2021 IBC REFERENCE & WAC 110-300

<u>CHAPTER 3: USE AND OCCUPANCY CLASSIFICATION</u> 305.2 (EDUCATIONAL GROUP E) DAY CARE FACILITIES BUILDINGSPORTIONS THEREOF OCCUPIED BY MORE THAN FIVE CHILDREN OLDER THAN 2-1/2 YEARS OF AGE WHO RECEIVE EDUCATIONAL, SUPERVISION FOR FEWER THAN 24 HOURS PER DAY	
CHAPTER 5: GENERAL BUILDING HEIGHTS AND AREAS PROPOSED BUILDING DESIGN: E OCCUPANCY SPRINKLER TYPE V-B CODE	
ALLOWABLE HEIGHT (TABLE 504.3)60'ALLOWABLE STORY (TABLE 504.4)2ALLOWABLE AREA (TABLE 506.2)38,000 SF (S1, SINGLE STORY)	
CITY REQ'D IBC REQ'D PROVIDED	
HEIGHT 40 60 36-6 (A3.1) STORY 2 1 APEA 38,000 SE 13,324 SE	
722.6.1 WOOD ASSEMBLIES, MAX FIRE-RESISTANCE RATING NOT MORE THAN ONE HOURS	
KIII TYPE X GWB 20 MIN	
5%" TYPE X GWB 40 MIN WD STUDS @ 16" IC 20 MIN	
CHAPTER 9: FIRE PROTECTION SYSTEMS	
1. THE DOOR SHALL BE PERMITTED TO BE LOCKED PROVIDED THAT THE KEY IS	
2. LABELED WHIT AN APPROVED SIGN. THE LETTER SHALL HAVE A MIN HEIGHT OF	
3. MAINTAINED TEMPERATURE OF NOT LESS THAN 40 F. HEATING UNITS SHALL BE	
4. PERMANENTLY INSTALLED 4. PERMANENTLY INSTALLED ARTIFICIAL ILLUMINATION 2003 3 1 1 NEPA 13 SPRINKLER SYSTEMS (DEFERRED SUBMITTAL)	
903.2.3 GROUP E	
906.1 EXCEPTIONS TO INSTALL FIRE-EXTINGUISHER	
TABLE 906.3(1) MIN 2-A RATED FIRE EXTINGUISHER IN EVERY 75'	
AUTOMATIC FIRE ALARM SYSTEM (DEFERRED SUBMITTAL)	
CHAPTER 10: MEANS OF EGRESS and 3rd Party Certification is required.	е
TABLE 1004.5 MAX FLOOR AREA ALLOWANCES PER OCCUPANT	
ASSEMBLY - UNCONCENTRATED 15 NET	
DAY CARE 35 NET	
NICHENS 200 GROSS 1004.9 POSTING OF OCCUPANT LOAD	
OCCUPANT LOAD OF THE ROOM OR SPACE POSTED IN A CONSPICUOUS PLACE NEAR THE MAIN EXIT OR EXIT ACCESS DOORWAY FROM THE ROOM OR SPACE 1005.3.2 OTHER EGRESS COMPONENTS SIZING EXCEPTION 1	
MULTIPLIED BY 0.15" PER OCCUPANT TABLE 1006.3.2 MINIMUM NUMBER OF EXITS: 1-500 PEOPLE, 2 EXITS	
1007.1.1 TWO EXITS OR EXIT ACCESS DOORWAY: WHERE TWO EXITS ARE REQUIRED(EXCEPTIONS 2 WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM), THE SEPARATION DISTANCE SHALL BE NOT	
LESS THAN 1/3 OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE AREA SERVE.	
1008 means of egress illumination: not less than 1 footcandle at the walking surface.	
1008.3.2-3: BUILDINGS & ROOMS: IN THE EVENT OF POWER SUPPLY FAILURE, EMERGENCY ELECTRICAL SYSTEM SHALL AUTOMATICALLY ILLUMINATE EXIT	
PASSAGEWAY ELEC EQUIPMENT ROOMS, FIRE PUMP ROOMS, AND PUBLIC RESTROOMS (GRATER THAN 300 SF)	
1008.3.4~5 DURATION & LEVEL: EMERGENCY POWER SYSTEM SHALL PROVIDE POWER FOR NOT LESS THAN 90 MIN RO PROVIDE INITIAL ILLUMINATION THAT IS	
NOT LESS THAN AVERAGE OF 1 FOOTCANDLE 1009.10 DIRECTIONAL SIGNAGEINDICATE THE LOCATION OF ALL OTHER MEANS	
OF EGRESS AT EXIT SERVING A REQUIRED ACCESS SPACE 1010.1.1 SIZE OF DOOR: THE REQUIRED CAPACITY OF EACH DOOR OPENING	
SHALL BE SUFFICIENT FOR THE OCCUPANT LOAD THEREOF AND SHALL PROVIDE A MIN CLEAR OPENING WIDTH OF 32".	
1010.1.6 THRESHOLDSAT DOORWAYS SHALL NOT EXCEED ¾" 1010.2.3 HARDWARE HEIGHT INSTALLED 34 INCHES MINIMUM AND 48 INCHES	
MAXIMUM ABOVE FINISHED FLOOR 1010.2.8 LOCKING ARRANGEMENTS IN EDUCATIONAL OCCUPANCIES: IN GROUP	
E EGRESS DOORS FROM CLASSROOMS SHALL BE PERMITTED TO BE PROVIDED WITH LOCKING ARRANGEMENTS DESIGNED TO KEEP INTRUDERS FROM ENTERING THE ROOM THE DOOR SHALL BE CAPABLE OF BEING UNLOCKED FROM OUTSIDE THE ROOM WITH A KEY THE DOOR SHALL BE OPENABLE FROM WITHIN	
1010.2.9 PANIC AND FIRE EXIT HARDWARE: SWINGING DOORS SERVINGE OCCUPANCY SHALL NOT BE PROVIDED WITH A LATCH OR LOCK OTHER THAN	
PANIC HARDWARE OR FIRE EXIT HARDWARE 1013.1 EXIT SIGNS REQUIREDREADILY VISIBLE FROM ANY DIRECTION OF EGRESS	
IRAVELEXIL SIGN PLACEMENT SHALL BE SUCH THAT ANY POINT IN AN EXIT ACCESS CORRIDOR OR EXIT PASSAGEWAY IS WITHIN 100 FEET OR THE LISTED	F
VIEWING DISTANCE OF THE SIGN, WHICHEVER IS LESS EXCEPTION 2: MAIN EXT EXIT DOORS THAT ARE OBVIOUSLY AND CLEARLY	
IDENTIFIABLE AS EXITS NEED NOT HAVE EXIT SIGNS WHERE APPROVED BY THE BUILDING OFFICIAL	ST
iui3.6.2-3: min intensity of 5 footcandle, duration of not less than 90	IN

EACH ADDITIONAL 500 OCCUPANTS

WAC 110-300-0135 ROUTINE CARE, PLAY, LEARNING, RELAXATION, AND COMFORT (1) AN EARLY LEARNING PROVIDER MUST HAVE ACCESSIBLE AND CHILD-SIZ

FURNITURE AND EQUIPMENT (3) AN EARLY LEARNING PROVIDER MUST SUPPLY SOFT FURNISHINGS IN LICE SPACE ACCESSIBLE TO CHILDREN.

WAC 110-300-0140 ROOM ARRANGEMENT, CHILD-RELATED DISPAYS ... (1) ENCOURAGE INDEPENDENT ACCESS BY CHILDREN (3) PROVIDE A PLACE FOR PRIVACY

(5) STORAGE SPACE FOR EACH CHILD'S BELONGINGS

WAC 110-300-0145 OUTDOOR EARLY LEARNING PROGRAM SPACE (2) MUST CONTAIN A MINIMUM OF 75 SQFT OF LICENSED USABLE SPACE PER CHILD

(3) SHADED AREAS BY TREES, BUILDINGS, OR SHADE STRUCTURES (6) ENCLOSED WITH A FENCE OR BARRIER THAT IS INTENDED TO PREVENT

CHILDREN FROM EXITING AND DISCOURAGES CLIMBING

(7) TO DETER PEOPE WITHOUT PERMISSION FROM ENTERING THE AREA (8) FENCES, BARRIERS, AND GATES MUST BE IN GOOD CONDITION, HAVE NO GAP THROUGH WHICH A SPHERE WITH A DIAMETER OF 3-1/2" CAN PASS, AI

HAVE A MINIMUM HEIGHT OF 48" (12) MUST HAVE TWO EXITS THAT MUST NOT BE PARTIALLY OR ENTIRELY BLOC AT LEAST ONE OF THE TWO EXITS MUST NOT LEAD BACK INTO LICENSED INDO Space

WAC 110-300-0166 EMERGENCY PREPARATION AND EXITING (1) EMERGENCY PREPAREDNESS PLAN REQUIRED BY WAC 110-300-0470

WAC 110-300-0170 FIRE SAFETY

(3.g.i) AT LEAST ONE SMOKE DETECTOR PER LICENSED SLEEPING AREA AND PER FLOOR. COMPLY WITH WAC 51-50-0907 (3.g.ii) MAINTAIN CARBON MONOXIDE DETECTOR. MUST COMPLY WITH WA 51-50-0915

(3.h) BACKUP METHOD TO SOUND AN ALARM (i) EXTINGUISHERS. MIN RATING OF 2A:10BC

(iii) MOUNTED WITHIN 75 FEET OF AN EXIT NEXT TO THE PATH OF THE EXIT

WAC 110-300-0220 BATHROOM SPACE AND TOILET TRAINING

(1.a.ii) ONE WORKING FLUSH TOILET FOR EVERY 15 CHILDREN AND STAFF. A CHILD IN DIAPERS DOES NOT COUNT FOR PURPOSES OF TOILET CALCULATION UNTIL THE CHILD BEGINS TOILET TRAINING (1.a.iii) TOILETS FOR STAFF MAY BE LOCATED OUTSIDE OF LICENSED SPACE (THE PREMISES

(1.b) ONE WORKING SINK AND FAUCET (5) TOILET TRAINING EQUIPMENT MUST BE CLEANED IN A SINK NOT USED FOR FOOD PREPARATION, HAND WASHING, OR CLEAN UP

WAC 110-300-0221 DIAPER CHANGING AREAS, PRIVACY, AND DISPOSAL (1) DESIGNATED DIAPER CHANGING AREA, INCLUDING STAND-UP DIAPERIN FOR EACH CLASSROOM OR FOR EVERY AGE GROUPING OF CHILDREN (2.b.i) MOISTURE RESISTANT, WASHABLE MATERIAL THAT HORTZ. OR VERT. AND EXTENDS AT LEAST 2' FROM THE DIAPER CHANGING. A TABLE LARGE ENOUGH TO ACCOMMODATE THE LENGTH OF A CHILD, PROTECTIVE BARRIER AT LEAST 3-1/2" HIGH ON ALL SIDE FROM SURFACE THE CHILD LAYS

WAC 110-300-0240 CLEAN AND HEALTHY ENVIRONMENT (1.b) AT LEAST 24" OF MOISTURE RESISTANT AND CLEANABLE MATERIALS OR BARRIER AROUND SINKS, DRINKING FOUNTAINS, AND TOILETS

WAC 110-300-0280 BOTTLE PREPARATION

(1.a) INCLUDE A SINK (1.c.iv) BE PHYSICALLY SEPARATED FROM THE DIAPER CHANGING AREA ...

EXTEND AT LEAST 24" IN HEIGHT FROM THE COUNTER

WAC 110-300-0354 INDOOR EARLY LEARNING PROGRAM SPACE CAPACITY (1) INDOOR EARLY LEARNING PROGRAM SPACE MUST HAVE A MIN OF 35 SF PER

CHILD IN ATTENDANCE (1.a) 15 ADDITIONAL SF FOR EACH INFANT OR TODDLER USING A CRIB

(2.c) BATHROOM AND DIAPER CHANGING AREA IS NOT COUNTED IN THE OVERALL CAPACITY

WAC 110-300-0356 CENTER CAPACITY, RATIO, AND GROUP SIZE (5.a.i) INFANTS (0-11 MO) WITH A MAX GROUP SIZE OF 8 WITH RATIO OF 1 STAFF

TO 4 CHILDREN (5.b.i) TODDLERS (12~29 MO) WITH A MAX GROUP SIZE OF 14 WITH RATIO OF 1:7 (5.c) PRESCHOOLERS (30 MO TO 6 YRS) WITH A MAX GROUP SIZE OF 20 WITH A RATIO OF 1:10

City of Puyallup Development & Permitting Services ISSUED PERMIT								
Building	Planning							
Engineering	Public Works							
Fire	Traffic							

ENERGY CODE COMPLIANCE

TEP BY STEP EARLY LEARNING CENTER - THERMAL ENVP COMPLIANCE PATH ISULATION

MIN IN CASE OF PRIMARY POWER LOSS....PROVIDED FROM STORAGE BATTERIES...

TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE: E, WITH SPRINKLER = 250 1020.2 EXCEPTIONS 1: A FIRE-RESISTANCE RATING IS NOT REQUIRED FOR

CORRIDORS IN AN OCCUPANCY GROUP E, WHERE EACH ROOM THAT IS USED FOR INSTRUCTION HAS NOT LESS THAN ONE DOOR OPENING DIRECTLY TO THE EXTERIOR. EXTERIOR DOORS ARE REQUIRED TO BE AT GROUND LEVEL

TABLE 1020.1 CORRIDOR FIRE-RESISTANCE RATING: E, WITH SPRINKLER SYSTEM. "0" DOESN'T REQUIRE FIRE-RESISTANCE RATING TABLE 1020.2 MIN CORRIDOR WIDTH: IN GROUP E WITH A CORRIDOR HAVING AN

OCCUPANT LOAD OF 100 OR MORE - MIN 72"

SECTION 29 PLUMBING SYSTEMS SEE G0.2 FOR PLUMBING CALC

TABLE 2902.1 | EDUCATION:

"E" FOR GROUP E OCCUPANCIES: THE NUMBER OF OCCUPANTS SHALL BE DETERMINED BY USING A CALCULATION OF 100 SQFT GROSS BUILDING AREA PER STUDENT FOR THE MINIMUM NUMBER OF PLUMBING FIXTURES

2902.1.1.2 URINALS IN MEN'S FACILITIES... SHALL NOT BE REDUCED TO LESS THAN 25% OF THE MIN SPECIFIED (NUMBER OF WATER CLOSET). 2902.5 DRINKING FOUNTAIN LOCATION: PUBLIC DRINKING FOUNTAINS ARE

LOCATED WITHIN A DISTANCE OF TRAVEL OF 500 FEET

2902.5.1 DRINKING FOUNTAIN NUMBER: OCCUPANCY LOADS OVER 30 SHALL HAVE ONE DRINKING FOUNTAIN FOR THE FIRST 150 OCCUPANTS, THEN ONE PER

- IF 2 OR MORE LAYERS OF RIGID INSULATION, STAGGER INSTALLATION - PROVIDE W/ MNF R-VALUE IDENTIFICATION MARK; IF NOT, PROVIDE INSULATION CERTIFICATE PER WSEC C303.1.1 AIR BARRIER TESTING PER 2021 WSEC

- ALL JOINTS AND SEAMS SHALL BE SEALED, INCLUDING SEALING TRANSITIONS IN PLACES AND CHANGES IN MATERIAL. - ALL PENETRATIONS OF THE AIR BARRIER SHALL BE CAULKED, GASKETED, OR OTHERWISE SEALED IN A MANNER COMPATIBLE WITH THE CONSTRUCTION

MATERIALS AND LOCATIONS. - AIR LEAKAGE TESTING SHALL BE PERFORMED PER ASTM C779 AND THE

TARGET LEAKAGE RATE IS 0.25 cfm/ft2 AT 0.3 in.wg - SUBMIT BLDG ENCLOSURE AIR LEAKAGE TEST TO JURISDICTION & OWNER. IF FAIL, CORRECTIVE ACTION SHALL BE TAKEN UNTI THE REQUIRED AIR LEAKAGE RATING IS ACHIEVED

- RECESSED LIGHTING FIXTURES SHALL COMPLY WITH SECTION C402.5.10 PROJECT CLOSURE DOCUMENT

PROVIDE PROJECT CLOSE DOCUMENTATION INCLUDING WSEC ENVELOPE COMPLIANCE FORM AND CALCULATION AND FENESTRATION NFRC RATING CERTIFICATES

SYMBOLS LEGEND

	ROOM IDENTIFICATION	XXX XXX
E	DOOR NUMBER	XXX)
INSED	WINDOW NUMBER	XX
	EQUIPMENT NUMBER	$\langle \mathbf{x} \mathbf{x} \rangle$
	WALL TYPE	(XX)
	CENTERLINE	œ <u>ل</u>
R	NORTH ARROW	\bigcirc
	DATUM	•
O ND	REVISION	#
CKED. OOR	COLUMN GRID/LINE	X
	ENLARGED DETAIL MARK	X A#.##
ONE	BUILDING SECTION MARK	X AX.X AX.X
	DETAIL MARK	
	EXTERIOR ELEVATIONS SYMBOL	X AX.X
SNC NC	INTERIOR ELEVATION SYMBOL	
२	MATERIAL CALL OUT/TAG	۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲
1G,		6

Applicants notes Occupant Load Capacity:
Licensing and restriction with state of Washington;
ELC can apply for:
14*4 = 54 Toddler (age 1-3)
8*4 = 32 Infant (age 0-12 month).
The total number of toddlers and infants are 86, which do not exceed co
requirements of 100 to qualify as I-4 occupancy. Thus, this building is E

GENERAL NOTES

- 1. CODE CONFLICTS ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH MOST CURRENT APPLICABLE CODE AND ORDINANCES OF PIERCE COUNTY 2. DISCREPANCY
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPORT DISCREPANCIES FOUND WITHIN THESE DOCUMENTS TO THE ARCHITECT AS SOON AS THEY ARE DISCOVERED
- 3. SCALING DRAWINGS
- DO NOT SCALE THE DRAWINGS. CONTACT ARCHITECT WITH ANY CONFLICTS 4. DIMENSIONS DIMENSIONS ARE TO FACE OF STUD AND FACE OF CONC. U.N.O. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, EXISTING CONDITIONS, AND MEMBER SIZES PERTAINING TO THE WORK PRIOR TO PROCEEDING. ALL DIMENSIONS OF EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE
- INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED. THE ARCHITECT MUST BE NOTIFIED IN WRITING OF ANY VARIATION FROM THE DIMENSIONS AND/OR CONDITIONS SHOWN ON THESE DRAWINGS. 5. DOORS AND WINDOWS
- ALL WINDOW AND DOOR SIZES SHALL BE VERIFIED AND FIELD MEASURED PRIOR TO FABRICATION EXISTING CONDITIONS
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AT THE SITE AND SHALL NOTIFY ARCHITECT IMMEDIATELY OF ANY UNCERTAINTIES OR DISCREPANCIES WITHIN THESES DOCUMENTS CONTRACTOR SHALL PROTECT THE EXISTING SITE WORK, LANDSCAPING, AND
- AREAS OF THE SITE NOT IN THE SCOPE OF WORK DEMOLITION 7.
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION. DEMOLITION DEBRIS SHALL NOT BE ALLOWED TO DAMAGE OR OVERLOAD THE EXISTING STRUCTURE. PROTECT EXISTING STRUCTURE TO REMAIN HEALTH AND SAFETY 8.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY PRECAUTIONS AND THE MEANS AND METHODS TO PERFORM THE WORK. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS
- QUALITY STANDARDS ALL CONSTRUCTION SHALL MEET OR EXCEED INDUSTRY STANDARDS. DETAILS ARE PROVIDED FOR MINIMUM QUALITY AND TO GIVE STANDARDS OF CONSTRUCTION. IF CONDITION IS NOT SPECIFICALLY DETAILED, SUBMIT A DETAIL FOR GUIDANCE AND REVIEW FOR ACCEPTANCE. CONTRACTOR SHALL PROVIDE BLOCKING AS REQUIRED FOR ALL CASEWORK, FIXTURE, AND SPECIALTY ITEMS.

LIST OF DRAWINGS

GENERAL	PRO IECT INFORMATIC)N		
G0.2	EXIT ACCESS & CODE	CALC		
Al.1	SITE PLAN			
AT.Z				
LANDSCAP	PLANTING PLAN WEST			
L2.0 L3.0	PLANTING PLAN EAST PLANTING DETAILS			
L4.0	PAVING DETAILS			
ARCHITECT A2.11	URAL MAIN FLOOR PLAN			
A2.12 A2.13	MAIN FLOOR - CLERES	TORY & RCP		
A2.21	ENLARGED PLAN - N. F	PRESCHOOL		
A2.22	ENLARGED PLAN - E. T	ODDLER & LOBB		
A2.24 A3.1	BUILDING ELEVATIONS	(SOUTH & EAST)	HEIN	
A3.2 A3.3	BUILDING ELEVATIONS BUILDING ELEVATIONS	(NORTH & WEST) (COURT YARD)		
A4.1 A4.2	BUILDING SECTIONS BUILDING SECTIONS			
(A4.3 A7.1	DETAILS DOOR SCHEDULE & TY	ΈPΕ		
A7.2	WINDOW SCHEDULE			
STRUCTURA	L General Notes			
\$1.1 \$2.0	GENERAL DETAILS			
\$2.1		AN }		
\$3.0	DETAILS			
\$3.1	DETAILS			
MECHANIC MH001	LEGEND, ABBREVIATIO	NS, AND GENER	al notes	
MH101 MH102	MECHANICAL FLOOR MECHANICAL FLOOR	PLAN PLAN 2		
MH103 MH104	PIPING FLOOR PLAN MECHANICAL ROOF P	'LAN		
MH501 MH502	DETAILS I DETAILS II			
MH601 MH602	SCHEDULES I SCHEDULES II			
MH701		tions		
ELECTRICAL				
E0.0		LEGEND		
E0.1 E0.2	GENERAL ELECTRICAL	NOTES		
PH1.0	ELECTRICAL SITE PLAN EGRESS SITE PHOTOME	TRICS		Please see both conditions) and
E2.0 E3.0	MAIN FLOOR LIGHTING	9 Plan / SIGNAL PLAN		occupancy app
E4.0	Power riser diagra	Μ		At the request of Civil permit stat
PLUMBING PP001	LEGENDS, ABBREVIATIO	ONS, AND GENER	ral notes	Fire Hydrants m
PP101 PP102	FOUNDATION PLAN PLUMBING FLOOR PLA	N		NO WORK may request inspect
PP103 PP401	PLUMBING ROOF PLAN PLUMBING ENLARGED	FLOOR PLANS		
PP501 PP502	DETAILS I DETAILS II			
PP503 PP601	DETAILS III SCHEDULES I			
PP602 PP801	SCHEDULES II SPECIFICATIONS			
City		of outprotition along		iou iol of
B	uilding omission	s or oversight by t	his office or	tions of
KE	FOR local governmenting of	ernment. The cont	tractor is respon	nsible for
COM	IPLIANCE BayC	e building codes a	ind regulations	of the
L.	2/24/2024	emment.		
7.	THE APPI ENGINEE	ROVED CONSTRUCT RING MUST BE POS	TON PLANS AND FED ON THE JOB	ALL AT ALL
ST.	INSPECTI ACCESSII PRINT in	ONS IN A VISIBLE A BLE LOCATION.	ND READILY	
0		COLOR and to SCALL		
ALL.	OF WASHING!			
ABBR	EVIATION	S		
&	AND	GWB	gypsum v	VALL BOARD
< @	ANGLE AT	HDR INT.	HEADER INTERIOR	
o Ø	DEGREE	MFR		CTURE
B/W BLCK	BETWEEN	O.C.		R
۹ ۹		PW, PLW		
CLR.	CLEAR(ANCE)	SCHD	SCHDULE	
COL.		S.D.	SMOKE DE	
CONC. C.J.	CONCRETE CONTROL JOINT		GLASS	
DEMO DN	demolish (ion) Down	1.O.BM T.O.P.	TOP OF BE	AM ATE
DIM D/W	DIMENSION DISH WASHER	T.O.S. TYP.	top of st typical	EEL
ELEC. E.Q.	ELECTRIC (AL) EQUAL	U.N.O.	UNLESS NO OTHERWIS	DTICED E
E.J. EXT	EXPANSION JOINT EXTERIOR	VIF WIN	VERIFY IN WINDOW	FIELD
F.O.F. F F	FACE OF FINISH	W.T. W/	WEATHER WITH	THRESHOLD
FT G		W/O WD	WITHOUT	
FND	FOUNDATION	· · D		

PROJECT INFORMATION

PROJECT NAME

STEP BY STEP - EARLY LEARNING CENTER PROJECT ADDRESS

3303 8TH AVE S, BLDG E

PUYALLUP, WA 98372 PROJECT DESCRIPTION

CREATE (4) PRESCHOOL AREA, (4) TODDLERS, (4) INFANT ROOM WITH OFFICE LANDSCAPE DESIGN CREATE EARLY LEARNING SCHOOL CAMPUS LANDSCAPE AND CIVIL TO CREATE PARKING (SEE A1.1&A1.2)

TAX PARCEL NUMBER 0420253071

DEFERRED PERMITS

SPRINKLER, ELECTRICAL (L&I), FIRE ALARM, FENCE (IF ABOVE 6'-0 H), MNF TRUSS LEGAL DESCRIPTION SEE SITE CIVIL PERMIT

PROJECT DIRECTORY

THE OWNER

STEP BY STEP KRISTA LINDEN, EXECUTIVE DIRECTOR 3303 8TH AVE S, BLDG A PUYALLUP, WA 98372 kristalinden@stepbystepfamily.org 253.841.1776

THE ARCHITECT

JEFF BROWN ARCHITECTURE JEFF BROWN, ARCHITECT SONG CHO (CONTACT PERSON) 12181 C STREET S TACOMA, WA 98444 songyi.cho@hotmail.com 509.432.4651

INTERIOR DESIGNER

MCGRANAHAN ARCHITECTS SEONG SHIN, PRINCIPLE INT. DESIGN 2111 PACIFIC AVE, SUITE 100 TACOMA, WA 98402 seong.chi@mcgranahan.com 253.383.3084

- LANDSCAPE ARCHITECT JGM LANDSCAPE ARCHITECTS INC CRAIG LEWIS, PLA 12610 NE 104TH STREET KIRKLAND, WA 98033 craig@jgm-inc.com 206-795-3196
- CONTRACTOR MOUNTAIN CONSTRUCTION JEREMY PATNOI 7457 S MADISION ST TACOMA, WA 98409 jeremy@mountainconst.com 253.355.6135

- **CIVIL ENGINEER** CECIL + ASSOCIAT<u>ES, LLC</u> ROGER CECIL, PE PO BOX 598 BOTHELL, WA 98011 rogerc@cecilnassoc.com 206.484.3495
- STRUCTURAL ENGINEER CHRIS FYNBOE, P.E CHRIS FYNBOE 12181 'C' STREET S. TACOMA, WA 98444 253.537.8128
- MECHANICAL ENGINEER MIDDLEBROOK ENGINEERING, LLC BRIAN MIDDLEBROOK, PE **REGGIE CHRISTOR** 6216 174TH AVE SW LONGBRANCH, WA 98351 brian@middlebrookeng.com rchristor@middlebrookeng.com

ELECTRIC ENGINEER

CROSS ENGINEER, INC BRICE ANDERSON 923 MARTIN LUTHER KING JR. WAY TACOMA, WA 98405 bricea@crossengineers.com 253.759.0118



PRCNC20241019 QR for Building Permit

the project conditions established on this permit (see the permit for this project QR code above, OPEN the Civil construction permit issued separately. Some of these conditions apply to final inspections and

f the architect of record and owner, the issuance of the Civil utility permits has been deferred. To check us use QR code below.

ust remain functional, active and accessible during construction. continue beyond rough in inspections; no framing inspection or cover inspections. The contractor may not ons for cover or framing until the Civil permit has been issued.

CODE/ZONING INFORMATION

GOVERNING CODE

- 2021 INTERNATIONAL BUILDING CODE
- 2021 INTERNATIONAL MECHANICAL CODE 2021 UNIFORM PLUMBING CODE
- 2021 WASHINGTON STATE ENERGY CODE, COMMERCIAL
- ADOPTED BY WA STATE BUILDING CODE COUNCIL AND ANY CITY OF PUYALLUP ORDINANCE

ZONING

ARO & DEVELOPMENT AGREEMENT HEIGHT LIMIT: 40'



VICINITY MAP



JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE 12181 C STREET SOUTH TACOMA, WA 98444

PROJECT LEAD JEFFREY E. BROWN 253.606.8324 jeff@jeffbrownarchitecture.com



PROJECT NAME/ADDRESS



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These documents have been prepared specifically for the above named project. They are not suitable for use on other projects or in other locations without the approval and participation of the Architect.

