ALSEA SCHOOL DISTRICT

ISSUE: 9-21-22

K-12 BUILDING HVAC UPGRADE
BID & PERMIT ISSUE

PHASE 1c.9 / 2c.22

SHEET SCHEDULE:

PROJECT SCOPE NARRATIVE:

This project will include HVAC upgrades to the existing K-12 building for the Alsea School District. Currently the K-12 building is heated by an end of life fuel oil boiler. The existing shop and technology classroom has an updated HVAC system and will not be included in this project. Demolition of the boiler, boiler room, and associated existing heating system components (radiators, wall units, etc.) will not be part of this project.

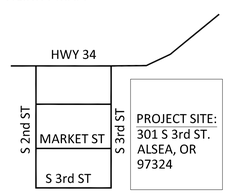
The new scope of work will include removal and replacement of the gymnasium RTU & associated ducting, and installation of Mini-split units (Fan coil & heat pump units) at classrooms and ancillary spaces as defined on the drawings.

Please note that the School campus is undergoing a building wide power upgrade which includes new panels and utility transformer. Electrical work shown on the drawings indicate scope of power work as they relate to this and other ongoing projects.

DEFERRED SUBMITTALS:

1. None

VICINITY MAP:



OWNER:

Address:

ALSEA SCHOOL DISTRICT
301 SOUTH 3rd STREET
ALSEA, OREGON 97324

CONSTRUCTION MANAGER (CM/GC):

Address:

CB Construction
1202 Adams Avenue
LaGrande, Oregon 97850

Contact:
Derek Howard
Office: 541.786.5315
Email: dhoward@cbconst.us

ARCHITECT:

Address:

STRAIGHTLINE Architects
4521 South Cloverdale Road
Suite 102
Boise, Idaho 83709

Contact:
Scott Marshall, AIA - NCARB, Principal
Office: 208.991.0855
Email: Scott@Straightline.biz

ELECTRICAL ENGINEER:

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Meridian, Idaho 83642

Contact:
Jon Van Stone, PE. Principal
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Email: jvanstone@e2co.com

MECHANICAL ENGINEER:

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VALUE ENGINEERING INC.
1406 N. Main Street, Suite 107
Meridian, ID 83642

Contact:
Tyson McFall, P.E., Principal
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Email: Tyson@v-engineering.com

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CBSE STRUCTURAL ENGINEERING
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SCOTT A. MARSHALL
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5794
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STATE OF OREGON

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ALSEA SCHOOL DISTRICT
1c9-2c22: K-12 BUILDING HVAC UPGRADE

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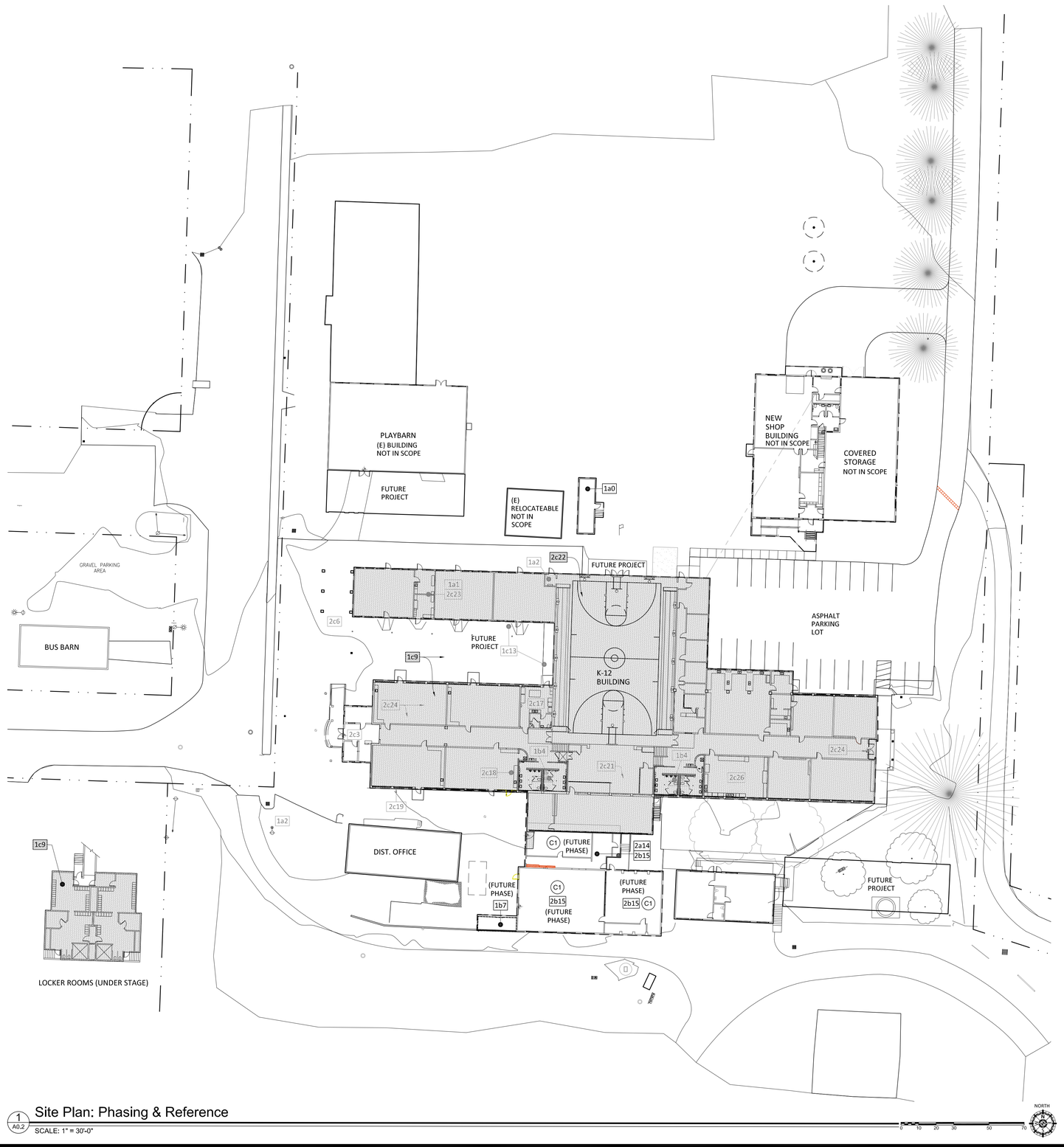
Date: 9-21-2022
Project: ALS-1821
Version History: V1.0
PHASES (PH):

BID & PERMIT SET

DRAWING NO.
A0.0
Cover sheet



1 A0.2 Site Plan: Phasing & Reference

SCALE: 1" = 30'-0"

General Notes

APPLICABLE TO THIS SHEET ONLY

1 - see Architectural Site Plan sheets for site details and grading.

2 - see Architectural Site Plan for existing & new topography.

3 - see Architectural Site Plan & electrical sheets for site lighting, underground sleeves, conductors & electrical conduits.

4 - landscape irrigation contractor shall provide sleeves for underground irrigation system

(X")	Height Above Fin. Floor
(TYP)	Typical (x)=#
(NIC)	Not in Contract
(UNO)	Unless Noted Otherwise
(#)	Number or Quantity

Legend

HATCHED AREAS:

AREAS HATCHED ON THIS SHEET SHOW AREAS OF NEW & EXISTING BUILDINGS IN THE SCOPE OF THIS DOCUMENT. ENLARGED SITE PLAN (AS REFERENCED) SHOW REQUIRED SITE WORK IN THIS SCOPE AS DEFINED.

Phasing Narrative & Notation

DATES BELOW REFLECT CONSTRUCTION START TIMES.
SEE 'BOND PROJECT SCHEDULE' FOR OVERALL PROJECT DURATIONS

ALL EXISTING & NEW CONSTRUCTION LISTED BELOW IS GRAPHICALLY SHOWN ON THIS PLAN FOR REFERENCE PURPOSES ONLY

COMPLETED PHASES:

- 1a1 SCOPE EXISTING SEWER
- 1b4 STUDENT TOILET REMODELS
- 1a0 NEW ADMINISTRATION RELOCATEABLE

PHASES UNDER REVIEW / CONSTRUCTION

- 1b7 NEW PANEL ROOM
- 1a3 NEW VOC / CTIL SHOP
- 1a2 NEW POWER SERVICE CONSTRUCTION
- 1c9 HVAC CLASSROOM & GYMNASIUM UPGRADES
- 2a14 OLD BOILER ROOM DEMOLITION
- 2c18 CONNECTION HALL THRU CLASSROOM
- 2b15 CAFETERIA & KITCHEN RE-PURPOSE
- 2c26 OLD KITCHEN CLASSROOM RE-PURPOSE

Phase Coordination Notes

Applicable to this Sheet only

NOTE: THE FOLLOWING NOTES APPLY TO FUTURE / ONGOING PHASED WORK THAT MAY IMPACT OR REQUIRE COORDINATION WITH THE CURRENT PHASE OF WORK.

(C1) FUTURE HVAC SYSTEM - TO BE INSTALLED DURING CAFETERIA & KITCHEN RE-PURPOSE PROJECT 2b.15

REGISTERED ARCHITECT
SCOTT A. MARSHALL
BOISE, IDAHO 5794
STATE OF OREGON

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1c9-2c22: K-12 BUILDING HVAC UPGRADE

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Version History: V1.0

PHASES (PH):

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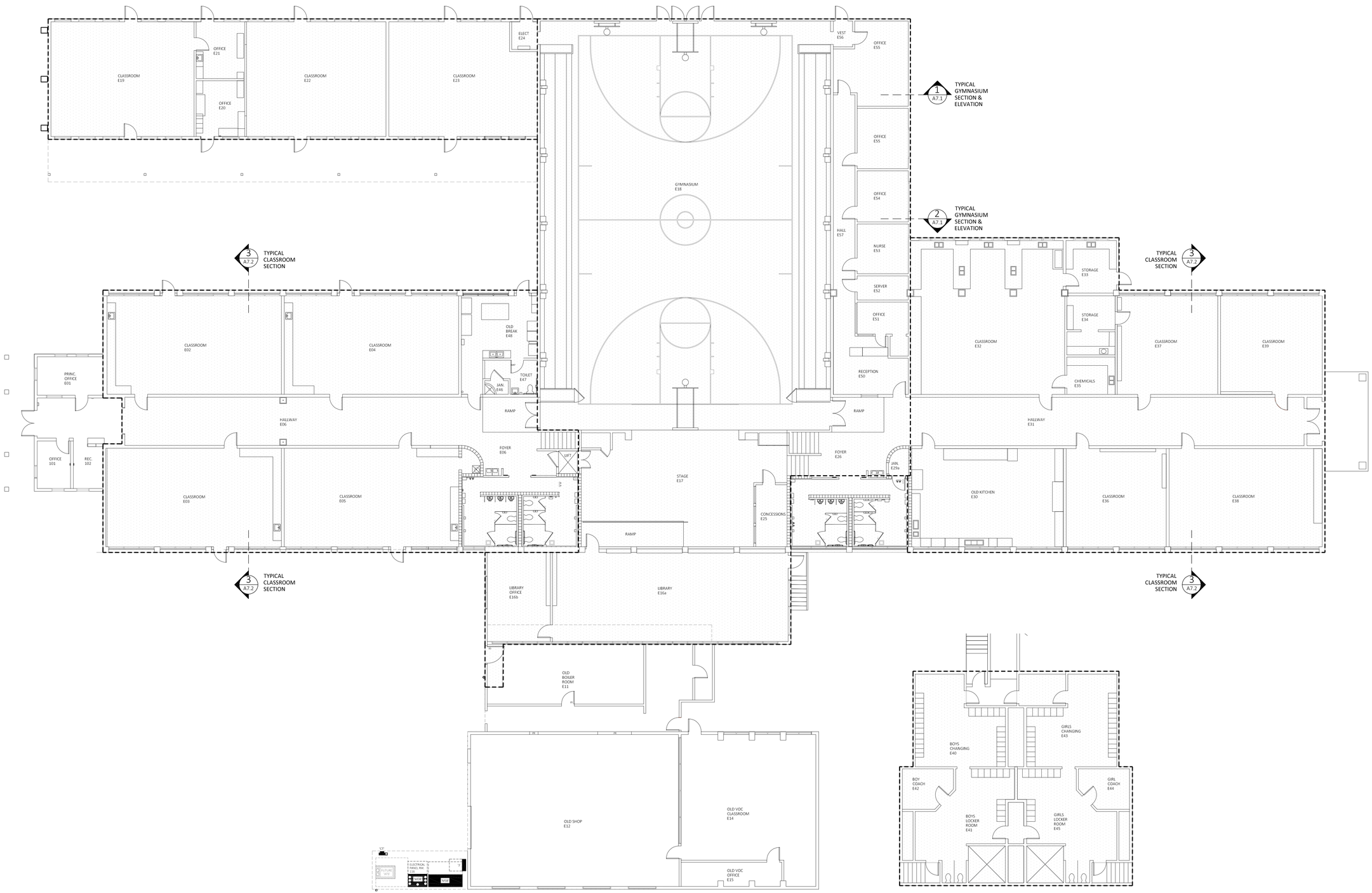
DRAWING NO.
A0.1
HVAC UPGRADE
PHASING SITE PLAN



1 A2.1 Overall Main Floor Plan
SCALE: 3/32" = 1'-0"

2 A2.1 Lower Floor Plan - Locker Rooms
SCALE: 3/32" = 1'-0"

REGISTERED ARCHITECT
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Scott Marshall
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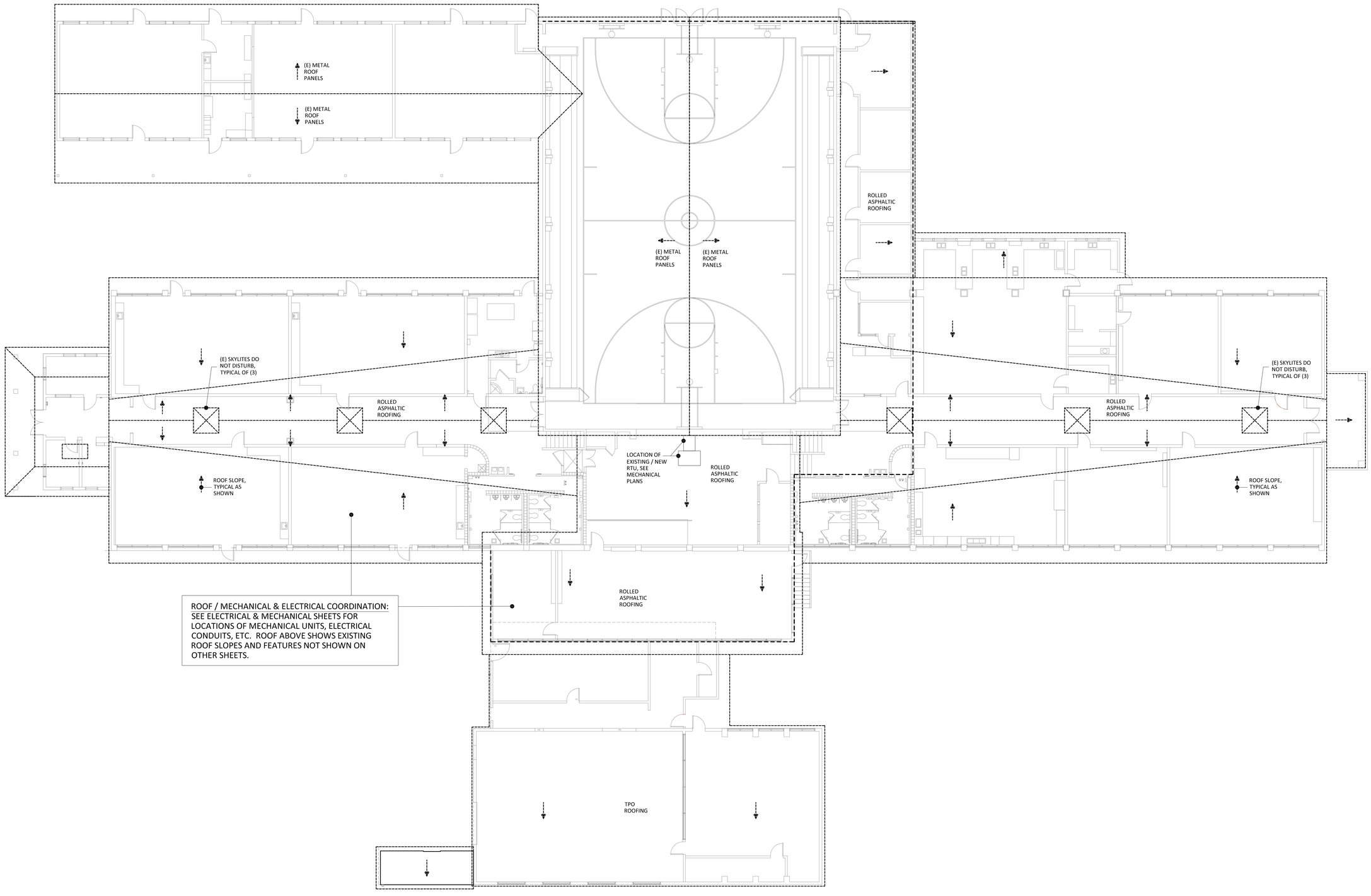
DRAWING NO.
A2.1
OVERALL FLOOR PLAN



ROOF / MECHANICAL & ELECTRICAL COORDINATION:
SEE ELECTRICAL & MECHANICAL SHEETS FOR LOCATIONS OF MECHANICAL UNITS, ELECTRICAL CONDUITS, ETC. ROOF ABOVE SHOWS EXISTING ROOF SLOPES AND FEATURES NOT SHOWN ON OTHER SHEETS.

