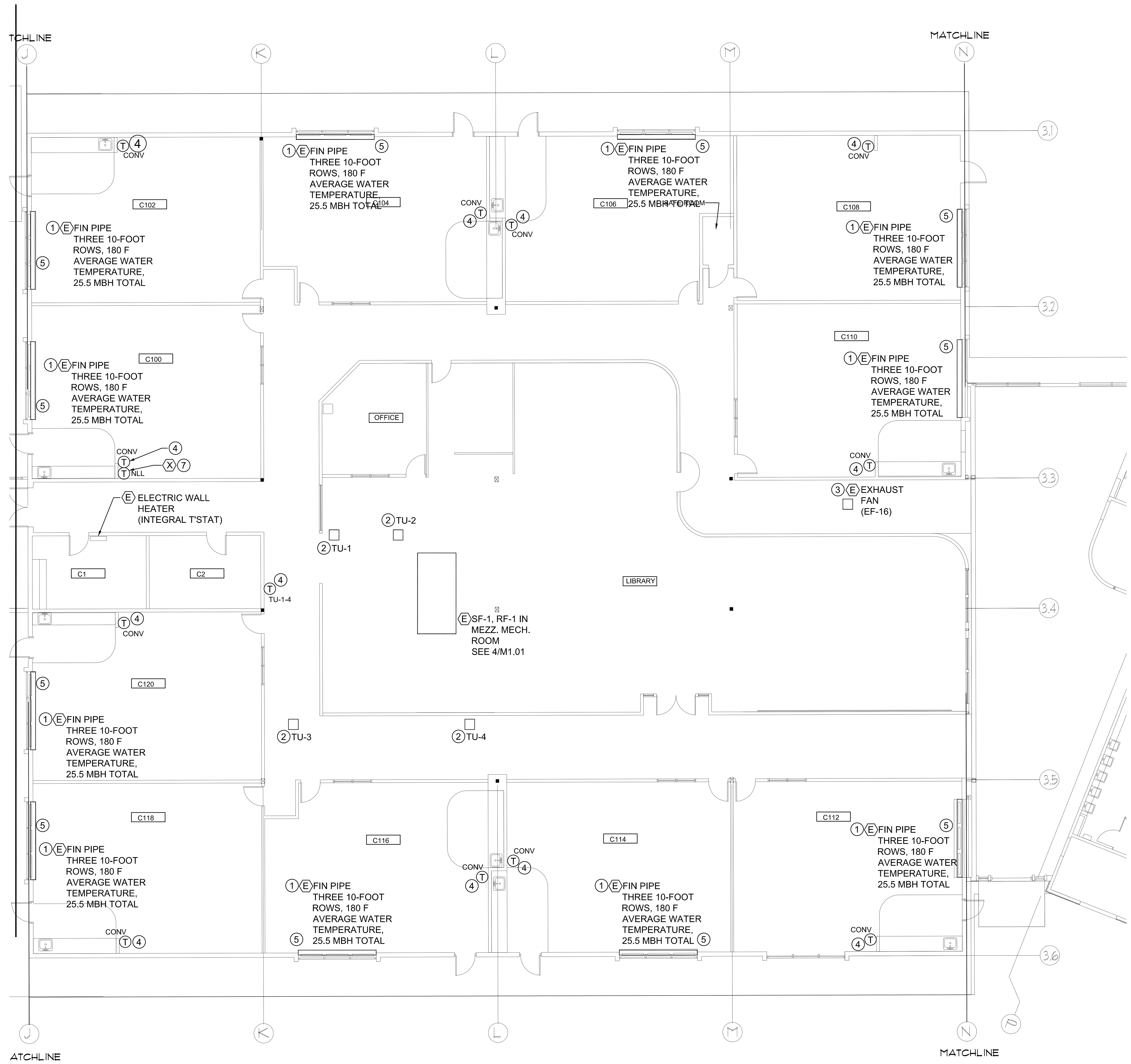
1	ADDENDA 2	01/19/21

Sheet Title
B-WING
FLOOR PLAN

NOT FOR CONSTRUCTION

M2.01

CONSTRUCTION DEVELOPMENT



1 C-WING FLOOR PLAN

SCALE: 1/8"=1'-0"

