### MARK MORRIS H.S. SHOP CLASSROOM REMODEL

### PROJECT TEAM

### **OWNER**

LONGVIEW SCHOOL DISTRICT **2080 38TH AVENUE** LONGVIEW, WA 98632 PHONE: 360-442-1841 **CONTACT: JASON REETZ** E-MAIL: jreetz@longview.k12.wa.us

### **MECHANICAL**

MKE & ASSOCIATES, INC 6915 SW MACADAM AVE PORTLAND, OR 97219 PHONE: (503) 892-1188 **CONTACT: JACOB PEN** E-MAIL: jacobp@mke-inc.com

### **ARCHITECT**

COLLINS ARCHITECTURAL GROUP PS 950 12th AVE SUITE 200 LONGVIEW WA 98632 PHONE: (360) 425-0000 **CONTACT: JARED BRADSHAW** E-MAIL: jaredb@collinsarchgroup.com

### **ELECTRICAL**

ATHAY AND ASSOCIATES 411 N.E. 83rd STREET VANCOUVER, WA 98665 PHONE: (360) 574-0199 **CONTACT: RON ATHAY** E-MAIL: rathay@athayeng.com

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**ELECTRICAL** 

E0.1

E1.0

ELECTRICAL SYMBOLS DEMO PLAN

E2.0 LIGHTING PLAN POWER AND SIGNAL PLAN

### CODE

BUILDING CODE: 2018 IBC, 2018 WASHINGTON STATE BUILDING CODE

**OCCUPANCY:** E - EDUCATIONAL

**VICINITY MAP** 

**CONSTRUCTION TYPE:** TYPE II-B (NON-COMBUSTIBLE)

**EMERGENCY LIGHTING: WHERE MORE THAN ONE EXIT IS REQUIRED, EXIT** SIGNS ARE REQUIRED. IBC 1013.1.1

> TOTAL OCCUPANT LOAD: 99 - TWO EXITS ARE REQUIRED IN AN AREA WITH MORE THAN 49 OCCUPANTS. (IBC TABLE 1006.2.1) EXIT LIGHTS SHALL BE INSTALLED

### **PLAN KEYNOTES:**

INSTALL NEW LVT FLOORING AND RUBBER BASE

REMOVE EXISTING LIGHTING AND INSTALL NEW LED LIGHTING THROUGHOUT

PAINT CEILING FLAT BLACK INCLUDING JOISTS, CONDUITS, DUCTWORK, AND EQUIPMENT. SEE SPEC SECTION 09 9123

PAINT ALL WALLS WITHIN ROOM

INSTALL NEW PLAM WINDOW SILL

REMOVE WHITE BOARD FROM WALL IN ORDER TO INSTALL NEW ACOUSTICAL FURRING, REINSTALL AT THE SAME LOCATION ONTO NEW WALL SURFACE

REMOVE WHITE BOARD FROM WALL IN ORDER TO INSTALL NEW ACOUSTICAL FURRING, REINSTALL AT NEW LOCATION. CUT HOLE IN WHITE BOARD WHERE OUTLET ACCESS PANEL IS LOCATED

ALL NEW WALL FURRING SHALL EXTEND TO THE STRUCTURE ABOVE. SEAL AROUND ALL PENETRATIONS INCLUDING BUT NOT

INSTALL ACCESS PANELS IN NEW WALL TO PROVIDE ACCESS TO EXISTING LB BOXES AND GAS VALVE. SEE SPEC SECTION 08 3100

REMOVE BUBBLING PAINT ON CMU BEFORE APPLYING NEW PAINT

LIMITED TO; CONDUITS, PIPES, ACCESS PANELS, JOISTS, OUTLET BOXES, ETC.

REMOVE FIRE EXTINGUISHER FROM WALL AND REINSTALL ON NEW FURRED WALL AT SAME LOCATION

REMOVE EXISTING OVERHEAD DOOR AND REPLACE WITH NEW 8'-0" x 9'-7" INSULATED OVERHEAD DOOR. VERIFY SIZE ONSITE

SAWCUT AND REMOVE CONCRETE FLOOR FOR INSTALLATION OF FLOOR OUTLETS. POUR BACK 4" CONCRETE SLAB AFTER OUTLET INSTALLATION. LOCATIONS FOR THE NEW OUTLET FLOOR BOXES ARE SHOWN AS THE GREY BOXES

EXISTING DOOR, FRAME AND HARDWARE. REPAINT BOTH SIDES OF DOOR AND FRAME

REPLACE EXISTING KNOB LOCKSET WITH NEW LEVER LOCKSET.

### WALL TYPES:

TWO LAYERS OF 5/8" GWB ON 2" Z CHANNELS ON SOUND ISOLATION STRIPS ON EXISTING CMU WALL UP TO ROOF DECK. SEE 13/A5.0

5/8" GWB ON 362162-33 METAL STUDS @ 16" O.C. W/ R-15 BATT INSULATION SPACED 2 INCHES FROM THE EXISTING CMU WALL UP TO ROOF DECK

5/8" GWB EACH SIDE OF 362162-33 METAL STUDS @ 16" O.C. UP TO ROOF DECK

AT EXISTING CMU/CONCRETE WALL: (INTERIOR SIDE) 5/8" GWB ON 362162-33 METAL STUDS @ 16" O.C. W/ R-19 BATT INSULATION ON MOISTURE RRIER SPACED 2 INCHES FROM EXISTING CMU/CONCRETE WALL. AT WINDOW INFILL: 362162-33 METAL STUDS @ 16" O.C. W/ R-11 BATT INSULATION ON 5/8" GYPSUM SHEATHING ON WEATHER BARRIER. 2" RIGID

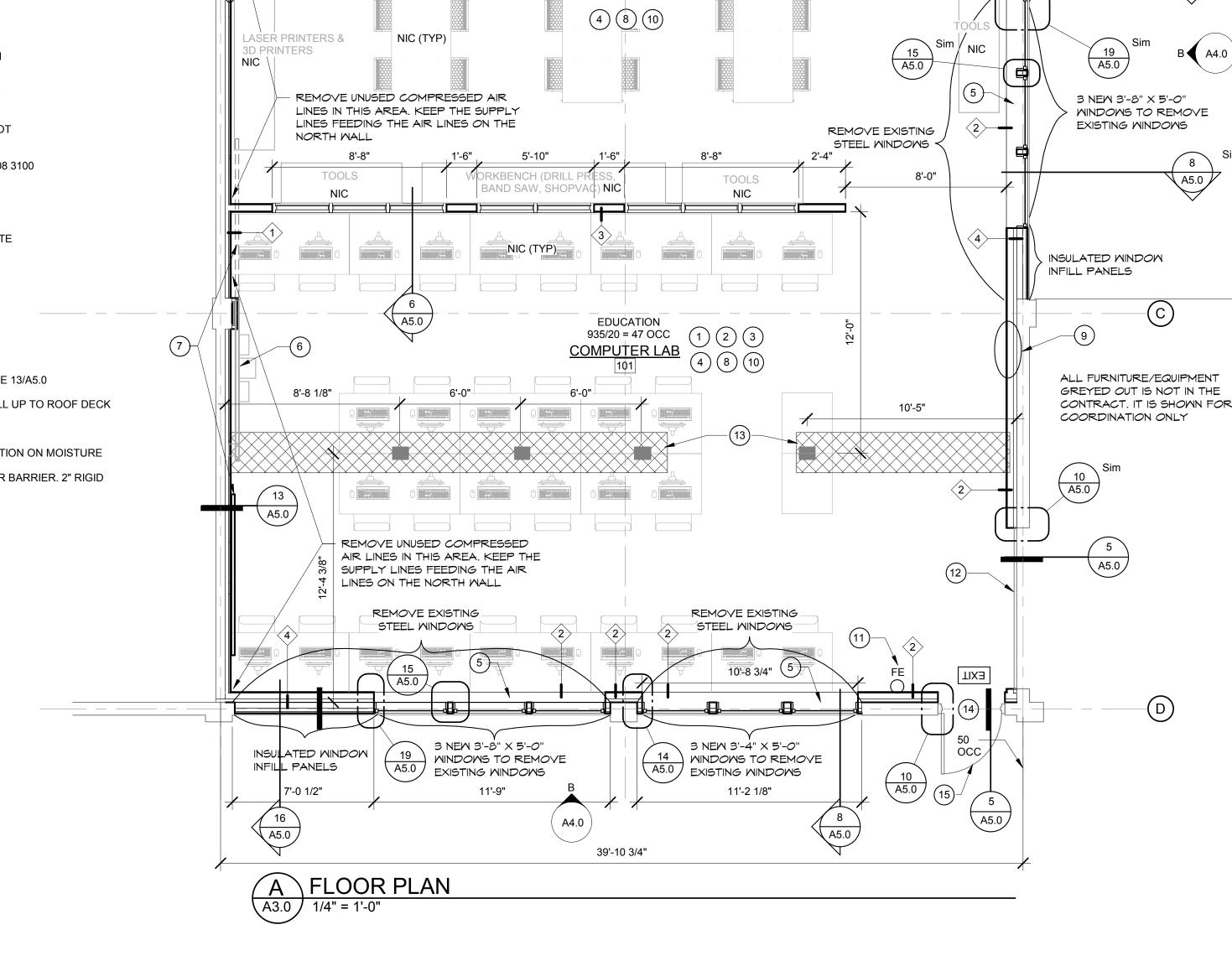
# INSULATION ON 7/8" HAT CHANNELS ON CEMENTITIOUS FLAT PANEL SIDING (EXTERIOR SIDE)

SHOP BUILDING KEY PLAN

1" = 100'-0"

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE RENOVATION OF THE EXISTING COMPUTER AND STEM LAB UPDATING THE FINISHES. BUILDING ENVELOPE. ELECTRICAL, AND MECHANICAL SYSTEMS.