PROJECT NUMBER 21015

DRAWING TYPE

PERMIT DOCUMENT

DATE	ISSUE	NO.
06.21.24	PERMIT CITY	

SHEET TITLE

GENERAL INFORMATION

SHEET #

G0.

		OCCUPA	NY LOAD			W					
	SOFT		MALES	FEMALE	1	N		F	М		
OCCOLATET	SQLL		(TOTAL/2)	(TOTAL/2)	CODE	REQ'D	CODE	REQ'D	CODE	REQ'D	
E	13324	134	67	67	1 PER 35	2	1 PER 25	3	1 PER 85		
			TOTAL	REQ'D		2		3			
WAC REQ'T*	CHILDREAN	TEACHER	WC REQ'D	LAV REQ'D	NOTE						
PRESCHOOL	80	8	6	6	20 CHILDR	REN AND 2 TE	ACHER PER	CLASS (4)	CLASS		
TODDLER	28	8	2	2	7 CHILDRE	N WITH DIAF	ER, 7 CHILD	re <mark>n W/</mark> Toile	W/ TOILET PER CLASS (4) CLAS		
	ONE WORKI	NG TOILET A									
* NOTE	A CHILD IN	DIAPERS DO	ES NOT COU	NT FOR TOIL	ET CACULAT	ION					
	TOILETS FOR	STAFF MAY	BE LOCATED	OUTSIDE OF	LICENSED S	PACE					

3 PLUMBING CALCULATION

WATER CLOSET		
PRESCHOOL - M	3	3
PRESCHOOL - F	3	3
TODDLER	2	2
UNISEX		4
	REQUIRED	PROVIDED
LAVATORY	REQUIRED	PROVIDED
LAVATORY PRESCHOOL - M	REQUIRED 3	PROVIDED 3
LAVATORY PRESCHOOL - M PRESCHOOL - F	REQUIRED 3 3	PROVIDED 3 3
LAVATORY PRESCHOOL - M PRESCHOOL - F TODDLER	REQUIRED 3 3 2	PROVIDED 3 3 2
LAVATORY PRESCHOOL - M PRESCHOOL - F TODDLER UNISEX	REQUIRED 3 3 2	PROVIDED 3 3 2 4

4 PLUMBING COMPLIANCE

City of Puyallup Development & Permitting Services ISSUED PERMIT									
Building Planning									
Engineering	Public Works								
Fire	Traffic								



COMPLIED
COMPLIED
COMPLIED
STATUS
STATUS
 STATUS COMPLIED
STATUS COMPLIED COMPLIED
COMPLIED COMPLIED COMPLIED COMPLIED



ROOM #	ROOM NAME	SQFT	IBC OCCUPANCY	OCC CLS	OCC LOAD	occ	WAC OCCUPANCY	SQFT	OCC LOAD	осс	MAX PER CODE	NOTES
102-107	LOBBY~RECEPTION	1200	OFFICE	В	150	8	-					
108~110	STORAGE	309	ACCESSORY STORAGE		300	1	14 - C					
111-114	PRESCHOOL	4423	DAYCARE	E	20	221	PRESCHOOL, 1:10 RATIO, MAX 20	4423	35	126	80	4 CLASSES, DIVIDED UP BY CURTAIN
115	STORAGE	100	ACCESSORY STORAGE		300	1						
118	storage	70	ACCESSORY STORAGE		300	1						
121-122	JNT & MECH	286	ACCESSORY STORAGE		300	1						
125	TODDLER	460	DAYCARE	E	20	23	TODDLER, 1:7 RATIO, MAX 14	490	35	14	14	INCLUDE SHARED ROOM
127	TODDLER	460	DAYCARE	E	20	23	TODDLER, 1:7 RATIO, MAX 14	490	35	14	14	INCLUDE SHARED ROOM
128	TODDLER	460	DAYCARE	E	20	23	TODDLER, 1:7 RATIO, MAX 14	490	35	14	14	INCLUDE SHARED ROOM
130	TODDLER	460	DAYCARE	E	20	23	TODDLER, 1:7 RATIO, MAX 14	490	35	14	14	INCLUDE SHARED ROOM
132	CONFERENCE	130	UNCONCENTRATED	ACC	15	9						
133	INFANT	410	DAYCARE	E	20	21	INFANT, 1:4 RATIO, MAX 8	406	50	8	8	EXCLUDE DIAPER STATION & WET AREA
135	INFANT	410	DAYCARE	E	20	21	INFANT, 1:4 RATIO, MAX 8	406	50	8	8	EXCLUDE DIAPER STATION & WET AREA
136	INFANT	410	DAYCARE	E	20	21	INFANT, 1:4 RATIO, MAX 8	406	50	8	8	EXCLUDE DIAPER STATION & WET AREA
138	INFANT	410	DAYCARE	E	20	21	INFANT, 1:4 RATIO, MAX 8	406	50	8	8	EXCLUDE DIAPER STATION & WET AREA
139	PREP KITCHEN	360	KITCHEN	ACC	200	2						
			TOTAL			420						

2 OCC. LOAD CALCULATION





JEFF BROWN ARCHITECTURE 12181 C STREET SOUTH TACOMA, WA 98444

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06.21.24	PERMIT	110.
09.30.24	CITY	1

SHEET TITLE

EXIT ACCESS CODE & CALC

SHEET # G0.2



RESTROOM GENERAL NOTES:

- 1. TOILET ROOM PLAN & ELEVATIONS ILLUSTRATE FIXTURE CLEARANCE DIMENSIONS, MOUNTING HEIGHTS AND ACCESSORY PLACEMENT. ACTUAL LAYOUT MAY VARY. SEE FLOOR PLAN FOR CORRECTION LAYOUT.
- 2. LOWER EDGE OF LAVATORY TO BE 2'-3" MIN. ABOVE FINISH FLOOR FOR KNEE CLEARANCE
- 3. MIRROR TO BE MOUNTED 3'-4" MAX ABOVE FINISH FLOOR.
- 4.GRAB BARS TO BE 1-1/4" ~ 1-1/2" IN DIAMETER, MOUNTED 1-1/2" FROM WALL. BARS SHALL BE CAPABLE OF SUPPORTING 300 LB LIVE LOAD WITHOUT PERMANENT DEFLECTION. 5. LAVATORY RIM TO BE 34" ABOVE FINISH FLOOR.
- 6.FLOORS SHALL BE SMOOTH, HARD, NON-ABSORBENT SURFACE SUCH AS SHEET VINYL OR OTHER AS ACCEPTABLE BY LOCAL HEALTH AND BUILDING DEPARTMENTS. FLOORING MATERIAL MUST EXTEND ONTO THE WALL AT LEAST 6". SEE FINISH SCHEDULE FOR MORE INFORMATION.
- 7. DIMENSIONS, NOTES, AND EQUIPMENT TYPICAL FOR ALL TOILET
- ROOMS, UNLESS NOTED OTHERWISE. 8.5EE FINISH SCHEDULE ON SHEET ID ## FOR RESTROOM FINISH
- INFORMATION.
- 9. TOILET ROOM FAN TO BE INTEGRALLY SWITCHED WITH TOILET LIGHT AND VENTED TO THE OUTSIDE.
- 10. CONCRETE OR CMU WALLS IN TOILET ROOMS SHALL BE FURRED OUT AND FINISHED SIMILAR TO ADJACENT WALLS.
- 11. PROVIDE PAPER TOWEL DISPENSER. UNIT TO BE MOUNTED SO THAT CONTROLS OR OPENING ARE LOCATED 40" MAX ABOVE FINISH FLOOR.
- 12. GYPSUM BOARD APPLIED TO PLUMBING WALLS SHOULD BE WATER-RESISTANT.
- 13. WATER CLOSET FLUSH VALVE TO BE ON OPEN SIDE OF TANK. 14. PROVIDE BLOCKING AS REQUIRED TO SUPPORT SINK, GRAB BARS, AND OTHER HARDWARE.
- 15. TOILET PAPER DISPENSERS SHALL COMPLY WITH SECTION 309.4. WHERE THE DISPENSER IS LOCATED ABOVE THE GRAB BAR, THE OUTLET OF THE DISPENSER SHALL BE LOCATED WITHIN AN AREA 24" MIN AND 42" MAX FROM THE REAR WALL. THE OUTLET OF THE DISPENSER SHALL BE LOCATED 18" MIN AND 48" MAX ABOVE THE FLOOR. DISPENSERS SHALL COMPLY WITH SECTION 609.3.
- DISPENSERS SHALL NOT BE OF A TYPE THAT CONTROL DELIVERY, OR DO NOT ALLOW CONTINUOUS PAPER FLOW. 16. OUTLET SHALL BE 15" MIN AND 48" MAX ABOVE FINISH FLOOR. THERE SHALL BE 1-1/2" MIN CLEARANCE BELOW AND 12" MIN ABOVE
- THE GRAB BAR 17. OTHER DISPENSERS AND DISPOSAL FIXTURES SHALL BE LOCATED 40" MAX ABOVE FINISH FLOOR, MEASURED TO ANY RACK,
- OPERATING CONTROL, RECEPTACLE OR DISPENSER
- 18. WALL WITHIN 2 FEET OF URINALS AND WATER CLOSETS SHALL HAVE A SMOOTH, HARD, NON-ABSORBENT SURFACE TO A HEIGHT OF 4'-O" ABOVE FINISH FLOOR.





- 1. ALL HANDICAP ROOMS TO HAVE SINGAGE PER ICC 1101.2.9 (ICC A117.1 SECTION 703.6.3.1) ALL INTERIOR SIGNS DEPICTING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL COMPLY WITH SECTION 706 (ICC A117.1 SECTION 703)
- 2. ALL ACCESSIBLE SIGNAGE DEPICTING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE WHITE ON A BLUE BACKGROUND PER 1101.2.9 IN THE WA STATE AMENDMENTS TO THE IBC
- 3. MOUNT ACCESSIBLE SIGNS 40" MIN AFF, MEASURED TO THE BASELINE OF THE CHARACTER PER ICC/ANSI 117.1-2009 SECTION 703.4.5







REAR WALL GRAB BAR



DISPENSER OUTLET





CLEAR FLOOR SPACE ICC/ANSI A117.1 | SECTION 305



KNEE AND TOE CLEARANCE CC/ANSI A117.1 | SECTION 305

20" MAX



20~25

FORWARD REACH

OBSTRUCTED FORWARD REACH



SIDE REACH

REACHING RANGES

ICC/ANSI A117.1 | SECTION 308

ACCESSIBILITY GENERAL NOTES

THE PROJECT SHALL COMPLY WITH THE CURRENT ICC/ANSI A117.1 CODE ADOPTED BY THIS JURISDICTION. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE CODE, EVEN IF NOT SPECIFICALLY DETAILED IN THE CONSTRUCTION DOCUMENTS.

- 1. FLOOR SURFACES SHALL BE STABLE, FIRM, AND SLIP RESISTANT 2. OPENINGS IN THE FLOOR SURFACES SHALL BE OF A SIZE THAT DOES NOT PERMIT THE PASSAGE OF A $\frac{1}{2}$ " Φ unless SPECIFICALLY ALLOWED AND NOTED WITHIN THE ENCLOSED DETAILS. ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL
- 3. CHANGES IN LEVEL
- 3.1. CHANGES IN LEVEL OF $\frac{1}{4}$ " MAX IN HEIGHT SHALL BE PERMITTED TO BE VERTICAL
- 3.2. CHANGES IN LEVEL GREATER THAN $\frac{1}{4}$ " IN HEIGHT AND NOT MORE THAN $\frac{1}{2}$ " MAX. IN HEIGHT SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 1:2
- 3.3. CHANGE IN LEVEL GRATER THAN $\frac{1}{2}$ " IN HEIGHT SHALL BE RAMPED
- 3.4. CARPET OR CARPETTILE SHALL BE SECURELY ATTACHED AND SHALL HAVE A FIRM CUSHION, PAD, OR BACKING, OR NO CUSHION NOR PAD. CARPET OR CARPETILE SHALL HAVE A LEVEL LOOP, TEXTURED LOOP, LEVEL CUT PILE, OR LEVEL/UNCUT PILE TEXTURE. THE PILE SHALL BE $\frac{1}{2}$ " MAX IN HEIGHT. EXPOSED EDGES OF CARPET SHALL BE FASTENED TO THE FLOOR AND SHALL HAVE TRIM ALONG THE ENTIRE LENGTH OF
- 4. CLEAR FLOOR SPACE
- FLOOR SURFACE OF A CLEAR FLOOR SPACE SHALL HAVE A SLOPE NOT STEEPER THAN 1:48
- 4.2. UNO, CLEAR FLOOR SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE REQUIRED BY CODE 5. ACCESSIBLE ROUTES
- 5.1. ACCESSIBLE ROUTES WILL INCLUDE WALKING SURFACES WITH A SLOPE NOT STEEPER THAN 1:20, DOORS AND DOORWAYS, RAMPS EXCLUDING THE FLARED SIDES, CURB RAMPS, ELEVATORS, AND PLATFORM LIFTS
- 5.2. THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20 WITH A MAX CROSS SLOPE OF 1:48. SLOPES STEEPER THAN 1:30 SHALL COMPLY WITH RAMP REQUIREMENTS
- 6. OPERABLE PARTS
- 6.1. CLEAR FLOOR SPACE SHALL COMPLY WITH CODE REQUIREMENTS
- 6.2. OPERABLE PARTS SHALL BE PLACED WITHIN ONE OR MORE OF THE REACH RANGE REQUIREMENTS
- THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL 6.3. BE 5.0 LB MAX
- 7. DOOR HARDWARE
- 7.1. IF PROVIDED, THRESHOLDS AT DOOR SHALL BE $\frac{1}{2}$ " MAX IN HEIGHT. RAISED THRESHOLDS AND CHANGE IN LEVEL AT DOORWAYS SHALL COMPLY WITH FLOORS SURFACE AND LEVEL CHANGE REQUIREMENTS. THIS REQUIREMENT SHALL NOT APPLY TO EXISTING OR ALTERED THRESHOLDS 3/4" MAX HIGH WITH A BELEVED EDGE EACH SIDE WITH A MAX SLOPE OF 1:2 FOR THE HEIGHT EXCEEDING $\frac{1}{4}$ "
- 7.2. OPERABLE PARTS SHALL BE MOUNTED 34" MIN, 48" MAX AFF 7.3. OPERATING HARDWARE FOR SLIDING DOORS SHALL BE EXPOSED AND USABLE FROM BOTH SIDES WHEN THE DOOR IS FULLY OPEN
- 8. HANDRAILS AND GRAB BARS 8.1. HANDRAILS, GRAB BARS, AND ADJACENT SURFACES SHALL BE FREE OF SHARP OR ABRASIVE ELEMENTS. EDGES SHALL
- BE ROUNTED 8.2. HANDRAILS AND GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.



