

ABBREVIATIONS											
AFF	ABOVE FINISH FLOOR	CNTR	COUNTER	FS	FULL SIZE / FULL SCALE	MECH	MECHANICAL	RO	ROUGH OPENING		
ACUST	ACOUSTICAL	CTSK	COUNTERSINK	FOIC	FURNISHED BY OWNER	MDO	MEDIUM DENSITY OVERLAY	SECT	SECTION		
ACP	ACOUSTICAL CEILING PANEL	DET	DETAIL	FURR	INSTALLED BY CONTRACTOR	MEMB	MEMBRANE	SHG	SHEATHING		
ACT	ACTUAL CEILING TILE	DIA	DIAMETER	FURR	FURRING	MTL	METAL	SHT	SHEET		
ADJ	ADJUST / ADJUSTABLE	DIM	DIMENSION	FUT	FUTURE	MIN	MINIMUM	SH	SHELF		
AL	ALUMINUM	DR	DOOR	G	GROUT	MISC	MISCELLANEOUS	SHWR	SHOWER		
AB	ANCHOR BOLT	DBL	DOUBLE	GALV	GALVANIZED	MTD	MOUNTED	SIM	SIMILAR		
APPROX	APPROXIMATELY	DN	DOWN	GI	GALVANIZED IRON	MUL	MULLION	SOG	SLAB ON GRADE		
ARCH	ARCHITECTURAL	DS	DOWNSPOUT	GA	GAUGE	NOM	NOMINAL	SC	SOLID CORE		
ASPH	ASPHALT	DWR	DRAWER	GLULAM	GLUE LAMINATED	NIC	NOT IN CONTRACT	SQ	SQUARE		
B	BASE	DWG	DRAWING	GLASS	GLASS	NTS	NOT TO SCALE	SF	SQUARE FOOT		
BM	BEAM	DF	DRINKING FOUNTAIN	GB	GRAB BAR	NO	NUMBER	SS	STAINLESS STEEL		
BTUM	BITUMINOUS	EA	EACH	GR	GRADE	OC	ON CENTER	STD	STANDARD		
BLK	BLOCK	ELEC	ELECTRICAL	GND	GROUND	OPNG	OPENING	STL	STEEL		
BLKG	BLOCKING	EL	ELEVATION	GWB	GYPSSUM WALL BOARD	OPP	OPPOSITE	STOR	STORAGE		
BD	BOARD	ELEV	ELEVATOR	GWBWR	WATER RESISTANT GWB	OH	OPPOSITE HAND	STRL	STRUCTURAL		
BOT	BOTTOM	EMER	EMERGENCY	GYP	GYPSSUM	OD	OUTSIDE DIAMETER	SV	SHEET VINYL		
BTM	BOTTOM	ENCL	ENCLOSURE	HDWE	HARDWARE	P	PAINT	SYM	SYMMETRICAL		
BC	BOTTOM OF CURB	EQ	EQUAL	HT	HEIGHT	PTD	PAPER TOWEL DISPENSER	SYS	SYSTEM		
BW	BOTTOM OF WALL	EQUIP	EQUIPMENT	HC	HOLLOW CORE	PART BD	PARTICLE BOARD	T	TILE		
BLDG	BUILDING	EXIST	EXISTING	HM	HOLLOW METAL	PERF	PERFORATED	THK	THICK		
OPT	CARPET	EXP	EXPANSION	HORIZ	HORIZONTAL	PLAS	PLASTER	T&G	TONGUE AND GROOVE		
CAB	CABINET	EJ	EXPANSION JOINT	HB	HOSE BIBS	PL	PLASTIC LAMINATE	TO	TOP OF		
CJ	CAST IRON	EXPO	EXPOSED	HR	HOUR	PLY	PLYWOOD	TYP	TYPICAL		
CIP	CAST IN PLACE	EXT	EXTERIOR	IN	INCH / INCHES	PLWD	PLYWOOD	UNF	UNFINISHED		
CLG	CEILING	F	FABRIC	ID	INSIDE DIAMETER	PT	POINT	UNO	UNLESS OTHERWISE NOTED		
CEM	CEMENT	FAC	FACE OF CONCRETE	INSUL	INSULATION	PP	POWER POLE	VG	VERTICAL GRAIN		
CTR	CENTER	POF	FACE OF FINISH	INT	INTERIOR	PREST	PRECAST	VCT	VINYL COMPOSITION TILE		
CT	CERAMIC TILE	FOM	FACE OF MASONRY	IRG	IMPACT RESISTANT GWB	PREFIN	PREFINISHED	WC	WATER CLOSET		
CLR	CLEAR	FOS	FACE OF STUD	JAN	JANITOR	PT	PRESSURE TREATED	WP	WATERPROOF		
CLO	CLOSER	FIN	FINISH	JT	JOINT	PIL	PROPERTY LINE	WT	WEIGHT		
COL	COLUMN	FIN	FINISH	KD	KNOCK DOWN	R	RADIUS	W	WEST		
CNC	CONCRETE	FF	FINISH FLOOR	LAV	LAVATORY	RAD	RADIANT	WDW	WINDOW		
CMU	CONCRETE MASONRY UNIT	FPE	FINISH FLOOR ELEVATION	LT	LIGHT	REFR	REFRIGERATOR	W	WITH		
COND	CONDUCTION	FL	FLOOR	M	MORTAR	REF	REFERENCE	W/O	WITHOUT		
CONST	CONSTRUCTION	FD	FLOOR DRAIN	MFR	MANUFACTURER	REINF	REINFORCED	WD	WOOD		
CONT	CONTINUOUS	FT	FOOT / FEET	MO	MASONRY OPENING	REQ	REQUIREMENTS	WWF	WOVEN WIRE FABRIC		
CONTR	CONTRACTOR	FT	FOOTING	RES	RISER / RISERS	R	RISER / RISERS	WR	WATER RESISTANT		
CJ	CONTROL JOINT	FTO	FOUNDATION	R	ROOF DRAIN	RD	ROOF DRAIN	WRB	WEATHER RESISTANT BARRIER		
CORR	CORRIDOR	FDN	FOUNDATION	RM	ROOM						

DIMENSIONS

1. DIMENSIONS ARE INDICATED IN THE DOCUMENTS. THE DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.

2. IN MANY INSTANCES, THE ACTUAL DIMENSIONS MAY BE LESS IMPORTANT THAN IF ELEMENTS ARE TO BE EQUAL. IN THESE CASES, THE NOTATION "EQ" IS USED IN LIEU OF THE ACTUAL DIMENSION.