NO WORK THIS AREA

**STORAGE** 

**EDUCATION** 

1036/20 = 52 OCC

(1) (2) (3)

PAINT BOTH SIDES

SUPPLIES STORAGE

OF EXISTING HM

DOORS, FRAMES

AND RELITE

NEW TRIPLE HANDWASH SINK, JH-ADA-6020-S-CP. REVISE

EXISTING PLUMBING FOR NEW SINK LOCATION. REROUTE

NO WORK THIS AREA

OFFICE 102

WITH NEW 4'-0" X 7'-0"

ACOUSTICAL DOOR

REMOVE EXISTING

SINK, REUSE/EXTEND

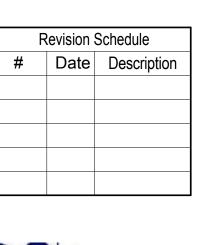
CLOSE OFF EXISTING INACTIVE LOUVERS,

COVER MITH NEW

MALL FURRING

EXISTING PLUMBING

FOR NEW SINK



INSTALL WALL

TYPE 2 ABOVE

EXISTING CLOSET

 $\begin{pmatrix} 10 \\ A5.0 \end{pmatrix}$ 

REMOVE EXISTING MINDOW INFILL AND EXHAUST FAN

INSULATED MINDOM

INFILL PANELS

CLOSET 104

COMPRESSED AIR LINES

IN THIS AREA ARE TO

REMAIN IN USE

RELOCATE/EXTEND

EXISTING COMPRESSED AIR VALVES/CONNECTORS TO

THE NEW FURRED WALL

**BID SET** 6/22/2021

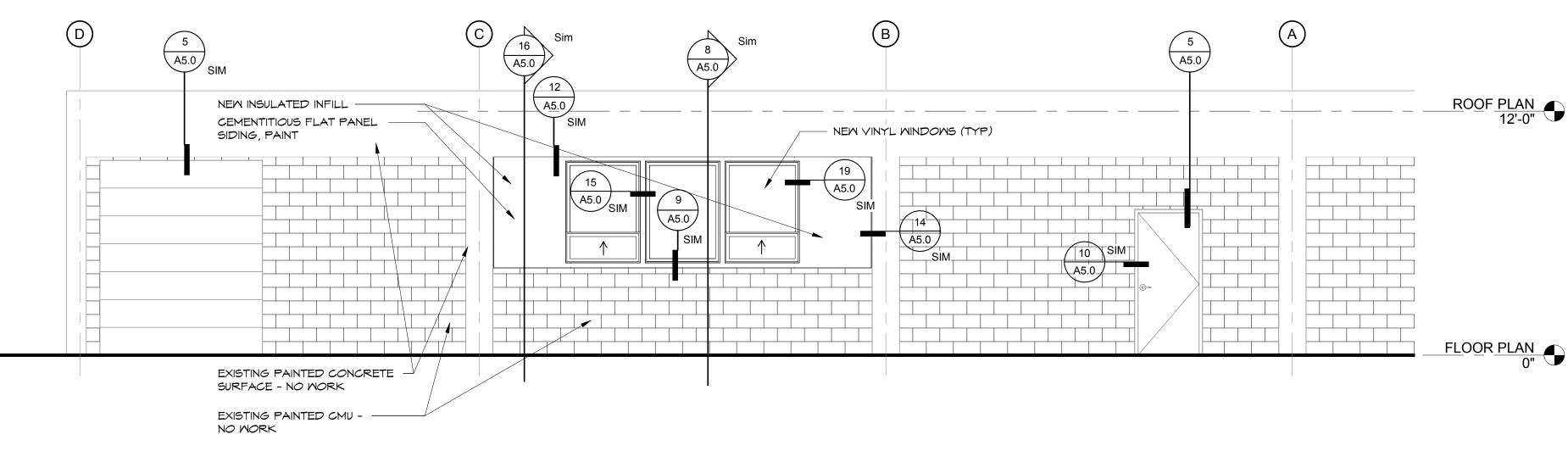
FLOOR PLAN

2021-12

SHEET NO.

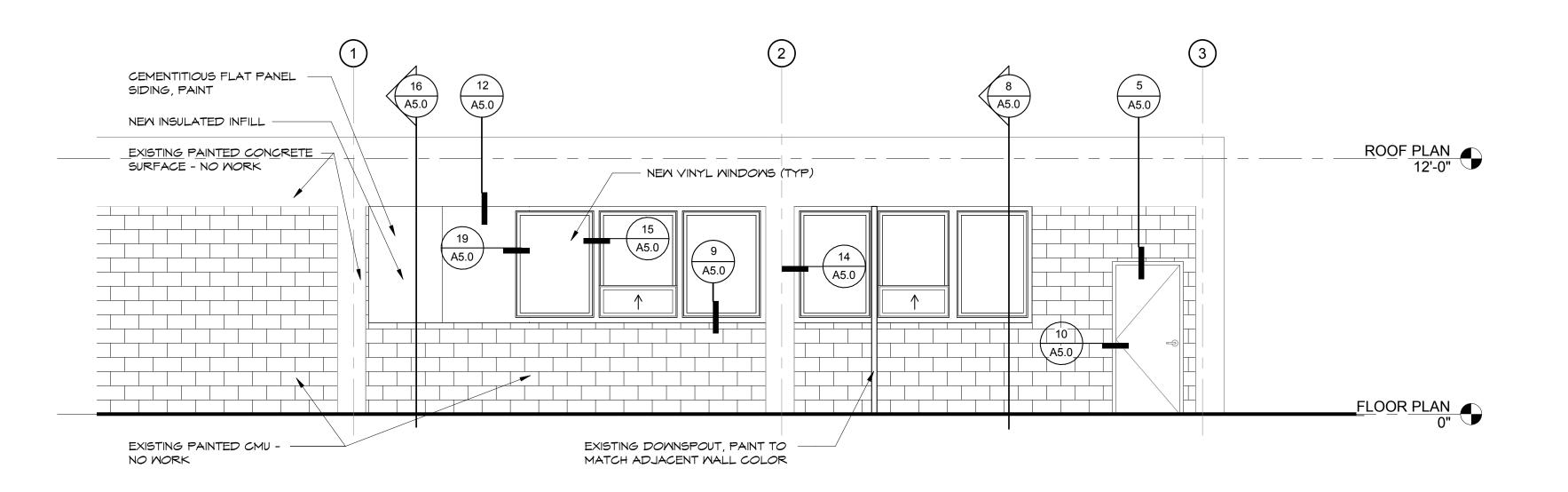
Revision Schedule

SHEET NO.



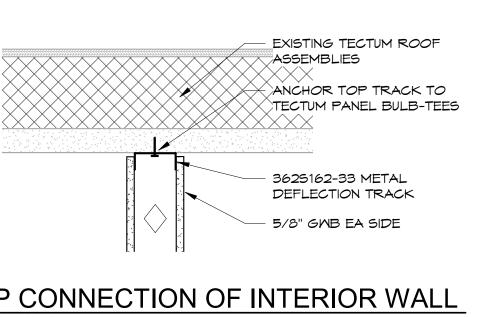
A NORTH EXTERIOR ELEVATION

A4.0 1/4" = 1'-0"

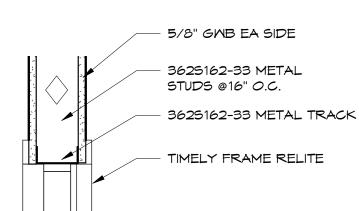


B EAST EXTERIOR ELEVATION

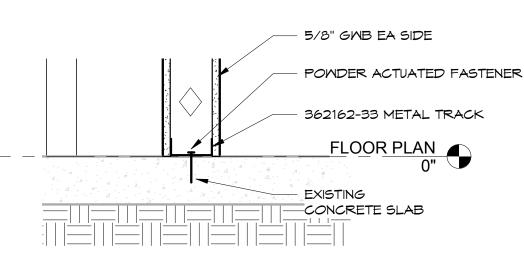
1/4" = 1'-0"