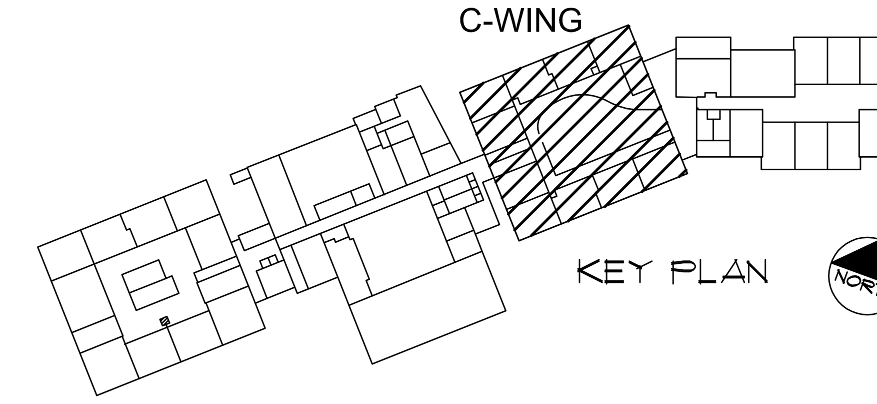
GENERAL NOTES

ALL SENSORS LOCATED IN HALLWAYS, CORRIDORS, TOILET ROOMS AND OTHER COMMON SPACES TO HAVE METAL PROTECTIVE PLATES

SHEET NOTES

1. SEE DETAIL 1/M1.02 FOR DDC CONTROL SCHEMATIC
2. REPLACE EXISTING TERMINAL UNIT CONTROL ACTUATOR WITH DDC ACTUATOR - SEE DETAIL 3/M1.01 AND THE TERMINAL UNIT SCHEDULE ON SHEET M1.00
3. SEE DETAIL 3/M1.02 FOR DDC CONTROL SCHEMATIC
4. REPLACE EXISTING WALL THERMOSTAT WITH DDC WALL SENSOR
5. PROVIDE A NEW WALL ACCESS PANEL IF NEEDED OR THAT SURFACE MOUNT TO BE USED AS NEEDED -TO REPLACE AND SERVICE THE CONTROL VALVE. PROVIDE A WOOD COVER PLATE SECURED TO THE WALL TO CLOSE OPENING. REMOVE THE EXISTING CONTROL VALVE AND INSTALL THE NEW CONTROL VALVE FURNISHED BY THE DDC CONTROLS CONTRACTOR. VERIFY EXACT LOCATION OF VALVE AT THE SITE SEE DETAIL 1/M1.02
7. REMOVE EXISTING CONTROL DEVICE AND PATCH WALL TO MATCH EXISTING CONDITIONS

C-WING



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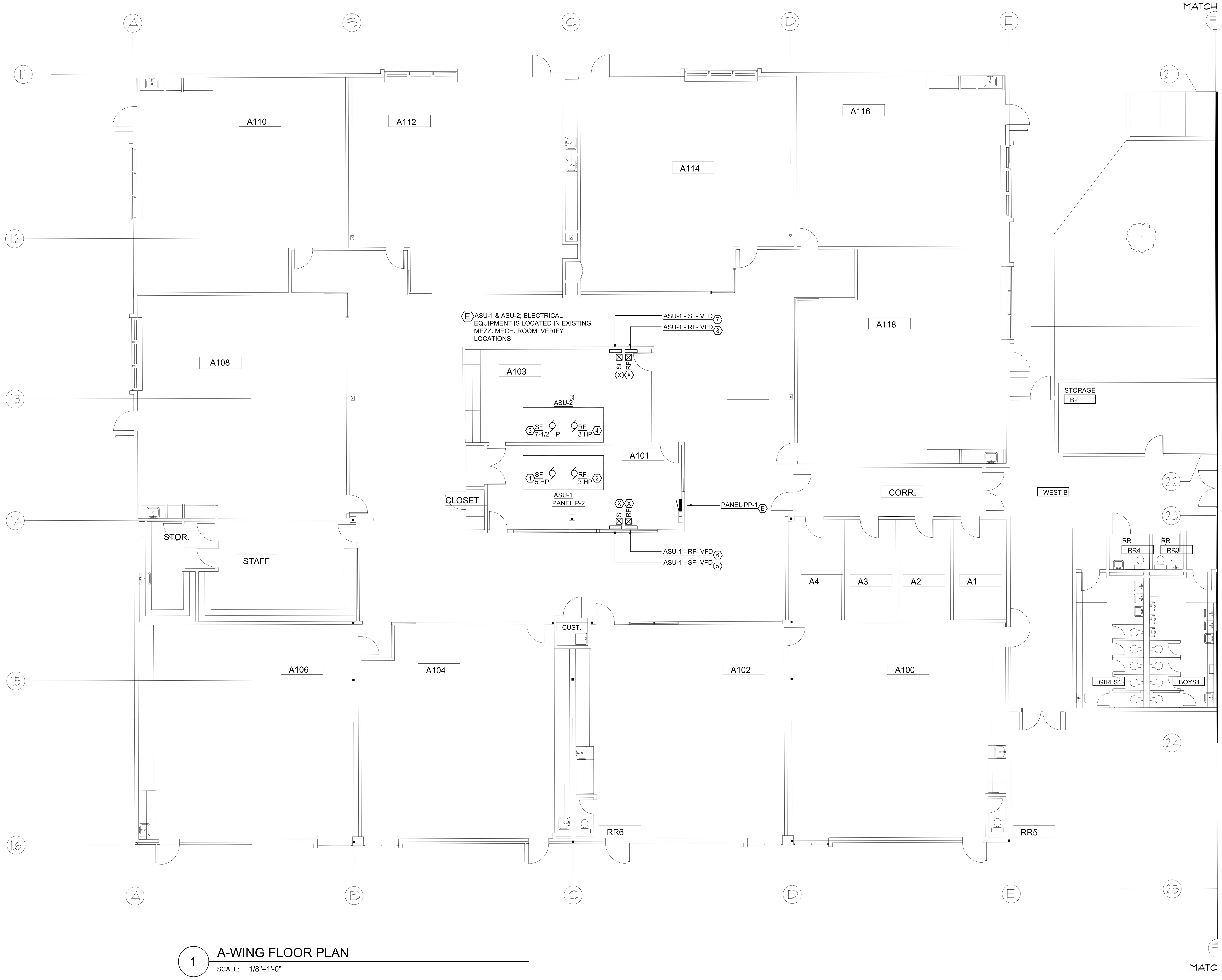
Sheet Title
C-WING FLOOR PLAN