ICC/ANSI A117.1 | SECTION 302 & 303

City of Puyallup Development & Permitting Services ISSUED PERMIT			
Building	Planning		
Engineering	Public Works		
Fire Traffic			





JEFF BROWN ARCHITECTURE 12181 C STREET SOUTH TACOMA, WA 98444

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ACCESSIBILITY

SHEET # G0.3



SITE PLAN (11X17) SCALE : 1" = 80' (22X34) SCALE : 1" = 40'





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STEP BY STEP EARLY LEARNING CENTER 3303 8TH AVE SE, BLDG E PUYALLUP, WA 98372

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SITE PLAN

SHEET #



City of Puyallup Development & Permitting Services ISSUED PERMIT			
Building	Planning		
Engineering	Public Works		
Fire OF W	Traffic		



Lighting and signage per building code, typical at required discharge gates. Typical





ENLARGED SITE PLAN (11X17) SCALE : 1/32" = 1'-0" (22X34) SCALE : 1/16" = 1'-0"



 \square





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ENLARGED SITE PLAN

SHEET #



PAVING SCHEDULE:

INDICATES IMPERVIOUS PAVING - CONCRETE PAVERS

INDICATES CONCRETE PAVING

INDICATES PERVIOUS PAVING - CONCRETE PAVERS

INDICATES PLAY AREA SOFT SURFACING





INCORPORATED P.S. KIRKLAND WA 98033 PH: 425.454.5723

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SHEET #

L1.0

City of Puyallup opment & Permitting Services ISSUED PERMIT		
Building	Planning	
gineering	Public Works	
Fire OF V	Traffic	



PLANTIN	G SCHEDULE:			
SYMBOL	BOTANICAL NAME/ COMMON NAME	SIZE AT Planting	QTY.	SPACING
TREES				
	AESCULUS HIPPOCASTANUM 'BAUMANNII' / HORSE CHESTNUT	2" CALIPER, 10' HT. TREE FORM, BRANCHED AT 6'	6	
+++++++++++++++++++++++++++++++++++++++	GLEDITSIA TRICANTHOS /HONEY LOCUST	2" CALIPER, 10' HT. TREE FORM, BRANCHED AT 6'	3	
	GYMNOCLADUS DIOCA / KENTUCKY COFFEE TREE	2" CALIPER, 10' HT. TREE FORM, BRANCHED AT 6'	20	
	STEWARTIA PSEUDOCAMILLIA / JAPANESE STEWARTIA	2" CALIPER, 10' HT. TREE FORM, BRANCHED AT 6'	4	
	BETULA NIGRA 'HERITAGE' / RIVER BIRCH	2" CALIPER, 8–10' HT. TREE FORM, BRANCHED AT 4'	6	
	CORNUS KOUSA 'STARLIGHT" / STARLIGHT DOGWOOD	2–1/2" CALIPER, 10'HT. TREE FORM, BRANCHED AT 6'	9	
	MAGNOLIA SELLATA 'KING ROSE' STAR MAGNOLIA	2" CALIPER, 6–7' HT.	8	
	TAXUS MEDIA 'HATFIELDII' / YEW	5–6'HT., FULL SYMMETRICAL SHAPE	3	
<u>SHRUBS</u>				
\odot	MYRICA CALIFORNICA / PACIFIC WAX MYRTLE	24"HT., 5-GAL Pot	13	
\odot	CISTUS HYBRIDUS / WHITE ROCK ROSE	24"HT., 5-GAL Pot	35	
\odot	OEMLERIA CERASIFORMIS / INDIAN PLUM	24"HT., 5-GAL Pot	8	
$\langle \rangle$	ROSA NUTKANA / NOOTKA ROSE	24"HT., 5-GAL POT	14	
	SYMFORICARPOS ALBUS / COMMON WHITE SNOWBERRY	24"HT., 5-GAL POT	47	
\bigotimes	TAXUS X MEDIA 'WARDII' / WARD'S YEW	12"HT., 2-GAL POT	12	
\odot	VIBURNUM DAVIDII / DAVID'S VIBURNUM	12"HT., 2-GAL POT	12	
\odot	MAHONIA NERVOSA / LONG-LEAF MAHONIA	12"HT., 2-GAL POT	19	
\bigcirc	RIBES SANGUINIUM / RED FLOWERING CURRENT	24"HT., 5-GAL POT	35	

\bigcirc	VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY	24"HT., 5-GAL POT	5	
$\left(\times\right)$	VIBURNUM TINUS "SPRING BOUQUET"	24"HT., 5-GAL POT	17	
\bigoplus	RHODODENDRON YAKUSHIMANUM 'YAKU PRINCESS' / RHODODENDRON	24"HT., 5-GAL POT	9	
\bigcirc	CORNUS STOLONIFERA 'KELSEYI'/DWARF RED-TWIG	12"HT., 2-GAL POT	49	
	PHILADELPHUS LEWISII / WILD MOCK ORANGE	18"HT., 3-GAL POT	5	
\bigcirc	SARCOCOCCA RUSCIFOLIA	18"HT., 3-GAL	9	
	BLECHNUM SPICANT / DEER FERN	18"HT., 2-GAL POT	48	

\bigotimes	AQUILEGIA FORMOSA / WESTERN COLUMBINE	12"HT., 2-GAL	61	
	PENNISETUM ALOPECUROIDES 'HAMELN' / FOUNTAIN GRASS	12"HT., 2-GAL POT	62	
۲	LIRIOPE MUSCARI / BIG BLUE LILYTURF	18"HT., 2-GAL POT	70	
	ROSA RUGOSA 'HANSA' / RUGOSA ROSE	36"HT., 5-GAL Pot	12	
$\overline{\mathbb{O}}$	CLEMATIS MONTANA / ANEMONE CLEMATIS	24"HT., 2-GAL STAKED VINE	18	
ર્દાંપુર	ADIANTUM ALEUTICUM / WESTERN MAIDENHAIR FERN	12"HT., 2-GAL POT	10	
	SEDUM MIX/ (3) VARIETIES STONECROP	4-INCH POT		1'-6" O.C.
B	CORNUS CANADENSIS / BUNCHBERRY	4-INCH POT		1'-6" O.C.
	MAHONIA REPENS / CREEPING MAHONIA	4-INCH POT		1'-6" O.C.
	FRAGARIA CHILOENSIS 'LIPSTICK' / SAND STRAWBERRY	4-INCH POT		1'-6" O.C.
	GALIUM ODORATUM / SWEET WOODRUFF	4-INCH POT		1'-6" O.C.
	arenaria montana / sandwort	4-INCH POT		1'-0" O.C.
$\begin{array}{c} & & & \\$	OPHIOPOGON PLANISCAPUS 'NIGRESCENS' / BLACK MONDO GRASS	4-INCH POT		1'-0" O.C.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	ARCTOSTAPHYLOS UNA–URSI 'EMERALD CARPET' / EMERALD MANZANITA	4-INCH POT		1'-6" O.C.
	INDICATES HYDROSEEDED LAWN			
	INDICATES EXISTING VEGETATION TO SAVE AND PROTECT			

NOTES

- 1. ALL NEW PLANTING AREAS ON SITE SHALL RECEIVE MINIMUM 6" OF IMPORTED SANDY LOAM TOPSOIL MIX CONTAINING 10% ORGANIC COMPOST TILLED INTO THE TOP 12" AND MINIMUM 2" OF FINE GRADE BARK MULCH.
- 2. ALL PLANTING OF SHRUBS AND TREES WITHIN CRITICAL ROOT ZONE OF EXISTING TREES TO SAVE AND PROTECT SHALL BE PLANTED BY HAND METHODS.



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STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT Maig A. Leus CERTIFICATE NO. 442

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DESIGN TEAM INFORMATION JGM LANDSCAPE ARCHITECTS CRAIG LEWIS, PLA 206.795.3196 CRAIG@JGM-INC.COM
PROJECT NAME/ADDRESS
STEP BY STEP EARLY LEARNING CENTER 3303 8TH AVE SE, BLDG E PUYALLUP, WA 98372
PROJECT NUMBER 21015 DRAWING TYPE PERMIT
ISSUE DATE ISSUE DESCRIP. NO.
SHEET TITLE PLANTING PLAN EAST SHEET # I 2 0

City of Puyallup Development & Permitting Services ISSUED PERMIT			
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Engineering	Public Works		
Fire	Traffic		













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Planning

Public Works

Traffic

(11X17) SCALE : 1/16" = 1'-0' (22X34) SCALE : 1/8" = 1'-0"

CLERESTORY & REFLECTED CLG PLAN SHEET #

A2.12





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C	
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М	
R	

EXPOSED CONC. OP1: EPOXY SEAL CONC. OP2: QUARRY TILE (KITCHEN) GRIND & POLISH CONC. W/ COLOR (FIELD) CARPETILE (OFFICE) WALK-OFF MAT (ENTRY) MAPLE FLOOR (PRESCHOOL) ROCK TILE (BATHROOM)





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SHEET TITLE

ENLARGED PLAN N. PRESCHOOL

SHEET #

A2.21



EXPOSED CONC.
OP1: EPOXY SEAL CONC. OP2: QUARRY TILE (KITCHEN)
GRIND & POLISH CONC. W/ COLOR (FIELD)
CARPETILE (OFFICE)
WALK-OFF MAT (ENTRY)
MAPLE FLOOR (PRESCHOOL)
ROCK TILE (BATHROOM)







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SHEET TITLE

ENLARGED PLAN S. PRESCHOOL, **MECH & TODDLER** SHEET # A2.22









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ENLARGED PLAN E. TODDLER & LOBBY SHEET #

A2.23



2 ENLARGED PLAN - S. INFANT & PREP KITCHEN (11X17) SCALE : 1/16" = 1'-0" (22X34) SCALE : 1/8" = 1'-0"







 $\langle | \rangle$



City of Puyallup Development & Permitting Services ISSUED PERMIT	
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ENLARGED PLAN INFANT & PREP KITCHEN SHEET #

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SHEET TITLE

BUILDING **ELEVATIONS**

SHEET # A3.1



		\frown	\frown
	(J	(\mathbf{I})
HATCHING LEGEND & NOTES			
SIDING 1			
SIDING 2			
STONE VENEER			
METAL			
GENERAL NOTE		I	1
- IF GLAZING PROVIDE SAFETY GLAZING S	FE DR		
SCHD		1	1
- SEE DR SCHD FOR SIZE WINDOW		ſ	
- IF WINDOW IS WITHIN 24" FROM THE DOOR	,		
PROVIDE SAFETY GLAZING; SEE WIN SCHE CALL- OUT	PFOR		
- SEE WIN SCHD FOR SIZE			
			·
GYM TOP @ TRUSS 20'-0"	- O	<u>E</u>	
	I	I	
BOT OF WIN @ GRID 2 & 7			
15'-0"			
TOP OF PARAPET (NORTH)	- ()		
12-0	Ŧ		
MAIN FLOOR			
0'-0"	-		

1 NORTH ELEVATION (11X17) SCALE : 1/8" = 1'-0" (22X34) SCALE : 1/4" = 1'-0"



2 WEST ELEVATION (11X17) SCALE : 1/8" = 1'-0" (22X34) SCALE : 1/4" = 1'-0"







BUILDING **ELEVATIONS**

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PROJECT LEAD JEFFREY E. BROWN 253.606.8324 jeff@jeffbrownarchitecture.com