3. DETAILS WILL GOVERN ALL DIMENSIONS NOT SHOWN ON PLANS. REFERENCE DETAIL DIMENSION POINTS.

4. EXTERIOR GRID LINES CORRESPOND TO EXTERIOR FACE OF SHEATHING.

5. CONCRETE AND MASONRY WALLS ARE DIMENSIONED TO FACE OF BRICK VENEER OR FACE OF CONCRETE UNLESS NOTED OTHERWISE.

6. INTERIOR WALLS ARE DIMENSIONED TO FACE OF FINISH UNLESS NOTED OTHERWISE.

7. INTERIOR WALLS WHICH ARE EQUALLY SPACED ARE DIMENSIONED TO CENTERLINE.

8. DOORS ARE LOCATED BY ONE OF THE FOLLOWING:

A. 4" FROM FACE OF ADJACENT WALL TO DOOR SIDE FACE OF JAMB.

4" TYP.

ADJACENT WALL

DOOR

B. AS DIMENSIONED.

LEGEND		
ROOM NAME AND NUMBER <div><div>NAME</div><div>ROOM NUMBER</div></div>	STRUCTURAL GRID <div>1</div>	NORTH ARROW <div><div>NORTH</div><div>PROJECT NORTH</div></div>
DOOR NUMBER <div><div>115-A</div><div>DOOR NUMBER</div><div>ROOM NUMBER</div></div>	EXTERIOR ELEVATION <div><div>1</div><div>DRAWING NUMBER</div><div>A2.01</div><div>SHEET NUMBER</div></div>	
WALL TYPE <div><div>W1.4 1</div><div>WALL TYPE</div><div>FIRE RATING (IN HOURS) WHERE OCCURS</div><div>FRAMING SIZE</div></div>	INTERIOR ELEVATION <div><div>1</div><div>DRAWING NUMBER</div><div>A5.01</div><div>SHEET NUMBER</div><div>2</div><div>3</div></div>	VERTICAL DATUM <div><div>LEVEL 2</div><div>12'-0"</div></div>
ASSEMBLY TYPE <div><div>F00 1</div><div>BUILDING ELEMENT</div><div>FIRE RATING (IN HOURS) WHERE OCCURS</div><div>ASSEMBLY TYPE</div></div>	BUILDING / WALL SECTION <div><div>1</div><div>DRAWING NUMBER</div><div>A3.01</div><div>SHEET NUMBER</div></div>	SPOT ELEVATION <div><div>00.00'</div></div>
FRAME TYPE <div><div>4</div><div>EXTERIOR FRAME</div><div>4</div><div>INTERIOR FRAME</div></div>	DETAIL CALLOUT <div><div>1</div><div>DRAWING NUMBER</div><div>A9.01</div><div>SHEET NUMBER</div></div>	REVISION DELTA <div><div>3</div><div>REVISION NUMBER</div><div>RFL 27</div><div>REVISION DESCRIPTION</div></div>
FINISH TYPE <div><div>P03</div><div>FINISH ELEMENT</div><div>FINISH TYPE</div></div>	CEILING HEIGHT <div><div>10' - 0"</div><div>CEILING HEIGHT ABOVE LEVEL</div></div>	

LEVEL 01 SITE PLAN

DEFERRED SUBMITTALS & SEPARATE PERMITS

GENERAL CONTRACTOR SHALL FILL IN THE NAME OF MANUFACTURER AND THE NAME OF THE OREGON REGISTERED ENGINEER WHO WILL STAMP CALCULATIONS AND SUBMITTALS FOR THE FOLLOWING SYSTEMS TO BE DESIGNED BY THE CONTRACTOR. THIS INFORMATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR TO THE CITY OF PORTLAND. DEFERRED SUBMITTAL INFORMATION SHALL BE SUBMITTED TO THE CITY OF PORTLAND IN TIME FOR PLAN AND CALCULATIONS REVIEW SO AS NOT TO DELAY CONSTRUCTION. DRAWINGS, MATERIAL SPECIFICATIONS, AND CALCULATIONS MEETING THE SPECIFIED REQUIREMENTS ARE TO BE SUBMITTED TO THE ARCHITECT FOR REVIEW OF CONFORMANCE TO DESIGN INTENT PRIOR TO SUBMITTAL TO THE CITY OF PORTLAND. UPON REVIEW, THE ARCHITECT WILL RETURN COPIES OF THE DOCUMENTS TO THE GENERAL CONTRACTOR FOR SUBMITTAL TO THE CITY OF PORTLAND FOR FINAL APPROVAL OR SEPARATE PERMIT

DEFERRED SUBMITTALS

SEPARATE PERMITS

SPECIAL INSPECTIONS

SEE TABLE 2 ON S0.02

NOTE: THE GENERAL CONTRACTOR SHALL SCHEDULE A FIRESTOPPING MEETING WITH THE BUILDING INSPECTOR AND ALL SUBCONTRACTORS THAT WILL BE INSTALLING FIRESTOPPING MATERIALS. EACH SUBCONTRACTOR SHALL PROVIDE A LIST OF FIRESTOP MATERIALS / ASSEMBLIES WHICH WILL BE USED; THE TYPE OF PENETRATIONS WHERE EACH MATERIAL / ASSEMBLY WILL BE USED; AND THE LISTING AND APPROVAL INFORMATION (i.e., UL, ICC, OR OTHER APPROVED REPORTS / LISTING NUMBERS). THIS INFORMATION MUST BE SUBMITTED TO, AND APPROVED BY THE BUILDING INSPECTOR PRIOR TO ANY INSTALLATION.

GENERAL PROJECT NOTES

1. THESE CONSTRUCTION DOCUMENTS SET MINIMUM STANDARDS. THE DRAWINGS SHALL GOVERN OVER GENERAL NOTES TO THE EXTENT SHOWN. DO NOT SCALE THE DRAWINGS. NOTED DIMENSIONS SHALL GOVERN.

2. ALL WORK PERFORMED, INCLUDING MATERIALS FURNISHED, WORKMANSHIP, MEANS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE APPLICABLE AND LATEST REQUIREMENTS OF NATIONAL, STATE, AND LOCAL BUILDING CODES, ALL LOCAL AND STATE HANDICAP ACCESS AND USE REGULATIONS, ANY FIRE DEPARTMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS AND GENERAL CONDITIONS OF APPLICABLE OWNER/CONTRACTOR AGREEMENT.

3. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL FILE ALL REQUIRED CERTIFICATES OF INSURANCE WITH THE OWNER AND THE BUILDING DEPARTMENT. OBTAIN ALL REQUIRED PERMITS, AND PAY ALL FEES REQUIRED BY THE GOVERNING AGENCIES, AND NAME THE OWNER AND HOLST ARCHITECTURE AND THEIR AGENTS AS ADDITIONAL INSURED.

4. DRAWINGS INDICATE LOCATION, DIMENSIONS, REFERENCE, AND TYPICAL DETAILS FOR CONSTRUCTION. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED BUT NECESSARY FOR PROPER CONSTRUCTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF THEY WERE INDICATED IN THE DRAWINGS. FOR CONDITIONS NOT ILLUSTRATED, NOTIFY ARCHITECT FOR CLARIFICATION AND/OR SIMILAR DETAIL.

5. CONTRACTOR SHALL EMPLOY ADEQUATE NUMBER OF SKILLED WORKERS WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK. ALL WORK SHALL BE PERFORMED BY DULY LICENSED TRADESMEN AND AS REQUIRED BY STATE AND LOCAL GOVERNMENTS FOR EACH APPLICABLE TRADE (PLUMBING, ELECTRICAL, ETC.) WHO SHALL ARRANGE FOR AND OBTAIN REQUIRED INSPECTIONS AND SIGN OFFS.

6. THESE DRAWINGS ARE DIVIDED INTO SECTIONS FOR CONVENIENCE ONLY. CONTRACTOR, SUBCONTRACTOR, VENDORS, AND MATERIAL SUPPLIERS SHALL REFER TO ALL RELEVANT SECTIONS IN BIDDING AND PERFORMING THEIR WORK AND SHALL BE RESPONSIBLE FOR ALL ASPECTS OF THEIR WORK REGARDLESS OF WHERE THE INFORMATION OCCURS IN THE DOCUMENTS.

7. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WORK OF ALL TRADES AND SHALL PROVIDE ALL DIMENSIONS PROVIDED FOR THE OTHER TRADES. SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATION OF THEIR WORK WITH THE WORK OF OTHERS, AND SHALL VERIFY THAT ANY WORK RELATING TO THEIR WORK WHICH MUST BE PROVIDED BY OTHERS HAS BEEN COMPLETED AND IS ADEQUATE PRIOR TO COMMENCING THEIR WORK.

8. CONTRACTOR SHALL PROVIDE STRUCTURAL BACKING/BLOCKING FOR ALL WALL MOUNTED FIXTURES, FINISHES, AND OTHER EQUIPMENT, AND FOR ALL HANGING FIXTURES, WINDOW BLINDS, ETC.

9. CONTRACTOR SHALL INSTALL ALL MATERIALS AND EQUIPMENT AS PER MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS.

10. CONTRACTOR SHALL AT ALL TIMES DURING THE COURSE OF THE CONTRACT KEEP THE ADJOINING PREMISES, INCLUDING STREETS AND OTHER AREAS ASSIGNED TO OR USED BY THE CONTRACTOR FREE FROM ACCUMULATIONS OF WASTE MATERIALS AND RUBBISH CAUSED BY CONTRACTOR'S EMPLOYEES, SUBCONTRACTORS, OR THEIR WORK.

11. CONTRACTOR SHALL ASSIST WITH THE DELIVERY AND STORAGE OF OWNER SUPPLIED ITEMS AND DISPOSE OF ANY RESULTING TRASH.

12. THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS OF TEMPORARY SHORING, BRACING, OR OTHERWISE PROTECTING ANY PORTION OF THE EXISTING STRUCTURE AND UTILITIES FROM DAMAGE DURING CONSTRUCTION. THE ENGINEER IS SPECIFYING THE FINISHED CONDITION ONLY, WITHOUT ASSUMING KNOWLEDGE OR RESPONSIBILITY OF HOW THE CONTRACTOR WILL ACHIEVE THIS RESULT.

13. CONTRACTOR SHALL VERIFY WITH OWNER AND IMPLEMENT ALL LANDLORD CONSTRUCTION AND DESIGN CRITERIA SHOWN ON THIS SET OF DRAWINGS.

VICINITY MAP - NTS

PROJECT SUMMARY

PROJECT NAME

INSTRUMENT T1 - WEST BUILDING

ADDRESS

3514 N VANCOUVER
PORTLAND, OR 97227

BUILDING CODE

OSSC 2014

ZONING

CM3dm

PROJECT DIRECTORY

TENANT

Instrument
3529 N Williams Ave
Portland, OR 97227
(503) 928 3188
Contact: Erin Kirby
Email: erin.kirby@instrument.com

ARCHITECT

Holst Architecture
110 SE 8th Avenue
Portland, OR 97214
(503) 233 9856
Contact: Kevin Valk
Email: kwalk@holstarc.com

CONTRACTOR

R&H Construction
1530 SW Taylor Street
Portland, OR 97205
(503) 228 7177
Contact: Evan Charpentier
Email: echarpentier@rconst.com

City of Portland
REVIEWED FOR CODE
COMPLIANCE
SEP 13 2019
Permit Number

100% CD SET
02.20.2019
issue: date:
100% SD 11.16.2019
PERMIT 02.15.2019

revision: date:
9 PERMIT R.1 5.17.2019
11 PERMIT R.2 7.22.2019

title:

DRAWING INDEX AND PROJECT SUMMARY

sheet:

DRAWING INDEX

GENERAL

G0.00 COVER SHEET
G0.01 DRAWING INDEX & PROJECT SUMMARY
G0.02 ADA STANDARDS
G1.00 CODE & LIFE SAFETY SUMMARY

ARCHITECTURAL

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A0.20 SCHEDULES & DOOR/RELITE DETAILS
A1.01 LEVEL 01 FLOOR PLAN
A1.02 LEVEL 01 FF&E PLAN
A1.03 LEVEL 01 FURNITURE PLAN
A1.04 ROOF PLAN
A5.01 INTERIOR ELEVATIONS & ENLARGEMENTS
A5.02 INTERIOR ELEVATIONS & ENLARGEMENTS
A5.03 INTERIOR ELEVATIONS & ENLARGEMENTS
A5.04 INTERIOR ELEVATIONS & ENLARGEMENTS
A5.05 INTERIOR ELEVATIONS
A5.06 LEVEL 01 REFLECTED CEILING PLAN
A7.01 INTERIOR DETAILS
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STRUCTURAL