NOT FOR CONSTRUCTION

M2.02

CONSTRUCTION DEVELOPMENT



1 A-WING FLOOR PLAN

SCALE: 1/8"=1'-0"

SHEET NOTES

1. ASU-1 - REMOVE SF ELECTRICAL CONNECTION TO MOTOR AS REQUIRED FOR REPLACEMENT. PROVIDE LABOR AND MATERIAL TO REMOVE ELECTRICAL CONNECTION BACK TO PANEL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, MOTOR STARTERS AND SUPPORTS. VERIFY PANEL LOCATION IN FIELD PRIOR TO BID.
2. ASU-1 - REMOVE RF-1 ELECTRICAL CONNECTION TO MOTOR AS REQUIRED FOR REPLACEMENT. PROVIDE LABOR AND MATERIAL TO REMOVE ELECTRICAL CONNECTION BACK TO PANEL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, MOTOR STARTERS AND SUPPORTS. VERIFY PANEL LOCATION IN FIELD PRIOR TO BID.
3. ASU-2 - REMOVE SF ELECTRICAL CONNECTION TO MOTOR AS REQUIRED FOR REPLACEMENT. PROVIDE LABOR AND MATERIAL TO REMOVE ELECTRICAL CONNECTION BACK TO PANEL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, MOTOR STARTERS AND SUPPORTS. VERIFY PANEL LOCATION IN FIELD PRIOR TO BID.
4. ASU-2 - REMOVE RF ELECTRICAL CONNECTION TO MOTOR AS REQUIRED FOR REPLACEMENT. PROVIDE LABOR AND MATERIAL TO REMOVE ELECTRICAL CONNECTION BACK TO PANEL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, MOTOR STARTERS AND SUPPORTS. VERIFY PANEL LOCATION IN FIELD PRIOR TO BID.
5. ASU-1 - PROVIDE SF ELECTRICAL CONNECTION TO NEW HIGH EFFICIENCY MOTOR. ROUTE 3 #10, #10 GRD, 1" CONDUIT FROM PANEL TO VFD TO MOTOR. PROVIDE ALL LABOR AND MATERIAL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, VFD CONNECTIONS AND SUPPORTS. VERIFY PANEL & VFD LOCATIONS IN FIELD PRIOR TO BID.
6. ASU-1 - PROVIDE RF ELECTRICAL CONNECTION TO NEW HIGH EFFICIENCY MOTOR. ROUTE 3 #12, #12 GRD, 3/4" CONDUIT FROM PANEL TO VFD TO MOTOR. PROVIDE ALL LABOR AND MATERIAL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, VFD CONNECTIONS AND SUPPORTS. VERIFY PANEL & VFD LOCATIONS IN FIELD PRIOR TO BID.
7. ASU-2 - PROVIDE SF ELECTRICAL CONNECTION TO NEW HIGH EFFICIENCY MOTOR. ROUTE 3 #8, #8 GRD, 1" CONDUIT FROM PANEL TO VFD TO MOTOR. PROVIDE ALL LABOR AND MATERIAL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, VFD CONNECTIONS AND SUPPORTS. VERIFY PANEL & VFD LOCATIONS IN FIELD PRIOR TO BID.
8. ASU-2 - PROVIDE RF ELECTRICAL CONNECTION TO NEW HIGH EFFICIENCY MOTOR. ROUTE 3 #12, #12 GRD, 3/4" CONDUIT FROM PANEL TO VFD TO MOTOR. PROVIDE ALL LABOR AND MATERIAL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, VFD CONNECTIONS AND SUPPORTS. VERIFY PANEL & VFD LOCATIONS IN FIELD PRIOR TO BID.