1 / A3.0 Overall Roof Plan
SCALE: 3/32" = 1'-0"

REGISTERED ARCHITECT
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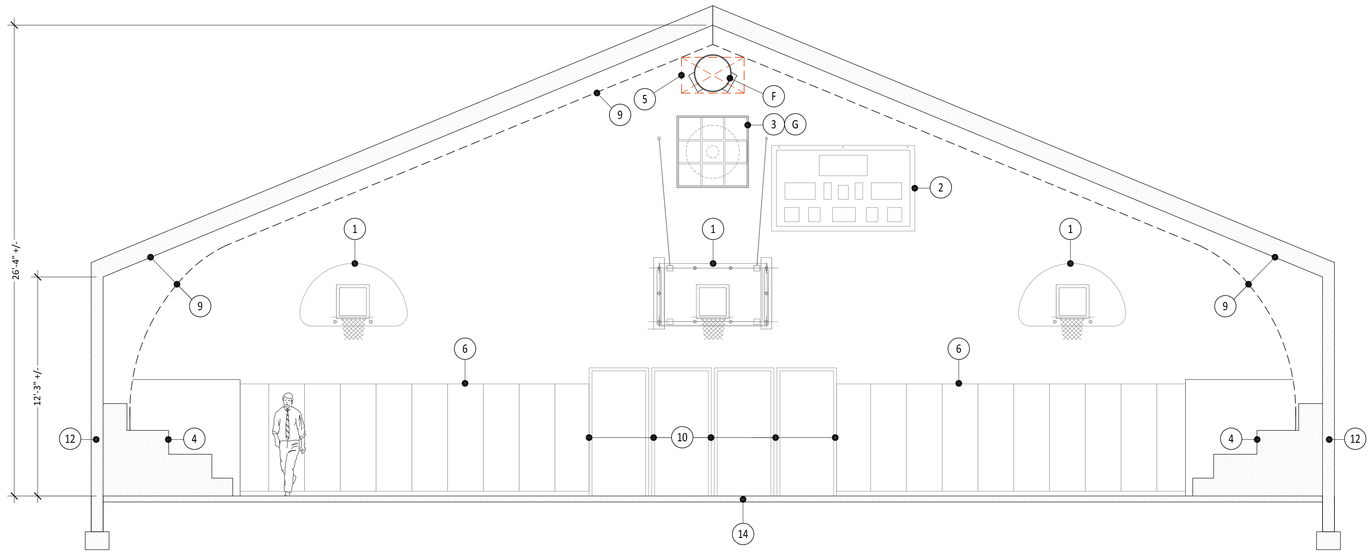
BID & PERMIT SET

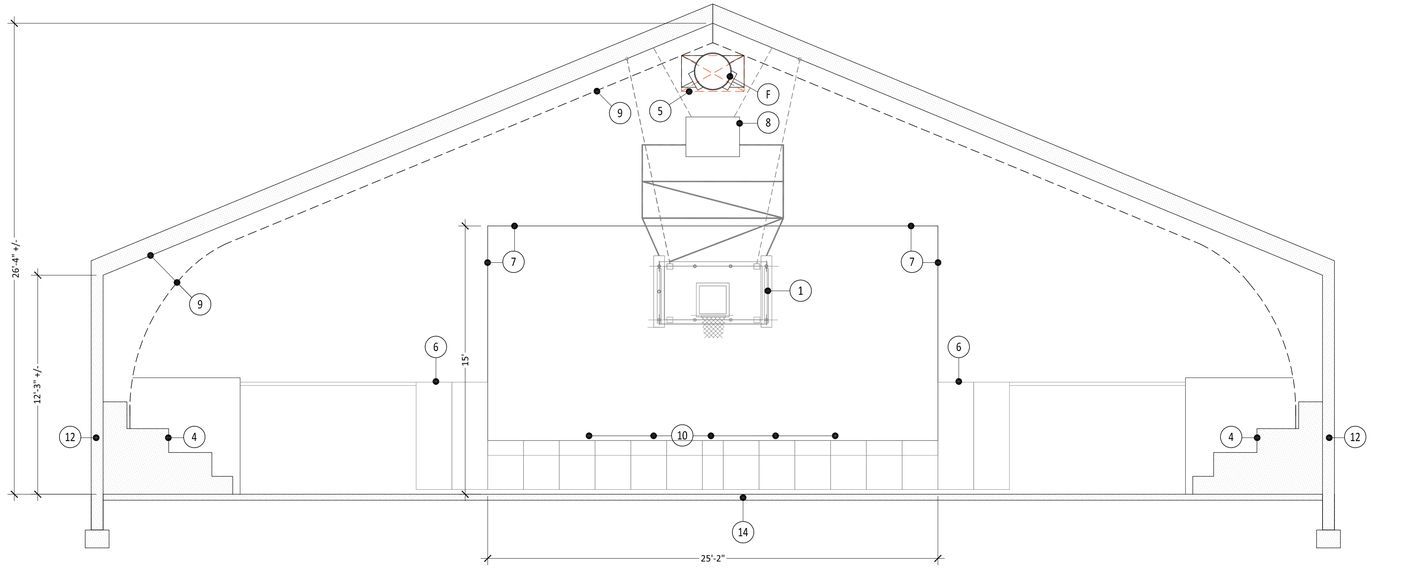
DRAWING NO.
A3.1
OVERALL ROOF PLAN



1 A7.1 North Gymnasium Section / Interior Elevation

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

0 5 10 15



2 A7.1 South Gymnasium Section / Interior Elevation

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

0 5 10 15

General Notes

1. BUILDING ELEMENTS NOT NOTATED SHALL REMAIN UNDISTURBED.

2. ANY CHANGES OR MODIFICATIONS TO THE PROJECT DURING CONSTRUCTION SHALL BE APPROVED BY ARCHITECT PRIOR TO WORK BEING DONE, AND SHALL BE RECORDED ON THE CONTRACTORS AS-BUILT DRAWINGS.

3. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK ENVIRONMENT AS STATED IN THE PROJECT MANUAL.

4. THE CONTRACTOR SHALL PAY FOR AND INCLUDE IN HIS BID ALL REQUIRED CONSTRUCTION PERMITS EXCEPT FOR THE OVERALL BUILDING PERMIT WHICH SHALL BE PAID BY THE OWNER.

GENERAL ABBREVIATIONS:

(N)	New
(D)	Demolish
(E)	Existing
(X')	Height Above Fin. Floor
(TYP)	Typical (x)=#
(NIC)	Not in Contract
(UNO)	Unless Noted Otherwise
(X)	Number or Quantity

(XX) KEYED / REFERENCE NOTE

(X / XX) DETAIL REFERENCE NOTE

(X / X) BUILDING SECTION NOTE

Reference Notes

Applicable to this Sheet Only

NOTE: DEMOLITION SHOWN IS PRESCRIPTIVE IN NATURE - IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL REQUIRED DEMOLITION TO ACCOMPLISH THE COMPLETED NEW OR REMODELED CONDITION SHOWN ON THE PROJECT DOCUMENTS.

EXISTNG & DEMOLITION

1. (E) BASKETBALL HOOPS - DO NOT DISTURB
2. (E) SCOREBOARD - DO NOT DISTURB
3. (E) EXHAUST FAN - DO NOT DISTURB, CONFIGURE NEW CONTROLS AS PER MECH. DRAWINGS.
4. (E) LINE OF BLEACHERS - DO NOT DISTURB
5. (D) HVAC DUCT - DEMOLISH EXISTING GYMNASIUM DUCT & READY FOR REPLACEMENT, SEE MECHANICAL DRAWINGS.
6. (E) WALL PADS - DO NOT DISTURB
7. (E) STAGE OPENING - AS GRAPHICALLY SHOWN.
8. (E) SPEAKER - CEILING HUNG, REMOVE AND REINSTALL AS REQUIRED FOR NEW HVAC WORK.
9. (E) LINE OF ROOF STRUCTURE - AS GRAPHICALLY SHOWN.
10. (E) EXTERIOR DOORS - AS GRAPHICALLY SHOWN.
11. (E) WINDOWS - DO NOT DISTURB
12. (E) WALLS - CAST IN PLACE CONCRETE, AS SHOWN
13. (E) ROOF STRUCTURE - WOOD MAIN BEAMS & WOOD PURLINS, AS SHOWN.
14. (E) FLOOR SLAB - AS SHOWN

NEW & RENNOVATED

- A. (N) ROOF TOP CONDENSERS - WITH UNIT STANDS, SEE MECHANICAL PLANS
- B. (N) HVAC HEAD UNITS - AS SHOWN, LOCATE AND MOUNT AS PER MECHANICAL SHEETS.
- C. (N) HVAC LINE SETS - LOCATE AS PER MECHANICAL SHEETS
- D. (N) CONDENSATE LINE - MOUNT ALONG WALL, SLOPE $\frac{1}{8}$" TYP. TO EXTERIOR WALL
- E. CORE DRILL CONC. WALL - AS SHOWN / REQUIRED FOR CONDENSATE LINE, CAULK IN PLACE
- F. (N) MAIN DUCT - MOUNT TIGHT TO STRUCTURE, AT GYM, SEE MECHANICAL PLANS FOR CONFIGURATION
- G. (N) INTERLOCKED CONTROLS - AT EXISTING FAN, SEE MECHANICAL PLANS
- H. (N) ROOFING PENETRATION - PROVIDE BOOT AND OR CAP AS REQUIRED FOR ROOFING TYPE.

REGISTERED ARCHITECT
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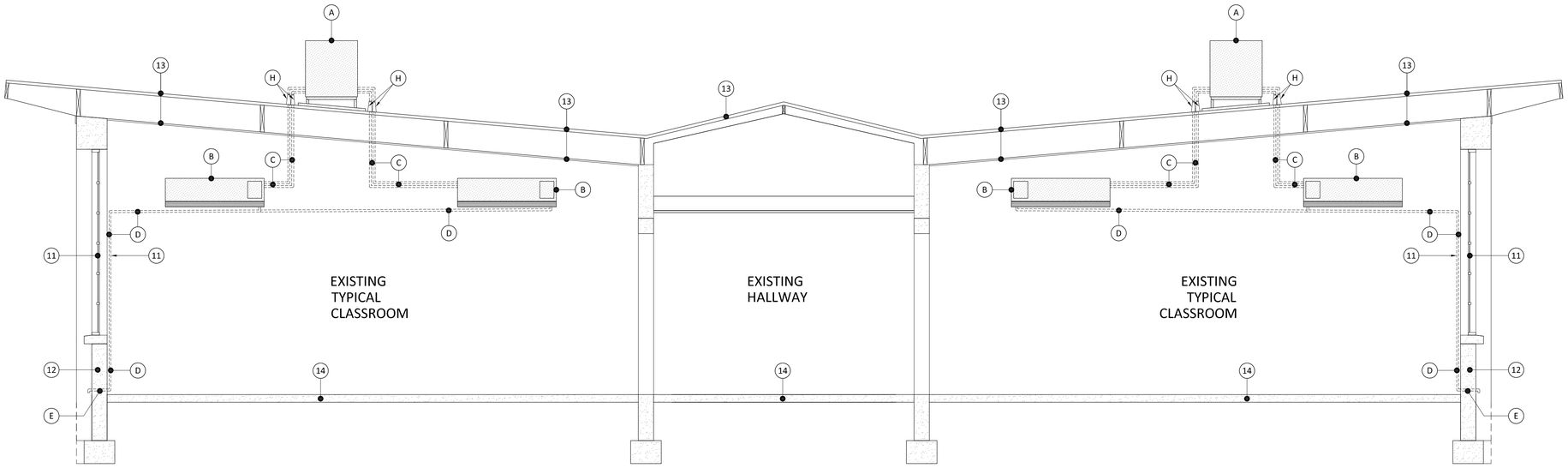
A7.1

WALL SECTIONS & INTERIOR ELEVATIONS AT GYMNASIUM



3 A7.2 Typical Classroom Secton

SCALE: 3/8" = 1'-0"

General Notes

1. BUILDING ELEMENTS NOT NOTATED SHALL REMAIN UNDISTURBED.

2. ANY CHANGES OR MODIFICATIONS TO THE PROJECT DURING CONSTRUCTION SHALL BE APPROVED BY ARCHITECT PRIOR TO WORK BEING DONE, AND SHALL BE RECORDED ON THE CONTRACTORS AS-BUILT DRAWINGS.

3. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK ENVIRONMENT AS STATED IN THE PROJECT MANUAL.

4. THE CONTRACTOR SHALL PAY FOR AND INCLUDE IN HIS BID ALL REQUIRED CONSTRUCTION PERMITS EXCEPT FOR THE OVERALL BUILDING PERMIT WHICH SHALL BE PAID BY THE OWNER.

GENERAL ABBREVIATIONS:

(N)	New
(D)	Demolish
(E)	Existing
(X")	Height Above Fin. Floor
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(XX) KEYED / REFERENCE NOTE

(X / XX) DETAIL REFERENCE NOTE

(X / X) BUILDING SECTION NOTE

Reference Notes

Applicable to this Sheet Only

NOTE: DEMOLITION SHOWN IS PRESCRIPTIVE IN NATURE - IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL REQUIRED DEMOLITION TO ACCOMPLISH THE COMPLETED NEW OR REMODELED CONDITION SHOWN ON THE PROJECT DOCUMENTS.

EXISTNG & DEMOLITION

1. (E) BASKETBALL HOOPS - DO NOT DISTURB
2. (E) SCOREBOARD - DO NOT DISTURB
3. (E) EXHAUST FAN - DO NOT DISTURB, CONFIGURE NEW CONTROLS AS PER MECH. DRAWINGS.
4. (E) LINE OF BLEACHERS - DO NOT DISTURB
5. (D) HVAC DUCT - DEMOLISH EXISTING GYMNASIUM DUCT & READY FOR REPLACEMENT, SEE MECHANICAL DRAWINGS.
6. (E) WALL PADS - DO NOT DISTURB
7. (E) STAGE OPENING - AS GRAPHICALLY SHOWN.
8. (E) SPEAKER - CEILING HUNG, REMOVE AND REINSTALL AS REQUIRED FOR NEW HVAC WORK.
9. (E) LINE OF ROOF STRUCTURE - AS GRAPHICALLY SHOWN.
10. (E) EXTERIOR DOORS - AS GRAPHICALLY SHOWN.
11. (E) WINDOWS - DO NOT DISTURB
12. (E) WALLS - CAST IN PLACE CONCRETE, AS SHOWN
13. (E) ROOF STRUCTURE - WOOD MAIN BEAMS & WOOD PURLINS, AS SHOWN.
14. (E) FLOOR SLAB - AS SHOWN

NEW & RENNOVATED

A. (N) ROOF TOP CONDENSERS - WITH UNIT STANDS, SEE MECHANICAL PLANS

B. (N) HVAC HEAD UNITS - AS SHOWN, LOCATE AND MOUNT AS PER MECHANICAL SHEETS.

C. (N) HVAC LINE SETS - LOCATE AS PER MECHANICAL SHEETS

D. (N) CONDENSATE LINE - MOUNT ALONG WALL, SLOPE $\frac{1}{8}$" TYP. TO EXTERIOR WALL

E. CORE DRILL CONC. WALL - AS SHOWN / REQUIRED FOR CONDENSATE LINE, CAULK IN PLACE

F. (N) MAIN DUCT - MOUNT TIGHT TO STRUCTURE, AT GYM, SEE MECHANICAL PLANS FOR CONFIGURATION

G. (N) INTERLOCKED CONTROLS - AT EXISTING FAN, SEE MECHANICAL PLANS

H. (N) ROOFING PENETRATION - PROVIDE BOOT AND OR CAP AS REQUIRED FOR ROOFING TYPE.

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REGISTERED ARCHITECT
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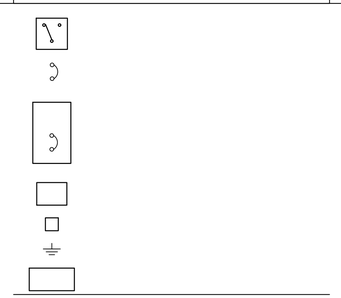
WALL SECTION
TYPICAL CLASSROOM