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MECHANICAL

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M0.01 MECHANICAL EQUIPMENT SCHEDULES
M1.01 ROOF PLAN - HVAC
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ELECTRICAL

E0.01 SYMBOLS, SPECIFICATIONS, SCHEDULES
E0.02 LIGHTING FIXT., LIGHTING COMPLIANCE
E0.03 POWER DISTRIBUTION, SCHEDULES
E1.01 LEVEL 01 LIGHTING PLAN
E2.01 LEVEL 01 POWER PLAN
E3.01 LEVEL 01 MECH/ELEC PLAN
E4.01 LEVEL 01 SIGNAL PLAN

HOLST

110 SE 8TH AVE.
PORTLAND, OR
97214

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3514 N VANCOUVER
PORTLAND, OR 97227

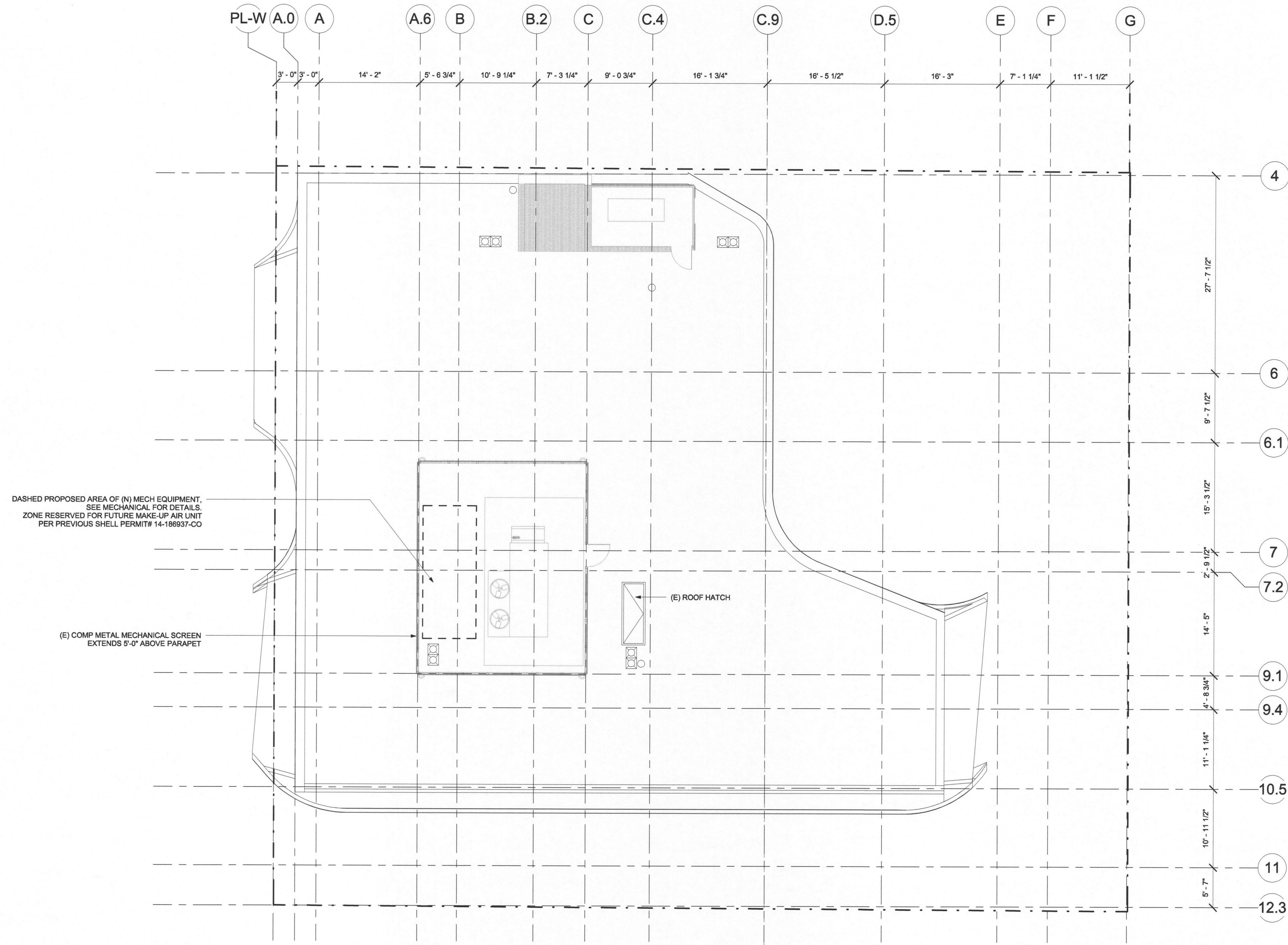
JOB NO. 18-046.00

REGISTERED ARCHITECT
KIMBERLEY A. WILSON
PORTLAND, OR
STATE OF OREGON

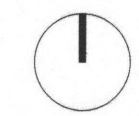
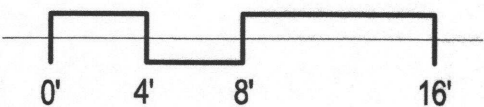
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1 ROOF PLAN
A1.04 1/8" = 1'-0"



BRANCH SELECTORS

TAG	EXST.	NEW	MNFR	MODEL	LOCATION	OUTDOOR UNIT	ELECTRICAL		OPERATING WEIGHT (LBS)	NOTES
							VOLTAGE	MCA		
HRB-01-01	X		LG	PRHR042A	ABOVE 1ST FLR CEILING	HP-R-03	208/230/1	0.2	49	
HRB-01-02	X		LG	PRHR042A	ABOVE 1ST FLR CEILING	HP-R-03	208/230/1	0.2	49	
HRB-01-03		X	LG	PRHR042A	ABOVE 1ST FLR CEILING	HP-R-03	208/230/1	0.2	49	1
Notes: 1. Verify ceiling access to branch selector.										