DEMOLITION SCOPE OF WORK

SCOPE: THE SCOPE OF WORK INCLUDES THE REMOVAL OF EXISTING CONNECTIONS TO MOTORS AS NOTED ON THE ELECTRICAL AND MECHANICAL PLANS. THE WORK WILL INCLUDE BUT NOT BE LIMITED TO THE DEMOLITION OF THE SPECIFIC MECHANICAL EQUIPMENT, ELECTRICAL CONTRACTOR COORDINATE WITH MECHANICAL CONTRACTOR FOR LOCATION OF EQUIPMENT.

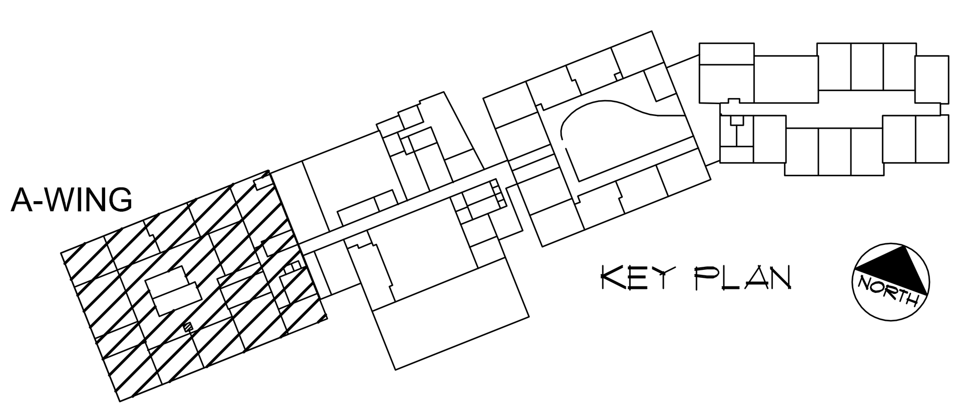
DEMOLITION: ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, DEMOLITION INFORMATION HAS BEEN SHOWN ON THE CONSTRUCTION DRAWINGS, IN THE SPECIFICATIONS OR INDICATED BELOW. ELECTRICAL DEVICES AND EQUIPMENT ARE FROM EXISTING RECORD DRAWINGS AND / OR SITE OBSERVATIONS. THEIR ACCURACY IS NOT GUARANTEED. IT WILL BE THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO VISIT THE SITE PRIOR TO BID AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID AND INCLUDE ALL LABOR AND MATERIAL REQUIRED FOR THE WORK INDICATED IN THE CONSTRUCTION SET

THE PURPOSE OF THE DEMOLITION INFORMATION IS TO OUTLINE A GENERAL DIRECTION OF WHAT NEEDS TO BE REMOVED TO ACCOMPLISH THE RENOVATION WORK. THE WORK IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO BE ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE TO VERIFY EXISTING CONDITIONS AT THE SITE AND INCLUDE ALL WORK EVIDENT BY SITE INSPECTION WHETHER OR NOT SHOWN ON THE DRAWINGS, TO ACHIEVE THE DESIRED RESULTS INDICATED ON THE DOCUMENTS FOR THE FINISHED SPACES.

ELECTRICAL DISTRIBUTION -
EXISTING DISTRIBUTION WILL BE REMAIN UNLESS NOTED OTHERWISE ON DRAWINGS. FIELD VERIFY ALL EQUIPMENT LOCATIONS

MECHANICAL - SEE MECHANICAL PLANS FOR ADDITIONAL DEMOLITION INFORMATION, MECHANICAL EQUIPMENT WILL BE REMOVED AS NOTED UNLESS INDICATED OTHERWISE. REMOVE EXISTING FEEDERS, MOTOR STARTERS AND DISCONNECT SWITCHES INCLUDING BUT NOT BE LIMITED TO CONDUIT, WIRE, AND SUPPORTS BACK TO PANELS

A-WING



KEY PLAN

SYSTEM DESIGN CONSULTANTS INC.