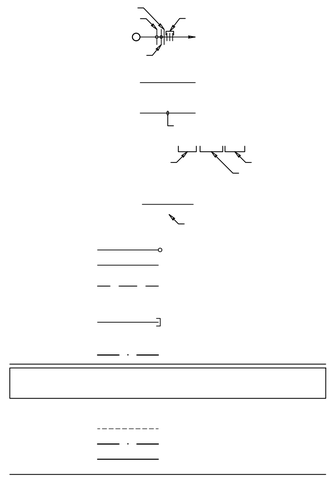
ELECTRICAL ABBREVIATIONS

FVNR

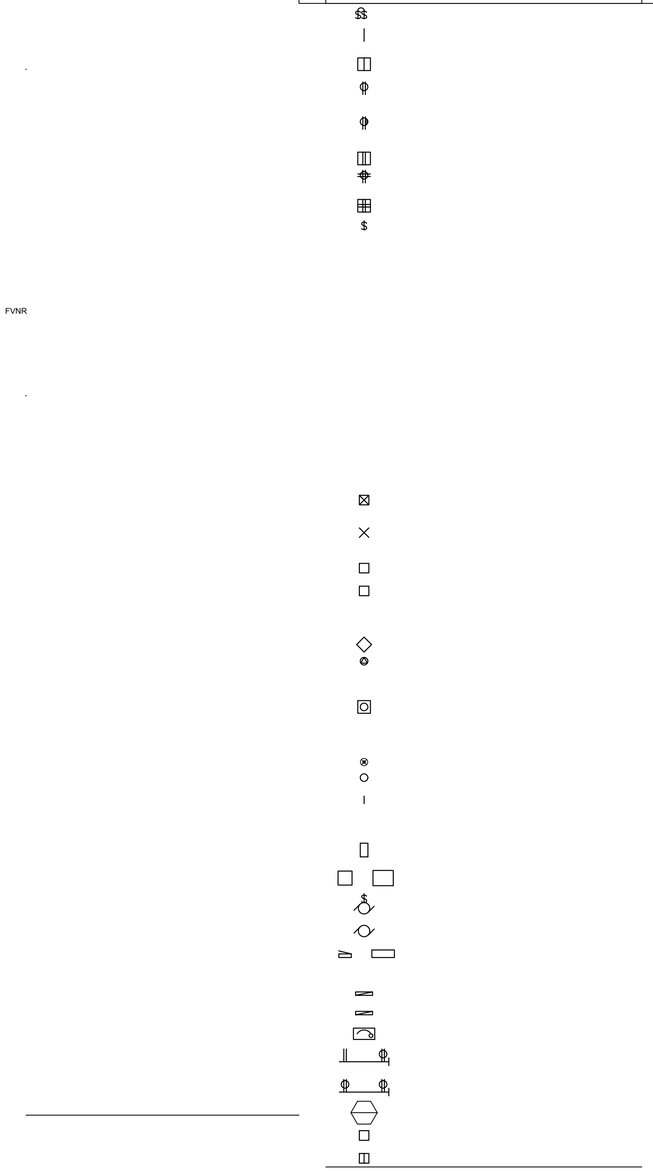
ONE LINE SYMBOLS
see electrical specifications for further information



CIRCUITING SYMBOLS
see electrical specifications for further information



ELECTRICAL DRAWING SHEET INDEX



1 E0.0 ELECTRICAL SYMBOLS AND SHEET INDEX

SCALE: NO SCALE

0 10 20 30 50 70

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 09, 2013
JON W. VAN STONE
EXPIRATION DATE: 6/30/24

301 SOUTH 3rd STREET
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ALSEA SCHOOL DISTRICT
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ISSUE: 9-21-202S

PERMIT

E0.0
ELECTRICAL SYMBOLS AND SHEET INDEX

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phone: 208.378.4450
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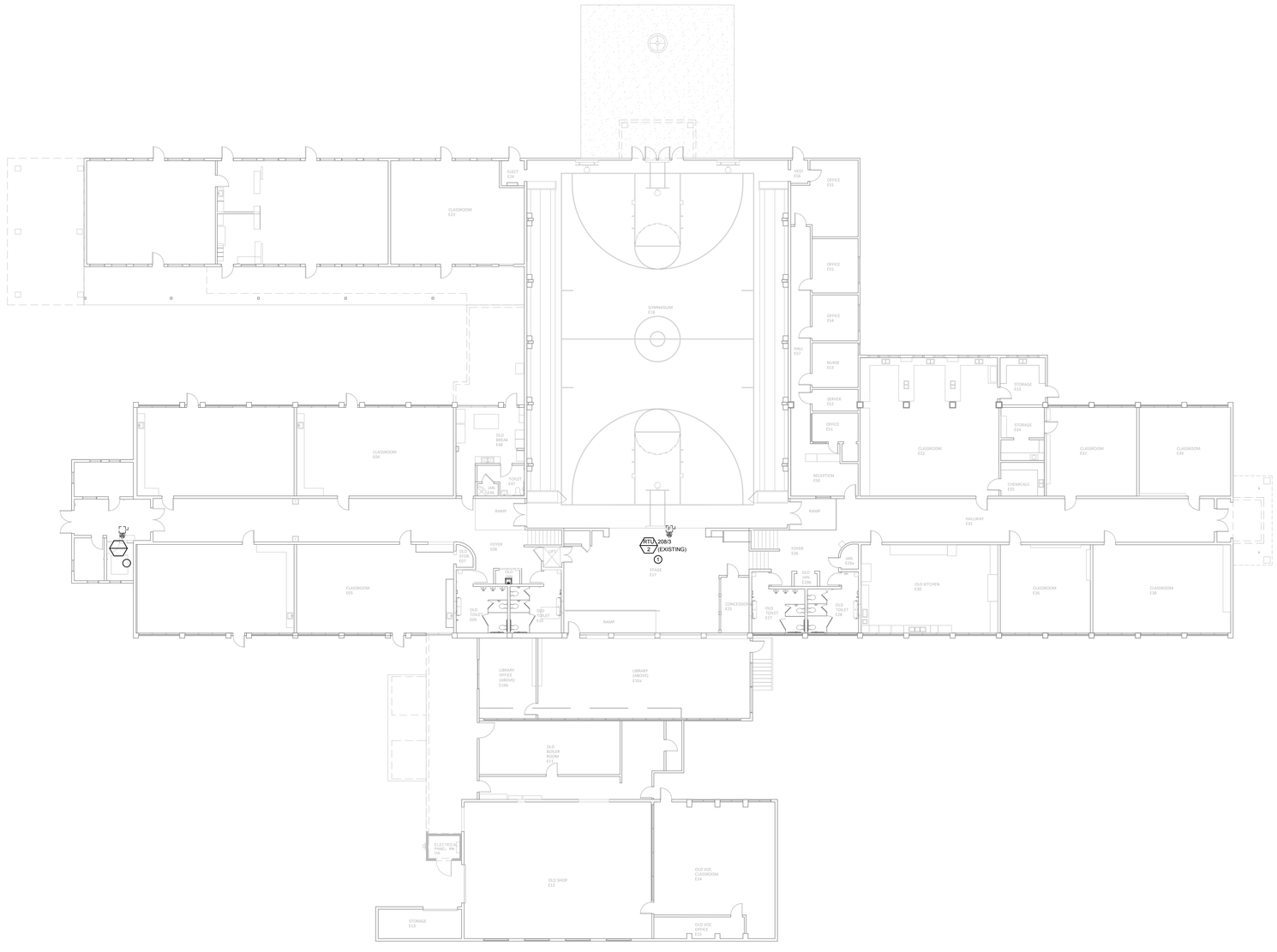
e2co project #: 21048



GENERAL NOTES:

1. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND RESTORING; IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS THAT SERVE EQUIPMENT IN UNDISTURBED AREAS.
2. EXISTING CONDUIT MAY BE UTILIZED FOR NEW INSTALLATION IF IT IS CURRENTLY INSTALLED PER THE INSTALLATION REQUIREMENTS INDICATED IN THESE CONTRACT DOCUMENTS (DRAWING AND SPECIFICATIONS).
3. PROVIDE BLANK COVERS FOR ALL JUNCTION BOXES THAT CANNOT BE REMOVED DUE TO EXISTING INSTALLATION CONDITIONS.
4. CONTRACTOR TO COORDINATE ALL CONSTRUCTION ACTIVITY WITH OWNER TO MINIMIZE ASSOCIATED DOWN TIME AND/OR POWER OUTAGES. ALL POWER OUTAGES ARE TO BE COORDINATED WITH OWNER IN TERMS OF LENGTH OF OUTAGE, AREA EFFECTED, AND ALTERNATIVE OPTIONS FOR TEMPORARY POWER PRIOR TO BEGINNING WORK IN THE AREA EFFECTED BY OUTAGE.
5. ANY EXISTING ITEM TO BE REMOVED ON EXISTING WALLS THAT ARE TO REMAIN, SHALL BE REMOVED OR ABANDONED WHERE REMOVAL IS NOT POSSIBLE WITHOUT DAMAGE TO THOSE WALLS. ANY DAMAGE TO EXISTING REMAINING WALLS AS A RESULT OF REMOVING THE ITEM SHALL BE REPAIRED AT NO ADDITIONAL COST TO OWNER.
6. ELECTRICAL CONTRACTOR TO IDENTIFY NEW SPARE CIRCUITS AS A RESULT OF REMOVAL OF ELECTRICAL EQUIPMENT AND REUSE NEW SPARE CIRCUIT BREAKERS FOR NEW CIRCUITS.
7. ANY EXISTING ITEMS TO BE REMOVED AND REINSTALLED SHALL BE REMOVED WITHOUT DAMAGING THE DEVICE. ANY DAMAGE TO THE ASSOCIATED ELECTRICAL DEVICE AS A RESULT OF REMOVING AND REINSTALLATION SHALL BE REPAIRED OR REPLACED AT NO COST TO OWNER.

KEYED NOTES:

1. DISCONNECT AND REMOVE ELECTRICAL ITEM INDICATED. REMOVE ALL ASSOCIATED CONDUIT AND CONDUCTORS BACK TO SOURCE FOR BOTH POWER AND CONTROLS. NEW ROOFTOP EQUIPMENT IS TO BE INSTALLED IN THE SAME LOCATION AND CIRCUITED AS SHOWN ON SHEET E2.0R AND CONTROLLED AS SHOWN ON SHEET E2.0M. COORDINATE ALL WORK WITH THE MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

1 E2.3DA ELECTRICAL DEMOLITION PLAN

SCALE: 1/16"=1'-0"

NORTH 0 10 20 30 50 70

REGISTERED PROFESSIONAL ENGINEER OREGON JON W. VAN STONE 9/21/22 EXPIRATION DATE: 6/30/24

ALSEA SCHOOL DISTRICT
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PHASES (PH): 2c

ISSUE: 9-21-2025

PERMIT

DRAWING NO.
E2.0D
OVERALL ELECTRICAL DEMOLITION PLANS

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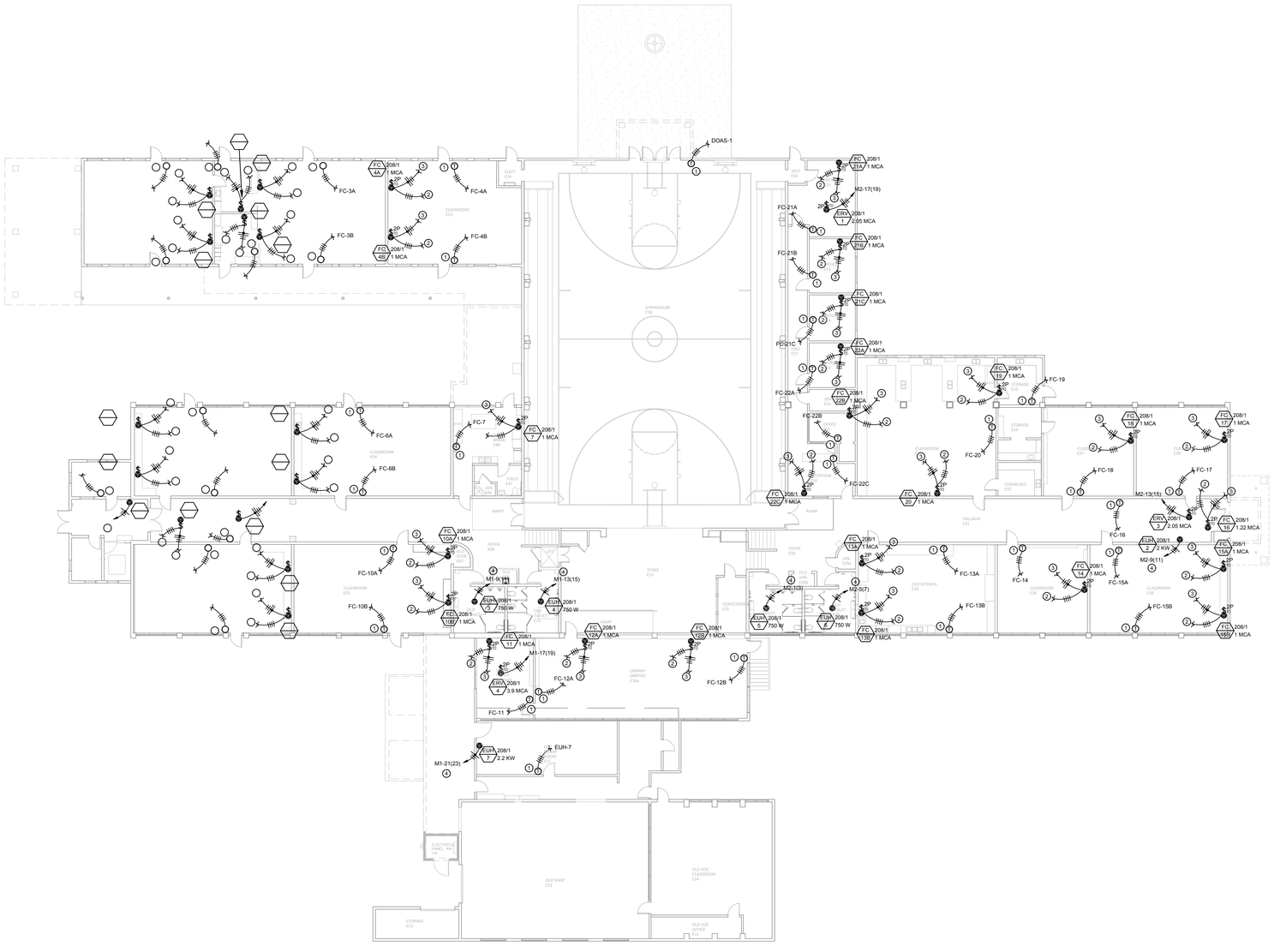
800 s. industry way, suite 350
meridian, idaho 83642
phone: 208.378.4450
fax: 208.378.4451
e2co project #: 21048

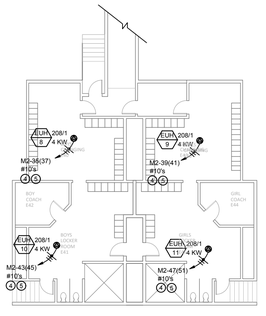
GENERAL NOTES:

1. COORDINATE ALL WORK ON HVAC SYSTEMS WITH DIVISION 15.
2. ALL BREAKERS SUPPLYING MECHANICAL EQUIPMENT SHALL BE HACR RATED.
3. CONTRACTOR SHALL ROUTE ALL CONDUIT AND CONDUCTORS IN CEILING SPACE BELOW ROOF. IF CONTRACTOR ROUTES CONDUIT AND CONDUCTORS ON ROOF, CONTRACTOR SHALL BE RESPONSIBLE FOR DE-RATING CONDUCTORS PER SECTION 310.15(A)(2) OF THE 2017 NEC AND MODIFY CONDUIT SIZES AS REQUIRED.
4. THERMAL OVERLOAD PROTECTION IS ONLY REQUIRED WHERE EQUIPMENT PROVIDED BY MECHANICAL CONTRACTOR DOES NOT INCORPORATE INTEGRAL THERMAL PROTECTION OF MOTOR. DIVISION 16 TO COORDINATE REQUIREMENTS WITH DIVISION 15 FOR ACTUAL EQUIPMENT SUPPLIED.