### WINDOW HEADER/SILL DETIAL 1 1/2" = 1'-0"

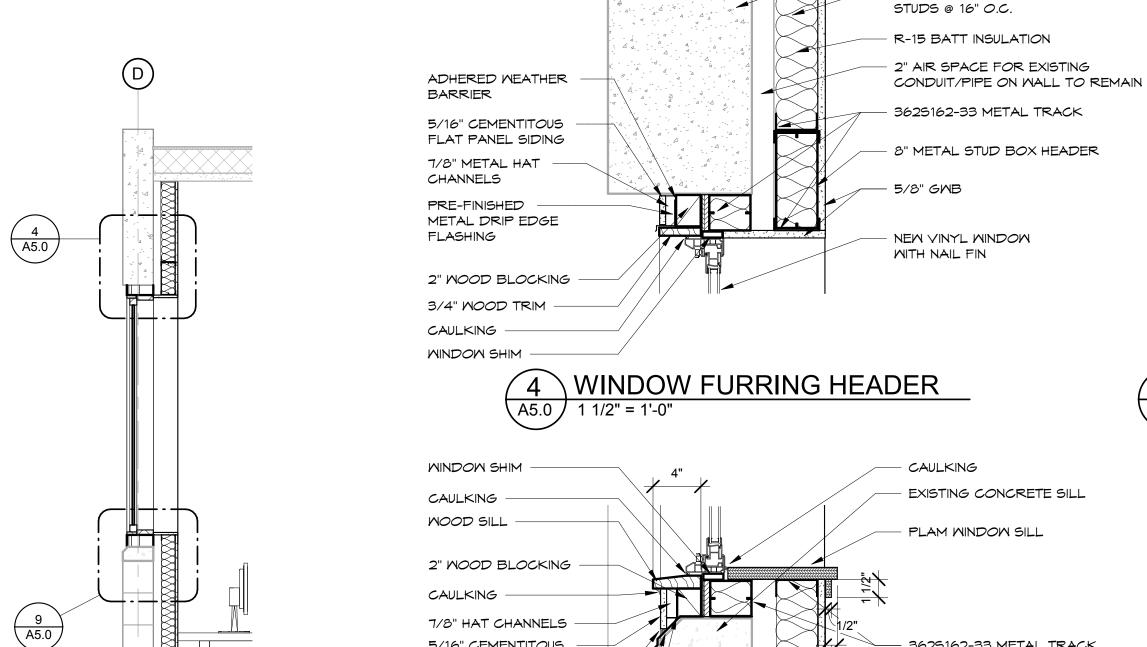




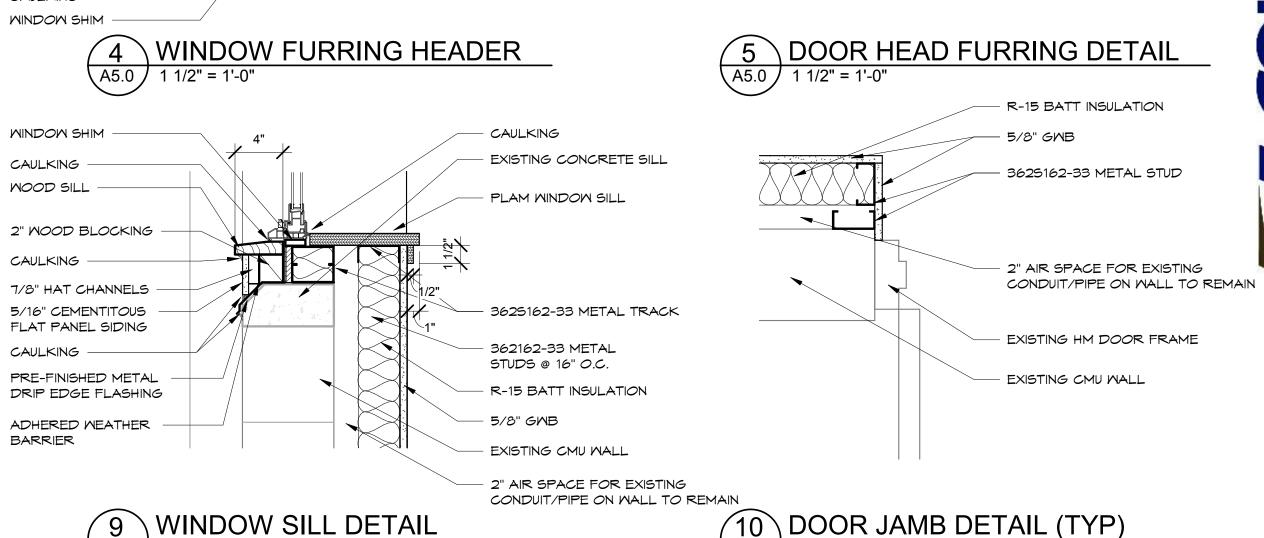
- 2" AIR SPACE FOR EXISTING

- EXISTING

CONDUIT/PIPE ON WALL TO REMAIN

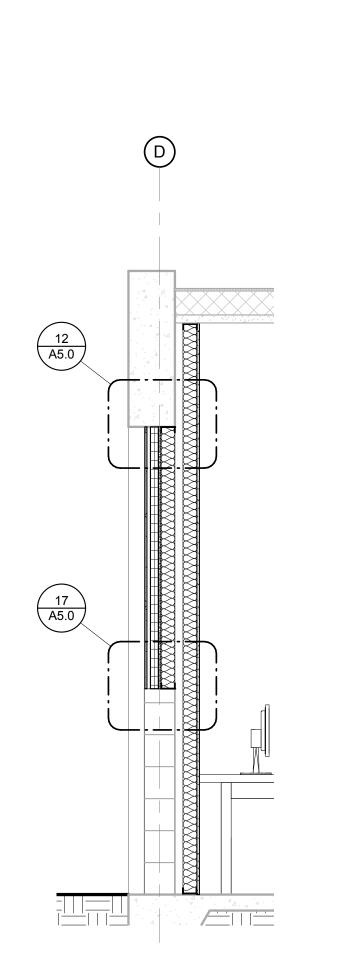


A5.0 / 1 1/2" = 1'-0"



EXISTING CONCRETE WALL

362162-33 METAL



16 WINDOW INFILL SECTION

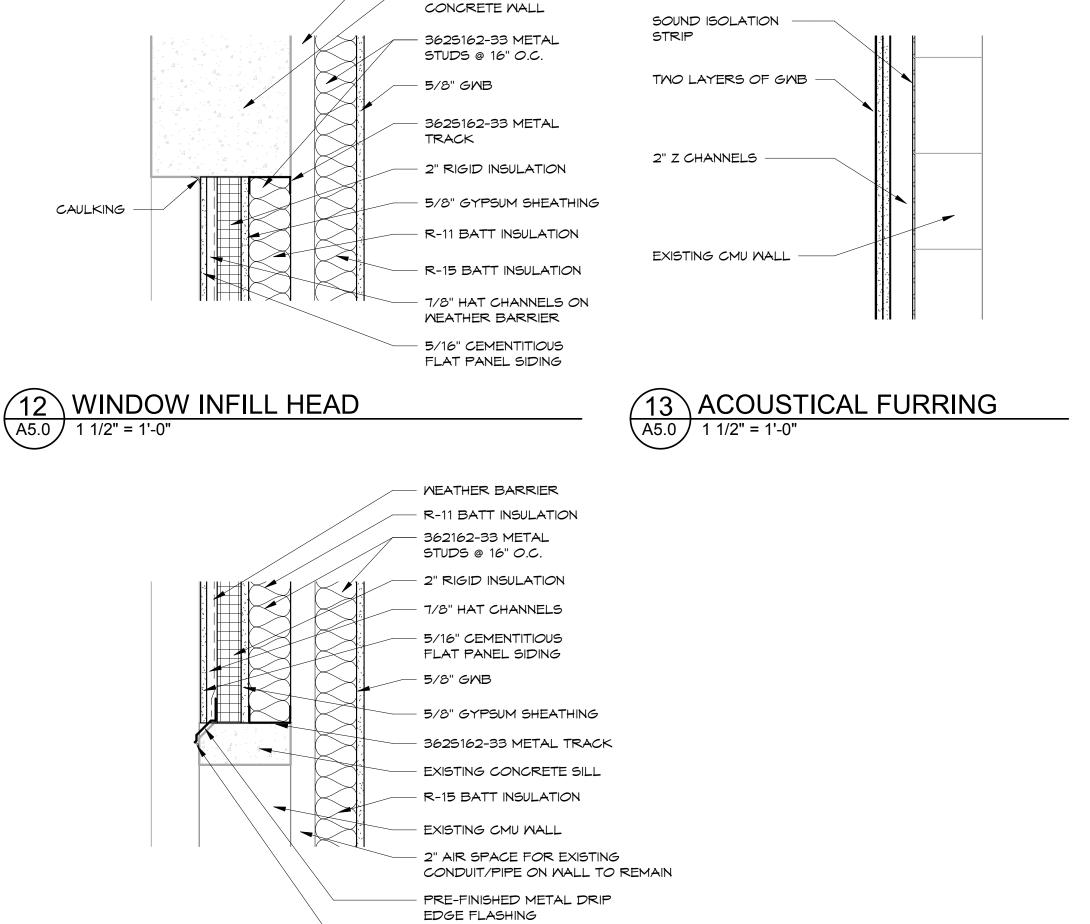
A5.0 1/2" = 1'-0"

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6 NEW INTERIOR WALL

A5.0 / 1/2" = 1'-0"

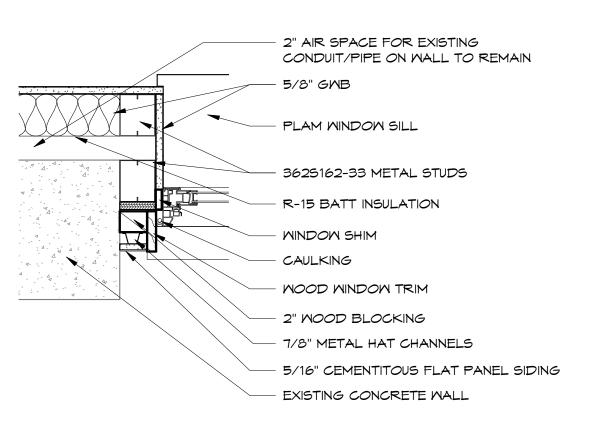
(7A) (A5.0)