BEAVERTON SCHOOL DISTRICT

HITEON ELEMENTARY SCHOOL - CONTROLS UPGRADE

13800 SW BROCKMAN STREET, BEAVERTON, OR 97007

Drawn:	JJD
Date:	10.09.2020
Check:	JFR
Job No:	BSD2001

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDA 2	01/19/21

Sheet Title
A-WING
FLOOR PLAN -
ELECTRICAL

NOT FOR CONSTRUCTION

E2.00

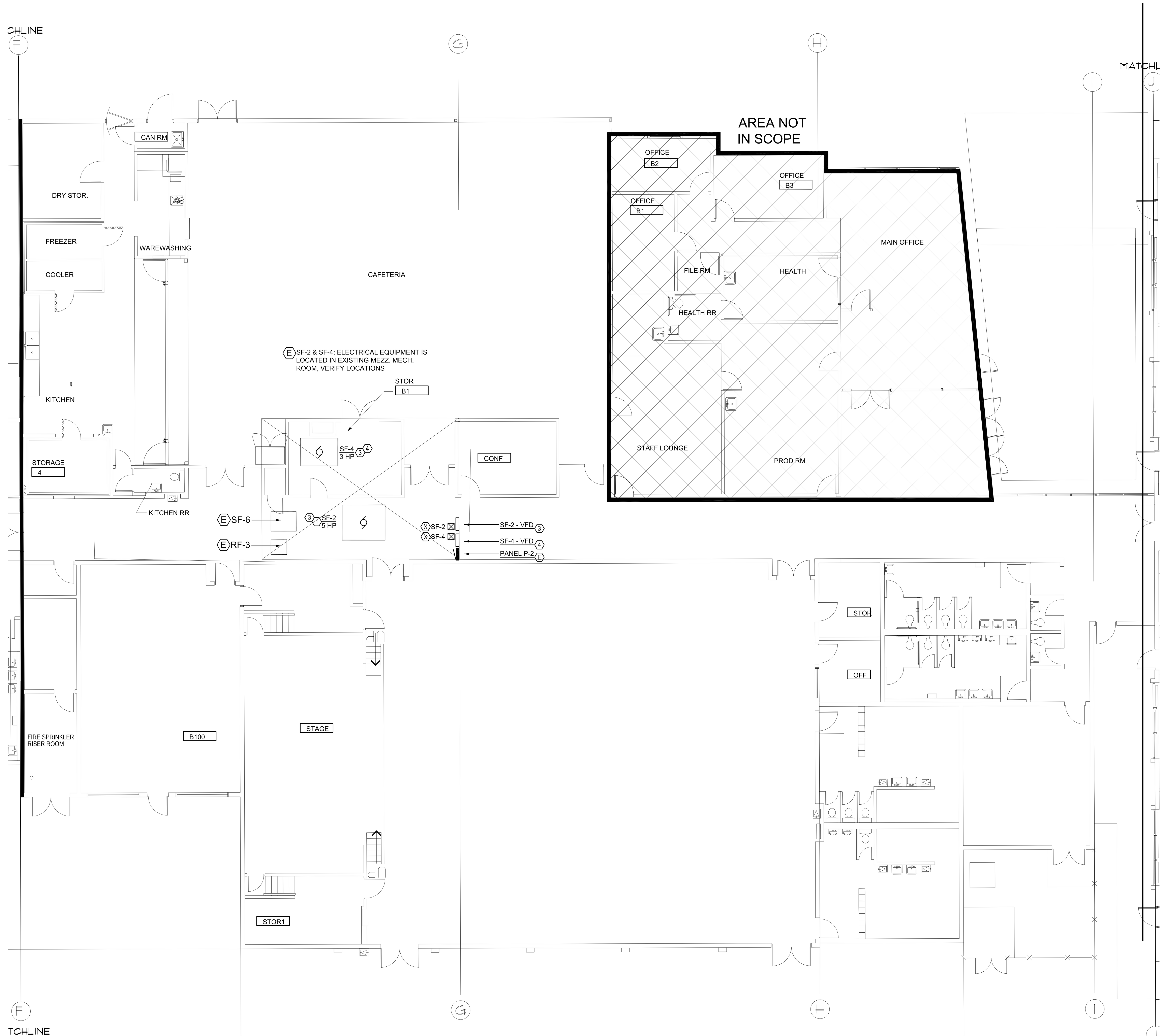
CONSTRUCTION DEVELOPMENT

SYSTEM
DESIGN
CONSULTANTS INC.
333 SE SECOND AVE, SUITE 100
PORTLAND OREGON 97214
503-248-0227 FAX 248-0240
CONTACT: JEFFREY DAVIS

BEAVERTON SCHOOL DISTRICT

HITEON ELEMENTARY SCHOOL - CONTROLS UPGRADE

13800 SW BROCKMAN STREET, BEAVERTON, OR 97007



1 B-WING FLOOR PLAN

SCALE: 1/8"=1'-0"

SHEET NOTES

1. SF-2 - REMOVE SF-2 ELECTRICAL CONNECTION TO MOTOR AS REQUIRED FOR REPLACEMENT. PROVIDE LABOR AND MATERIAL TO REMOVE ELECTRICAL CONNECTION BACK TO PANEL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, MOTOR STARTERS AND SUPPORTS. VERIFY PANEL LOCATION IN FIELD PRIOR TO BID.
2. SF-4 - REMOVE SF-4 ELECTRICAL CONNECTION TO MOTOR AS REQUIRED FOR REPLACEMENT. PROVIDE LABOR AND MATERIAL TO REMOVE ELECTRICAL CONNECTION BACK TO PANEL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, MOTOR STARTERS AND SUPPORTS. VERIFY PANEL LOCATION IN FIELD PRIOR TO BID.
3. SF-2 - PROVIDE SF-2 ELECTRICAL CONNECTION TO NEW HIGH EFFICIENCY MOTOR. ROUTE 3 #10, #10 GRD, 1" CONDUIT FROM PANEL TO VFD TO MOTOR. PROVIDE ALL LABOR AND MATERIAL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, VFD CONNECTIONS AND SUPPORTS. VERIFY PANEL & VFD LOCATIONS IN FIELD PRIOR TO BID.
4. SF-4 - PROVIDE SF-4 ELECTRICAL CONNECTION TO NEW HIGH EFFICIENCY MOTOR. ROUTE 3 #10, #10 GRD, 1" CONDUIT FROM PANEL TO VFD TO MOTOR. PROVIDE ALL LABOR AND MATERIAL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, VFD CONNECTIONS AND SUPPORTS. VERIFY PANEL & VFD LOCATIONS IN FIELD PRIOR TO BID.