KEYED NOTES:

1. PRIOR TO ROUGH-IN DIVISION 16 TO COORDINATE LOCATION AND MOUNTING HEIGHTS OF T-STAT OR SENSOR WITH DIVISION 15. DIVISION 16 TO FURNISH AND INSTALL BACKBOX, 1/2" CONDUIT, AND CONDUCTORS UP TO ABOVE ACCESSIBLE CEILING; CONTINUE CONDUCTORS TO MECHANICAL EQUIPMENT INDICATED. DIVISION 15 TO FURNISH T-STAT OR SENSOR AND MAKE FINAL CONNECTIONS. COORDINATE SIZE AND NUMBER OF CONDUCTORS WITH DIVISION 15.
2. DIVISION 16 TO PROVIDE 1/2" CONDUIT AND CONDUCTORS TO ASSOCIATED HEAT PUMP LOCATED ON ROOF OF BUILDING FOR CONTROLS. DIVISION 15 TO MAKE FINAL CONNECTIONS. COORDINATE SIZE AND NUMBER OF CONDUCTORS WITH DIVISION 15.
3. CONNECTION TO ROOFTOP HEAT PUMP UNIT FOR POWER, INDOOR FAN COIL UNIT TO BE PUMPED THROUGH EXTERIOR HEAT PUMP. SEE SHEET E2.0R FOR HEAT PUMP INFORMATION.
4. FURNISH AND INSTALL LOCKABLE BREAKER AT POSITION INDICATED.
5. FIELD VERIFY ROUTE FROM LOCKER ROOM TO ROOF MOUNTED PANEL M2. CONDUIT TO BE LOCATED IN PROTECTED LOCATION AND BE PAINTED TO MATCH EXISTING CONDITIONS WHERE CONDUIT IS TO BE ROUTED.





1 E2.3DA — LOCKER ROOM MECHANICAL POWER PLAN
SCALE: 1/16"=1'-0"

1 E2.3DA — OVERALL MECHANICAL POWER PLAN
SCALE: 1/16"=1'-0"

REGISTERED PROFESSIONAL ENGINEER — OREGON — JON W. VAN STONE — EXPIRATION DATE: 6/30/24

ALSEA SCHOOL DISTRICT
1C9-2C22: KI-12 BUILDING HVAC UPGRADES
301 SOUTH 3rd STREET
ALSEA, OREGON 97324

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Date: 9-21-2022
Project: ALS-1821
Version History: V1.0
PHASES (PH): 2c

ISSUE: 9-21-2025
PERMIT

DRAWING NO.
E2.0M
MECHANICAL POWER PLAN

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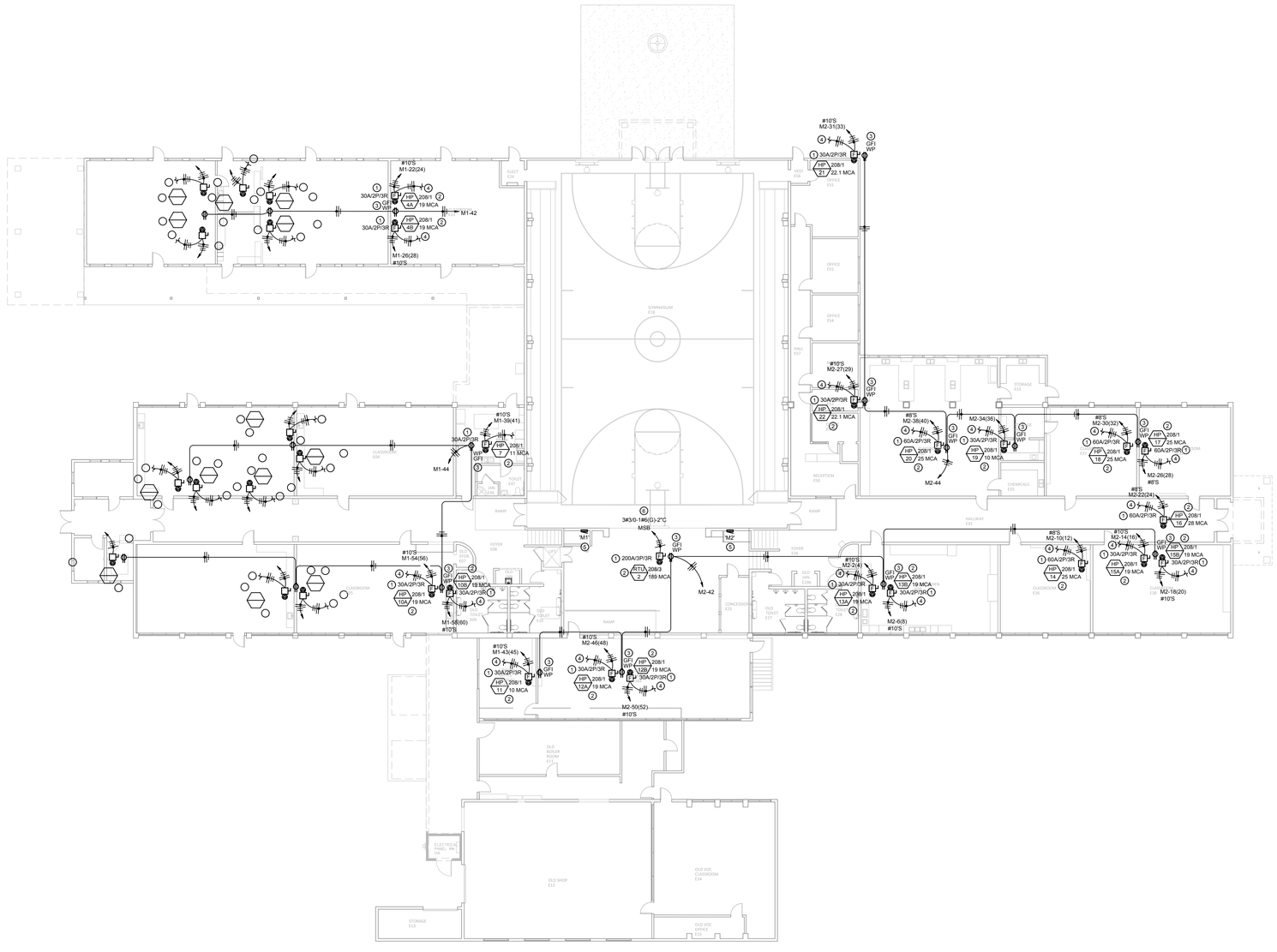
e2co project #: 21048



GENERAL NOTES:

1. COORDINATE ALL WORK ON HVAC SYSTEMS WITH DIVISION 15.
2. ALL BREAKERS SUPPLYING MECHANICAL EQUIPMENT SHALL BE HACR RATED.
3. CONTRACTOR SHALL ROUTE ALL CONDUIT AND CONDUCTORS IN CEILING SPACE BELOW ROOF, IF CONTRACTOR ROUTES CONDUIT AND CONDUCTORS ON ROOF, CONTRACTOR SHALL BE RESPONSIBLE FOR DE-RATING CONDUCTORS PER SECTION 310.15(A)(2) OF THE 2017 NEC AND MODIFY CONDUIT SIZES AS REQUIRED.
4. THERMAL OVERLOAD PROTECTION IS ONLY REQUIRED WHERE EQUIPMENT PROVIDED BY MECHANICAL CONTRACTOR DOES NOT INCORPORATE INTEGRAL THERMAL PROTECTION OF MOTOR. DIVISION 16 TO COORDINATE REQUIREMENTS WITH DIVISION 15 FOR ACTUAL EQUIPMENT SUPPLIED.

KEYED NOTES:

1. MOUNT DISCONNECT(S) ON UNISTRUT RACK, MAINTAIN 30" CLEARANCE SIDE TO SIDE AND 36" CLEARANCE IN FRONT OF DISCONNECT. FUSE DISCONNECT AT EQUIPMENT NAMEPLATE. PROVIDE FUSE REDUCERS WHERE REQUIRED BASED ON ACTUAL EQUIPMENT NAMEPLATE.
2. MECHANICAL EQUIPMENT MOUNTED ON ROOF.
3. MOUNT RECEPTACLE ON UNI-STRUT RACK NEXT TO THE MECHANICAL UNIT LOCATED ON THE ROOF. COORDINATE INSTALLATION WITH DIVISION 15 PRIOR TO ROUGH-IN.
4. DOWN TO INDOOR FAN COIL UNIT - INDOOR UNIT TO BE POWERED THROUGH OUTDOOR UNIT.
5. PANEL TO BE MOUNTED ON ROOF ON UNISTRUTE RACK, PANEL SHALL BE NEMA 3R RATED.
6. SEE ONELINE DIAGRAM ON SHEET E3.0 FOR ADDITIONAL INFORMATION REGARDING CONNECTION OF RTU-2 TO THE SERVICE ENTRANCE MSB.

1 E2.3DA ELECTRICAL ROOF PLAN

SCALE: 1/16"=1'-0"

NORTH

0 10 20 30 50 70

REGISTERED PROFESSIONAL ENGINEER
OREGON
JOHN W. VAN STONE
EXPIRATION DATE: 6/30/24

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PHASES (PH): 2c

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DRAWING NO.
E2.0R
ELECTRICAL ROOF PLAN

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fax: 208.378.4451
e2co project #: 21048

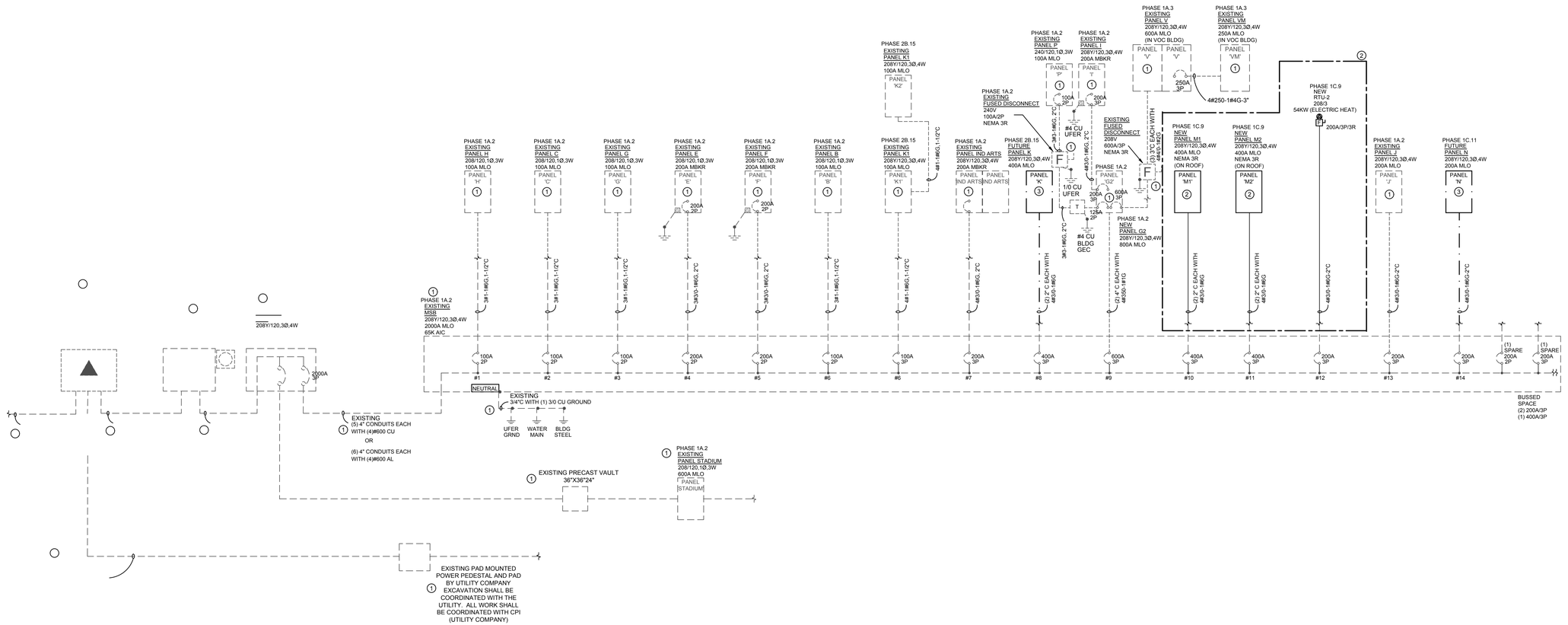
THE PHASING SHALL FOLLOW THE ARCHITECTURAL PHASING PLANS FOR

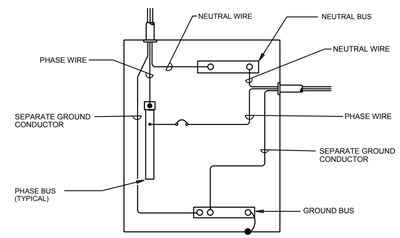
KEYED NOTES:

1 ALL ITEMS SHOWN AS EXISTING WERE DESIGNED AND TO BE INSTALLED IN A PREVIOUS PROJECT PHASE. THE RPOJECT PHASE IS NOTED AT EACH PIECE OF EQUIPMENT.

2 THIS PANEL AND ASSOCIATED FEEDERS ARE TO BE INSTALLED AS PART OF THIS PROJECT PHASE.

3 THIS PANEL, OR EQUIPMENT AND ASSOCIATED FEEDERS ARE TO BE INCLUDED IN A FUTURE PROJECT PHASE.





TYPICAL ELECTRICAL PANEL DETAIL

1 E3.0 ONE LINE DIAGRAM AND ELECTRICAL DETAILS

SCALE: NO SCALE

0 10 20 30 50 70

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DRAWING NO.
E3.0
ONE LINE DIAGRAM AND ELECTRICAL DETAILS

1 ELECTRICAL SCHEDULES
E3.0
SCALE: NO SCALE

0 10 20 30 50 70

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E3.1
ELECTRICAL SCHEDULES

ELECTRIC UNIT HEATER SCHEDULE (EUH #)

NO.	TYPE	MOUNT TYPE	AREA SERVED	CFM	kW	MBH	EAT °F	LAT °F	CHAR	AMPS	WEIGHT (LB)	APPROXIMATE DIMENSION LxWxD (in)	MANUFACTURER	REMARKS
1	WALL MOUNT	RECESSED	HALLWAY E06	65	2.0	6.82	55	152	208/1Ø	9.6	12	9-1/4 x 12-1/8 x 4	'QMARK' CWH	1,2,3
2	WALL MOUNT	RECESSED	HALLWAY E06	65	2.0	6.82	55	152	208/1Ø	9.6	12	9-1/4 x 12-1/8 x 4	'QMARK' CWH	1,2,3
3	CEILING MOUNT	RECESSED	RESTROOM	65	0.75	2.56	55	91	208/1Ø	3.6	10	10-1/2 x 12-1/2 x 4	'QMARK' QCH	1,2
4	CEILING MOUNT	RECESSED	RESTROOM	65	0.75	2.56	55	91	208/1Ø	3.6	10	10-1/2 x 12-1/2 x 4	'QMARK' QCH	1,2
5	CEILING MOUNT	RECESSED	RESTROOM	65	0.75	2.56	55	91	208/1Ø	3.6	10	10-1/2 x 12-1/2 x 4	'QMARK' QCH	1,2
6	CEILING MOUNT	RECESSED	RESTROOM	65	0.75	2.56	55	91	208/1Ø	3.6	10	10-1/2 x 12-1/2 x 4	'QMARK' QCH	1,2
7	HIGH WALL	WALL HUNG	BOILER	350	2.2	7.51	55	74	208/1Ø	11.0	27	16 x 14 x 7-1/2	'QMARK' MUH	1,2,3
8	CEILING MOUNT	RECESSED	LOCKER	150	4.0	13.65	55	86	208/1Ø	19.21	23	15-3/8 x 18-3/4 x 4	'QMARK' EFF	1,2
9	CEILING MOUNT	RECESSED	LOCKER	150	4.0	13.65	55	86	208/1Ø	19.21	23	15-3/8 x 18-3/4 x 4	'QMARK' EFF	1,2
10	CEILING MOUNT	RECESSED	LOCKER	150	4.0	13.65	55	86	208/1Ø	19.21	23	15-3/8 x 18-3/4 x 4	'QMARK' EFF	1,2
11	CEILING MOUNT	RECESSED	LOCKER	150	4.0	13.65	55	86	208/1Ø	19.21	23	15-3/8 x 18-3/4 x 4	'QMARK' EFF	1,2

1 FURNISH WITH INTEGRAL THERMOSTAT.

2 PROVIDE WITH MANUFACTURER'S MOUNTING KIT.

3 SET TO OPERATE AT 55°F.

ENERGY RECOVERY VENTILATOR SCHEDULE (ERV #)

NO.	AREA SERVED	SUPPLY CFM	EXHAUST CFM	ESP	LEAVING AIR CONDITIONS		NOMINAL RECOVERY EFF			ELECTRICAL		APPROXIMATE DIMENSION HxWxL (IN)	WEIGHT (LB)	MANUFACTURER	REMARKS
					COOLING DB/WB (°F)	HEATING DB (°F)	TEMP. RECOVERY	ENTHALPY COOLING	ENTHALPY HEATING	MCA	CHAR				
1	OFFICES	100	100	0.46	78/64	60	65%	50%	63%	2.05	208/1Ø	13x42x42	75	'LOSSNAY' LGH-F300RVX-E	1-4
2	HALLWAY E06	200	200	0.46	79/64	56	65%	50%	63%	2.05	208/1Ø	13x40x34	73	'LOSSNAY' TLGHF0300RX501A	1-4
3	HALLWAY E31	200	200	0.46	79/64	56	65%	50%	63%	2.05	208/1Ø	13x40x34	73	'LOSSNAY' TLGHF0300RX501A	1-4
4	LIBRARY	350	350	0.86	78/64	60	65%	49%	61%	3.9	208/1Ø	16x49x39	90	'LOSSNAY' TLGHF0380RVX02A	1-4

1 PROVIDE ALL ANCILLARY COMPONENTS REQUIRED FOR A FULL INSTALLATION.

2 PROVIDE WITH MERV 8 FILTER OR BETTER.

3 PROVIDE WITH VENTILATION WALL CONTROLLER WITH A TIME CLOCK AND SET TO CFM SHOWN. SET TO OPERATE DURING OCCUPANCY HOURS.