DIFFUSER, REGISTER AND GRILLE SCHEDULE

TAG	DESCRIPTION	FACE	FINISH	BASIS OF DESIGN (OR EQUAL)	NOTES
CD-1	CEILING SUPPLY DIFFUSER	PERFORATED	WHITE	TITUS PCS ; PRICE PDC	LAY-IN CEILING
SG-1	SIDEWALL SUPPLY GRILLE	DOUBLE DEFLECTION, ADJ	WHITE	TITUS 300RS ; PRICE 520	3/4" BLADE SPACING W/ OBD
CR-1	CEILING RETURN/EXHAUST	EGGCRATE	WHITE	TITUS 50F ; PRICE 80	HARD LID CEILING
T-1	DOOR TRANSFER GRILLE	FIXED BLADES	WHITE	AJ 1900	1 HR. FIRE RATED.
NOTES:					

A

AIR CONDITIONING & HEAT RECOVERY UNIT SCHEDULE

TAG #	HRU-R-1
BASIS OF DESIGN	MANJF. AAOB
	MODEL RN-016
AREA SERVED	WEST BUILDING
SUPPLY FAN	
SUPPLY FAN TYPE / QUANTITY	PLENUM
SUPPLY FAN CONFIG.	DRAW THRU
SUPPLY CFM	5390
SUPPLY E.S.P.	2"
SUPPLY BHP / HP	7.50/5.24
SUPPLY MOTOR EFFICIENCY	67%
VARIABLE FREQUENCY DRIVE	NA
EXHAUST FAN	
EXHAUST FAN TYPE / QUANTITY	PLENUM
EXHAUST CFM	5390
EXHAUST E.S.P.	1.25"
EXHAUST BHP / HP	3.42/5.00
EXHAUST MOTOR EFFICIENCY	65%
VARIABLE FREQUENCY DRIVE	NA
COOLING	
COOLING COIL EAT (DB/WB)	81/64
COOLING COIL LAT (DB/WB)	52/52
COOLING MBH SENSIBLE/TOTAL	164/178
COOLING RECOVERY	
OUTSIDE AIR TEMPERATURE (DB/WB)	91/67
RETURN AIR TEMPERATURE (DB/WB)	75/62
SUPPLY AIR CFM	5390
EXHAUST AIR CFM	5390
SUPPLY AIR LAT (DB/WB)	80/64
EXHAUST AIR LAT (DB)	86/65
MINIMUM EFFICIENCY	50%
COOLING MBH RECOVERY SENSIBLE/TOTAL	62/56
UNIT TOTAL CAPACITY	
COOLING MBH SENSIBLE/TOTAL	226/235
HEATING	
HEATING TYPE, PRIMARY	HEAT PUMP
HEATING TYPE, AUXILIARY	NATURAL GAS
HEATING COIL EAT (DB/WB)	54/47
HEATING COIL LAT (DB/WB)	91/62
HEATING MBH, PRIMARY (TOTAL)	144.1
STAGES OF HEATING	MODULATING
AUX. HEATING INPUT (MBH)	270
AUX. HEATING OUTPUT (MBH)	218
COMBUSTION EFFICIENCY - AFUE (PERCENT)	80
HEATING RECOVERY	
OUTSIDE AIR TEMPERATURE (DB/WB)	22/21
RETURN AIR TEMPERATURE (DB/WB)	70/58
SUPPLY AIR CFM	5390
RETURN AIR CFM	5390
SUPPLY AIR LAT (DB/WB)	54/47
EXHAUST AIR LAT (DB)	35/37
MINIMUM EFFICIENCY	50%
HEATING MBH RECOVERY SENSIBLE/TOTAL	185/274
UNIT TOTAL CAPACITY	
HEATING MBH (PRIMARY HTG PLUS HEAT WHEEL)	314
ELECTRICAL	
VOLTAGE/PHASE	480/3
UNIT MCA	52
UNIT MOP	60
BRANCH FUSES AND MOTOR	YES
SUPPLY SMOKE DETECTOR	BY ELEC.
STARTER	BY ELEC.
DISCONNECT	BY ELEC.
SINGLE POINT CONNECTION	YES
110 V. SERVICE OUTLET WITHIN 25'	BY ELEC.
UNIT SIZE	
OVERALL HEIGHT (NOT INCLUDING CURB)	59"
OVERALL WIDTH	101"
OVERALL LENGTH	110"
TOTAL WEIGHT (LBS)	3517
MISC.	
MINIMUM OUTSIDE AIR (CFM)	100%
FILTER EFF. (%)	80%
NOMINAL TONNAGE	16
UNIT EER AT OPERATING CONDITIONS	10.0
UNIT COP AT OPERATING CONDITIONS	5.3
TYPE OF REFRIGERANT	R-410A
FACTORY CURB	YES

NOTE:
EXISTING HRU-R-1 PROVIDED AND INSTALLED ON CORE AND SHELL.

VARIABLE REFRIGERANT FAN COILS

TAG	DESCRIPTION	MNFR	MODEL	SERVING	OUTDOOR UNIT	SA CFM	COOLING CAPACITY	HEATING	ELECTRICAL			SOUND PRESSURE dBA	OPERATING WEIGHT (LBS)	NOTES
							TOTAL (MBH)	CAPACITY (MBH)	VOLTAGE	MCA¹	MOCP²			
FC-1-1-1	24x24 Cassette	LG	ARNU053TRD4	Break Room 03	HP-R-03	247	5.5	6.1	208/230/1	0.2	15	26-29	29	
FC-1-1-2	36x36 Cassette	LG	ARNU363TMA4	Open Office SW 01	HP-R-03	812	36.2	40.6	208/230/1	1.3	15	37-44	59	
FC-1-1-3a	24x24 Cassette	LG	ARNU093TRD4	Open Office 01	HP-R-03	424	9.6	10.9	208/230/1	0.6	15	24-29	54	3
FC-1-1-3b	24x24 Cassette	LG	ARNU093TRD4	Open Office 01	HP-R-03	424	9.6	10.9	208/230/1	0.6	15	24-29	54	3
FC-1-1-3c	24x24 Cassette	LG	ARNU123TRD4	Open Office 01	HP-R-03	283	12.3	13.6	208/230/1	0.2	15	27-32	32	3
FC-1-1-4	Wall mounted unit	LG	ARNU093SJA4	Conference Rm. 01	HP-R-03	254	9.6	10.9	208/230/1	0.3	15	28-34	19	1
FC-1-3-1	Wall mounted unit	LG	ARNU053SJA4	Conference Rm. 02	HP-R-03	230	5.5	6.1	208/230/1	0.3	15	28-30	19	1
FC-1-3-2	Horizontal ducted (high static)	LG	ARNU073BHA4	Focus Rm. 01 / 02	HP-R-03	198	7.5	8.5	208/230/1	1.1	15	32-34	58	5
FC-1-3-3	36x36 Cassette	LG	ARNU243TMA4	Open Office E 02	HP-R-03	530	24.2	27.3	208/230/1	0.2	15	31-36	48	
FC-1-3-4a	24x24 Cassette	LG	ARNU183TQD4	Open Office S 02	HP-R-03	283	12.3	13.6	208/230/1	0.2	15	27-32	32	4
FC-1-3-4b	24x24 Cassette	LG	ARNU183TQD4	Open Office S 02	HP-R-03	283	12.3	13.6	208/230/1	0.2	15	27-32	32	4
FC-1-1	1 Way Cassette	LG	ARNU093TJC2	Lobby	HP-R-03	229	9.6	10.9	208/230/1	0.2	15	37-40	25	6
FC-1-2	1 Way Cassette	LG	ARNU093TJC2	Lobby	HP-R-03	229	9.6	10.9	208/230/1	0.2	15	37-40	25	6
FC-1-3	Horizontal ducted	LG	ARNU0363BGA4	Retail 3	HP-R-03	894	36.2	40.6	208/230/1	2.7	15	42-44	84	6
Notes: 1. Install condensate pump 2. Not Used 3. Unit FC-1-2-3a, FC-1-2-3b and FC-1-2-3c to be twinned together and run off one thermostat. 4. Unit FC-1-3-4a and FC-1-3-4b to be twinned together and run off one thermostat. 5. Field installed filter rack with MERV 13 filter. 6. Existing equipment not in scope on the first floor.														