PROJECT NAME/ADDRESS

STEP BY STEP EARLY LEARNING CENTER 3303 8TH AVE SE, BLDG E PUYALLUP, WA 98372

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PROJECT NUMBER 21015

DRAWING TYPE



SHEET TITLE

BUILDING ELEVATIONS

SHEET #

SHEET #

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	Traffic









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SHEET TITLE

BUILDING SECTIONS

SHEET # A4.1



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PROJECT NUMBER 21015

DRAWING TYPE

PERMIT DOCUMENT

DATE	ISSUE	NO.
06.21.24		

SHEET TITLE

BUILDING SECTIONS

SHEET # A4.2

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PROJECT NUMBER

DRAWING TYPE

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	Traffic

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1 DOOR TYPE

						NOTE: 1. ALL EXT WOOD DOOR TO BE SOLID-CORE 2. SG - SAFETY GLAZING					
(11X17) SCALE: 1/8" = 1'-0" (22X34) SCALE: 1/4" = 1'-0"							2. 50 - SAFETT GLAZING 3. DOOR SWING PER A2.11, A2.21~2.24 4. DOOR WIDTH AND HEIGHT PER SCHD, TYP				
		DOORS								FRAME	
NO.	LOCATION	TYPE	FT	DTH IN	FT	GHT IN	MAT	FINISH	MAT	FINISH	REMARKS
101A	VESTIBULE	A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP CLOSER PANIC BAR TEP
101B	VESTIBULE	A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP CLOSER PANIC BAR TEP
102A	LOBBY (N)	A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	CLOSER PANIC BAR
102B		A	3	0	/	0	AL	PAINTED-WHITE	AL	PAINIED-WHITE	CLOSER PANIC BAR
1020	LOBBY (S)	A	3	0	/	0	AL	PAINTED-WHITE	AL	PAINIED-WHITE	WEATHER STRIP CLOSER PANIC BAR TEP
1020		A	3	0	/ 7	0	AL	PAINTED-WHITE	AL		
102E			<u>с</u> С	0	7	0					
103		R	3 3	0	7	0	WD	STAIN & VARNISH	НМ		
104	BATHROOM	C	3	0	7	0	WD	STAIN & VARNISH	НМ		
108	STORAGE	C	6	0	7	0	WD	STAIN & VARNISH	НМ	PAINTED	(2) 3'-0" DOOR L REMOVABLE MULLION
100	STORAGE	C	6	0	7	0	WD	STAIN & VARNISH	НМ	PAINTED	
110	STORAGE	C	6	0	7	0	WD	STAIN & VARNISH	HM	PAINTED	(2) 3'-0" DOOR REMOVABLE MULLION
111A	PRESCHOOL	A	6	0	7	0	AL	DARK BRONZE	AL	DARK BRONZE	WEATHER STRIP CLOSER PANIC BAR TEP
111B	PRESCHOOL	A	6	0	7	0	AL	DARK BRONZE	AL	DARK BRONZE	WEATHER STRIP CLOSER PANIC BAR TEP
112	PRESCHOOL	D	12	0	12	0	AL	DARK BRONZE	AL	DARK BRONZE	GARAGE DOOR
113	PRESCHOOL	D	12	0	12	0	AL	DARK BRONZE	AL	DARK BRONZE	GARAGE DOOR
114A	PRESCHOOL	A	6	0	7	0	AL	DARK BRONZE	AL	DARK BRONZE	WEATHER STRIP CLOSER PANIC BAR TEP
114B	PRESCHOOL	A	6	0	7	0	AL	DARK BRONZE	AL	DARK BRONZE	CLOSER TEP
115	STORAGE	С	3	0	7	0	WD	STAIN & VARNISH	HM	PAINTED	
116	WOMEN'S	С	3	0	7	0	WD	STAIN & VARNISH	HM	PAINTED	PUSH, TOE KICK PLATE CLOSER
117	STORAGE	С	3	0	7	0	WD	STAIN & VARNISH	HM	PAINTED	
118	MEN'S	С	3	0	7	0	WD	STAIN & VARNISH	HM	PAINTED	PUSH, TOE KICK PLATE CLOSER
120A	HALL	A	3	0	7	0	AL	TBD	AL	TBD	WEATHER STRIP CLOSER PANIC BAR TEP
120B	HALL	A	3	0	7	0	AL	TBD	AL	TBD	PANIC BAR TEP
121	JANITOR'S CL	С	3	0	7	0	WD	STAIN & VARNISH	HM	PAINTED	CLOSER
122	ELEC	C	3	0	7	0	HM	PAINTED	HM	PAINTED	WEATHER STRIP CLOSER
123		C	3	0	7	0	HM		HM	PAINTED	WEATHER STRIP CLOSER
124		0	3	0	/	0	WD	STAIN & VARNISH	HM		CLOSER
125A			3	0	/	0	WD	STAIN & VARNISH	HM		
1256			0	0	7	0	AL		AL		
1250		<u>к</u>	<u>с</u>	0	7	0		STAIN & VADNISH			WLATTER STRIP CLOSER PAINIC BAR TEP
12/A			8	0	7	0	AL		AI	PAINTED-WHITE	GARAGE DOOR
127C		A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP L CLOSER L PANIC BAR L TEP
129A		C	3	0	7	0	WD	STAIN & VARNISH	HM		
129B	TODDLER	D	8	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	GARAGE DOOR
129C	TODDLER	A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP CLOSER PANIC BAR TEP
130A	TODDLER	С	3	0	7	0	WD	STAIN & VARNISH	HM	PAINTED	
130B	TODDLER	D	8	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	GARAGE DOOR
130C	TODDLER	А	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP CLOSER PANIC BAR TEP
132	CONFERENCE	A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP CLOSER
133A	INFANT	A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP CLOSER TEP
133B	INFANT	D	8	0	10	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	GARAGE DOOR
133C	INFANT	A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP CLOSER PANIC BAR TEP
134	RESTROOM	С	3	0	7	0	WD	STAIN & VARNISH	HM	PAINTED	
135A	INFANT	A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP CLOSER TEP
135B		D	8	0	10	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	GARAGE DOOR
135C		A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP CLOSER PANIC BAR TEP
136A		A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINIED-WHITE	
136B			8	0	10	0	AL	PAINTED-WHITE	AL	PAINIED-WHILE	
1360		A C	<u>১</u>	0	/ 7	0					WEATHER STRIF CLOSER PANIC BAR TEP
132			3	0	7	0		PAINTED WILLTE			
1380			Q Q	0	10	0					
1380	INFANT	A	3	0	7	0	AL	PAINTED-WHITE	AL	PAINTED-WHITE	WEATHER STRIP CLOSER PANIC BAR TEP
139A	PREP KITCHEN	В	3	0	7	0	HM	PAINTED	HM	PAINTED	WEATHER STRIP CLOSER TEP FLUSH BOIT
139B	PREP KITCHEN	В	3	0	7	0	HM	PAINTED	HM	PAINTED	WEATHER STRIP CLOSER TEP FLUSH BOLT
	FENCE		3	0	6	0	HM	PAINTED	HM	PAINTED	CRASH BAR (3) THROUGHOUT SITE, SEE G0.2 & A1.1 FOR LOCATION
	<u>1</u>		1			1			•		

2 DOOR SCHEDULE

PER SCHD

 $/ \setminus$ / \

D GARAGE DR

JEFF BROWN ARCHITECTURE 12181 C STREET SOUTH TACOMA, WA 98444

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PROJECT NUMBER

21015

DRAWING TYPE

ISSUE	NO.
PERMIT	
CITY	$\underline{1}$
	issue Permit City

DOCUMENT

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SHEET TITLE

DOOR SCHD & TYPE

A7.1

SHEET #

		WI	DTH	HEIGHT	U					
NO.	LOCATION	FT	IN	FT IN	VALUE	QTY	TYPE	MANUFACTURE	FINISH	REMARKS
101.S1~S2	VESTIBULE	3	2	7 2	0.34	2	STOREFRONT-FIXED	KAWNEER	WHITE	SG (ADJACENT TO DR)
101.S1~S2	VESTIBULE	6	6	2 10	0.34	2	STOREFRONT-FIXED	KAWNEER	WHITE	ABV DOOR
101.\$5	VESTIBULE		TB	3D	0.34		STOREFRONT-FIXED	KAWNEER	WHITE	VERIFY IN FIELD
102.S1~S2	LOBBY (N)	3	2	7 2	N/A	2	STOREFRONT-FIXED	KAWNEER	WHITE	INTERIOR SG (ADJACENT TO DR)
102.51~52	LOBBY (N)	6	6	2 10	N/A	2	STOREFRONT-FIXED	KAWNEER	WHITE	INTERIOR
102.\$3~\$4	LOBBY (S)	1	8	7 2	0.34	2	STOREFRONT-FIXED	KAWNEER	WHITE	SG (ADJACENT TO DR)
102.\$3~\$4	LOBBY (S)	5	1	2 10	0.34	2	STOREFRONT-FIXED	KAWNEER	WHITE	
102.\$5	LOBBY (S)		TB	BD	0.34		STOREFRONT-FIXED	KAWNEER	WHITE	VERIFY IN FIELD
102.1, 102.3	LOBBY	8	4	7 2	0.34	2	STOREFRONT-FIXED	KAWNEER	WHITE	
102.2	LOBBY	9	4	7 2	0.34	1	STOREFRONT-FIXED	KAWNEER	WHITE	
102.4, 102.6	LOBBY	6	4	4 6	0.34	2	STOREFRONT-FIXED	KAWNEER	WHITE	ABV WIN 102.1, 102.3
102.5	LOBBY	9	4	4 6	0.34	1	STOREFRONT-FIXED	KAWNEER	WHITE	ABV WIN 102.2
102.7	LOBBY	3	4	4 6	0.34	1	STOREFRONT-FIXED	KAWNEER	WHITE	ABV DR 102E
102.11~14	LOBBY CLERE (W)	3	0	3 0	0.26	4	FIXED	MILGARD-AL	CLEAR ANODIZE	ALIGN WITH WIN 102.15~18
102.15	LOBBY CLERE (E)	3	4	3 0	0.26	1	FIXED	MILGARD-AL	CLEAR ANODIZE	ABV DR 102E
102.16~21	LOBBY CLERE (E)	3	0	3 0	0.26	7	FIXED	MILGARD-AL	CLEAR ANODIZE	see elev for alignment
103.11~13	OFFICE CLERE	4	0	1 6	0.26	3	FIXED	MILGARD-AL	CLEAR ANODIZE	ALIGN WITH WIN 117.11
104.1~2	OFFICE	4	0	4 ⁰	0.26	2	FIXED	MILGARD-AL	CLEAR ANODIZE	
104.3~104.6	OFFICE	4	0	4 ⁰	N/A	4	FIXED	MILGARD-AL	CLEAR ANODIZE	INTERIOR 104.6 - SG (ADJACENT TO DR)
111.1~114.1	PRESCHOOL	6	4	4 4	0.26	3	FIXED	MILGARD-AL	BRONZE ANODIZE	ABV DR 111A, 111B, AND 114B
111.11~114.14	PRESCHL CLERE	3	0	3 0	0.26	10	FIXED	MILGARD-AL	BRONZE ANODIZE	
111.21~113.26	PRESCHL CUPULA	6	0	2 0	0.26	8	FIXED	MILGARD-AL	BRONZE ANODIZE	W/O MIDDLE WINDOWS
111.22~113.25	PRESCHL CUPULA	3	0	2 0	0.26	4	FIXED	MILGARD-AL	BRONZE ANODIZE	MIDDLE WINDOWS @ CUPULA
116.11	WOMEN'S	4	0	1 10	0.26	1	FIXED	MILGARD-AL	CLEAR ANODIZE	
117.11	MEN'S	4	0	1 6	0.26	1	FIXED	MILGARD-AL	CLEAR ANODIZE	ALIGN WITH WIN 103.11~103.13
120.51	HALL	4	8	7 2	0.34	1	STOREFRONT-FIXED	KAWNEER	TBD	SG (ADJACENT TO DR)
120.51	HALL	8	0	1 10	0.34	1	STOREFRONT-FIXED	KAWNEER	TBD	
120.52	HALL	4	8	7 2	N/A	1	STOREFRONT-FIXED	KAWNEER	WHITE	INTERIOR SG (ADJACENT TO DR)
120.52	HALL	8	0	1 10	N/A	1	STOREFRONT-FIXED	KAWNEER	WHITE	
120.11~120.16	HALL-CLERE	5	0	2 6	0.26	6	FIXED	MILGARD-AL	CLEAR ANODIZE	
125.1~130.3	TODDLER	2	0	6 0	N/A	12	FIXED	MILGARD-AL	CLEAR ANODIZE	INTERIOR SG (BOM SILL LOWER THAN 18'')
125.11~130.11	TODDER	8	4	2 0	0.26	4	FIXED	MILGARD-AL	CLEAR ANODIZE	ABV GARAGE DOOR
125.12~130.12	TODDER	3	4	2 0	0.26	4	FIXED	MILGARD-AL	CLEAR ANODIZE	ABV SWING DOOR
126.1~129.3	TODDLER	2	6	3 4	0.26	6	FIXED	MILGARD-AL	CLEAR ANODIZE	SG (BOM SILL LOWER THAN 18'')
126.4~129.6	TODDLER	2	6	2 2	0.26	6	FIXED	MILGARD-AL	CLEAR ANODIZE	ABV WIN 126.1~129.3
132.1~3	CONFERENCE	4	0	4 0	0.26	3	FIXED	MILGARD-AL	CLEAR ANODIZE	132.3 - SG (ADJACENT TO DR)
133.3~4	INFANT	4	0	4 ⁰	0.26	2	FIXED	MILGARD-AL	CLEAR ANODIZE	
133.1~138.1	INFANT	3	4	2 4	0.26	4	FIXED	MILGARD-AL	CLEAR ANODIZE	ABV DR 133A~138A
133.2~138.3	INFANT	2	4	<mark>4</mark> 0	0.26	8	FIXED	MILGARD-AL	CLEAR ANODIZE	SG (ADJACENT TO DR)
133.11~138.12	INFANT CLERE (W)	3	0	2 0	0.26	8	FIXED	MILGARD-AL	CLEAR ANODIZE	
133.14~138.16	INFANT CLERE (E)	2	4	2 0	0.26	8	FIXED	MILGARD-AL	CLEAR ANODIZE	W/O MIDDLE WINDOWS (ABV DR)
133.15~138.15	INFANT CLERE (E)	3	4	2 0	0.26	4	FIXED	MILGARD-AL	CLEAR ANODIZE	ABV DOOR 113~138
139.11~16	PREP KITCHEN	2	2] 6	0.26	4	FIXED	MILGARD-AL	CLEAR ANODIZE	W/O 139.12, 139.15
139.12, 139.15	PREP KITCHEN	3	10	1 6	0.26	2	FIXED	MILGARD-AL	CLEAR ANODIZE	

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City of Puyallup Development & Permitting Services ISSUED PERMIT				
Building	Planning			
Engineering	Public Works			
Fire	Traffic			

2 WINDOW SCHEDULE

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PROJECT NUMBER 21015

DRAWING TYPE

PERMIT DOCUMENT

DATE	ISSUE	NO.
06.21.24	PERMIT CITY	

SHEET TITLE

DOOR SCHD & TYPE WIN SCHD & TYPE

SHEET #

A7.1

1.0 Construction Notes.

These notes supplement the specification. Any discrepancy found among the drawings, specifications, these notes, and the site conditions shall be reported to the Architect/Engineer, who shall correct such discrepancy in writing. Any work done by the Contractor after discovery of such discrepancy shall be done at the Contractor's risk. The Contractor shall verify and coordinate the dimensions among all drawings prior to proceeding with any work or fabrication. The Contractor is responsible for all erection bracing, formwork and temporary construction shoring.

1.10 Bidder's warranty.

By the act of submitting a bid for the proposed contract, the Contractor warrants that: The Contractor and all subcontractors he intends to use have carefully and thoroughly reviewed the drawings and structural notes and have found them complete and free from ambiguities and sufficient for the purpose intended; further that,

The Contractor has carefully examined the site of the work and that from his own investigations, he has satisfied himself as to the nature and location of the work, as to the character, quality, quantities of material and difficulties to be encountered, as to the extent of equipment and other facilities needed for the performance of the work and as to the general and local conditions, and other items which may in any way affect the work or its performance, further that,

The Contractor and all workmen he intends to use are skilled and experienced in the type of construction represented by the drawings and documents bid upon; further that, Neither the Contractor nor any of his employees, agents, intended suppliers, or subcontractors have relied upon any verbal representations allegedly authorized or unauthorized from the owner or his employees or agents, including the Architect or Engineers, in assembling the bid figures; further that,

The bid figure is based solely upon the construction contract documents and properly issued written addenda and not upon any other written or verbal representations.

1.20 Codes.

All methods, materials and workmanship shall conform to the 2021 International Building Code (IBC) as amended and adopted by the local building authority. All reference to other codes and standards, (ACI, ASTM, etc.,), Shall be for the latest or most current edition available.

1.30 Design criteria.

niform loads:		
Loads	Live load	Dead load
Roof	25 psf* (I _S = 1.10	actual
Slab-on-grade	125 psf	actual

*15% increase in stresses for wood framing allowed for snow live load. Concentrated loads:

Mechanical units or other concentrated loads on roof or floor. All manufacturers of preengineered systems shall locate, coordinate, verify weights, etc., And design their system for these loads.