DEMOLITION SCOPE OF WORK

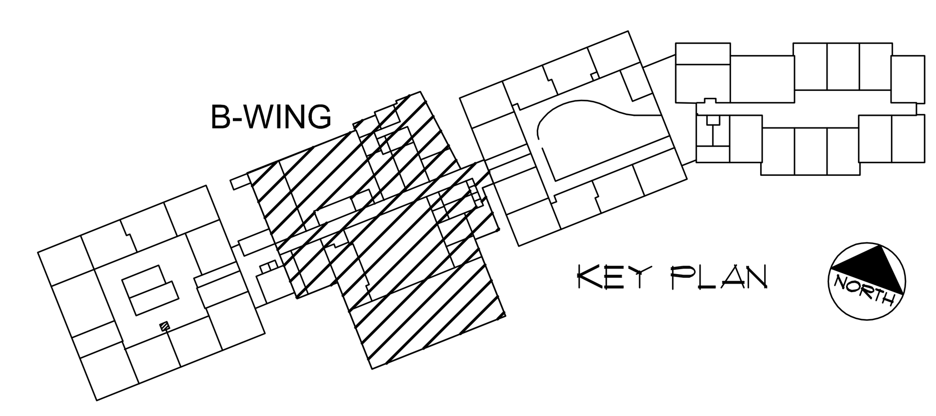
SCOPE: THE SCOPE OF WORK INCLUDES THE REMOVAL OF EXISTING CONNECTIONS TO MOTORS AS NOTED ON THE ELECTRICAL AND MECHANICAL PLANS. THE WORK WILL INCLUDE BUT NOT BE LIMITED TO THE DEMOLITION OF THE SPECIFIC MECHANICAL EQUIPMENT, ELECTRICAL CONTRACTOR COORDINATE WITH MECHANICAL CONTRACTOR FOR LOCATION OF EQUIPMENT.

DEMOLITION: ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, DEMOLITION INFORMATION HAS BEEN SHOWN ON THE CONSTRUCTION DRAWINGS, IN THE SPECIFICATIONS OR INDICATED BELOW. ELECTRICAL DEVICES AND EQUIPMENT ARE FROM EXISTING RECORD DRAWINGS AND / OR SITE OBSERVATIONS. THEIR ACCURACY IS NOT GUARANTEED. IT WILL BE THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO VISIT THE SITE PRIOR TO BID AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID AND INCLUDE ALL LABOR AND MATERIAL REQUIRED FOR THE WORK INDICATED IN THE CONSTRUCTION SET

THE PURPOSE OF THE DEMOLITION INFORMATION IS TO OUTLINE A GENERAL DIRECTION OF WHAT NEEDS TO BE REMOVED TO ACCOMPLISH THE RENOVATION WORK. THE WORK IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO BE ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE TO VERIFY EXISTING CONDITIONS AT THE SITE AND INCLUDE ALL WORK EVIDENT BY SITE INSPECTION WHETHER OR NOT SHOWN ON THE DRAWINGS, TO ACHIEVE THE DESIRED RESULTS INDICATED ON THE DOCUMENTS FOR THE FINISHED SPACES.

ELECTRICAL DISTRIBUTION -
EXISTING DISTRIBUTION WILL BE REMAIN UNLESS NOTED OTHERWISE ON DRAWINGS. FIELD VERIFY ALL EQUIPMENT LOCATIONS

MECHANICAL - SEE MECHANICAL PLANS FOR ADDITIONAL DEMOLITION INFORMATION, MECHANICAL EQUIPMENT WILL BE REMOVED AS NOTED UNLESS INDICATED OTHERWISE. REMOVE EXISTING FEEDERS, MOTOR STARTERS AND DISCONNECT SWITCHES INCLUDING BUT NOT BE LIMITED TO CONDUIT, WIRE, AND SUPPORTS BACK TO PANELS