4 PROVIDE WITH EXHAUST AND OUTSIDE AIR ROOF/WALL CAP WITH GRAVITY DAMPER AND BIRD SCREEN. SEE PLAN.

HEAT PUMP PACKAGED ROOFTOP UNIT SCHEDULE (RTU #)

NO.	TYPE	AREA SERVED	CFM	NOMINAL TONS	OSA	HP	MCA	CHAR	RPM	SPE	HEAT PUMP HEATING			ELECTRIC HEAT				COOLING							WEIGHT (LB)	MANUFACTURER	REMARKS
											MBH	EDB (°F)	LDB (°F)	CAPACITY	STAGES	OUTPUT MBH	TEMP RISE °F	MBH	S/T	STAGES	EDB/EWB (°F)	LDB/LWB (°F)	OA DB (°F)	EER/SEER			
1	PACKAGED	OFFICES	1200	3	50	0.60	55.0	208/3Ø	864	0.50	31.32	60	91	-	-	-	-	34.98	0.94	1	80/62	52/51	95	12.5/ 16.0	870	'TRANE' WHC036H3REB	1-4
2	PACKAGED	GYM	4000	10	2400	2.750	189.0	208/3Ø	1448	0.60	77.97	60	102	54 kW	2	184.41	42.46	77.97	0.94	2	80/63	55/53	95	11.5/ 15.5	1617	'TRANE' WHC120H3RPA	1-6

1 PROVIDE 2" PLEATED DISPOSABLE MERV 9 FILTER. PROVIDE FOR 0.5" W.G. DIRTY FILTER ALLOWANCE WHEN CALCULATING TOTAL STATIC PRESSURE DROP.

2 PROVIDE 14" CURB FOR UNIT.

3 PROVIDE WITH POWERED CONVENIENCE OUTLET.

4 PROVIDE UNIT WITH ECONOMIZER AND BAROMETRIC RELIEF TO ENSURE PROPER BUILDING PRESSURE WHEN UNIT IS IN ECONOMIZER MODE.

5 PROVIDE WITH SMOKE DETECTOR MOUNTED IN RETURN DUCT.

6 LOCK OUT COOLING.

MECHANICAL SHEET INDEX

GRILLE AND REGISTER SCHEDULE

SYMBOL	DESCRIPTION	TYPE	FINISH	REMARKS
SG	SUPPLY GRILLE	'TITUS' 272RL	WHITE	-
RG	RETURN GRILLE	'TITUS' 50F	WHITE	-
DL	DRUM LOUVER	'TITUS' DL	WHITE	-

ABBREVIATIONS

SYMBOL	DESCRIPTION
°F	DEGREES FAHRENHEIT
AC	AIR CONDITIONING
ACH	AIR CHANGES PER HOUR
ACT	ACOUSTICAL CEILING TILE
AL	ACOUSTIC LINING
ALT	ALTERNATIVE
APD	AIR PRESSURE DROP (INCHES W.G.)
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNITS
BTUH	BRITISH THERMAL UNITS PER HOUR
CFM	CUBIC FEET PER MINUTE
CHAR	CHARACTERISTICS
COP	COEFFICIENT OF PERFORMANCE
CV	CONSTANT VOLUME
DB	DRY BULB
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EER	ENERGY EFFICIENCY RATIO
EFF	EFFECTIVENESS
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE (INCHES W.G.)
EVAP	EVAPORATOR
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
(E)	EXISTING
FM	FREQUENCY MODULATION
FT	FEET
HP	HORSEPOWER
HR	HEAT RECOVERY
HS	HEAT SUPPLY
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HSPF	HEATING SEASONAL PERFORMANCE FACTOR
IN	INCH
KW	KILOWATTS
LB	POUNDS
LAT	LEAVING AIR TEMPERATURE
LVG	LEAVING
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	BTUH'S IN THOUSANDS
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MECH	MECHANICAL
MFR	MANUFACTURER
MOD	MOTOR OPERATED DAMPER; MODULATING
NC	NOISE CRITERIA
NO.	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OP	OPERATING
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
RCP	REFLECTED CEILING PLAN
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SD	SMOKE DAMPER
SENS	SENSIBLE
SEER	SEASONAL ENERGY EFFICIENCY RATING
SF	SQUARE FOOTAGE
F/SD	FIRE/SMOKE DAMPER
SPE	STATIC PRESSURE EXTERNAL (INCHES W.G.)
SP	STATIC PRESSURE (INCHES W.G.)
SQFT	SQUARE FEET
SS	STAINLESS STEEL
S/T	SENSIBLE TO TOTAL COOLING RATIO
TEMP	TEMPERATURE
TYP	TYPICAL
VTR	VENT THROUGH ROOF
WB	WET BULB
WC	WATER COLUMN
W.G.	WATER GAUGE

GENERAL MECHANICAL NOTES

1. CONTRACTOR TO VERIFY EQUIPMENT LOCATIONS, DIMENSIONS, AND COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
2. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
3. ALL WORK IS TO BE IN COMPLIANCE WITH CURRENT CODES AS ADOPTED AND AMENDED BY THE LOCAL JURISDICTION. PROVIDE ALL LABOR AND MATERIAL AS NECESSARY TO MEET THE CURRENT ADOPTED CODES.
4. RECORD DRAWINGS OF THE INSTALLATION ARE REQUIRED TO BE PROVIDED BY THE CONTRACTOR WITHIN 30 DAYS OF SUBSTANTIAL COMPLETION. REDLINES OF AS-BUILT PLANS AND SPECIFICATIONS ARE ACCEPTABLE.
5. PROVIDE OPERATION AND MAINTENANCE MANUALS WITHIN 30 DAYS OF SUBSTANTIAL COMPLETION OF ALL EQUIPMENT INSTALLED.
6. INSTALL ALL EQUIPMENT, PIPING, AND DUCTWORK SEISMICALLY BRACED PER CODE, MANUFACTURER RECOMMENDATIONS, OR STANDARD CONSTRUCTION PRACTICES, WHICHEVER IS MORE STRINGENT.
7. ALL DRAWINGS ARE DIAGRAMMATIC IN NATURE SHOWING GENERAL LOCATIONS, GENERAL SPATIAL RELATIONSHIPS, APPROXIMATE DIMENSIONS, ETC, AND HAS BEEN GENERALLY COORDINATED. THE CONTRACTOR IS RESPONSIBLE FOR ACTUAL COORDINATION BETWEEN SYSTEMS, STRUCTURE, OTHER TRADES, ETC. DO NOT SCALE OFF DRAWINGS FOR EXACT DIMENSIONS OF ANY ITEM.
8. ALL DUCTWORK PENETRATIONS OF CEILING MUST BE FIRE DAMPERED IF REQUIRED. SEE GRILLES, REGISTERS AND DIFFUSERS SCHEDULE FOR MORE INFORMATION.
9. ALL SEALING OF ROOF SHALL BE COMPLETED IN ACCORDANCE WITH ROOFING SYSTEM REQUIREMENTS AND ROOF MANUFACTURERS WARRANTY.
10. CONTRACTOR SHALL VERIFY EXACT HEIGHT OF ALL CEILINGS PRIOR TO START OF WORK. SEE ARCHITECTURAL SHEETS FOR CEILING DETAILS AND CONSTRUCTION. COORDINATE EXACT DUCTWORK INSTALLATION WITH CEILING HEIGHTS, TRUSSES AND STRUCTURE AS REQUIRED.
11. SEE ELECTRICAL LIGHTING SHEETS FOR EXACT LOCATION OF ALL LIGHT FIXTURES. COORDINATE EXACT DIFFUSER AND GRILLE LOCATIONS WITH LIGHTING FIXTURES AS REQUIRED.
12. ALL DUCTWORK SHALL MEET SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE", CURRENT EDITION.
13. ALL DIMENSIONS ARE LISTED IN INCHES UNLESS OTHERWISE NOTED. ALL DUCTWORK DIMENSIONS ARE INSIDE CLEAR.
14. ALL PLUMBING VENTS, EXHAUST OUTLETS OR GAS FLUES SHALL BE A MINIMUM OF 10'-0" FROM ANY AIR INTAKE INTO THE BUILDING, PER CODE.
15. DO NOT CUT, DRILL HOLES OR REMOVE ANY STRUCTURAL MEMBERS, TRUSSES, BEAMS OR PURLINS. ROUTE ALL DUCTWORK, PIPING AND CONDUIT AROUND AND BELOW STRUCTURAL MEMBERS AS REQUIRED. SEE STRUCTURAL DETAILS AND DRAWINGS FOR EXACT METHOD OF ATTACHING HANGERS TO BEAMS AND STRUCTURAL MEMBERS.
16. ALL EQUIPMENT PLACEMENT SHALL COMPLY WITH THE CURRENT ADOPTED INTERNATIONAL MECHANICAL CODE.
17. CONTRACTOR SHALL PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE DURING SELECTIVE DEMOLITION WORK.
18. IT IS NOT EXPECTED THAT HAZARDOUS MATERIALS WILL BE ENCOUNTERED DURING DEMOLITION. IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, STOP WORK AND IMMEDIATELY NOTIFY ENGINEER.

MECHANICAL LEGEND

- SUPPLY DUCT RISE/DROP
- SIDEWALL SUPPLY GRILLE
- RETURN RISE/DROP
- SIDEWALL RETURN GRILLE
- EXHAUST RISE/DROP
- EXHAUST GRILLE
- BACKDRAFT DAMPER
- DOUBLE WALL TURNING VANES
- FLEX DUCT
- HIDDEN LINE
- 1,2,3, AND 4 WAY DIFFUSERS, RESPECTIVELY
- VOLUME DAMPER
- SPIN IN FITTING
- DEMOLISHED DUCT CAP
- M
- T EQUIP # THERMOSTAT
- RETURN GRILLE

REGISTERED PROFESSIONAL ENGINEER 98785PE OREGON NOV. 09, 2021 SEAN PATRICK DRAKE 09/21/22
RENEWS: 12/31/23

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DESIGN DEVELOPMENT

DRAWING NO.
M0.0
MECHANICAL COVER SHEET

FAN COIL UNIT SCHEDULE (FC #)

NO.	TYPE	AREA	CFM	COOLING				HEATING@ 17°F				ELECTRICAL		APPROXIMATE DIMENSION	WEIGHT (LB)	MANUFACTURER MAKE & MODEL	REMARKS
				TOTAL (MBH)	SENS. (MBH)	EAT DB/WB (°F)	LWT (°F)	TOTAL (MBH)	SENS. (MBH)	EAT (°F)	LWT (°F)	CHAR	MCA	W x D x H (IN)			
1A	HIGH WALL DUCTLESS	CLASSROOM E19	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
1B	HIGH WALL DUCTLESS	CLASSROOM E22	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
2A	HIGH WALL DUCTLESS	OFFICE E20	425	12.0	8.2	80/67	57	14.0	8.3	70	88	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' TPKA0A0121HA70A	1-3
2B	HIGH WALL DUCTLESS	OFFICE E21	425	12.0	8.2	80/67	57	14.0	8.3	70	88	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' TPKA0A0121HA70A	1-3
3A	HIGH WALL DUCTLESS	CLASSROOM E19	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
3B	HIGH WALL DUCTLESS	CLASSROOM E19	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
4A	HIGH WALL DUCTLESS	CLASSROOM E23	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
4B	HIGH WALL DUCTLESS	CLASSROOM E23	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
5A	HIGH WALL DUCTLESS	CLASSROOM E02	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
5B	HIGH WALL DUCTLESS	CLASSROOM E02	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
6A	HIGH WALL DUCTLESS	CLASSROOM E04	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
6B	HIGH WALL DUCTLESS	CLASSROOM E04	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
7	HIGH WALL DUCTLESS	BREAK RM E48	437	9.0	8.5	80/67	61	10.9	10.0	70	92	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' NTXWPH09A112AA	1-3
8	CEILING SUSPENDED	HALLWAY E06	990	34.0	33.0	80/67	54	38.0	36.5	70	105	POWERED BY OUTDOOR UNIT	1.22	63 x 27 x 9	84	'MITSUBISHI' TPCA0A0361KA70A	1-3
9A	HIGH WALL DUCTLESS	CLASSROOM E03	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
9B	HIGH WALL DUCTLESS	CLASSROOM E03	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
10A	HIGH WALL DUCTLESS	CLASSROOM E05	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
10B	HIGH WALL DUCTLESS	CLASSROOM E05	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
11	HIGH WALL DUCTLESS	LIBRARY OFFICE E16b	437	6.0	5.8	80/67	66	8.7	6.0	70	95	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' NTXWPH06B112AA	1-3
12A	HIGH WALL DUCTLESS	LIBRARY E16a	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
12B	HIGH WALL DUCTLESS	LIBRARY E16a	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
13A	HIGH WALL DUCTLESS	OLD KITCHEN E30	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
13B	HIGH WALL DUCTLESS	OLD KITCHEN E30	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
14	HIGH WALL DUCTLESS	CLASSROOM E36	920	36.0	18.5	80/67	53	38.0	23.5	70	94	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0361KA70A	1-3
15A	HIGH WALL DUCTLESS	CLASSROOM E38	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
15B	HIGH WALL DUCTLESS	CLASSROOM E38	775	24.0	18.5	80/67	56	26.0	16.0	70	90	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0241KA70A	1-3
16	CEILING SUSPENDED	HALLWAY E31	990	34.0	33.0	80/67	54	38.0	36.5	70	105	POWERED BY OUTDOOR UNIT	1.22	63 x 27 x 9	84	'MITSUBISHI' TPCA0A0361KA70A	1-3
17	HIGH WALL DUCTLESS	CLASSROOM E39	920	36.0	18.5	80/67	53	38.0	23.5	70	94	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0361KA70A	1-3
18	HIGH WALL DUCTLESS	CLASSROOM E36	920	36.0	18.5	80/67	53	38.0	23.5	70	94	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0361KA70A	1-3
19	HIGH WALL DUCTLESS	STORAGE E33	437	6.0	5.8	80/67	66	8.7	6.0	70	95	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' NTXWPH06B112AA	1-3
20	HIGH WALL DUCTLESS	CLASSROOM E32	920	36.0	18.5	80/67	53	38.0	23.5	70	94	POWERED BY OUTDOOR UNIT	1.0	46 x 12 x 15	46	'MITSUBISHI' TPKA0A0361KA70A	1-3
21A	HIGH WALL DUCTLESS	OFFICE E56	406	6.0	5.8	80/67	66	7.3	10.1	70	80	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' NTXWST06A112AB	1-3
21B	HIGH WALL DUCTLESS	OFFICE E55	406	6.0	5.8	80/67	66	7.3	10.1	70	80	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' NTXWST06A112AB	1-3
21C	HIGH WALL DUCTLESS	OFFICE E54	406	6.0	5.8	80/67	66	7.3	10.1	70	80	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' NTXWST06A112AB	1-3
22A	HIGH WALL DUCTLESS	NURSE E53	406	6.0	5.8	80/67	66	7.3	10.1	70	80	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' NTXWST06A112AB	1-3
22B	HIGH WALL DUCTLESS	OFFICE E51	406	6.0	5.8	80/67	66	7.3	10.1	70	80	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' NTXWST06A112AB	1-3
22C	HIGH WALL DUCTLESS	RECEPTION E50	406	6.0	5.8	80/67	66	7.3	10.1	70	80	POWERED BY OUTDOOR UNIT	1.0	37 x 10 x 13	29	'MITSUBISHI' NTXWST06A112AB	1-3

REMARKS

1. PROVIDE ALL ANCILLARY COMPONENTS REQUIRED FOR A FULL INSTALLATION.
2. FURNISH WITH 7-DAY HARDWIRED PROGRAMMABLE WALL MOUNTED THERMOSTAT.
3. PROVIDE WITH CONDENSATE PUMP, DRAIN PAN AND OVERFLOW SHUTOFF.