CONSTANT VOLUME - OUTSIDE AIR CALCULATIONS

SYSTEM	ROOM NAME	SPACE TYPE	FLOOR AREA, A _z (SF)	OSA PER AREA, R _A (CFM / SF)	OSA FOR SPACE (CFM)	OCCUPANT DENSITY (# / 1,000 SF)	NUMBER OF OCCUPANTS, P _z (-)	OSA PER PERSON, R _p (CFM / PERSON)	OSA FOR OCCUPANTS (CFM)	BREATHING ZONE, V _{Bz} (CFM)	EFFECTIVENESS, E _z (-)	Required ZONE OSA, V _{oz} (CFM)	Design Airflow (CFM)	FRESH AIR SOURCE	
HP-R-01	Breakroom	Break Room	260	0.06	15.6	70	18.2	5.0	91.0	107	0.8	134	500	Fresh Air Opening in HP-R-01	
	Open Office	Office Space	3,100	0.06	186.0	5	15.5	5.0	77.5	264	0.8	330			
	Conference Rm. 01	Conference Room	178	0.06	10.7	50	8.9	5.0	44.5	55	0.8	69			75
	Conference Rm. 02	Conference Room	107	0.06	6.4	50	5.4	5.0	26.8	33	0.8	42			50
	Focus Room	Office Space	45	0.06	2.7	5	0.2	5.0	1.1	4	0.8	5			30
			3,690	TOTAL OSA (VOT) FOR HP-R-01:								580	655		
Notes: 1. Ventilation rate procedure per 2014 OMSC 403.3															

VARIABLE REFRIGERANT VOLUME UNITS

SYMBOL	QTY.	MANF.	MODEL	LOCATION	COOLING CAPACITY	HEATING INPUT	EQ. REFRIGERANT	AMBIENT TEMP		ELECTRICAL			REFER. TYPE	OPER. WEIGHT (LBS.)	NOTES
					(MBH)	(MBH)	(LBS)	SUM.	WIN.	VOLTS / PHASE	MCA (AMPS)	MOCP (AMPS)			
HP-R-03	1	LG	ARUM241DTE5	ROOF	233	243	37.5	90.8	21.9	460 / 3	41.4	50	R410A	666	1
NOTES: 1. REFERENCE SUBMITTALS FOR LINESET SIZES, AND REFNET SIZES															

NOTE:
BARRING LINESET LENGTHS AND REFRIGERATION CHARGE, LG VRF SYSTEMS CAN TYPICALLY RUN BETWEEN 50% AND 130% OF THE HEAT PUMPS CAPACITY PER MANUFACTURES SUBMITTALS AND INSTALLATION INSTRUCTIONS. THIS SYSTEM WAS DESIGNED WITHIN THESE CONSTRAINTS.



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INSTRUMENT TI -
GROUND FLOOR WEST

3514 N VANCOUVER
PORTLAND, OR 97227

REVISIONS

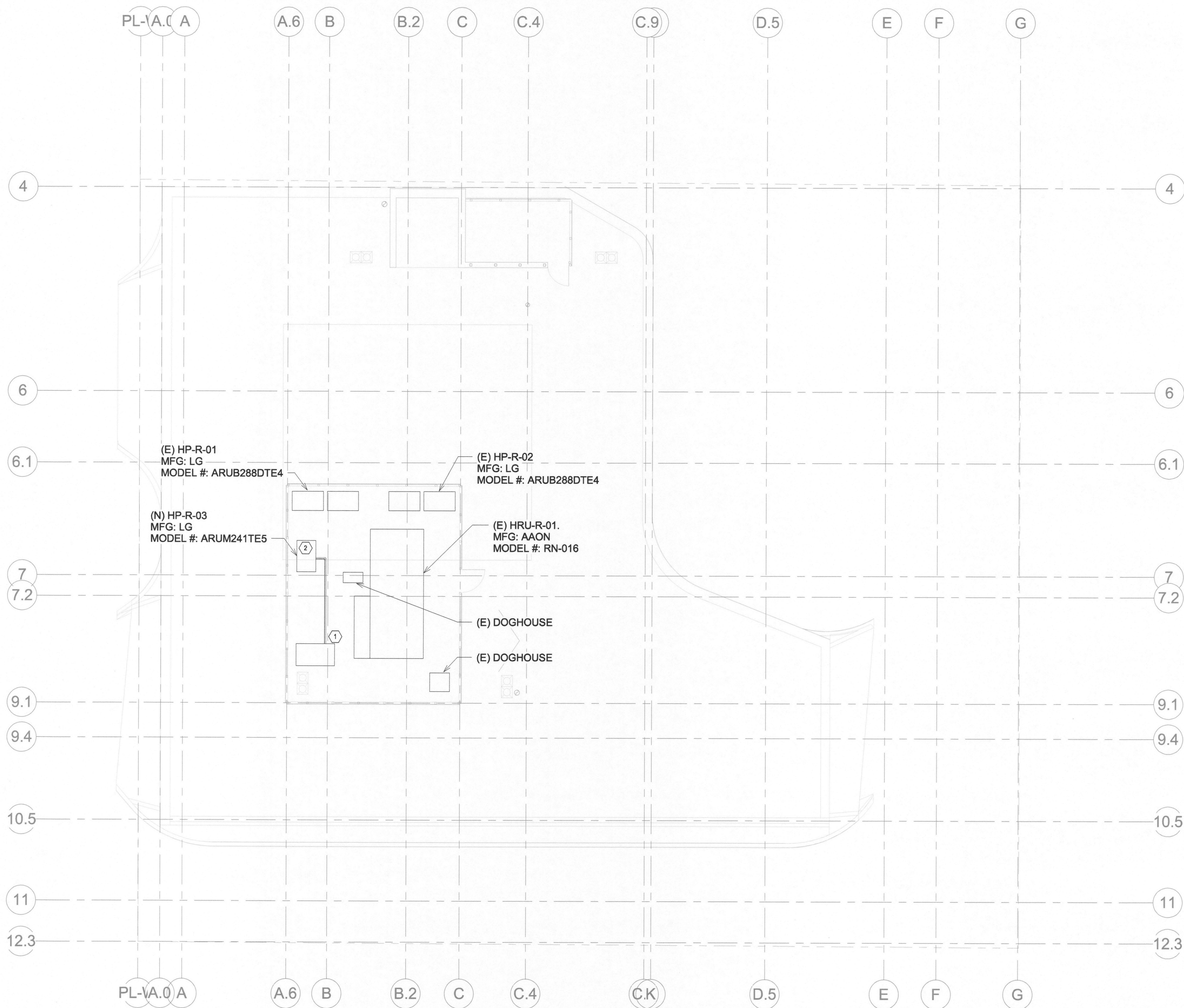
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2	REV. 2	2019_07-23
3	REV. 3	2019_07-25