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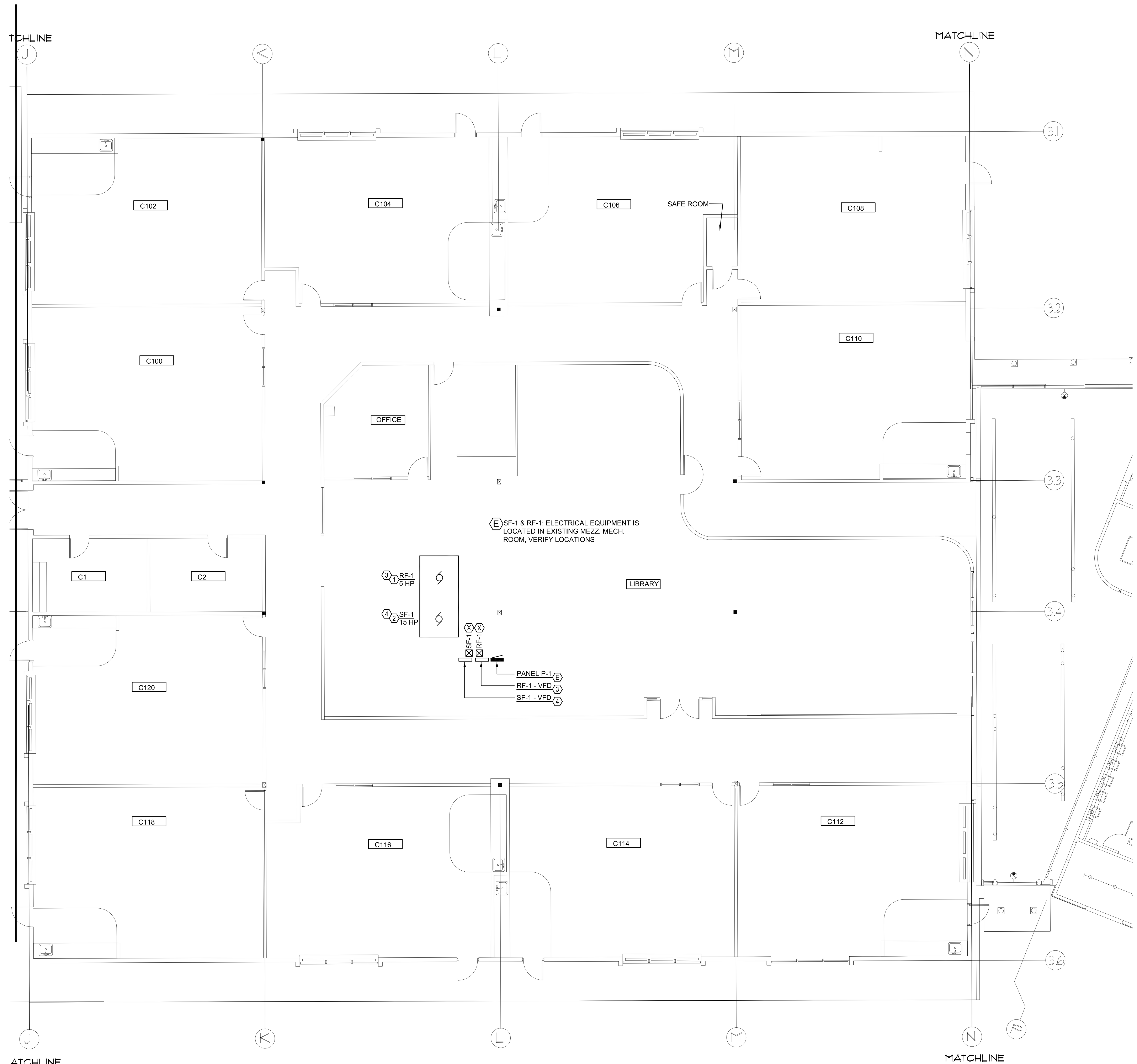
Sheet Title
B-WING
FLOOR PLAN -
ELECTRICAL

NOT FOR
CONSTRUCTION

E2.01

CONSTRUCTION
DEVELOPMENT



1 C-WING FLOOR PLAN

SCALE: 1/8"=1'-0"

SHEET NOTES

1. RF-1 - REMOVE RF-1 ELECTRICAL CONNECTION TO MOTOR AS REQUIRED FOR REPLACEMENT. PROVIDE LABOR AND MATERIAL TO REMOVE ELECTRICAL CONNECTION BACK TO PANEL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, MOTOR STARTERS AND SUPPORTS. VERIFY PANEL LOCATION IN FIELD PRIOR TO BID.

2. SF-1 - REMOVE SF-1 ELECTRICAL CONNECTION TO MOTOR AS REQUIRED FOR REPLACEMENT. PROVIDE LABOR AND MATERIAL TO REMOVE ELECTRICAL CONNECTION BACK TO PANEL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, MOTOR STARTERS AND SUPPORTS. VERIFY PANEL LOCATION IN FIELD PRIOR TO BID.