Lateral loads:

wind (IBC 1609)	
104 MPH - 3 second gust	
lw = 1.15 Exposure B Earthquake Design Data (IBC 1613) Ie = 1.25 Ss = 1.44	See Geo-Technical report for recommendations and provide geo-technical report for field review prior to requesting footing inspections. S1.0
$S_I = 0.42$ Site Class D $S_{DS} = 1.06$ $S_{DI} = 0.60$ Seismic Design Catagory D Bearing Wall System - Light frame V = 0.20W (Strength Design) Cs = 0.20 R = 6.5 Equivalent lateral force method	d walls sheathed

1.40 Soil data.

1500 psf assumed bearing. Contractor to field verify.

1.50 Inspection - see specifications.

1.60 Differred Submittals / Shop drawings.

Submit differred submittals / shop drawings to be reviewed by the Engineer for the following:

- Concrete mix
- Reinforcing steel

Pre-engineered Steel/Wood Trusses (Washington State seal required) Glue-laminated members

1.70 Miscellaneous.

Verify all dimensions and conditions in the field.

Verify size and location of all openings in the floors, roof and walls with Architectural, mechanical and electrical drawings.

Construction details not specifically shown on the drawings shall follow similar details of sections of this project as approved by the Architect/Engineer.

See architectural, mechanical and electrical drawings for dimensions and locations of openings not dimensioned or shown on structural plans.

1.80 Special Inspections

Special inspection in accordance with IBC section 1704 shall be provided for the following work items: (Refer tp Section 1704 for complete desscriptions)

Item Reinforced Concrete	Required for Reinforcing	<u>Frequency</u> Periodic
	Reinforcing welding Bolts installed in concrete Use of correct design mix Slump & air tests Placement of concrete	Continuous Periodic Continuous Continuous
Soil compaction	Curing temp. & technique Bearing capacity	Periodic Periodic
Wood construction	Shear Wall Nailing $\langle 2 \rangle$ & $\langle 3 \rangle$	Periodic

1.90 Quality Assurance

Qualitity Assurance Plans for Seismic Resistance: Unless otherwise provided by the Architect or other Consultans for this project, the Contractor shall provide quality assurance for each of the following systems:

Piping systems and mechanical units containing flammable combustible or highly toxic materials

Anchorage of electrical equipment used for emergency or standby power systems. Suspended ceiling systems and their anchorage.

Each Contractor responsible for the construction of the building's seismic-force-resisting system or other system listed in the quality assurance plan(s) shall submit a written contractor's statement of responsibility to the Building Official, Owner and Architect prior to commencement of the work on that system. The statement of responsibility shall meet all the After approval from the Owner and Architect, please provide contractors

requirements of IBC 1705.3. 2.0 Site work. statement of responsibly for Building Official review. Const. Plan Set S1.0

↑2.10 Excavation.

Excavate to depth shown and to firm undisturbed material. Over-excavations shall be backfilled with lean concrete (f'c = 2,000 psi) at the Contractor's expense. Exercise extreme care during excavation to avoid damage to buried lines, tanks, and other concealed items. Upon discovery, do not proceed with work until receiving written instructions from Architect. A competent representative of the owner shall inspect all footing excavations for suitability of bearing surfaces prior to placement of reinforcing steel. Provide drainage as necessary to avoid water-softened subgrade.

2.20 Fill, backfill and compaction.

Backfill against walls shall not be placed until after the removal of all material subject to rot or corrosion. All fill placed against retaining walls or basement walls shall be freedraining granular material. Structural fill other than pea gravel shall be granular, placed in 6 inch lifts and compacted to at least 95% of its maximum dry density as determined by ASTM D-1557 (Mod. Proctor) and ASTM D-698 (Standard Proctor). Pea gravel fill shall have a maximum particle size of 3/8" diameter.

3.0 Structural Concrete.

3.10 General. All concrete shall be hard rock concrete meeting requirements of ACI-301, "Specifications for Structural Concrete for Buildings." Proportioning of ingredients for each concrete mix shall be by method 2 or the alternate procedure given in ACI-301. Place concrete per ACI-304 and conform to ACI-604(306) for winter concreting and ACI-605(305) for hot weather concreting. Use interior mechanical vibrators with 7,000 rpm minimum frequency. Do not over-vibrate. Concrete shall be placed in a single pour between construction or control joints. Protect all concrete from premature drying, excessive hot or cold temperature for seven days after placing.

3.20 Strength.

Twenty-eight day compressive strengths shall be:

Slabs Beams, columns, vertically Formed walls Footings

These slumps may be increased with proper addition of admixtures for workability without changing the water content of the original aproved mix design. Admixtures containing chlorides are not permitted unless approved by the Engineer.

3.30 Materials

Cement: ASTM 150, type I or type I-II. Engineer's approval is needed for use of type III

Coarse and fine aggregate: ASTM C-33. Water shall be clean and potable.

3.40 Water reducing admixtures.

with manufacturer's instructions.

Synergized performance systems: Concrete using admixtures to produce flowable concrete may be used subject to Engineer's approval. Air entrainment: ASTM C-260 and ASTM C-494, entrain 4% plus/minus 1% by volume in

all exposed concrete and footings. No other admixtures permitted unless approved by the Engineer.

3.50 Formwork and shoring.

Follow recommended practice for concrete formwork (ACI-347). Reshoring for early removal of original supports will not be permitted. While reshoring operations are underway, no construction loads will be permitted on the new construction.

All shoring shall be the responsibility of the Contractor. Formwork supports and shoring shall be designed to provide finished concrete surfaces at all faces level, plumb, and true to the dimensions and elevations shown. Tolerances and variations shall be as specified.

3.60 Reinforcing steel.

Detail, fabricate, and place per ACI-315 and ACI-318. Support reinforcement with approved chairs, spacers, or ties.

Deformed bar reinforcement: ASTM A-615 Grade 60 Welded deformed bar reinforcement: ASTM A-706 Grade 60, weldable grade, submit weld procedures and mill certificates showing carbon content for all bars to be welded.

Welded wire fabric:	ASTM A-185 & AS
Deformed bar anchors:	ASTM A-496

All reinforcing shall be lap-spliced a minimum lap of 40 bar diameters except as noted specifically on the structural drawings. No more than 50% of horizontal or vertical bars shall be spliced at one location.

Provide elbow bars (40 diameter) to lap horizontal steel at corners and intersections in footings and walls. Lap welded fabric 12" or one spacing plus 2", whichever is more.

3.70 Concrete cover on reinforcing (unless shown otherwise).

Bottom of footings 3" Formed earth face & slab-on-grade 2" 1-1/2" Walls, weather face 1-1/2" Columns and beams to stirrups Bottom of interior slab 3/4" Walls, inside face 1"

slump psi 3000 3" +/- 1" 3000 3" +/- 1" 3000 4" +/- 1"

Water reducing admixture: ASTM C-494. Admixtures shall be used in exact accordance

STM A-82 fy = 65 ksi

3.80 Construction joints.

Construction joint spacing in walls shall not exceed 50' on center except as directed by the Architect/Engineer

Horizontal construction joints in beams and girders are not permitted except where indicated. Vertical construction joints in beams and slabs shall be located between the midpoint and the third point of the span. Unless noted otherwise, location of the construction or control joints in slab-on-grade shall be on column grids or under permanent partitions and shall not exceed 20'-0" c/c each way.

No joists, beams or girders shall be sleeved for piping or conduit except as noted on the structural drawings or as approved by the Architect/Engineer.

Electrical conduit in slabs, shall be placed at the mid-depth of the slab at a minimum spacing of three times the conduit diameter. Conduit outside diameter shall not exceed one-third of the slab thickness.

Provide control joints in exposed hollow core topping at each end of each hollow core plank. Provide additional joints parallel to planks at 16' o/c maximum.

5.0 Metals.

5.10 Welding. All welding shall be in accordance with the "Structural Welding Code" ANSI/AWS D1.1. In the case of welding reinforcing bars, all welding shall be in accordance with ANSI/AWS D1.4. Welding of reinforcement bars shall not be allowed except where shown. Materials: use only E60 or E70 electrodes

All welding shall be by certified welders. All full penetration welds shall be inspected by ultrasonic non-destructive testing procedures. Submit test results to Architect/Engineer for review.

5.20 Structural steel. All detailing, fabrication, and erection shall conform to aisc "manual of steel construction", latest edition. Materials: Steel shapes/plates ASTM A6 ASTM A-53, type E or S (fy=36 ksi.) Pipe columns ASTM A-500, grade B (fy=46 ksi.) Tube columns Bolts, nuts ASTM A-307 unless noted otherwise

Metal protection: all steel exposed to weather, moisture, soil, or as noted shall be galvanized per ASTM A-123 (1.25 Oz/sf minimum). All other steel surfaces to be shop primed after fabrication.

BHP roof decking B-36 ASTM A446 & ASTM A525, Fy = 38 ksi

6.0 Wood.

6.10 General.

Framing lumber shall be DF#2 or better, except that 2x framing lumber may be HF #2 unless otherwise shown on the plans. All 2" lumber shall be kiln dried (KD). Each piece of lumber shall bear a grade stamp of a recognized lumber grading or inspection bureau or agency per the NIST American Softwood Lumber Standard PS 20-99.

Provide cut or malleable iron washers or where bolt heads, nuts, and lag screws bear on wood.

Treat all wood in contact with concrete, mortar, grout, masonry, and within 8" of earth; all wood over water; and all wood in contact with earth; with one of the following processes:

Chromated Copper Arsenate (CCA-C) DOT Sodium Borate (SBX) Alkaline Copper Quat ACQ-C and ACQ-D (Carbonate) Copper Azole (CBA-A and CA-B)

Where possible, pre-cut material before treatment. All field cuts and drilled holes shall be field treated in accordance with AWPA M-4.

6.20 Accessories. Bolts shall be ASTM A-307.

Washers shall be malleable iron washers (M.I.W.) or heavy plate cut washers. Nails shall be common, American or Canadian manufacturers only. Lag screws, shear plates - see national design specifications. Anchors and connections shall be Simpson, Teco, Lumberlok or other International Code Council (ICC) approved products. All fasteners shall be installed per manufacturer's recommendations unless otherwise shown.

All hardware exposed to weather, in unheated portions of building, or in contact with treated wood as specified above shall be galvanized as follows: Fasteners shall be hot dipped per ASTM A 153 or mechanically galvanized per ASTM B 695, class 55 or greater. Hardware shall be galvanized per one of the following processes: ASTM A 653 Class 185 (Simpson ZMax G185) or Batch/Post Hot Dipped Galvanized per ASTM A 123.

Stainless steel hardware and fasteners shall be used in connection with any preservative treatment process not specifically listed above.

6.30 Minimum nailing.

Minimum nailing shall be per IBC Table 2304.10.1 - Nailing Schedule.

6.40 Sheathing (plywood or OSB).

All grading shall conform to the following standards: NIST Voluntary Product Standard PS 2-92. Thickness and lay-up shall be as shown. All plywood shall be group I or II species. Unless otherwise shown, provide the following minimum nailing:

Panel edges 8d at 6" on center Intermed. Support 8d at 12" on center

6.50 Gluelam Beams.

Materials, manufacture and quality control shall be per ANSI/AITC A-190.1 "Structural Glue Laminated Timber". Unless otherwise shown, camber all beams 1-1/2 times dead load deflection. Unless otherwise shown all beams shall be combination 24F-1.8E as listed in AWC-ASD table 3.1, and have exterior glue. Unless otherwise shown, industrial appearance is acceptable.

6.60 Wood adhesive. All wood adhesives shall be elastomeric and shall have a current ICC-ES approval. Apply all adhesives in accordance with the adhesive manufacturer's recommendations.

- 6.70 Pre-Engineered Trusses. Member geometry and spacing shall be as shown on the plans. The manufacturer shall provide additional framing member as shown or as necessary to provide support for mechanical equipment, wall or other partitions, snow drift loads, etc. Trusses with spans greater than 35' shall have the heel plates designed considering the effect of eccentric loading.
- Where noted precut blocking, bridging, bracing and/or filler pieces shall be furnished by the manufacturer. Where applicable, wind uplift bracing shall be provided by the manufacturer. Unless noted otherwise, the truss manufacturer shall specify and furnish connection hardware for the installation of their system.
- Shop drawings shall indicate all required permanent bracing. Supporting calculations shall indicate member stresses, species/grades and applicable ICC-ES approvals. Shop drawings and calculations shall be sealed by a professional engineer registered in the State of Washington.
- following standards:
- Construction.

Truss Industry

notices (or notices equivalent) to:

Plate Connected Wood Trusses.

TA	BLE 1705.3	
RE	QUIRED SPECIAL INSPECTIC	ONS AND TEST
	7.05	CONTINUOUS
	TYPE	SPECIAL
-		INSPECTION
1.	Inspect reinforcement,	
	including prestressing	-
	tendons, and verify	
0	placement.	
2.	Reinforcing bar welding:	
	a. verify weldability of	-
	reinforcing bars other	
	than ASTM A706;	
	b. inspect single-pass fillet	
	welds, max 5/16", and	
	 c. inspect all other wells. 	X
3.	Inspect anchors casts in	-
_	concrete.	
4.	Inspect anchors post-	
	installed in hardened	
	concrete members.	
	 Adhesive anchors 	x
	installed in horizontally	~
	or upwardly inclined	
	orientations to resist	
	sustained tension loads.	
	 Mechanical anchors and 	
	adhesive anchors not	
	defined in 4.a.	
5.	Verify use of required design	
	mix.	
		-
6.	Prior to concrete placement,	
	fabricate specimens for	
	strength tests, perform	×
	slump and air content tests,	~
	and determine the	
	temperature of the concrete	
7.	Inspect concrete and	
	shotcrete placement for	v
	proper application	^
	techniques	
8.	Verify maintenance of	
	specified curing temperature	-
	and techniques	
9.	Inspect prestressed concrete	
	for:	
1	a. Application of	~
1	presstressing forces;	~
	and	
	b. Grouting of bonded	x
	prestressing tendons	~
10.	Inspect erection of precast	
	concrete members	-
11.	Verify in-situ concrete	
1.0	strength, prior to stressing of	
1	tendons in posttensioned	
1	concrete and prior to	-
1	removal of shores and forms	
	from beams and structural	
1	slabs	
12	Inspect formwork for shape	
	location, and dimensions of	
	the concrete member being	-
	formed	
<u> </u>		

WABO certified special inspection and welding is required unless otherwise approved.