CAULKING

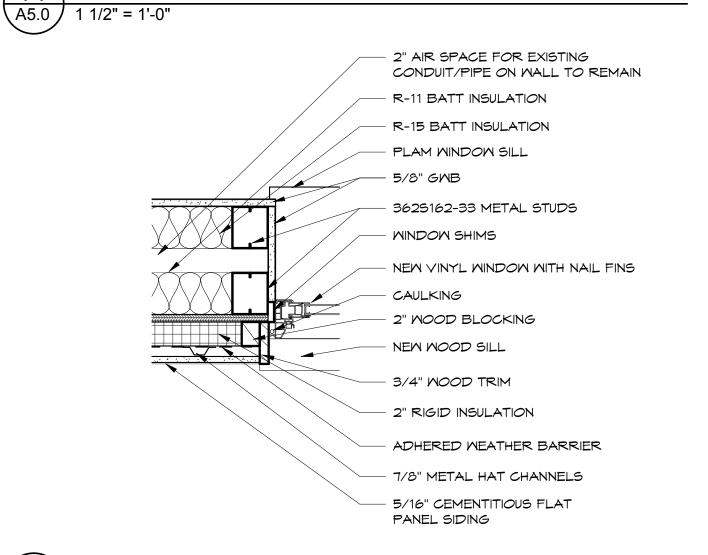
17 WINDOW INFILL SILL

A5.0 / 1 1/2" = 1'-0"





(A5.0 / 1 1/2" = 1'-0"



19 WINDOW JAMB AT WINDOW INFILL A5.0 1 1/2" = 1'-0"

Revision Schedule

# Date Description

2" AIR SPACE FOR EXISTING

CONDUIT/PIPE ON WALL TO

EXISTING CMU WALL

R-19 BATT INSULATION

- 3625162-33 METAL STUD

3625162-33 METAL TRACK

EXISTING HM DOOR FRAME

PLAM WINDOW SILL

362162-33 METAL STUDS

-VINYL WINDOW FRAME

- 5/4" CEMENTITIOUS TRIM

5/8" GNB

CAULKING

CAULKING

NEW MOOD SILL

MINDOM SHIM

REMAIN

**BID SET** 6/22/2021

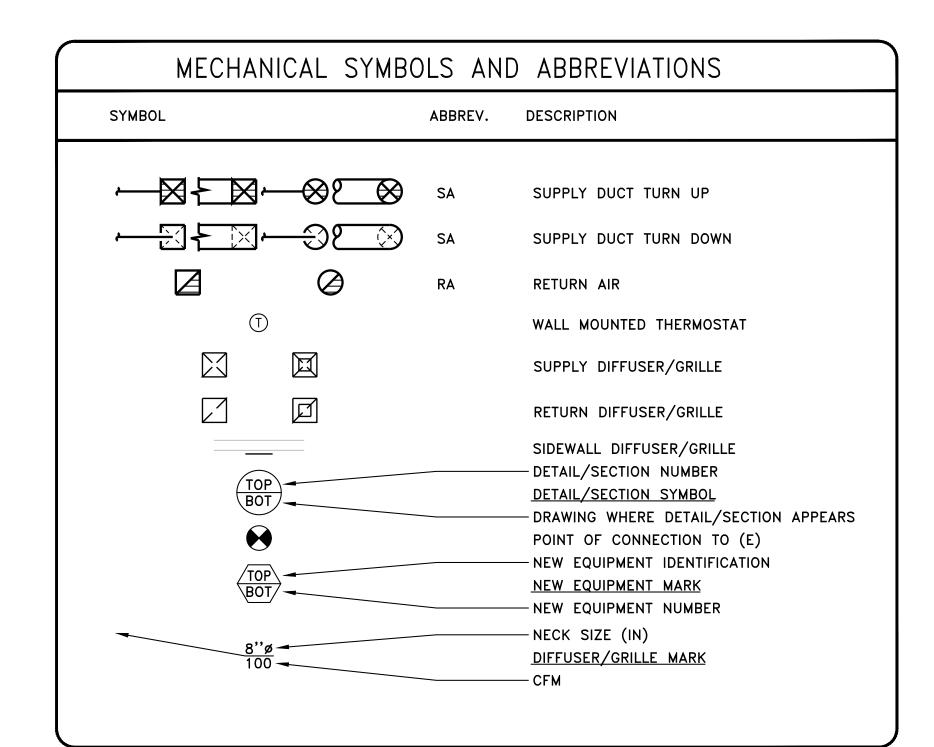
**DETAILS** 

2021-12 SHEET NO.

A5.0

			DIFFUSER, REGI	STER, AND GRILL	E SCHEDULE		
SYMBOL	TYPE	FACE	FRAME	DAMPER	FINISH	MODEL#	COMMENTS
SD-1	SUPPLY	ADJUSTABLE BLADES	S.S.	YES		PRICE 720D	12"X4"
RE-1	RETURN	FIXED LOUVER	S.S.	YES	-	PRICE 735D	24"X8"

	ELECTRIC DUCT HEATER														
SYMBOL	DESCRIPTION	SERVICE	CFM	VOLTAGE	PH.	KW	MCA	FLA	TSP	EAT	LAT	STEPS	WEIGHT	COMMENTS	
MARK									(IN WC)	(°F)	(°F)		(LBS)		
DH-1	UNIVERSAL	ERV SUPPLY DUCT	700	208	3	3.5	9.7					SCR			
NOTES:															
1	DESIGN BASIS: GREENHECK EDH-1 IDHE														
2	PROVIDE SENSOR FOR CONTROL. SET DUC	T TEMPERATURE TO 60°F SAT.													



DRAWING	INDEX
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DWG. DESCRIPTION

M1.0 MECHANICAL SCHEDULES

M2.0 CTE LAB - DEMO PLAN

M2.1 CTE LAB - HVAC PLAN

M5.1 MECHANICAL DETAIL SHEET

Revision Schedule # Date Description

**BID SET** 

06/22/2021

**MECHANICAL** SCHEDULES

2021-12

SHEET NO.

	ROOF TOP UNIT																				
SYMBOL	DESCRIPTION	SERVICE					SUPPLY						COOLING				HEATING		MINIMUM	WEIGHT	COMMENTS
MARK			CFM	VOLTAGE	PH.	HP	MCA	FLA	ESP	RPM	DRIVE	TOTAL	EAT DB/WB	LAT DB/WB	MIN.	INPUT	OUTPUT	STAGES	OSA	(LBS)	
									(IN WC)			CAPACITY (MBH)	(°F)	(°F)	EER	(MBH)	(MBH)		CFM		
RTU-1	GAS POWERED	CTE LAB	1,800	208	3	0.25	28.0	4.5	0.50	1,888	DIRECT	70	80/ 67	56/ 54	11.0	110	88	2	1,800	660	
NOTES:																					
1	DESIGN BASIS : CARRIER 48FC -M07																				

	ENERGY RECOVERY VENTILATOR																							
SYMBOL	DESCRIPTION	SERVICE				SUPPL	Y FAN							EXHAUS	TFAN				EFFE	CTIVENESS	(NOTE 1)	FILTERS	WEIGHT	COMMENTS
MARK			CFM	VOLTAGE	PH.	HP	MCA	FLA	ESP	DRIVE	CFM	VOLTAGE	PH.	HP	MCA	FLA	ESP	DRIVE	WINTER	SUMMER	SENSIBLE	TYPE	(LBS)	
									(IN WC)								(IN WC)		TOTAL	TOTAL				
ERV-1	ELECTRIC UNIT	CTE LAB	700	115	1	0.75	19.8	12.0	0.50	DIRECT	700	115	1	0.75	19.8	12.0	0.50	DIRECT	64%	66%	64%	2" MERV	484	
								·	·		·		·											

### BASED ON AHRI 1060 STANDARD CONDITIONS.

PROVIDE 100% ECONOMIZER

PROVIDE ADAPTER CURB TO LENNOX RMF16-65 ROOF CURB

2 DESIGN BASIS: GREENHECK AE-12-433-B6 3 PROVIDE CLASS 1A MOTORIZED DAMPER

- PROVIDE UNIT WITH EC MOTORS. PROVIDE MOTORIZED DAMPERS AT OSA AND EXH. INTERLOCK WITH OA AND EA DAMPERS. DAMPERS TO OPEN WHEN UNIT IS ENERGIZED.
- DESIGN BASIS: GREENHECK MINICORE-10-VG-FM

						OUTSIDE A	IR VENTILATION	I SINGLE ZONE S	YSTEMS								
	A <sub>Z</sub>				P <sub>Z</sub>	R <sub>P</sub>	R <sub>A</sub>	$V_{BZ}$	E <sub>Z</sub>	V <sub>OZ</sub>				1	NATURAL VEN	TILATION	COMMENTS
ROOM	ROOM	OCCUPANCY	OCCUPANT	CODE MAX.	ACTUAL	VENTILATION	AREA OUTDOOR	BREATHING ZONE	AIR	ZONE OUTDOOR	EXHAUST	EXHAUST	EXHAUST	YES	AREA	AREA	1
DESCRIPTION	AREA	CLASSIFICATION	DENSITY	OCCUPANCY	OCCUPANCY	FACTOR	AIR RATE	VENTILATION	DISTRIBUTION	AIRFLOW	AIRFLOW RATE	AIRFLOW RATE	AIRFLOW	OR	REQUIRED	AVAILABLE	
	(SF)		(PEOPLE/1000 SF)	(PEOPLE)	(PEOPLE)	(CFM/PERSON)	(CFM/SF)	(CFM)	EFFECTIVENESS	(CFM)	(CFM/SF)	(CFM/UNIT)	(CFM)	NO	(SF)	(SF)	
CAD ROOM	2,031	EDUCATION - COMPUTER LAB	25	51	30	10	0.12	544	0.8	680	0.00	0	0	NO	N/A	0	
OFFICE	114	OFFICE - OFFICE SPACE	5	1	1	5	0.06	12	0.8	15	0.00	0	0	NO	N/A	0	
STORAGE 1	154	MISCELLANEOUS	0	0	0	0	0.00	0	0.8	0	0.00	0	0	NO	N/A	0	
SYSTEMS SERVING ROOMS:	1		•	•					•							•	•
OSA FLOW RATE (CFM) V <sub>OT</sub> :	695																

EXH FLOW RATE (CFM):

1 VENTILATION CALCULATION PERFORMED PER THE 2019 OREGON MECHANICAL SPECIALTY CODE

2 ACTUAL OCCUPANCY PER STUDENT CLASS SIZE

1. THE BUILDING HAS A BMS PROVIDED BY DELTA

**CONTROLS NOTES:** 

CONNECTS. THE GC/MC ARE TO PROVIDE AND COORDINATE THE INSTALLATION OF NEW WORK WITH DELTA CONNECTS. CONTACT INFORMATION: MATT AXTELL, 206-730-5671, MAXTELL@DELTACONNECTS.COM

2. CONTROLS CONTRACTOR IS TO PROVIDE ALL NECESSARY EQUIPMENT, SENSORS, WIRING, AND THE LIKE FOR A COMPLETE FUNCTIONING SYSTEM.