3. RF-1 - PROVIDE RF-1 ELECTRICAL CONNECTION TO NEW HIGH EFFICIENCY MOTOR. ROUTE 3 #10, #10 GRD, 1" CONDUIT FROM PANEL TO VFD TO MOTOR. PROVIDE ALL LABOR AND MATERIAL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, VFD CONNECTIONS AND SUPPORTS. VERIFY PANEL & VFD LOCATIONS IN FIELD PRIOR TO BID.

4. SF-1 - PROVIDE SF-1 ELECTRICAL CONNECTION TO NEW HIGH EFFICIENCY MOTOR. ROUTE 3 #6, #6 GRD, 1" CONDUIT FROM PANEL TO VFD TO MOTOR. PROVIDE ALL LABOR AND MATERIAL INCLUDING BUT NOT BE LIMITED TO CONDUIT, CONDUCTORS, VFD CONNECTIONS AND SUPPORTS. VERIFY PANEL & VFD LOCATIONS IN FIELD PRIOR TO BID.

DEMOLITION SCOPE OF WORK

SCOPE: THE SCOPE OF WORK INCLUDES THE REMOVAL OF EXISTING CONNECTIONS TO MOTORS AS NOTED ON THE ELECTRICAL AND MECHANICAL PLANS. THE WORK WILL INCLUDE BUT NOT BE LIMITED TO THE DEMOLITION OF THE SPECIFIC MECHANICAL EQUIPMENT, ELECTRICAL CONTRACTOR COORDINATE WITH MECHANICAL CONTRACTOR FOR LOCATION OF EQUIPMENT.

DEMOLITION: ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, DEMOLITION INFORMATION HAS BEEN SHOWN ON THE CONSTRUCTION DRAWINGS, IN THE SPECIFICATIONS OR INDICATED BELOW. ELECTRICAL DEVICES AND EQUIPMENT ARE FROM EXISTING RECORD DRAWINGS AND / OR SITE OBSERVATIONS. THEIR ACCURACY IS NOT GUARANTEED. IT WILL BE THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO VISIT THE SITE PRIOR TO BID AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID AND INCLUDE ALL LABOR AND MATERIAL REQUIRED FOR THE WORK INDICATED IN THE CONSTRUCTION SET

THE PURPOSE OF THE DEMOLITION INFORMATION IS TO OUTLINE A GENERAL DIRECTION OF WHAT NEEDS TO BE REMOVED TO ACCOMPLISH THE RENOVATION WORK. THE WORK IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO BE ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE TO VERIFY EXISTING CONDITIONS AT THE SITE AND INCLUDE ALL WORK EVIDENT BY SITE INSPECTION WHETHER OR NOT SHOWN ON THE DRAWINGS, TO ACHIEVE THE DESIRED RESULTS INDICATED ON THE DOCUMENTS FOR THE FINISHED SPACES.

ELECTRICAL DISTRIBUTION -
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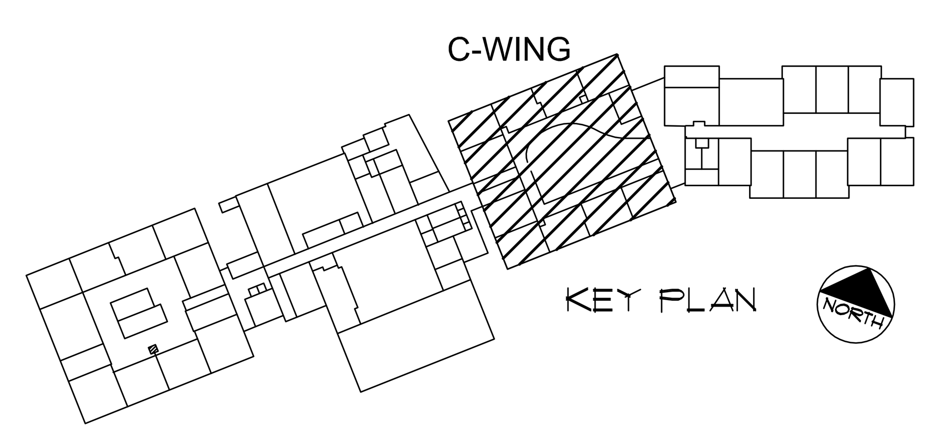
MECHANICAL - SEE MECHANICAL PLANS FOR ADDITIONAL DEMOLITION INFORMATION, MECHANICAL EQUIPMENT WILL BE REMOVED AS NOTED UNLESS INDICATED OTHERWISE. REMOVE EXISTING FEEDERS, MOTOR STARTERS AND DISCONNECT SWITCHES INCLUDING BUT NOT BE LIMITED TO CONDUIT, WIRE, AND SUPPORTS BACK TO PANELS



KEY PLAN

SYSTEM DESIGN CONSULTANTS INC.

BEAVERTON SCHOOL DISTRICT
HITEON ELEMENTARY SCHOOL - CONTROLS UPGRADE
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C-WING
FLOOR PLAN -
ELECTRICAL

NOT FOR CONSTRUCTION

E2.02

CONSTRUCTION DEVELOPMENT