HEAT PUMP UNIT SCHEDULE (HP #)

NO.	NOMINAL TONS	TYPE	COOLING PERFORMANCE				HEATING PERFORMANCE				ELECTRICAL		APPROXIMATE UNIT DIMENSION WxDxH (IN)	WEIGHT (LB)	REFRIGERANT	MANUFACTURER MAKE & MODEL	REMARKS
			TOTAL (MBH)	SENS. (MBH)	OUTDOOR TEMP DB (°F)	SEER	TOTAL (MBH)	SENS. (MBH)	OUTDOOR TEMP DB (°F)	HSPF	CHAR	MCA					
1A	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
1B	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
2	2.0	MULTI	24.0	23.3	89	20.8	26.0	16.5	22	10.2	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
3A	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
3B	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
4A	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
4B	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
5A	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
5B	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
6A	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
6B	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
7	0.75	SINGLE	0.75	9.0	89	30.5	10.9	10.0	22	13.5	208/1Ø	11.0	31 x 11 x 21	81	R-410A	'MITSUBISHI' NTXSPH09A112AA	1,2
8	3.0	SINGLE	34.0	33.0	89	16.6	38.0	36.5	22	10.3	208/1Ø	28.0	42 x 13 x 53	214	R-410A	'MITSUBISHI' TRUZH0361HA50NA	1,2
9A	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
9B	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
10A	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
10B	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
11	0.5	SINGLE	6.0	5.8	89	33.1	8.7	6.0	22	13.5	208/1Ø	10.0	31 x 11 x 21	81	R-410A	'MITSUBISHI' NTXSPH06B112AA	1,2
12A	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
12B	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
13A	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
13B	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
14	3.0	SINGLE	36.0	23.4	89	18.80	38.0	23.4	22	9.2	208/1Ø	25.0	42 x 13 x 53	214	R-410A	'MITSUBISHI' TRUZA0361KA70NA	1,2
15A	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
15B	2.0	SINGLE	24.0	18.5	89	29.4	26.0	16.0	22	11.0	208/1Ø	19.0	38 x 13 x 37	153	R-410A	'MITSUBISHI' TRUZA0241HA70NA	1,2
16	3.0	SINGLE	33.4	33.0	89	16.6	38.0	36.5	22	10.3	208/1Ø	28.0	42 x 13 x 53	214	R-410A	'MITSUBISHI' TRUZH0361HA50NA	1,2
17	3.0	SINGLE	36.0	34.9	89	18.8	38.0	23.4	22	9.2	208/1Ø	25.0	42 x 13 x 53	214	R-410A	'MITSUBISHI' TRUZH0361HA50NA	1,2
18	3.0	SINGLE	36.0	34.9	89	18.8	38.0	23.4	22	9.2	208/1Ø	25.0	42 x 13 x 53	214	R-410A	'MITSUBISHI' TRUZH0361HA50NA	1,2
19	0.5	SINGLE	6.0	5.8	89	33.1	8.7	6.0	22	13.5	208/1Ø	10.0	31 x 11 x 21	81	R-410A	'MITSUBISHI' NTXSPH06B112AA	1,2
20	3.0	SINGLE	36.0	34.9	89	18.8	38.0	23.4	22	9.2	208/1Ø	25.0	42 x 13 x 53	214	R-410A	'MITSUBISHI' TRUZH0361HA50NA	1,2
21	1.83	MULTI	22.0	17.5	89	18.0	12.8	23.4	22	9.5	208/1Ø	22.1	38 x 13 x 32	137	R-410A	'MITSUBISHI' NTXMMX24A132BA	1,2
22	1.83	MULTI	22.0	17.5	89	18.0	12.8	23.4	22	9.5	208/1Ø	22.1	38 x 13 x 32	137	R-410A	'MITSUBISHI' NTXMMX24A132BA	1,2

REMARKS

1. PROVIDE WITH MANUFACTURER'S OR 3RD PARTY 16" TALL ROOF MOUNTED EQUIPMENT STAND.
2. PROVIDE WITH INSULATED REFRIGERANT LINE SET.
3. PROVIDE WITH DRAIN PAN HEATER FOR LOW AMBIENT OPERATION TO PREVENT ICE BUILD UP. DEVICE IS CONTROLLED BY OUTDOOR UNIT.

REGISTERED PROFESSIONAL ENGINEER
98783PE
OREGON
NOV. 09, 2021
SEAN PATRICK DRAKE
09/21/22
RENEWS: 12/31/23

VALUE ENGINEERING INC.
HVAC | PLUMBING | ENERGY | CONSULTING
119 E CALDERWOOD 101, MERIDIAN, ID 83642
208-841-2781

ALSEA SCHOOL DISTRICT
1c9-2c22: K-12 BUILDING HVAC UPGRADE
301 SOUTH 3rd STREET
ALSEA, OREGON 97324

CB Const, Inc
CB Construction
1202 Adams Avenue
LaGrande, OR 97850

STRAIGHTLINE ARCHITECTURE
4521 South Cloverdale Road,
Suite 102 - Boise, Idaho 83709
P: 208.991.0855
E: Scott@Straightline.biz
W: www.StraightlineArchitects.com

Date: 9-21-2022
Project: ALS-1821
Version History: V1.0
PHASES (PH):

DESIGN DEVELOPMENT

DRAWING NO.
M0.1
MECHANICAL SCHEDULES

COMcheck Software Version COMcheckWeb
Mechanical Compliance Certificate

Project Information

Energy Code:	90.1 (2019) Standard
Project Title:	ALSEA SCHOOL DISTRICT 1C9-2C22
Location:	Corvallis, Oregon
Climate Zone:	4c
Project Type:	Alteration

Construction Site:
301 S 3rd St, Alsea
Alsea, Oregon 97324

Owner/Agent:

Designer/Contractor:
Peter Bibikov
Value Engineering
119 E Calderwood Dr #101
Meridian, Idaho 83642
+12082587016
peter@v-engineering.com

Mechanical Systems List

Quantity — System Type & Description

20 HP CLASSROOM (2-TON SINGLE SPLIT)
Split System Heat Pump
Heating Mode: Capacity = 26 kBtu/h,
Proposed Efficiency = 11.00 HSPF, Required Efficiency = 8.20 HSPF
Cooling Mode: Capacity = 24 kBtu/h,
Proposed Efficiency = 29.40 SEER, Required Efficiency = 14.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: 775 cfm | Classrooms -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 1 Supply, Constant Volume, 775 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

5 HP CLASSROOM (3-TON SINGLE SPLIT)
Split System Heat Pump
Heating Mode: Capacity = 36 kBtu/h,
Proposed Efficiency = 9.20 HSPF, Required Efficiency = 8.20 HSPF
Cooling Mode: Capacity = 38 kBtu/h,
Proposed Efficiency = 18.80 SEER, Required Efficiency = 14.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: 920 CFM | CLASSROOM -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 3 Supply, Constant Volume, 920 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

1 HP-2 (2-TON MULTI SPLIT)
Split System Heat Pump
Heating Mode: Capacity = 24 kBtu/h,
Proposed Efficiency = 10.20 HSPF, Required Efficiency = 8.20 HSPF
Cooling Mode: Capacity = 26 kBtu/h,
Proposed Efficiency = 20.80 SEER, Required Efficiency = 14.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: 425 CFM | OFFICE E20, E21 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 5 Supply, Constant Volume, 425 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW
FAN 4 Supply, Constant Volume, 425 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

1 HP-7 (0.75 TON SINGLE SPLIT)
Split System Heat Pump
Heating Mode: Capacity = 10 kBtu/h,
Proposed Efficiency = 13.50 HSPF, Required Efficiency = 8.20 HSPF
Cooling Mode: Capacity = 9 kBtu/h,
Proposed Efficiency = 30.50 SEER, Required Efficiency = 14.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: 437 CFM | BREAK RM E48 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 6 Supply, Constant Volume, 437 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

2 HP-8,16 (3-TON SINGLE SPLIT)
Split System Heat Pump
Heating Mode: Capacity = 38 kBtu/h,
Proposed Efficiency = 10.30 HSPF, Required Efficiency = 8.20 HSPF
Cooling Mode: Capacity = 34 kBtu/h,
Proposed Efficiency = 38.00 SEER, Required Efficiency = 14.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: 990 CFM | HALLWAY -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 7 Supply, Constant Volume, 990 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

1 HP-11 (0.5 TON SINGLE SPLIT)
Split System Heat Pump
Heating Mode: Capacity = 8 kBtu/h,
Proposed Efficiency = 13.50 HSPF, Required Efficiency = 8.20 HSPF
Cooling Mode: Capacity = 6 kBtu/h,
Proposed Efficiency = 33.50 SEER, Required Efficiency = 14.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: 437 CFM 2 | LIBRARY OFFICE -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 8 Supply, Constant Volume, 437 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

2 HP-21,22 (MULTI SPLIT)
Split System Heat Pump
Heating Mode: Capacity = 12 kBtu/h,
Proposed Efficiency = 9.50 HSPF, Required Efficiency = 8.20 HSPF
Cooling Mode: Capacity = 22 kBtu/h,
Proposed Efficiency = 18.00 SEER, Required Efficiency = 14.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: 406 CFM | OFFICE -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 11 Supply, Constant Volume, 406 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW
FAN 10 Supply, Constant Volume, 406 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW
FAN 9 Supply, Constant Volume, 406 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

Quantity — System Type & Description

2 EUH-1,2
Heating: 1 each - Unit Heater, Electric, Capacity = 6 kBtu/h
No minimum efficiency requirement applies
Fan System: 65 CFM | HALLWAY AND RR -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 12 Supply, Constant Volume, 65 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

4 EUH-3,4,5,6
Heating: 1 each - Unit Heater, Electric, Capacity = 2 kBtu/h
No minimum efficiency requirement applies
Fan System: 65 CFM | HALLWAY AND RR -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 12 Supply, Constant Volume, 65 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

1 EUH-7
Heating: 1 each - Unit Heater, Electric, Capacity = 7 kBtu/h
No minimum efficiency requirement applies
Fan System: 350 CFM -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 13 Supply, Constant Volume, 350 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

4 EUH-8,9,10,11
Heating: 1 each - Unit Heater, Electric, Capacity = 13 kBtu/h
No minimum efficiency requirement applies
Fan System: 150 CFM | LOCKER -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 14 Supply, Constant Volume, 150 CFM, 0.1 motor nameplate hp, 0.10 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

1 RTU-1
Single Package Heat Pump
Heating Mode: Capacity = 31 kBtu/h,
Proposed Efficiency = 8.00 HSPF, Required Efficiency = 8.00 HSPF
Cooling Mode: Capacity = 34 kBtu/h,
Proposed Efficiency = 16.00 SEER, Required Efficiency = 14.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: 1200 CFM | Offices -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 14 Supply, Constant Volume, 1200 CFM, 0.8 motor nameplate hp, 0.75 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

SYSTEM VERIFICATION REQUIRED.

1 RTU-2
Single Package Heat Pump
Heating Mode: Capacity = 262 kBtu/h,
Proposed Efficiency = 3.30 COP, Required Efficiency = 3.30 COP
Cooling Mode: Capacity = 77 kBtu/h, , Air Economizer
Proposed Efficiency = 11.50 EER, Required Efficiency = 11.00 EER
Proposed Part Load Efficiency = 15.50 IEER, Required Part Load Efficiency = 12.20 IEER
Fan System: 4000 CFM | GYM -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 16 Supply, Constant Volume, 4000 CFM, 2.8 motor nameplate hp, 2.80 fan energy index

Quantity — System Type & Description

SYSTEM VERIFICATION REQUIRED.

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 90.1 (2019) Standard requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Peter Bibikov
Name - Title

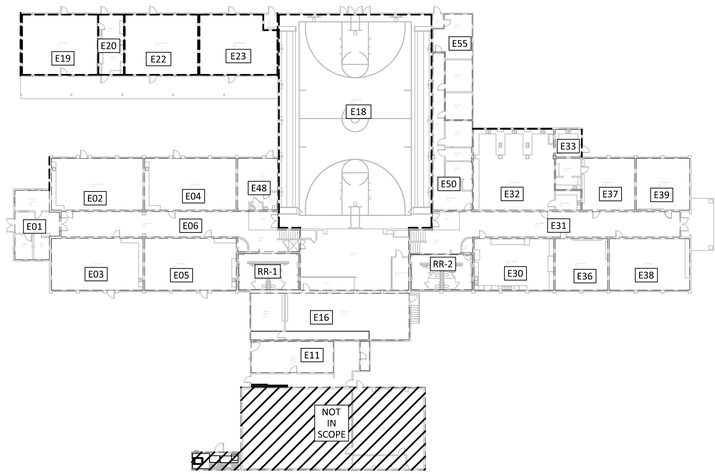
Signature

Date

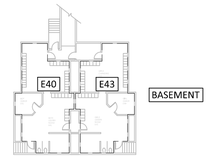
LOAD CALCULATION SUMMARY FORM

ZONE	ROOM NAME	EQUIPMENT	SQFT	COOLING LOAD WITH FRESH AIR (MBH)	HEATING LOAD WITH FRESH AIR (MBH)	VENTILATION TYPE
E01	OFFICES ENTRY	RTU-1	502	13.1	20.7	NATURAL
E02	CLASSROOM	FC/HP-5A,5B	940	28.2	26.0	NATURAL
E03	CLASSROOM	FC/HP-9A,9B	946	32.7	26.0	NATURAL
E04	CLASSROOM	FC/HP-6A,6B	945	28.0	24.6	NATURAL
E05	CLASSROOM	FC/HP-10A,10B	947	27.6	36.0	NATURAL
E06	HALLWAY	FC/HP-8, EUH-1	1475	7.8	45.3	MECHANICAL
E11	BOILER	EUH-7	514	-	2.0	-
E16	LIBRARY	FC/HP-11,12A,12B	1467	32.9	31.5	MECHANICAL
E18	GYM	RTU-2	7785	-	235.0	MECHANICAL
E19	CLASSROOM	FC/HP-1A,1B	940	32.6	31.5	NATURAL
E20	OFFICES	FC/HP-2A,2B	302	4.4	10.5	NATURAL
E22	CLASSROOM	FC/HP-3A,3B	905	32.5	28.2	NATURAL
E23	CLASSROOM	FC/HP-4A,4B	895	31.0	26.1	NATURAL
E30	KITCHEN	FC/HP-13A,13B	820	32.2	22.8	NATURAL
E31	HALLWAY	FC/HP-16, EUH-2	1475	8.6	46.8	MECHANICAL
E32	CLASSROOM	FC/HP-20	1395	25.0	16.6	NATURAL
E33	STORAGE	FC/HP-19	144	2.3	4.6	NATURAL
E36	CLASSROOM	FC/HP-14	540	22.1	15.3	NATURAL
E37	CLASSROOM	FC/HP-18	702	16.8	15.4	NATURAL
E38	CLASSROOM	FC/HP-15A,15B	821	36.2	25.4	NATURAL
E39	CLASSROOM	FC/HP-17	555	16.5	17.4	NATURAL
E40	LOCKER	EUH-8,10	950	-	24.0	-
E43	LOCKER	EUH-9,11	950	-	24.0	-
E48	BREAK RM	FC/HP-7	402	10.8	9.4	NATURAL
E50	RECEPTION	FC/HP-22A,B,C	754	8.0	16.7	MECHANICAL
E55	OFFICES	FC/HP-21A,B,C	615	12.3	14.9	MECHANICAL
RR-1	RESTROOM	EUH-3,4	400	-	3.0	-
RR-2	RESTROOM	EUH-5,6	400	-	3.0	-

1. MECHANICAL SYSTEMS HAVE BEEN DESIGNED UNDER THE 2018 AHSRAE 90.1.
2. LOAD CALCULATIONS HAVE BEEN PERFORMED IN ACCORDANCE WITH ASHRAE 183.
3. DUCT SEALING SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
4. ALL THERMOSTATS CONTROLLING HVAC SYSTEMS SHALL BE 7-DAY, SOLID STATE, PROGRAMMABLE THERMOSTATS WITH NIGHT SETBACK CAPABILITIES AT A MINIMUM.



1 / M0.1 MAIN LEVEL MECHANICAL ZONE PLAN
SCALE: NTS



2 / M0.1 LOWER LEVEL MECHANICAL ZONE PLAN
SCALE: NTS

COMMISSIONING REQUIREMENT

1. A COMMISSIONING AGENT WILL BE PROVIDING COMMISSIONING FOR THIS PROJECT. THE CONTRACTOR IS REQUIRED TO PROVIDE ALL NECESSARY DOCUMENTATION, SUPPORT AND ACCESS FOR VERIFICATION AS REQUIRED BY THE COMMISSIONING AGENT. CONTRACTOR IS ALSO REQUIRED TO ATTEND COORDINATION MEETINGS AS REQUIRED. TESTING, ADJUSTING AND BALANCING (TAB) WILL ALSO BE COMPLETED. THE CONTRACTOR SHALL MAKE MODIFICATIONS TO CONTROL SEQUENCES AS DEEMED NECESSARY BY BOTH THE TAB AND COMMISSIONING AGENT TO ENSURE PROPER FUNCTION OF THE SYSTEM.
2. COMMISSIONING SHALL BE PERFORMED AS STATED IN OREGON EFFICIENCY CODE SECTIONS 4.2.5. COMMISSIONING MUST UTILIZE ASHRAE/IES STANDARD 202 OR OTHER GENERALLY ACCEPTED ENGINEERING STANDARDS ACCEPTABLE TO THE BUILDING OFFICIAL. FPT AND VERIFICATION REQUIREMENTS FOR COMMISSIONING ARE AS STATED IN SECTION 4.2.5.1. COMMISSIONING SHALL DOCUMENT COMPLIANCE OF THE BUILDING SYSTEMS, CONTROLS, AND BUILDING ENVELOPE WITH REQUIRED PROVISIONS OF THIS STANDARD. COMMISSIONING REQUIREMENTS SHALL BE INCORPORATED INTO THE CONSTRUCTION DOCUMENTS.