ABBREVIATION MEANING

@	AT
<i>II</i>	PARALLEL
B.U.	BUILT UP
BLKG.	BLOCKING
BOTT.	BOTTOM
BRG.	BEARING
CLR.	CLEAR
COL.	COLUMN
CONN.	CONNECTION
CONT.	CONTINUE
d	DIAMETER
DBL	DOUBLE
EA.	EACH
EQ.	EQUAL
F.O.	FACE OF
HDR	HEADER
HORIZ	HORIZONTAL
MFR	MANUFACTURE
	OR MANUFAC
O.C.	ON CENTER
PL.	PLATE
REQ'D	REQUIRED
SCHED	SCHEDULE

- Metal plated trusses shall be manufactured a detailed in conformance with the
- ANSI/TPI 1-2002 National Design Standards for Metal Plate Connected Wood Truss
- ANSI/TPI 1-1995 Code of Standard Practice for the Metal Plate Connected Wood
- ANSI/TPI 2-1995 Standard for Testing Metal Plate Connected Wood Trusses.
- When delivered, the components shall be accompanied by the fabricators certificate of conformance to the above referenced standards, and by the following user advisory
- BCSI-B1 Summary Sheet Guide for Handling, Installation and Bracing of Metal
- BSCI-B2 Summary Sheet Truss Installation and Temporary Bracing.
- BSCI-B3 Summary Sheet Web Member Permanent Bracing/Web Reinforcement. BSCI-B4 Summary Sheet - Construction Loading.

|--|

SHTHG. SIM. TYP. U.N.O.

VERT

W/

SF	IEATHING
SI	MILAR
ΤY	PICAL
U	NLESS NOTED
	OTHERWISE
VE	RTICAL
WI	ТН

TABLE (Inspection Tasks	C-N5.4-1 Prior to Welding
Inspection Tasks Prior to Welding	AWS D1.1/D1.1M References*
Velding procedure specifications (WPSs) vailable	6.3
fanufacturer certifications for welding onsumables available	6.2
Aterial identification (type/grade)	6.2
Velder identification system	6.4 (welder qualification) (identification system not required by AWS D1.1/D1.1M)
it-up of groove welds (including joint eometry) • Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable)	6.5.2 5.22 5.15 5.18 5.10, 5.22.1.1
Configuration and finish of access holes	6.5.2, 5.17 (also see Section J1.6)
it-up of fillet welds • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location)	5.22.1 5.15 5.18
Check welding equipment	6.2, 5.11

TABLE C-N5.4-2 Inspection Tasks During Welding

Inspection Tasks During Welding	AWS D1.1/D1.1M References*
lse of qualified welders	6.4
Control and handling of welding consumables • Packaging • Exposure control	6.2 5.3.1 5.3.2 (for SMAW), 5.3.3 (for SAW)
lo welding over cracked tack welds	5.18
invironmental conditions • Wind speed within limits • Precipitation and temperature	5.12.1 5.12.2
VPS followed • Settings on welding equipment • Travel speeed • Selected welding materials • Shielding gas type/flow rate • Preheat applied • Interpass temperature maintained (min/max.) • Proper position (F, V, H, OH)	6.3.3, 6.5.2, 5.5, 5.21 5.6, 5.7
Velding techniques Interpass and final cleaning Each pass within profile limitations Each pass meets quality requirements 	6.5.2, 6.5.3, 5.24 5.30.1
WS (2010)	

TABLE C-N5.4-3 Inspection Tasks After Welding

Inspection Tasks After Welding	AWS D1.1/D1.1M References**
Welds cleaned	5.30.1
Size, length and location of welds	6.5.1
Welds meet visual acceptance criteria • Crack prohibition • Weld/base-metal fusion • Crater cross section • Weld profiles • Weld size • Undercut • Porosity	6.5.3 Table 6.1(1) Table 6.1(2) Table 6.1(4), 5.24 Table 6.1(6) Table 6.1(7) Table 6.1(8)
Arc strikes	5.29
<i>k</i> -area*	not addressed in AWS
Backing removed and weld tabs removed (if re-	quired) 5.10, 5.31
Repair activities	6.5.3, 5.26
Document acceptance or rejection of welded joint or member	6.5.4, 6.5.5
k-area issues were identified in AISC (1997b). See C * AWS (2010)	commentary Section A3.1c and Section J10.8.

City of P Development & Pe ISSUED	Puyallup ermitting Services PERMIT
Building	Planning
Engineering	Public Works
Fire OF W	Traffic

MARK (SHEAR CAPACITY)	WALL TYPE	PANEL EDGE NAILING (1), (2)	INTERMEDIATE NAILING (2)	BOTTOM PLATE ANCHOR BOLTING OR NAILING (5)
(200 LB/FT)	1/2" CDX PLYWOOD OR OSB, ONE SIDE	8d @ 6" O.C.	8d @ 12" O.C.	1/2" A.B. @ 48" O.C. OR 16d @ 7 1/2" O.C.
(350 LB/FT)	1/2" CDX PLYWOOD OR OSB, ONE SIDE	8d @ 3 1/2" O.C.	8d @ 12" O.C.	5/8" A.B. @ 3'-4" O.C. OR 16d @ 4" O.C.
(870LB/FT)	1/2" CDX PLYWOOD	10d @ 2" O.C. (4)	10d @ 12" O.C.	3/4" A.B. @ 18" OC OR SDS25412 @ 4" OC STAGGERED

SHEAR WALL SCHEDULE NOTES:

9

NTS

1) BLOCK ALL PANEL EDGES 2) SEE NAILS - MINIMUM REQUIREMENTS

3) 2X STUDS SHALL BE HF#2 OR BETTER, KILN-DRIED

4) USE 3X STUDS AND PLATES @ PANEL EDGES AT SHEARWALL 3 ONLY.

5) ANCHOR BOLTS SHALL HAVE MINIMUM 3" BY 3" BY

1/4" THICK PLATE WASHER. 6) 7/16" OSB MAY BE SUBSTITUTED FOR 1/2" CDX

NAILS - MINIMUM REQUIREMENTS MINIMUM PENETRATIO REQUIRED FOR LATERAL STRENGTH NAIL MINIMUM DESCRIPTION WIRE DIAMETER 5d Cooler 0.086" 1.12" 6d 0.099" 1.25" 0.113" 1.25" 8d 1.50" 0.128" 10d 1.75" 16d 0.141"

SHEARWALL NAILING SCHEDULE

City of P Development & Pe ISSUED	uyallup ermitting Services PERMIT
Building	Planning
Engineering	Public Works
Fire	Traffic

FOC	TING	S	CHEDULE
MARC	SIZE		REINFORCING
F3	3'-0"x3'-0"x12"		(3) #4 EA WAY

City of P Development & Pe ISSUED	uyallup ermitting Services PERMIT
Building	Planning
Engineering	Public Works
Fire	Traffic

SCALE : 1" = 1'-0"

PLAN & ELEVATION

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SCALE : 1" = 1'-0"

City of P Development & Pe ISSUED	Puyallup ermitting Services PERMIT
Building	Planning
Engineering	Public Works
Fire	Traffic

DETAILS

GENERAL NOTES

- ALL WORK PERFORMED SHALL BE DONE IN STRICT ACCORDANCE TO ALL APPLICABLE MECHANICAL, BUILDING, ENERGY, FUEL GAS, AND LOCAL CODES, WITH AMENDMENTS.
- WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
- 3. COORDINATE MECHANICAL WORK WITH ELECTRICAL, ARCHITECTURAL, STRUCTURAL, CIVIL AND LANDSCAPE WORK SHOWN ON OTHER CONTRACT DOCUMENTS. PROVIDE ADDITIONAL OFFSETS FOR COORDINATED INSTALLATION WHERE REQUIRED.
- COORDINATE HVAC, PLUMBING, AND FIRE PROTECTION WORK PRIOR TO INSTALLATION. DUCTWORK AND EQUIPMENT ACCESS TAKES PRECEDENCE OVER ALL PIPING EXCEPT GRAVITY SYSTEMS FOR AVAILABLE SPACE.
- CONTRACTOR IS RESPONSIBLE FOR CONFORMANCE WITH ALL PLANS AND SPECIFICATIONS. IF A DISCREPANCY EXISTS BETWEEN ANY PLAN AND/OR SPECIFICATION, THE MORE STRINGENT REQUIREMENT SHALL BE FOLLOWED. CONTRACTOR IS ENCOURAGES TO SUBMIT RFI'S BEFORE BID TO CLARIFY PLAN AND SPECIFICATION INTENT.
- 6. COORDINATE EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
- CLEAN THE JOB SITE DAILY AND REMOVE FROM THE PREMISES ANY DIRT AND DEBRIS CAUSE BY THE PERFORMANCE OF THE WORK INCLUDED IN THIS CONTRACT. BEFORE SUBSTANTIAL COMPLETION, CLEAN EQUIPMENT, FIXTURES, EXPOSED DUCTS, PIPING AND SIMILAR ITEMS.
- PROVIDE EQUIPMENT THAT FITS INTO THE SPACE ALLOTTED AND ALLOWS ADEQUATE ACCEPTABLE CLEARANCE FOR INSTALLATION, REPLACEMENT, SERVICING, AND MAINTENANCE. COORDINATE WITH OTHER TRADES TO ENSURE NO CONFLICT WITH REQUIRED CLEARANCES.
- CONTRACTOR SHALL OBTAIN & PAY FOR ALL PERMITS AND CONSTRUCTION FEES. FURNISH FINAL CERTIFICATE TO OWNER SHOWING COMPLIANCE WITH CODE REQUIREMENTS.
- 10. REFER TO TYPICAL DETAILS PROVIDED IN THIS DRAWING SET FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR CONFORMANCE WITH DETAILS.
- 11. A SHORT DASH IN A SCHEDULE TABLE CELL INDICATES THAT THE COLUMN HEADING IS NOT USED OR NOT APPLICABLE TO THAT SCHEDULED ITEM.
- 12. PROVIDE COMMISSIONING FOR MECHANICAL SYSTEMS. COMMISSIONING AGENT SHALL PROVIDE A COMMISSIONING PLAN OUTLINING ORGANIZATION, SCHEDULE, NARRATIVE, RESPONSIBILITIES MATRIX, LIST OF EQUIPMENT TO BE TESTED. FUNCTIONS TO BE TESTED, CONDITIONS UNDER WHICH TESTS SHALL BE PERFORMED, AND MEASURABLE CRITERIA FOR PERFORMANCE. COMMISSIONING SHALL BE PER C408 OF THE 2021 WSEC.
- 13. ALL PIPING & DUCTWORK IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD LID CEILING. COORDINATE WITH ARCHITECTURAL DOCUMENTS FOR FURRING & CHASE LOCATIONS & SIZES.
- 14. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 70 STANDARDS AND LOCAL REQUIREMENTS.
- 15. ALL FIELD WIRING SHALL REQUIRE AN ELECTRICAL PERMIT AND SHALL BE PERFORMED BY A LICENSED ELECTRICIAN.
- 16. COORDINATE ELECTRICAL REQUIREMENTS SHOWN ON PLANS AND SPECS WITH AVAILABLE VOLTAGES AND PANEL SPACE ONSITE AS WELL AS WITH ELECTRICAL ENGINEER AND ELECTRICAL CONTRACTOR. IF DISCREPANCIES EXIST BETWEEN THESE PLANS AND AVAILABLE ONSITE ELECTRICAL UTILITIES, DO NOT PURCHASE OR INSTALL EQUIPMENT BEFORE FIRST CONTACTING MEL AND RECEIVING INSTRUCTION.
- 17. LOCATE VALVES, DAMPERS, CONTROLS AND SIMILAR COMPONENTS SO THAT THEY ARE ACCESSIBLE. PROVIDE ACCESS DOORS FOR MECHANICAL EQUIPMENT INSTALLED BEHIND WALLS, ABOVE INACCESSIBLE CEILINGS AND BELOW FLOORS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT/ENGINEER.
- 18. ACCESS PANELS SHALL BE 16 GA, STEEL, FLUSH TYPE ACCESS DOOR WITH CONCEALED HINGE AND SLOT SCREWDRIVER TYPE CAM LATCH. PROVIDE FACTORY PRIMED IN PAINTED SURFACE AREAS FOR FIELD PAINTING. PROVIDE STAINLESS STEEL FOR ALL OTHER AREAS. PROVIDE UL LISTED AND LABELED DOOR WHERE FIRE-RESISTANCE RATING IS INDICATED ON DRAWINGS. ACCESS DOOR SHALL BE SIZED SO THAT ADJACENT EQUIPMENT IS ACCESSIBLE. PROVIDE ACUDOR, ELMDOR, MILCOR, OR APPROVED.
- 19. INSTALL TAG ON CEILING GRID FRAME TO INDICATE LOCATION AND TYPE OF EQUIPMENT THAT REQUIRES MAINTENANCE.

PIPING:

- 1. INSULATE PIPING PER WASHINGTON STATE ENERGY CODE SECTION C403.10.3.
- 2. ALL PRESSURES LISTED ARE GAGE PRESSURES UNLESS OTHERWISE NOTED.
- PROVIDE COMPLETE CONDENSATE DRAINAGE SYSTEM FOR ALL INDOOR UNITS. FIELD ROUTE DRAINAGE PIPING FROM EQUIPMENT TO NEAREST DRAIN LOCATION (SUCH AS SERVICE SINK, FUNNEL DRAIN, ETC.). SLOPE NON-PRESSURIZED DRAIN PIPING TO DRAIN LOCATION. PIPING & FITTINGS SHALL BE PVC. USE COPPER FOR ALL PLENUM APPLICATIONS OR WHERE NONCOMBUSTIBLE PIPING IS REQUIRED. MINIMUM PIPE SIZE SHALL BE 3/4". INCREASE PIPE SIZE WHERE APPLICABLE PER IMC 307.2.2
- 4. VALVES SHALL BE INSTALLED SO THAT SYSTEM REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
- VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE 5. CONNECTIONS TO EQUIPMENT AND CONTROLS UNLESS OTHERWISE NOTED.
- 6. THE PROPOSED ROUTING FOR THE REFRIGERATION PIPING BETWEEN THE INDOOR AND OUTDOOR UNITS IS INDICATED AS A SINGLE LINE ON THE PLANS. THAT SINGLE LINE REPRESENTS ALL THE PIPING RUNS REQUIRED FOR THE SYSTEM DESIGNED. SIZE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATION.