DATE	1/9/2019
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MECHANICAL
EQUIPMENT
SCHEDULES

M001

PERMIT
DRAWINGS



KEY NOTES:

- ① LINE SETS ROUTE INTO DOGHOUSE. LINE SETS ROUTE ALONG 5TH FLOOR MENS RESTROOM CEILING AND DOWN MENS RESTROOM WEST WALL TO 1ST FLOOR. LINE SETS TIE INTO HRB-01-01 AND HRB-01-02.
- ② NEW 20-TON HEAT PUMP ON THE ROOF. MAINTAIN CLEARANCE REQUIREMENTS PER INSTALLATION INSTRUCTION. REFERENCE 3/M501 & 4/M501 FOR HEAT PUMP MOUNTING DETAIL AND PIPE SUPPORT DETAIL.



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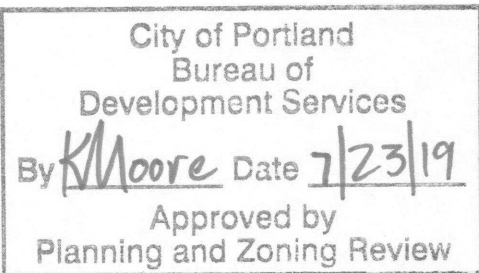
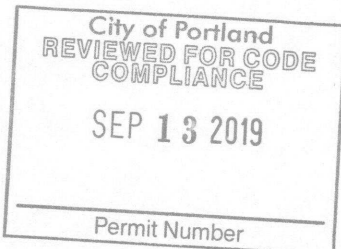


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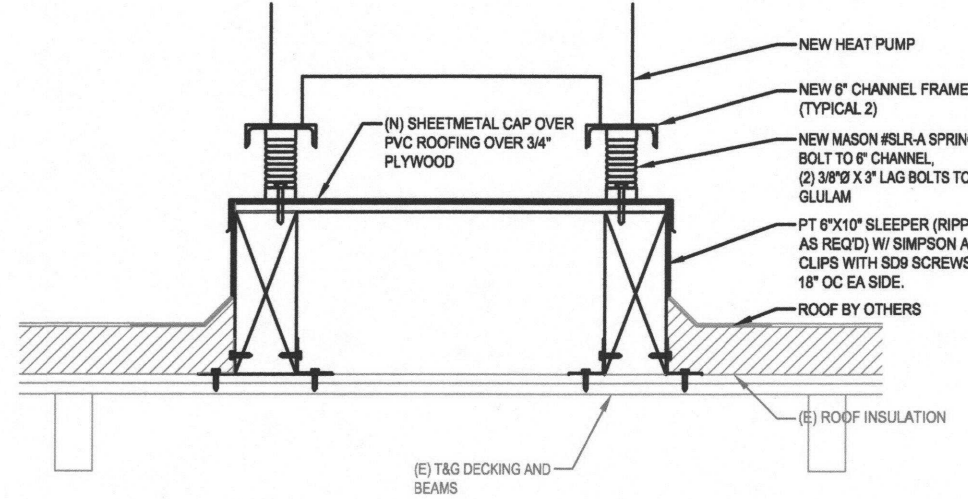