REGISTERED PROFESSIONAL ENGINEER
98783PE
OREGON
NOV. 09, 2021
SEAN PATRICK DRAKE
09/21/22
RENEWS: 12/31/23

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ALSEA SCHOOL DISTRICT
1c9-2c22: K-12 BUILDING HVAC UPGRADE

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Date: 9-21-2022
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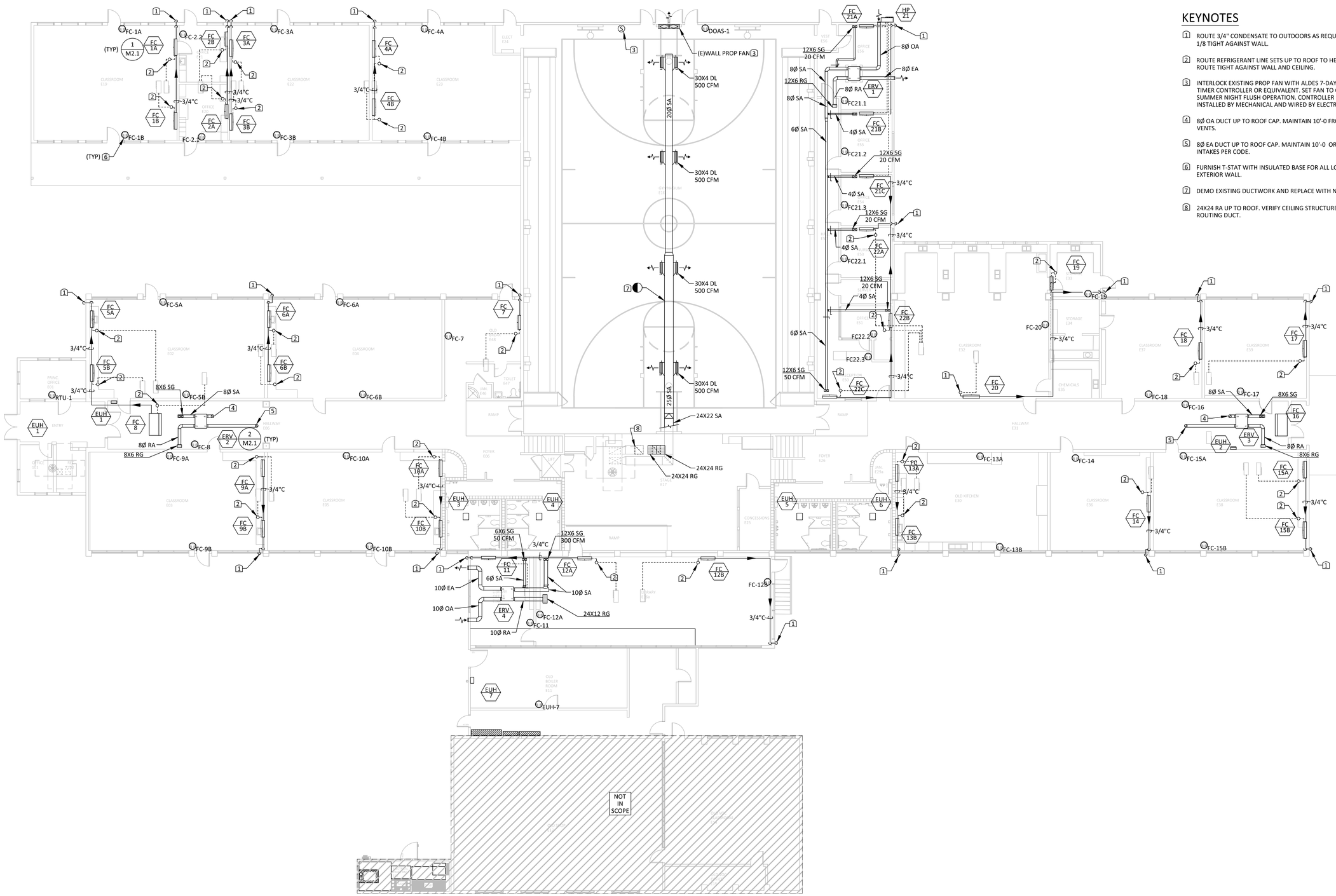
Version History: V1.0

PHASES (PH):

DESIGN DEVELOPMENT

DRAWING NO.
M0.2

ENERGY COMPLIANCE SHEET



KEYNOTES

1. ROUTE 3/4" CONDENSATE TO OUTDOORS AS REQUIRED. SLOPE AT 1/8 TIGHT AGAINST WALL.
2. ROUTE REFRIGERANT LINE SETS UP TO ROOF TO HEAT PUMP UNIT. ROUTE TIGHT AGAINST WALL AND CEILING.
3. INTERLOCK EXISTING PROP FAN WITH ALDES 7-DAY PROGRAMMABLE TIMER CONTROLLER OR EQUIVALENT. SET FAN TO OPERATE DURING SUMMER NIGHT FLUSH OPERATION. CONTROLLER PROVIDED AND INSTALLED BY MECHANICAL AND WIRED BY ELECTRICAL.
4. 8Ø OA DUCT UP TO ROOF CAP. MAINTAIN 10'-0 FROM EXHAUST AND VENTS.
5. 8Ø EA DUCT UP TO ROOF CAP. MAINTAIN 10'-0 OR 3'-0" ABOVE AIR INTAKES PER CODE.
6. FURNISH T-STAT WITH INSULATED BASE FOR ALL LOCATED ON EXTERIOR WALL.
7. DEMO EXISTING DUCTWORK AND REPLACE WITH NEW AS SHOWN.
8. 24X24 RA UP TO ROOF. VERIFY CEILING STRUCTURE PRIOR TO ROUTING DUCT.

1 M1.2 MAIN LEVEL - MECHANICAL PLAN

SCALE: 3/32"=1'

0' 4' 8' 16'

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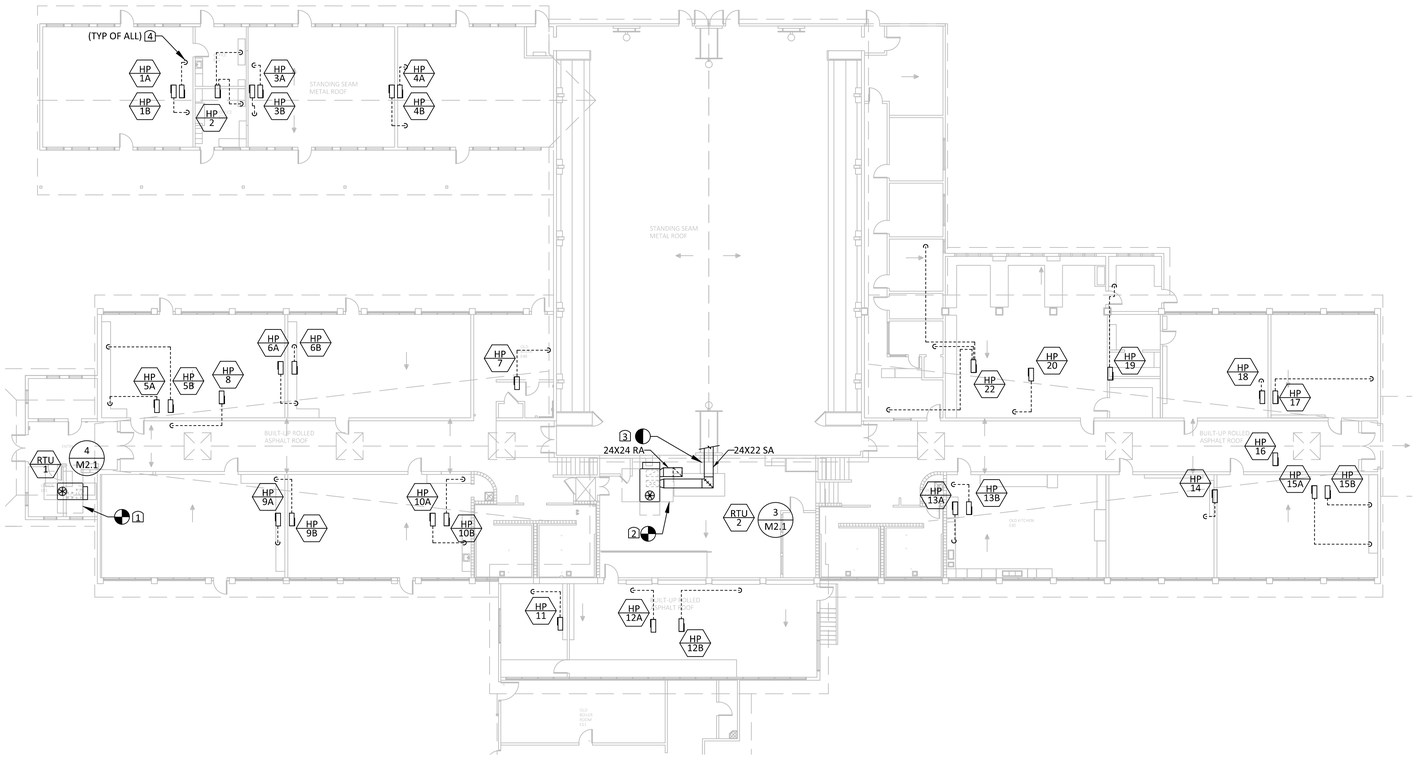
DESIGN DEVELOPMENT

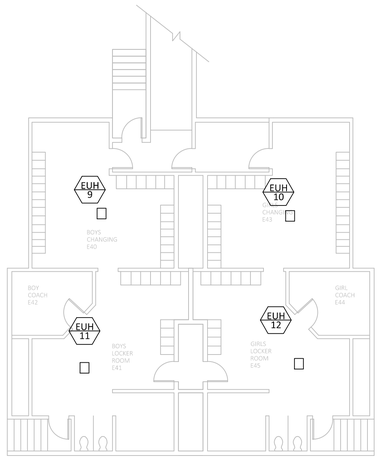
DRAWING NO.
M1.1
MECHANICAL PLAN



MECHANICAL ROOF PLAN

1 M1.2 SCALE: 1/16" = 1'

0' 8' 16' 32'



LOWER LEVEL - MECHANICAL PLAN

2 M1.2 SCALE: 3/32"=1'

0' 4' 8' 16'

KEYNOTES

1. DEMO EXISTING RTU WITH CURB AND LEGALLY DISPOSE OF. REPLACE WITH NEW AS SHOWN. RECONNECT DUCTWORK AND POWER AS REQUIRED.
2. DEMO EXISTING MECHANICAL UNIT WITH CURB AND LEGALLY DISPOSE OF. REPLACE WITH NEW AS SHOWN.
3. DEMO EXISTING DUCTWORK AND LEGALLY DISPOSE OF. REPLACE WITH NEW AS SHOWN.
4. REFRIGERANT LINE SET DOWN TO INDOOR FAN COIL UNIT. SEE DETAIL 1/M2.1.

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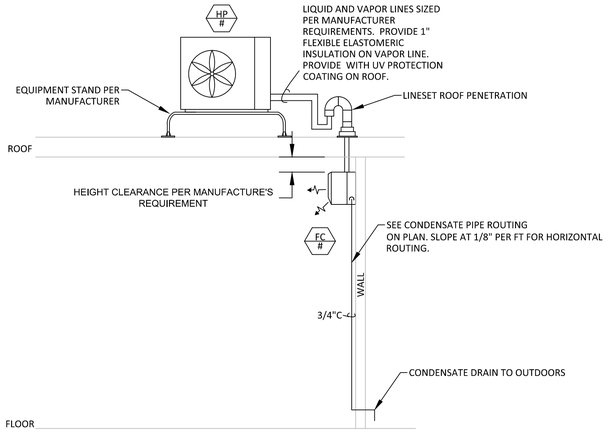
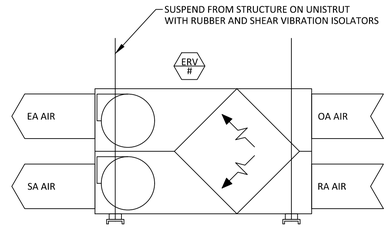
MECHANICAL PLAN



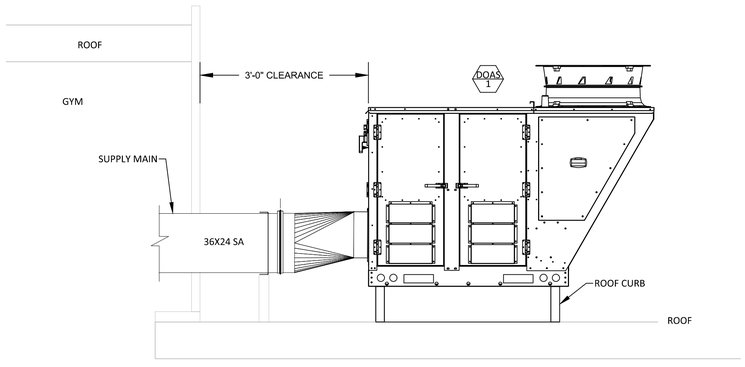
1 M2.1 DUCTLESS SPLIT SYSTEM DETAIL

SCALE: NTS



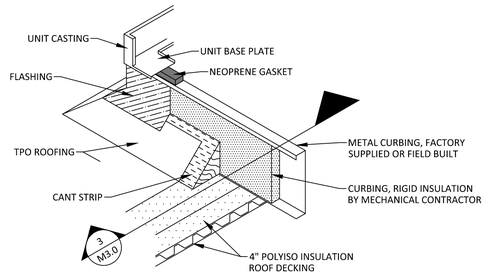
2 M1.1 ENERGY RECOVERY VENTILATOR

SCALE: NTS



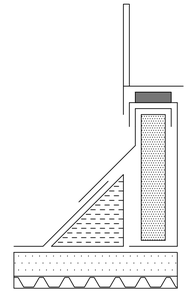
3 M2.1 DEDICATED OUTSIDE AIR UNIT DETAIL

SCALE: NTS



4 M2.1 ISOMETRIC ROOFCURB DETAIL

SCALE: NTS



5 M2.1 ROOFCURB SECTION DETAIL

SCALE: NTS

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PHASES (PH):

DESIGN DEVELOPMENT

DRAWING NO.
M2.1
MECHANICAL SCHEDULES

GENERAL

SCOPE OF WORK

1. CONTRACTOR SHALL PROVIDE AND INSTALL ALL REQUIRED LABOR, EQUIPMENT, AND MATERIALS AS SHOWN OR INDICATED IN THESE DRAWINGS. CONTRACTOR SHALL ALSO PROVIDE ANY REQUIRED SUPPORTING MATERIALS IN ORDER TO PROVIDE A FULLY FUNCTIONING SYSTEM AS PER THE DESIGN INTENT OF THESE DRAWINGS.
2. PROPER AND REASONABLE EFFORT TO ENSURE COMPLETE CONSTRUCTIONS DOCUMENTS HAS BEEN PROVIDED ON THESE DRAWINGS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE TO VERIFY DRAWINGS AND LOOK FOR ANY INACCURACIES BEFORE BIDDING ON PROJECT. IF ANY INACCURACIES ARE NOTICED, PLEASE REPORT THEM TO THE ENGINEER AS SOON AS POSSIBLE. DO NOT BID OR PERFORM ANY WORK BEFORE NOTIFYING ENGINEER OF THESE DISCREPANCIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY FEES, PERMITS, AND INSPECTIONS REQUIRED TO COMPLETE THE WORK INTENDED IN THESE DOCUMENTS.
4. COORDINATE ALL ROOF AND WALL PENETRATIONS WITH STRUCTURAL ENGINEER AND ROOFING CONTRACTOR TO ENSURE ALL PENETRATIONS ARE PROPERLY SEALED AND SUPPORTED.
5. PROVIDE ALL NECESSARY WORK INCLUDING ELECTRICAL, STRUCTURAL, AND ARCHITECTURAL TO COMPLETE THE WORK SHOWN IN THESE DRAWINGS UNLESS THAT WORK IS SPECIFICALLY CALLED OUT UNDER ANOTHER DIVISION.
6. COORDINATE ALL WORK WITH ALL OTHER DIVISIONS IN ORDER TO ENSURE WORK IS FULLY COMPLETED. ALSO COORDINATE THIS WORK WITH THE GENERAL CONTRACTOR.
7. CONTRACTOR IS RESPONSIBLE TO PROVIDE ANY NECESSARY SEISMIC RESTRAINTS PER LISTED CODE, MANUFACTURER, AND STANDARD RECOMMENDATIONS.
8. THE CONTRACTOR IS RESPONSIBLE TO REPAIR ANY AND ALL DAMAGE THAT OCCURS AS A RESULT OF THE WORK ON THIS PROJECT. WORK MUST BE REPAIRED TO A CONDITION THAT IS ACCEPTED BY OWNER.
9. CONTRACTOR SHALL ONLY EMPLOYEE COMPETENT, QUALITY TRADESMEN IN THE TRADE THEY ARE SKILLED IN FOR THE WORK THEY ARE PROVIDING.
10. CONTRACTOR SHALL PROVIDE AND INSTALL NEW MATERIALS AND EQUIPMENT UNLESS THOSE MATERIALS OR EQUIPMENT ARE SPECIFICALLY STATED TO BE REUSED.
11. ANY MATERIALS OR TRIM THAT IS REQUIRED IN ORDER TO MAKE A SYSTEM OPERATE PROPERLY SHALL BE PROVIDED AND INSTALLED EVEN IF THOSE MATERIALS ARE NOT SHOWN IN THESE DRAWINGS.
12. IF ANY TESTING IS REQUIRED FOR THIS WORK, CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANY REQUIRED MATERIAL, EQUIPMENT, OR LABOR.
13. ARCHITECT, ENGINEER, OWNER, OR HIS/HER REPRESENTATIVE MAY INSPECT THE WORK AT ANY TIME. IF WORK HAS BEEN COVERED, IT SHALL BE UNCOVERED FOR INSPECTION.
14. GET APPROVAL IN WRITING FROM OWNER, ARCHITECT, AND ENGINEER BEFORE PERFORMING ANY ADDITIONAL WORK YOU EXPECT TO BE COMPENSATED FOR.