3. EXISTING RTU CONTROL POINTS AND SEQUENCE OF OPERATIONS ARE TO REMAIN.

4. ERV IS TO OPERATE DURING ALL OCCUPIED HOURS AS SET BY THE BMS OCCUPANCY SCHEDULE. ON PROOF OF DAMPERS OPENING THE ERV WILL BE ENABLED. DAMPER ACTUATORS ARE TO BE CONTROLLED BY THE

5. PROVIDE A SAT SENSOR IN ERV SUPPLY DUCT, DOWNSTREAM OF THE ELECTRIC DUCT HEATER, TO MONITOR SAT THROUGH THE BMS. IF TEMPERATURE FALLS BELOW 45 DEG F SINGLE ALARM AND SHUTDOWN ERV AND CLOSE DAMPERS.

Revision Schedule

KEYED NOTES:

1. REMOVE UNIT HEATERS AND CAP EXISTING HYDRONIC PIPING. SAVE EXISTING UNIT HEATERS FOR MAINTIANCE AS PARTS FOR UNIT HEATERS IN OTHER ROOMS.

2. REMOVE ROOF TOP UNIT, AND GAS PIPE FROM EXISTING UNIT IN PREPARATION FOR NEW RTU. PATCH

3. EXISTING HWS AND HWR ARE TO REMAIN UP HIGH IN JOIST SPACE TO SERVE OTHER ROOM HYDRONIC UNIT HEATERS.

4. EXISTING DUCT WORK IS TO REMAIN FOR USE WITH NEW RTU.

5. EXISTING EGG CRATE RETURN AND SUPPLY DUCT DROP TO REMAIN FOR USE WITH NEW RTU.

CONTROLS FROM THE EXISTING RTU ARE TO REMAIN FOR USE WITH THE NEW RTU.

EXISTING GRILLES TO BE REMOVED IN PREPARATION FOR NEW GRILLES.

8. EXISTING GRILLES TO BE REMOVED,
HOLE IN WALL TO BE PATCHED.
EXISTING 12"X10" DUCT TO BE

20"X18" DUCT TRANSITION.

REMOVED AND CAPPED AT EXISTING

NEW RTU.

AND REPAIR ROOF AS NEEDED WITH



## 06/23/2021

**BID SET** 06/22/2021

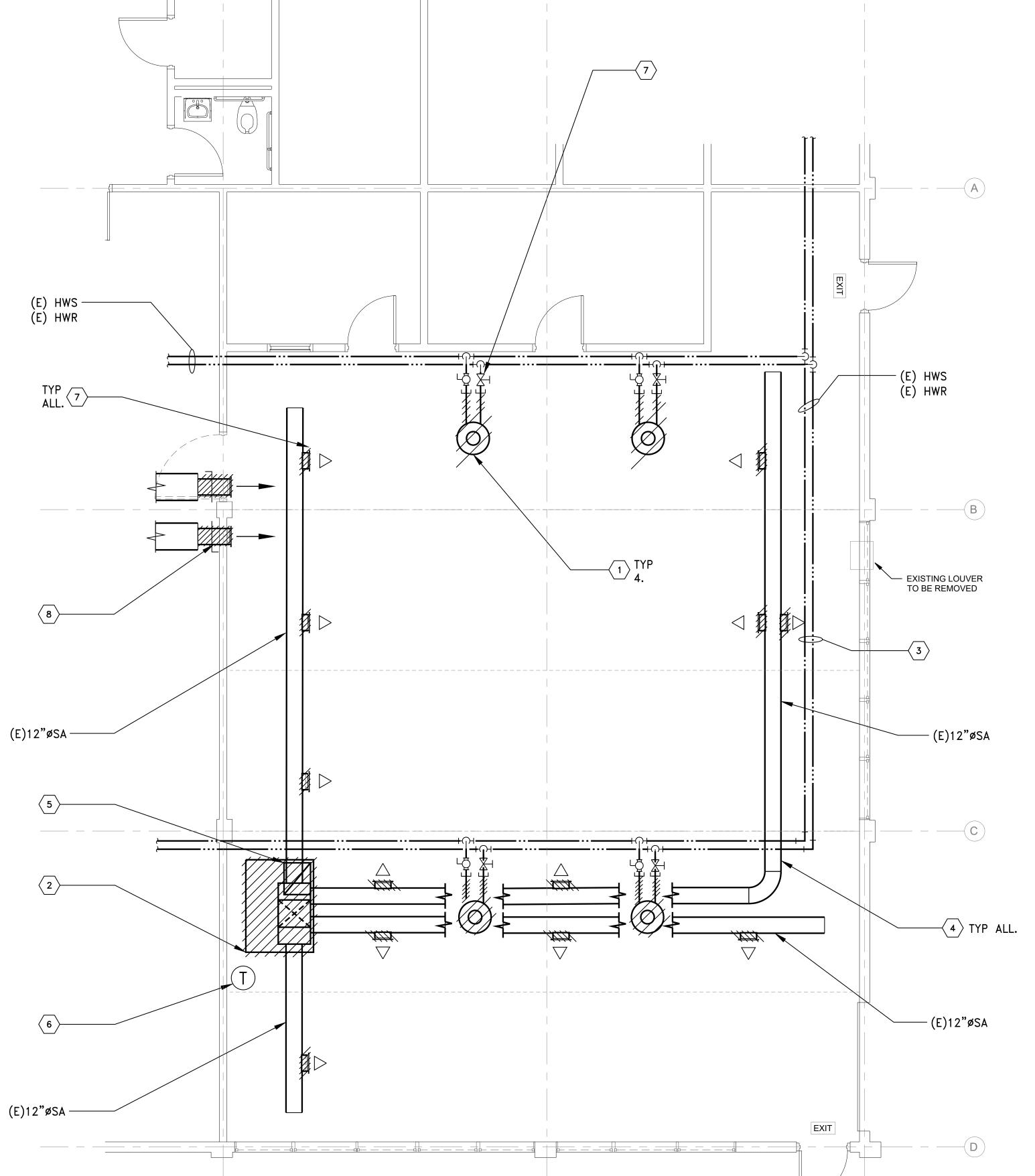
SHOP DEMO PLAN

2021-12

SHEET NO.

6915 S MACADAM AV SUITE 20 PORTLAND, OREGON 9721 PHONE: (503) 892-118

CONTACT: RICK DUSA/ZACH SICHLEY ENGINEERING@MKE-INC.COM MECHANICAL AND ELECTRICAL SYSTEMS





10. ERV-1 TO BE INSTALLED AT A HEIGHT OF 9' 11" ABOVE FINISHED FLOOR. 11. CUT HOLE IN EXISTING DUCT. ADD EXTRUSION TO

ERV TO BE IN CEILING SPACE, SUPPORTED BY STRUT ACROSS JOIST.

**GENERAL NOTES:** 

A. EXISTING ROOF HAS TECTUM DECK. SUPPORT DUCT FROM UNI-STRUT SPANNING JOISTS

B. RECONNECT (E) GAS ON ROOF TO NEW RTU-1.

KEYED NOTES:

OPERATION.

1. MOUNT NEW RTU ON ADAPTER CURB.

2. EXISTING WALL MOUNTED SENSOR. CONTROLS CONTRACTOR TO INSTALL NEW CONTROLS AND MAINTAIN EXISTING POINTS AND SEQUENCE OF

ROUTE DUCTWORK FROM ERV THROUGH CROSS BRACING.

INTERNALLY LINE DUCT TO REDUCE NOISE IN CLASSROOM.

6. OUTSIDE AIR INTAKE IS TO BE 10' FROM HOOD EXHUASTS.

7. ROOF HOOD TO PROVIDE OUTSIDE AIR INTAKE TO ERV UNIT.

8. ROOF HOOD TO PROVIDE EXHUAST FROM THE ERV UNIT.

4. DUCT TO BE INSTALLED ABOVE NEW WALL ADDITION.

12. NEW ROOF CURB ADAPTER TO BE PLACED ON EXISTING ROOF CURB.

MATCH EXISTING FOR NEW SUPPLY GRILLE.