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ROOF PLAN -
HVAC

1
M106
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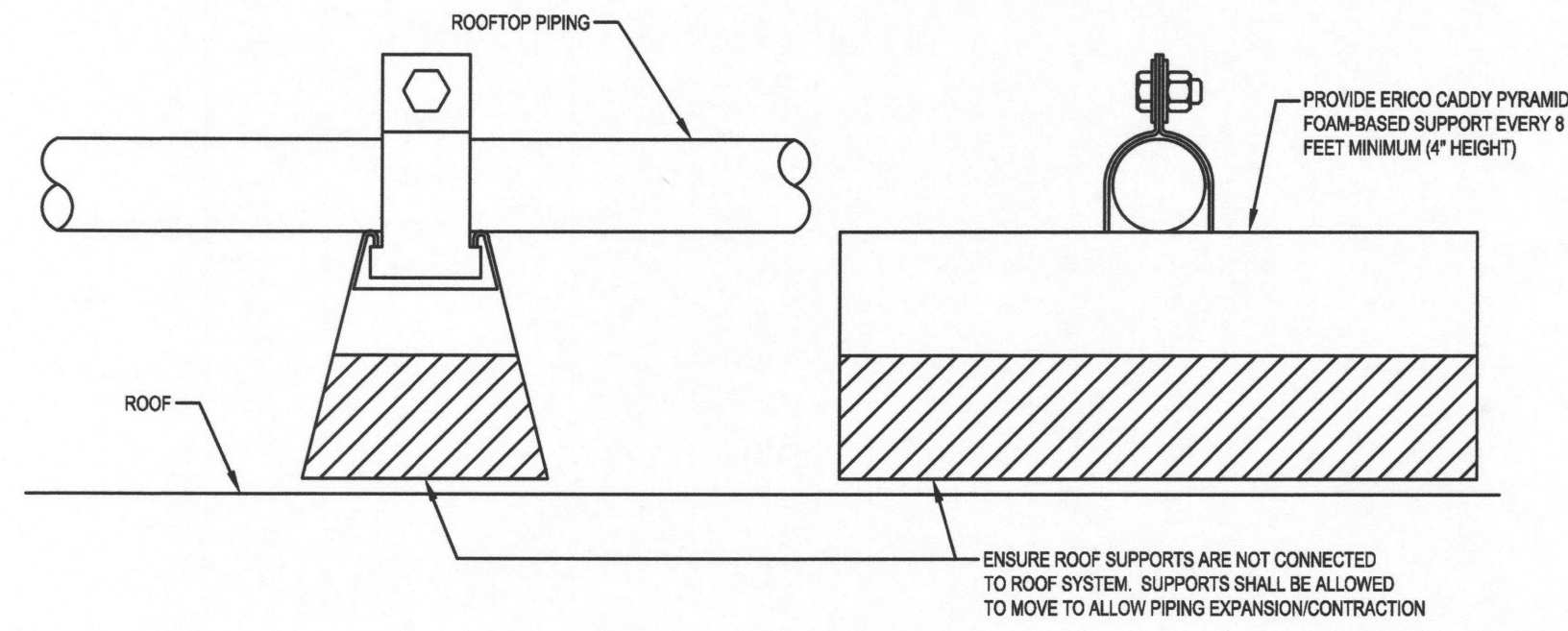
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2 VRF HEAT PUMP MOUNTING DETAIL

M501

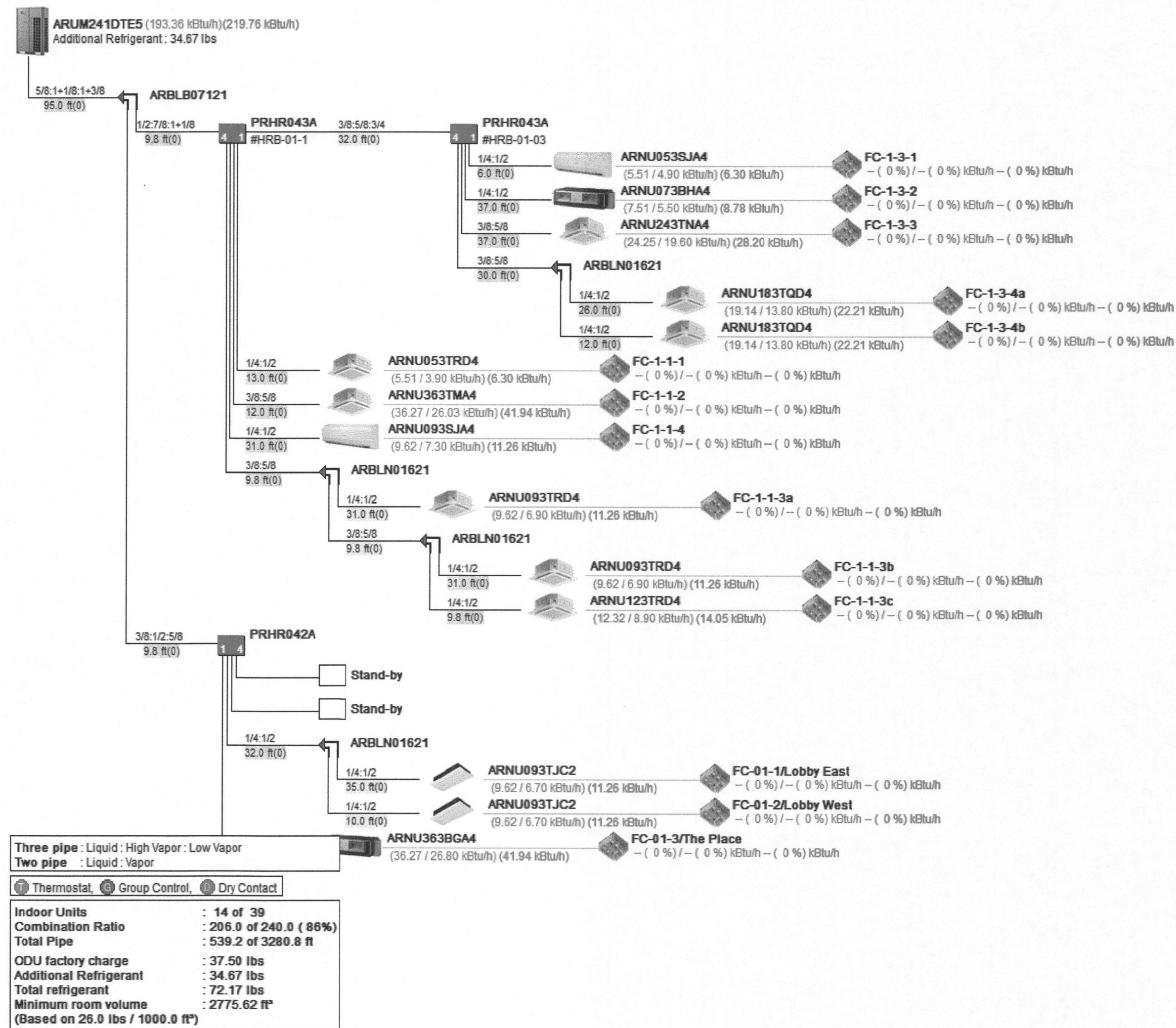
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3 REFRIGERANT SUPPORT DETAIL

M501

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1 REFRIGERANT PIPING DIAGRAM HP-R-03

M501

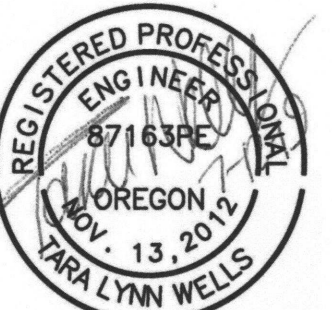
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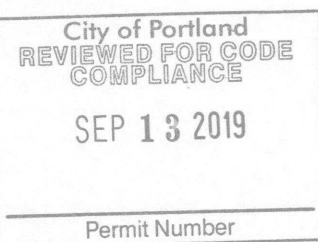
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