EQUIPMENT AND MATERIAL HANDLING

1. ENSURE EQUIPMENT AND MATERIAL ORDERS ARE DELIVERED IN A TIMELY MANNER IN ORDER TO ENSURE PROJECT SCHEDULE IS CONFORMED TO.
2. CONTRACTOR IS RESPONSIBLE TO ENSURE EQUIPMENT AND MATERIAL IS NOT DAMAGED WHEN DELIVERED. ANY DAMAGED ITEMS SHALL BE REPLACED AT NO COST TO THE OWNER.
3. COORDINATE WITH THE GENERAL CONTRACTOR AND OWNER IN ORDER TO LOCATE A SAFE AND CLEAN SPACE IN ORDER TO STORE MATERIALS, EQUIPMENT, AND TOOLS IN AN ORGANIZED MANNER.
4. COORDINATE WORK AREAS WITH GENERAL CONTRACTOR TO ENSURE WORKPLACE SAFETY AND CONTRACTOR COORDINATION.
5. DAMAGED OR LOST EQUIPMENT OR MATERIALS SHALL BE REPLACED AT NO COST TO THE OWNER.
6. CONTRACTOR IS RESPONSIBLE TO PROVIDE A ONE YEAR WARRANTY FOR ALL WORK COMPLETED ON THIS PROJECT. WARRANTY COVERAGE SHALL INCLUDE EQUIPMENT, CRAFTSMANSHIP, AND ALL OTHER MATERIALS.

STANDARDS AND CODES

1. ALL MATERIALS AND WORK COMPLETED BY CONTRACTOR SHALL BE PERFORMED PER ALL CODE, MANUFACTURER, AND OWNER REQUIREMENTS, WHICHEVER IS MOST STRINGENT.
2. CONTRACTOR SHALL FOLLOW THE MOST RECENTLY ADOPTED EDITIONS OF THE FOLLOWING CODES AND STANDARDS:
   - 2.1. EXISTING BUILDING CODE OF OREGON
   - 2.2. OREGON FIRE CODE
   - 2.3. NATIONAL FIRE PROTECTION ASSOCIATION
   - 2.4. INTERNATIONAL FUEL GAS CODE
   - 2.5. OREGON ENERGY EFFICIENCY SPECIALTY CODE
   - 2.6. OREGON MECHANICAL SPECIALTY CODE
   - 2.7. OREGON PLUMBING SPECIALTY CODE
   - 2.8. AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS
   - 2.9. SHEET METAL AND AIR CONDITIONING NATIONAL ASSOCIATION
   - 2.10. ALL OTHER APPLICABLE LAWS AND REGULATIONS
3. THESE DRAWINGS DO NOT INTENTIONALLY, OR UNINTENTIONALLY PERMIT INSTALLATIONS NOT CONFORMING TO ANY OF THESE STANDARDS OR CODES. CONTRACTOR SHALL ENSURE INSTALLATIONS MEET OR EXCEED THESE REQUIREMENTS.

EQUIPMENT SUBMITTALS

1. PROVIDE EQUIPMENT SUBMITTALS FOR ALL EQUIPMENT NECESSARY FOR THIS PROJECT. THIS INCLUDES MECHANICAL EQUIPMENT, DUCTWORK, ACCESSORIES, PIPING, PLUMBING FIXTURES, VALVES, TRIM, ETC. SUBMIT EVERYTHING REQUIRED FOR THIS PROJECT IN ONE PACKAGE NEATLY ORGANIZED AND LABELED FOR REVIEW. CLEARLY STATE CAPACITIES AND EQUIPMENT OPTIONS.
2. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ANY CHANGES FROM ORIGINAL DESIGN INCLUDING, BUT NOT LIMITED TO DIMENSIONS, STRUCTURAL IMPACTS, ELECTRICAL IMPACTS, ETC. CONTRACTOR IS RESPONSIBLE FOR THE COSTS RESULTING FROM THESE CHANGES.

CLEANING

1. CLEAN ALL WORK AFTER IT HAS BEEN COMPLETED. THIS INCLUDES, BUT IS NOT LIMITED TO HYDRONIC CHEMICAL TREATMENT, DUCT CLEANING, EQUIPMENT CLEANING, VALVE CLEANING, STRAINER CLEAN OUT, DOMESTIC WATER PIPING CLEANING, AND GAS PIPING CLEANING.
2. CLEAN UP SITE AT THE END OF EACH DAY AFTER WORK. ONCE ALL WORK HAS BEEN COMPLETED, CLEAN UP THE SITE IN A CONDITION SATISFACTORILY TO THE OWNER.

COORDINATION

1. ALL WORK DUE TO THESE CONSTRUCTION DOCUMENTS SHALL BE COORDINATED WITH OTHER TRADES TO ENSURE EFFICIENT CONSTRUCTION. THIS COORDINATION SHALL OCCUR BEFORE BEGINNING CONSTRUCTION.
2. COORDINATE ALL ELECTRICAL CONNECTIONS WITH ELECTRICAL CONTRACTOR BEFORE BEGINNING WORK.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CONDUIT, SLEEVES, PIPING, EQUIPMENT, AND DUCT LOCATIONS BEFORE CONCRETE IS POURED.

MATERIALS AND EQUIPMENT

GENERAL EQUIPMENT REQUIREMENTS

1. EQUIPMENT MAKE AND MODELS IN THESE CONSTRUCTION DOCUMENTS ARE TO ESTABLISH DESIGN INTENT. ALTERATIONS FROM THESE SELECTIONS ARE ACCEPTABLE AS LONG AS THEY ARE REVIEWED BY THE ENGINEER FOR CONFORMANCE TO DESIGN INTENT. CONTRACTOR IS STILL RESPONSIBLE FOR DIMENSIONS AND ELECTRICAL COORDINATION.
2. CONTRACTOR TO ENSURE EQUIPMENT AND MATERIALS ARE UL LISTED OR APPROVED BY A SIMILAR LISTING PROCESS.
3. CONTRACTOR IS RESPONSIBLE FOR ALL ACCESS DOORS REQUIRED IN THIS PROJECT FOR EQUIPMENT, FIRE DAMPERS, SMOKE DAMPERS, FIRE/SMOKE DAMPERS, MATERIAL, VALVE, OR FITTING ACCESS. ACCESS PANEL SIZE SHALL BE APPROPRIATE FOR THE EQUIPMENT OR VALVE TO BE ACCESSED. COORDINATE WITH ARCHITECTURAL DRAWINGS. FRAME SHALL BE MOUNTED FLUSH TO THE SURFACE WITH APPROPRIATE LOCKING MECHANISM. ACCESS PANEL SHALL BE APPROPRIATELY RATED AND INSTALLED IF LOCATED IN A RATED ASSEMBLY.

MATERIALS

DUCTWORK

1. ALL DUCT WORK SHALL BE G90 GALVANIZED SHEET METAL CONSTRUCTED PER SMACNA DUCT CONSTRUCTION STANDARDS. SUPPLY DUCT SHALL BE CONSTRUCTED TO SMACNA 2 IN. WG. PRESSURE CLASS. ALL RETURN, EXHAUST, AND TRANSFER DUCT SHALL BE CONSTRUCTED TO 1 IN. WG. PRESSURE CLASS. SUPPLY AND RETURN DUCT SHALL BE SEALED TO SMACNA SEAL CLASS A. ALL DUCT SHALL BE CLEANED PER SMACNA DUCT CLEANLINESS GUIDELINES TO THE INTERMEDIATE LEVEL. ALL DUCTWORK SHALL BE 26 GAUGE AT A MINIMUM.
2. ROUND DUCTWORK IN EXPOSED AREAS SHALL BE SPIRAL CONSTRUCTION.
3. ROUND DUCTWORK THAT IS LINED SHALL BE MCGILL K-27 OR EQUAL.
4. ALL DUCTWORK SHALL BE SEALED WITH DUCT SEALER.
5. ALL DUCTWORK SHALL BE SUPPORTED AND BRACED APPROPRIATELY PER MANUFACTURER AND SEISMIC REQUIREMENTS.
6. FLEXIBLE DUCTWORK RUNOUTS SHALL BE LIMITED TO 5 FEET UNLESS DRAWINGS STATE OTHERWISE OR YOU HAVE APPROVAL FROM THE OWNER AND ENGINEER.

DUCT INSULATION

1. CONCEALED FRESH AIR, SUPPLY, AND RETURN DUCTWORK SHALL BE INSULATED WITH 1-1/2" INSULATION WITH A MINIMUM R-VALUE THAT MEETS THE REQUIREMENTS OF THE IECC.
2. EXPOSED FRESH AIR, SUPPLY, AND RETURN DUCTWORK SHALL BE ACOUSTICALLY LINED WITH A MINIMUM R-VALUE THAT MEETS THE REQUIREMENTS OF THE IECC.
3. EXTERIOR FRESH AIR, SUPPLY, AND RETURN DUCTWORK SHALL BE DOUBLE WALLED CONSTRUCTION WITH 2" INSULATION WITH A MINIMUM R-VALUE THAT MEETS THE REQUIREMENTS OF THE IECC.

GRILLES, REGISTERS, AND DIFFUSERS

1. VERIFY ALL SURFACES AND REFLECTED CEILING PLANS BEFORE ORDERING DIFFUSERS. ALTERNATE MANUFACTURERS ARE ALLOWED AS LONG AS SUPPLIER VERIFIES SIZING TO ENSURE PROPER THROW AND NOISE CRITERIA. ENSURE APPEARANCE OF ALTERNATE IS SIMILAR TO ORIGINAL DESIGN.

ACCESSORIES

1. CONTRACTOR SHALL PROVIDE FILTERS FOR ALL PIECES OF EQUIPMENT. IF EQUIPMENT IS RAN DURING CONSTRUCTION, REPLACE FILTERS ONCE THE PROJECT IS TURNED OVER TO THE OWNER. SEE THESE DOCUMENTS OF MANUFACTURER RECOMMENDATIONS FOR FILTER SIZES AND REQUIREMENTS.
2. PROVIDE AND INSTALL FLEXIBLE CONNECTIONS ON ALL PIECES OF EQUIPMENT THAT HAS A CHANCE OF VIBRATING. THIS INCLUDED DUCTWORK AND PIPING. PROVIDE AN APPROPRIATE FLEX CONNECTION FOR THE APPLICATION IT IS USED.
3. CONTRACTOR SHALL SUPPLY FIRE, SMOKE, AND FIRE/SMOKE DAMPERS AS SHOWN ON DRAWINGS AS WELL AS WHERE REQUIRED BY CODE. FIRE DAMPERS SHALL MEET ALL CODE AND UL REQUIREMENTS. PROVIDE FIRE/SMOKE DAMPERS WITH 120 VOLT ACTUATOR.
4. PROVIDE PARALLEL BLADE MANUAL BALANCE DAMPERS ON ALL DUCTWORK RUNOUTS UNLESS DRAWINGS STATE OTHERWISE.

EXECUTION

MATERIALS

1. DUCTWORK SHALL BE KEPT CLEAN OF ALL DIRT AND DEBRIS. IT SHALL ALSO BE COVERED AT THE END OF EACH DAY TO LIMIT THE AMOUNT OF DUST INTRUSION. TEST DUCTWORK FOR LEAKAGE PER IMC AND IECC REQUIREMENTS. PROVIDE AND INSTALL APPROPRIATE HANGERS FOR ALL DUCTWORK PER MANUFACTURER AND CODE REQUIREMENTS. ENSURE DUCTWORK CONSTRUCTION MEETS CODE, SMACNA, AND ASHRAE REQUIREMENTS.
2. CLEAN AND SEAL ALL EQUIPMENT PRIOR TO INSTALLING NEW FILTERS. REPLACE FILTER IF EQUIPMENT WAS RAN DURING CONSTRUCTION.

EQUIPMENT

1. INSTALL ALL EQUIPMENT PER MANUFACTURER AND CODE REQUIREMENTS. ENSURE EQUIPMENT IS ACCESSIBLE FOR EASE OF MAINTENANCE.
2. ENSURE EQUIPMENT IS PROPERLY ANCHORED AND BRACED FOR CODE, MANUFACTURER, AND STRUCTURAL REQUIREMENTS.
3. IDENTIFY EACH PIECE OF EQUIPMENT AS SHOWN IN THESE CONSTRUCTION DOCUMENTS WITH PLASTIC TAGS INCLUDING EQUIPMENT ABBREVIATION AND NUMBER. CONTACT ENGINEER IF THERE IS A DISCREPANCY IN NUMBERING.

CONTROLS

1. CONTRACTOR SHALL PROVIDE CONTROLS ON THIS PROJECT PER CONSTRUCTION DRAWING REQUIREMENTS. CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT, PROGRAMMING, VALVES, AND TRIM TO ENSURE A COMPLETE FUNCTIONING SYSTEM THAT OPERATES PER THE DESIGNED SEQUENCE OF OPERATION.
2. COORDINATE ALL WORK WITH THE ELECTRICAL CONTRACTOR FOR ALL WORK INCLUDING CONDUIT, WIRING, AND ELECTRICAL CONNECTIONS.
3. EXPOSED WIRING IN A PLENUM SHALL BE PLENUM RATED AND MEET ALL CODE REQUIREMENTS.

TESTING, ADJUSTING, AND BALANCING

1. PROVIDE TESTING, ADJUSTING, AND BALANCING ON THIS PROJECT INCLUDING ALL AIR FLOWS, STATIC PRESSURES, AND OTHER CONDITIONS OF THE EQUIPMENT. PROVIDE A REPORT SHOWING ALL ACTUAL VERSUS DESIGN CONDITIONS.

EQUIPMENT START UP

1. ENSURE EQUIPMENT IS PROPERLY SET UP BEFORE STARTING. THIS INCLUDES, BUT IS NOT LIMITED TO SAFETY VALVES, VALVES, TRIM, WIRING, LUBRICATION, CONTROLS, ETC.
2. START EQUIPMENT AND PROVIDE OWNER WITH DOCUMENTATION OF START UP AND PROPER EQUIPMENT OPERATION.

CLEANING AND PATCHING

1. CLEAN THE WORK SITE COMPLETELY AT THE END OF THE PROJECT IN A MANNER ACCEPTABLE TO OWNER. REPAIR ANY DAMAGED FINISHED SURFACES WITH A CRAFTSMAN THAT IS SKILLED IN THAT TRADE.

TRAINING

1. PROVIDE OWNER WITH APPROPRIATE TRAINING ON EQUIPMENT OPERATION AND MAINTENANCE. PROVIDE OWNER WITH RED LINE DRAWINGS, SUBMITTALS, WARRANTY INFORMATION, AND OPERATION AND MAINTENANCE MANUALS AT THIS TIME.

REGISTERED PROFESSIONAL ENGINEER
98785PE
OREGON
NOV. 09, 2021
SEAN PATRICK DRAKE
09/21/22
RENEWS: 12/31/23

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PHASES (PH):

DESIGN DEVELOPMENT

DRAWING NO.
M3.1
MECHANICAL SPECIFICATIONS