**BID SET** 06/22/2021

SH

SHOP HVAC PLAN

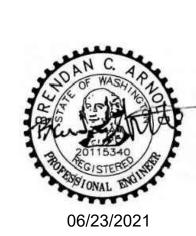
2021-12

SHEET NO.

6915 S MACADAM AVE PORTLAND, OREGON 97. PHONE: (503) 892-CONTACT: RICK DUSA/ZACH SICHLEY ENGINEERING@MKE-INC.COM MECHANICAL AND ELECTRICAL SYSTEMS

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

Revision Schedule



06/22/2021

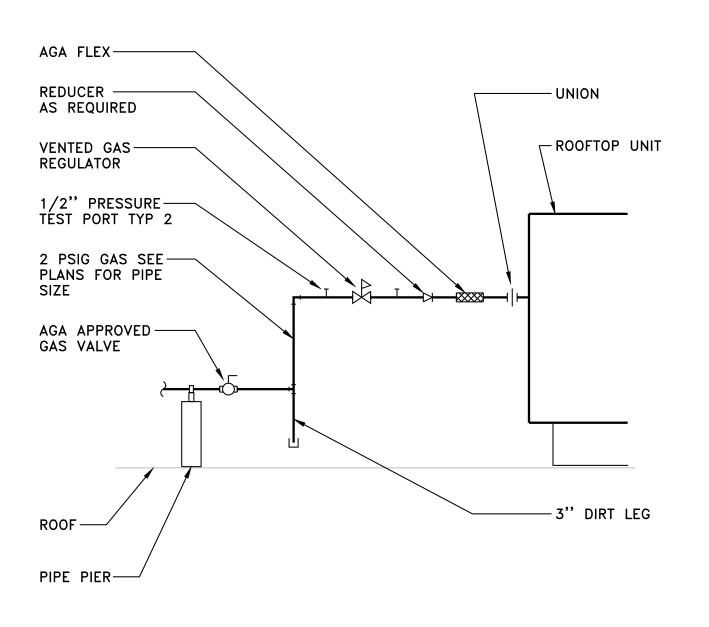
**BID SET** 

MECH DETAILS

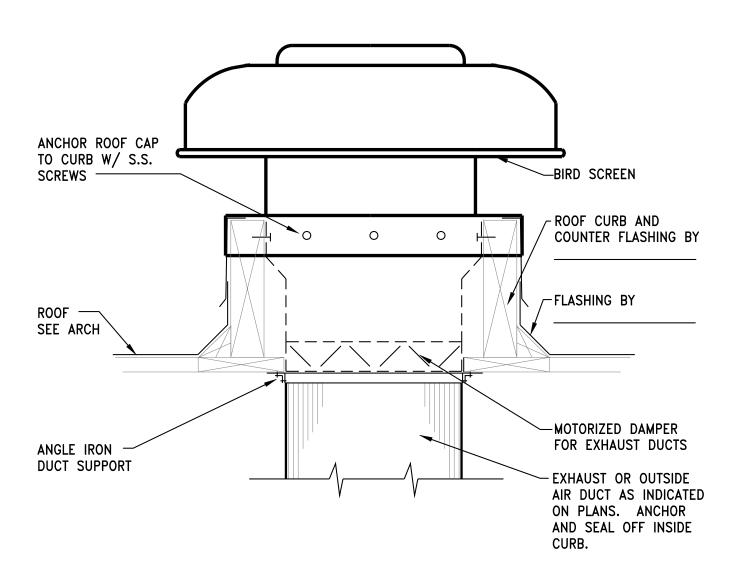
M5.1

2021-12 SHEET NO.

6915 S MACADAM AVE SUITE 200 PORTLAND, OREGON 97219 PHONE: (503) 892-1188 CONTACT: RICK DUSA/ZACH SICHLEY ENGINEERING@MKE-INC.COM MECHANICAL AND ELECTRICAL SYSTEMS

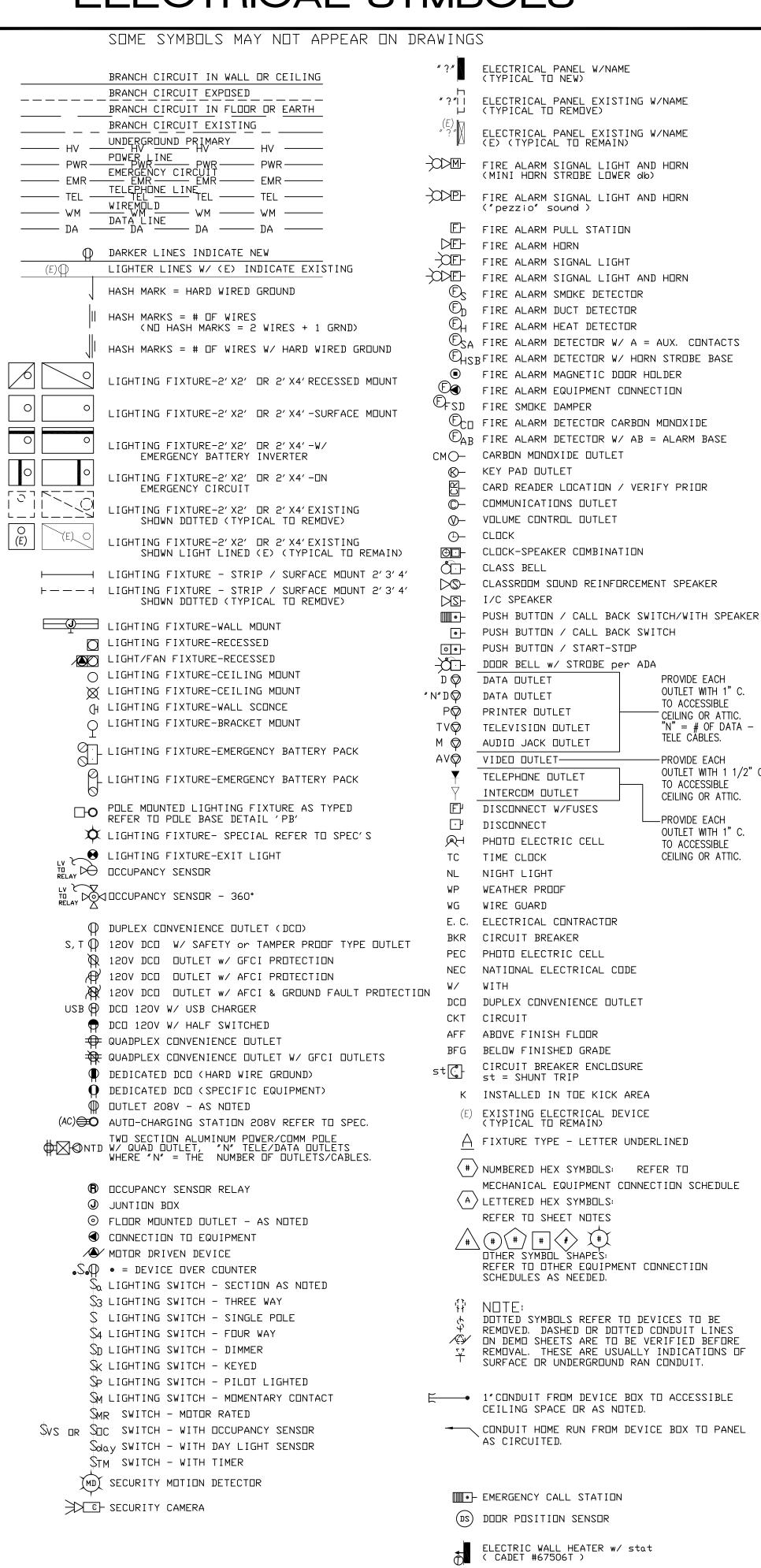


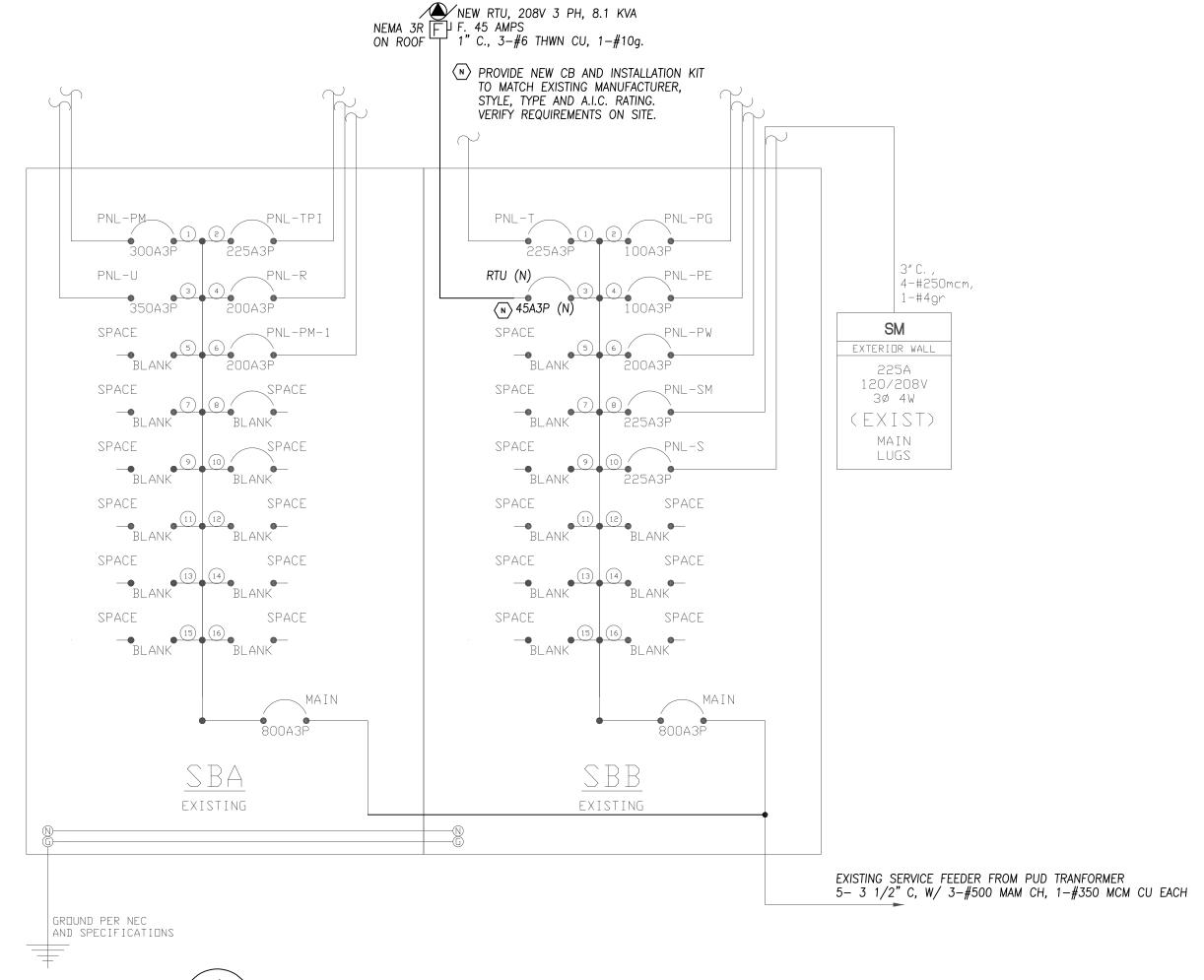




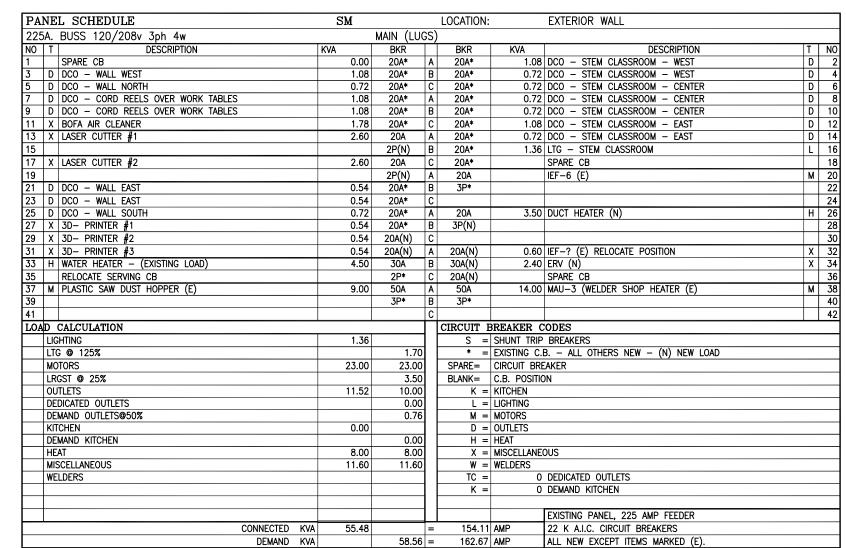
2 DETAIL - ROOF HOOD M5.1 SCALE: N.T.S. MDA09

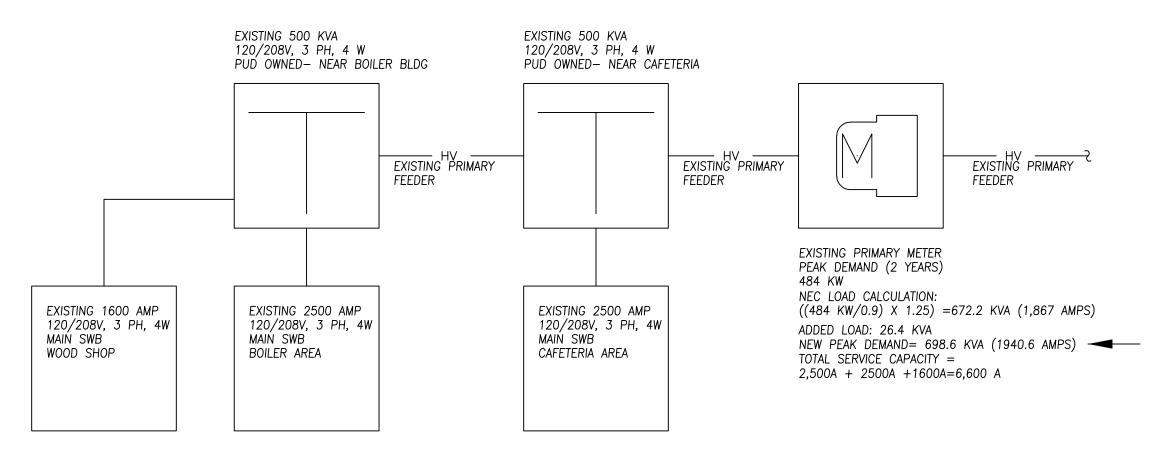
### ELECTRICAL SYMBOLS





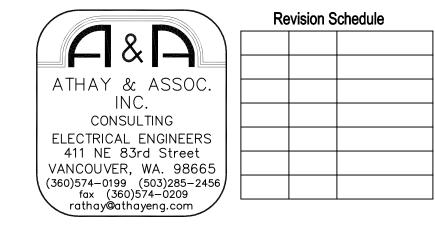
1 MARK MORRIS HIGH SCHOOL SHOPS ONE LINE DIAGRAM E0.1 scale: n.t.s.



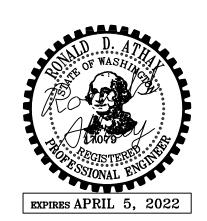


1 MARK MORRIS HIGH SCHOOL CAMPUS ONE LINE DIAGRAM E0.1) scale: N.T.S.

		Ŋ	MECHANI (	CAL	EQUIP	MENT C	ONNECTION	SCHEDULE	
HEX	DESCRIPTION	HP	KVA	PH.	VOLTS	C.	WIRE+GND	CIRCUIT	REMARKS
1	RTU-1		8.1	3	208V	1"	#6	SBB-3	
2	ERV-1		2.4	1	120	3/4"	#10	SM-34	
3	DH-1		3.5	3	208V	3/4"	#10	SM-26,28,30	
4									
5		·							
6									



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LONGVIEW, WA 98632
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LPS - MARK MORRIS SHOP CLASSROOM REMODE

> BID SET 06-22-2021

ELEC SYMBOLS & ONELINE DIA.

2021-12

SHEET NO.

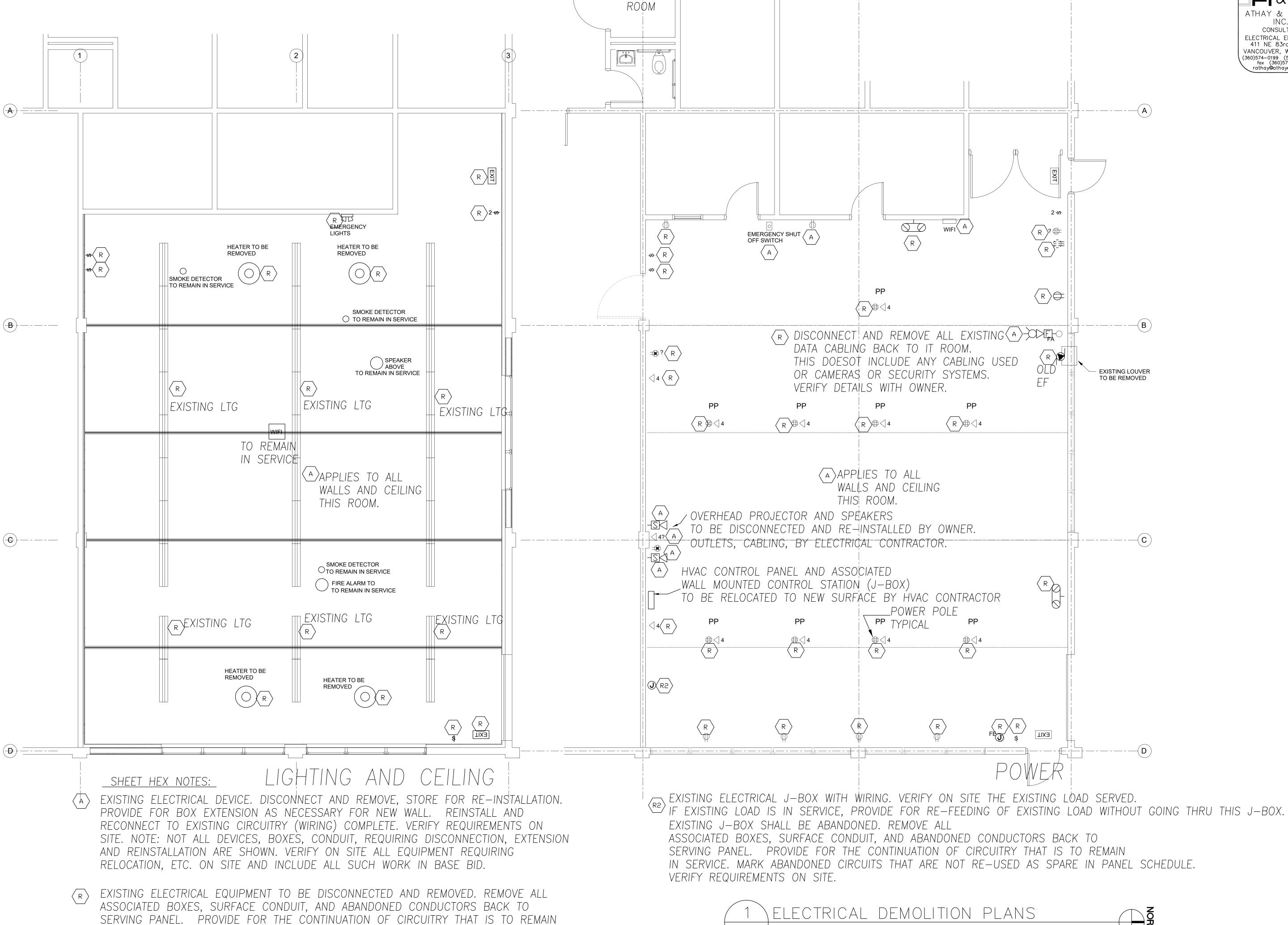
0.1

FLOOR DEMO PLAN

2021-12

SHEET NO.

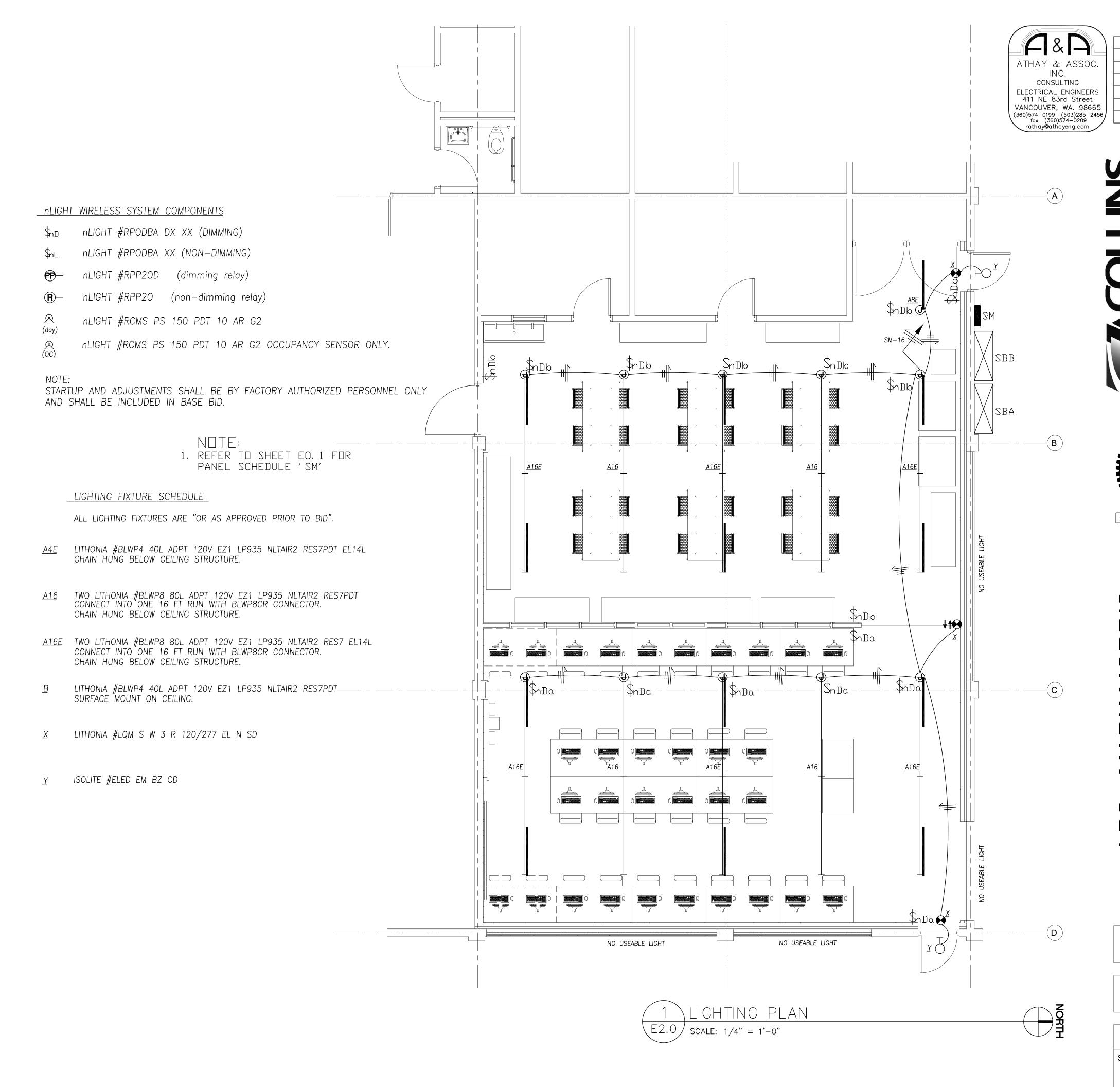
E1.0



IN SERVICE. MARK ABANDONED CIRCUITS THAT ARE NOT RE-USED AS SPARE IN PANEL SCHEDULE.

VERIFY REQUIREMENTS ON SITE.

E1.0 / SCALE: 1/4" = 1'-0"



MORNEW, WA 98632

**Revision Schedule** 

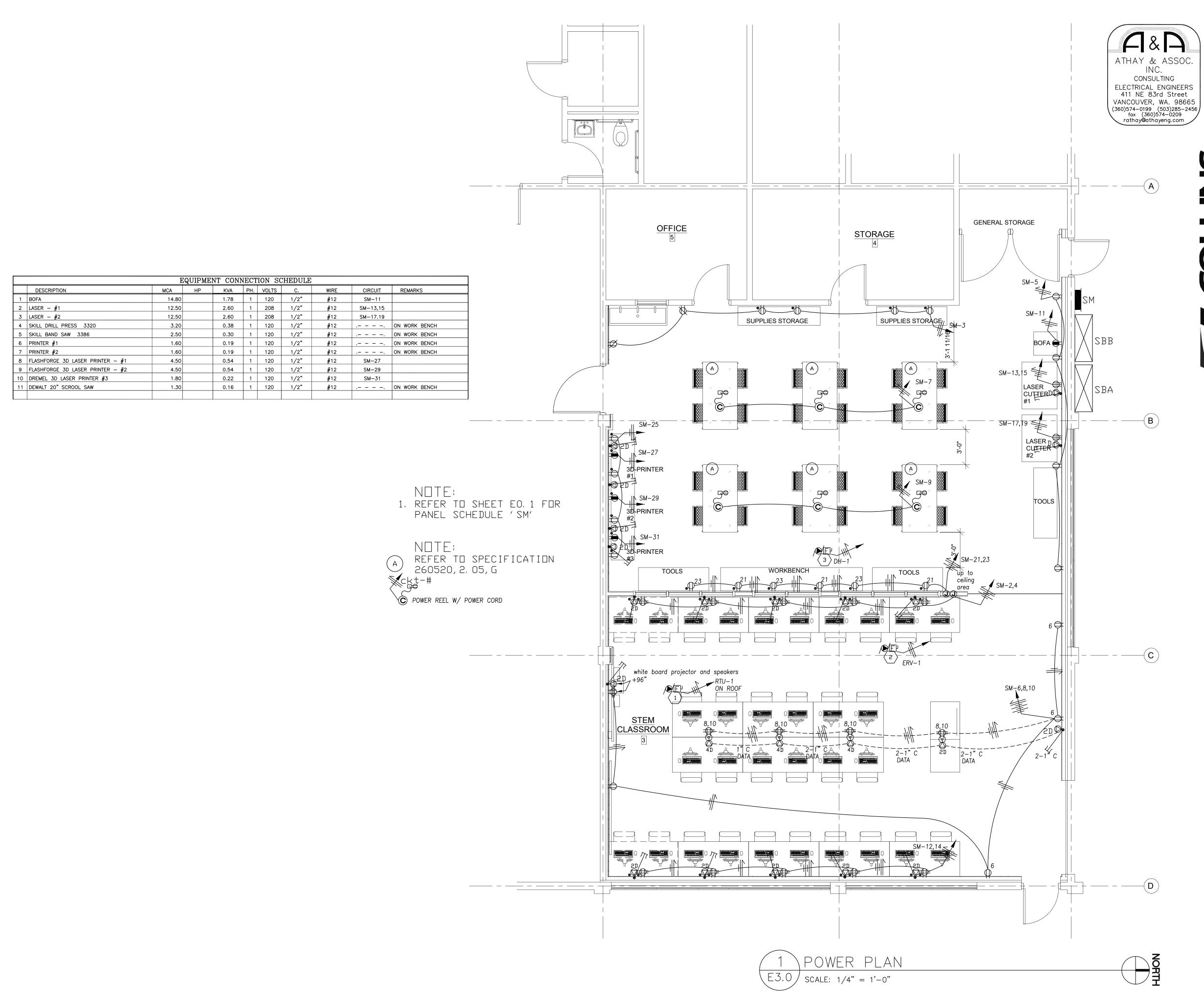
LIGHTING

BID SET

06-22-2021

2021-12 SHEET NO.

E2.0



MORNEW, WA 98632

**Revision Schedule** 

06-22-2021

BID SET

ELECTRICAL POWER

2021-12 SHEET NO.

E3.0