HVAC/SHEET METAL:

- THE FIRST FIGURE OF DUCT SIZE CALLOUTS INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZES ARE NET INSIDE DIMENSIONS. PROVIDE ANY APPLICABLE DUCT LINING AND INSULATION PER THESE PLANS.
- 2. DUCT SIZE NOT SHOWN SHALL BE SIZED TO VELOCITIES NO GREATER THAN UP STREAM SECTIONS USING SIMILAR ASPECT RATIOS.
- 3. TOTAL STATIC PRESSURE NOTED IN SCHEDULES SHALL BE ASSUMED TO INCLUDE DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
- 4. ALL SUPPLY AIR FILTERS SHALL BE MERV-8 RATED. ALL RETURN/EXHAUST/OUTSIDE AIR FILTERS SHALL BE MERV-8 RATED.
- 5. AIR TERMINAL SIZES SHOWN ON PLANS ARE NECK SIZES. PROVIDE ADDITIONAL PANS, HARDWARE, ETC., REQUIRED TO INSTALL AIR TERMINAL IN CEILING SYSTEM.
- 6. AIR TERMINALS IN UNFINISHED SPACES OR OPEN CEILING AREAS SHALL BE INSTALLED AT[8'] AFF UNLESS OTHERWISE NOTED ON THESE DRAWINGS.
- 7. DUCTWORK SHALL BE 2.0" PRESSURE CLASS UNLESS OTHERWISE NOTED ON THESE DRAWINGS.
- CONSTRUCT DUCTWORK ACCORDING TO WASHINGTON STATE ENERGY CODE SECTION C403.10.2. ALL DUCT WORK SHALL BE PRIMED GALVANIZED SHEET STEEL, LOCK FORMING QUALITY, FABRICATED IN ACCORDANCE TO SMACNA STANDARDS.
- 9. PROVIDE TURNING VANES IN ALL MITERED RECTANGULAR DUCT ELBOWS & TEES.
- 10. PROVIDE MOTORIZED DAMPERS ON OUTDOOR AIR SUPPLY, AND EXHAUST OPENINGS. DAMPERS SHALL HAVE A MAXIMUM LEAKAGE RATE OF 4 CFM PER SQUARE FOOT AT 1" W.C.
- 11. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED AND SEALED PER WASHINGTON STATE ENERGY CODE SECTION C403.10.1.
- 12. OUTSIDE AIR DUCTWORK SHALL BE INSULATED IN ACCORDANCE WITH C403.10.1.1
- 13. VENTILATION AND EXHAUST AIR IS PROVIDED IN ACCORDANCE WITH C403.2.2.
- 14. PROVIDE EACH ZONE WITH THERMOSTATIC CONTROLS THAT PROVIDE A DEADBAND OF AT LEAST 5 DEGREES FAHRENHEIT IN WHICH HEATING OR COOLING ENERGY IS CAPABLE OF BEING SHUT OFF OR REDUCED TO A MINIMUM. THERMOSTAT SHALL BE CAPABLE OF THERMOSTATIC SETBACK, AUTOMATIC SETBACK AND SHUTDOWN, AND AUTOMATIC START CAPABILITIES PER WASHINGTON STATE ENERGY CODE SECTION C403.4.

- 15. PROVIDE TEMPORARY COVERS OVER OPEN ENDS OF EQUIPMENT ANI
- 16. PROVIDE MANUAL VOLUME DAMPER FOR EACH DIFFUSER, REGISTER, AND GRILLE. OPPOSED BLADE DAMPERS LOCATED AT THE DIFFUSER, REGISTER, AND GRILLE SHALL NOT BE USED FOR SYSTEM BALANCE.
- 17. PROVIDE DUCT ACCESS DOORS AT DUCT SMOKE DETECTORS, BACKDRAFT DAMPERS, MOTORIZED CONTROL DAMPERS, FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, DUCT MOUNTED COILS, DUCT AIRFLOW STATIONS AND LOUVER PLENUMS.
- COORDINATE FINAL LOCATION OF EQUIPMENT WITH OWNER OR REPRESENTATIVE.

APPLICABLE CODES

AS ADOPTED BY THE CITY OF PUYALLUP, WA

INTERNATIONAL MECHANICAL CODE, IMC 2021 INTERNATIONAL BUILDING CODE, IBC 2021 WASHINGTON STATE ENERGY CODE, WSEC 2021 UNIFORM PLUMBING CODE, UPC 2021

AND ASSOCIATED WASHINGTON ADMINISTRATIVE CODE AMENDMENTS

DESIGN CONDITIONS

OUTDOOR CONDITIONS (PUYALLUP, WA) COOLING: 86°F DB, (WSEC APPENDIX C) HEATING: 19°F DB (WSEC APPENDIX C)

INDOOR CONDITIONS COOLING: 75°F DB, 50% RH HEATING: 70°F DB

SCOPE OF WORK

- 1. INSTALL TWO VRF SYSTEMS, AS SHOWN ON PLANS.
- 2. INSTALL TWO DOAS SYSTEMS, AS SHOWN ON PLANS. DOAS SYSTEI ARE PROVIDED WITH AUXILIARY ELECTRIC HEAT PER WSEC 403.1.4 EXEMPTION 16, SIZED AT A 55F DISCHARGE TEMPERATURE.
- 3. INSTALL PACKAGED UNIT SERVING PRESCHOOL WITH FABRIC SUPPLY DUCT. SPACE IS SERVED VIA NATURAL VENTILATION AND IS NOT PROVIDED WITH A DOAS AND HEAT RECOVERY.
- 4. INSTALL ELECTRIC RESISTANCE WALL HEATERS IN SEMI HEATED SPACES. FREEZE PROTECTION SYSTEMS WILL HAVE HEAT LOCKED OUT ABOVE 45F PER WSEC 403.1.4 EXEMPTION 15.
- 5. INSTALL RADIANT HEATERS IN VESTIBULES.

ND DUCTWORK DURING CONSTRUCTION.	

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AMP	AMPERAGE
ASHRAE	AMERICAN SOCIETY OF HEATING REFRIGERAT
	AND AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL
	ENGINEERS
MT2A	
ASTIN	
BAS	BUILDING AUTOMATION SYSTEM
BHP	BRAKE HORSEPOWER
CB	CATCH BASIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
COND	CONDENSATE
CONFIC	CONFICURATION
CONFIG	CONFIGURATION
CSA	CANADIAN STANDARDS ASSOCIATION
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROLS
DIA	DIAMETER
DN	DOWN
DUAS	DEDICATED OUTSIDE AIR SYSTEM
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
ECM	ELECTRICALLY COMMUTATED MOTOR
FFF	FEECIENCY
ESP	EXTERNAL STATIC PRESSURE
ETC	ET CETERA
FX SP	EXTERNAL STATIC PRESSURE
FM	FACTORY MANUAL
FPM	FEET PER MINUTE
ET.	
GA	GAUGE
HP	HORSEPOWER
HР	HOUR
IBC	INTERNATIONAL BUILDING CODE
IFGC	INTERNATIONAL FUEL GAS CODE
IMC	INTERNATIONAL MECHANICAL CODE
IIN	INCH
IU	INDOOR UNIT
IAT	LATERAL
LD/LDO/#	
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MC MCA	
MC MCA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY
MC MCA MERV	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE
MC MCA MERV MFG/MFR	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER
MC MCA MERV MFG/MFR MIN	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM
MC MCA MERV MFG/MFR MIN	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM
MC MCA MERV MFG/MFR MIN MOCP/ MOP	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEMA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEMA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEBB NEMA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEMA OC NFPA NO	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEMA OC NFPA NO NOM	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEMA OC NFPA NO NOM NTS	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEMA OC NFPA NO NOM NTS OSA PH	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE FOOT
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSI PSI PSI PSI PSI	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR REI ATIVE HUMIDITY
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH BD	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY PEDUCED DRESSURE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEBB NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEFT
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACHIA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SUFFET METAL AND AID CONDITIONING
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SPEC	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SPEC STM	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SPEC STM	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH SUPPLY AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SFEC STM THRD	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH SUPPLY AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SPEC STM THRD TYP	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH SUPPLY AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION STEAM THREADED TYPICAL
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SPEC STM THRD TYP	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SFEC STM THRD TYP UL	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SF SMACNA SPEC STM THRD TYP UL UPC	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH SUPPLY AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SFEC STM THRD TYP UL UPC V	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH SUPPLY AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SFEC STM THRD TYP UL UPC V VOI T	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH SUPPLY AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLT
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SFEC STM THRD TYP UL UPC V VOLT	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH SUPPLY AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLTAGE
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SF SMACNA SFEC STM THRD TYP UL UPC V VOLT VRF	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLTAGE VARIABLE REFRIGERANT FLOW
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SF SMACNA SPEC STM THRD TYP UL UPC V VOLT VRF VTR	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLTAGE VARIABLE REFRIGERANT FLOW VENT TO ROOF
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SF SMACNA SFEC STM THRD TYP UL UPC V VOLT VRF VTR VAV	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLTAGE VARIABLE REFRIGERANT FLOW VENT TO ROOF VARIABLE AIR VOLUME
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SF SMACNA SFEC STM THRD TYP UL UPC V VOLT VRF VTR VAV VEPT	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLTAGE VARIABLE REFRIGERANT FLOW VENT TO ROOF VARIABLE AIR VOLUME
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP PSF PSI PSIG RA RH RP RPM SA SF SMACNA SF SMACNA SF SMACNA SF SMACNA	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLTAGE VARIABLE REFRIGERANT FLOW VENT TO ROOF VARIABLE AIR VOLUME VERTICAL
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP PSF PSI PSIG RA RH RP RPM SA SF SMACNA SF SMACNA SF SMACNA SF STM THRD TYP UL UPC V VOLT VRF VAV VERT W/	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH, GAUGE RETURN AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLTAGE VARIABLE REFRIGERANT FLOW VENT TO ROOF VARIABLE AIR VOLUME VERTICAL WITH
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SF SMACNA SF SMACNA SF STM THRD TYP UL UPC V VOLT VRF VTR VAV VERT W/ WIN	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH SUPPLY AIR RELATIVE HUMIDITY REDUCED PRESSURE REVOLUTIONS PER MINUTE SUPPLY AIR SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLTAGE VARIABLE REFRIGERANT FLOW VENT TO ROOF VARIABLE AIR VOLUME VERTICAL WITH WINTER
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SF SMACNA SF SMACNA SF STM THRD TYP UL UPC V VOLT VRF VTR VAV VERT W/ WIN WSFC	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLTAGE VARIABLE REFRIGERANT FLOW VENT TO ROOF VARIABLE AIR VOLUME VERTICAL WITH WINTER
MC MCA MERV MFG/MFR MIN MOCP/ MOP MSS NEBB NEMA OC NFPA NO NOM NTS OSA PH PSF PSI PSIG RA RH RP RPM SA SF SMACNA SF SMACNA SF SMACNA SF SMACNA SPEC STM THRD TYP UL UPC V VOLT VRF VTR VAV VERT W/ WIN WIN WSEC	MECHANICAL CONTRACTOR MAXIMUM CIRCUIT AMPACITY MINIMUM EFFICIENCY REPORTING VALUE MANUFACTURER MINIMUM MAXIMUM OVER CURRENT PROTECTION MANUFACTURER'S STANDARDIZATION SOCIET NATIONAL ENVIRONMENTAL BALANCING BURE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION ON CENTER NATIONAL FIRE PROTECTION ASSOCIATION NUMBER NOMINAL NOT TO SCALE OUTSIDE AIR PHASE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH SQUARE FEET SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SPECIFICATION STEAM THREADED TYPICAL UNDERWRITERS LABORATORY UNIFORM PLUMBING CODE VENT/ VOLT VOLTAGE VARIABLE REFRIGERANT FLOW VENT TO ROOF VARIABLE AIR VOLUME VERTICAL WITH WINTER WASHINGTON STATE ENERGY CODE

City of P Development & Pe ISSUED	Puyallup ermitting Services PERMIT
Building	Planning
Engineering	Public Works
Fire	Traffic

ABBREVIATIONS AMERICAN AIR BALANCE COUNCIL ABOVE FINISHED FLOOR

ANNUAL FUEL UTILIZATION EFFICIENCY

AMERICAN GAS ASSOCIATION

EXISTING

AIR GAP

AABC

AFUE

AFF

AG

AGA

AHRI

SYMBOL AIR CONDITIONING, HEATING, & REFRIGERATION INSTITUTE TION, RIALS $\overline{\mathbf{U}}$ SD-X, XX/XX XXX CFM XX $C \longrightarrow$ <u>ب____اال____م</u> \rightarrow

╷__^__

X"Ø

SUPPLY DUCT, OSA DUCT UP SUPPLY DUCT, OSA DUCT DOWN RETURN, RELIEF, TRANSFER UP RETURN, RELIEF, TRANSFER DOWN EXHAUST AIR UP EXHAUST AIR DOWN RECTANGULAR ELBOW WITH TURNING \ ROUND/ RECTANGULAR ELBOW RECTANGULAR DUCT SQUARE ELBOW L RECTANGULAR DUCT, RADIUS ELBOW U RECTANGULAR DUCT, SQUARE ELBOW I RECTANGULAR DUCT, RADIUS ELBOW D ROUND DUCT ELBOW UP ROUND DUCT ELBOW DOWN EQUIPMENT ABBREVIATION AND NUMBE AIR TERMINAL TYPE, SIZE, AND CFM DETAIL NUMBER DRAWING NUMBER WHERE DRAWN COMPRESSED AIR CONDENSATE GATE VALVE (GV) GLOBE VALVE BUTTERFLY VALVE PRESSURE REDUCING VALVE (PRV) CHECK VALVE (CV) TEMP./PRESS. RELIEF VALVE (T&PRV) BALL VALVE BALANCING COCK (BC) 2-WAY CONTROL VALVE 3-WAY CONTROL VALVE GAS COCK STRAINER WITH BLOWDOWN VALVE UNION VACUUM BREAKER MANUAL AIR VENT DRAIN VALVE WALL HYDRANT FLOAT AND THERMOSTATIC STEAM TRA FLEXIBLE DUCT VOLUME DAMPER (VD) MOTORIZED DAMPER BACKDRAFT DAMPER CEILING RADIATION DAMPER FIRE DAMPER SMOKE DAMPER COMBINATION FIRE/SMOKE DAMPER ROUND DUCT **y** cs **___** CONDENSER SUPPLY CONDENSER RETURN — CWS — CHILLED WATER SUPPLY CHILLED WATER RETURN — HWS — S HOT WATER SUPPLY **S** HWR **---S** HOT WATER RETURN

DESCRIPTION

MECHAN	IICAL LEGEND	
	SYMBOL	DESCRIPTION
	X/X	SQUARE DUCT
	X/X"Ø	OVAL DUCT
	\bullet	POINT OF CONNECTION
		LIMIT OF DEMOLITION
	E E E	ROUND 4-WAY CEILING DIFFUSERS
		SQUARE 4-WAY CEILING DIFFUSERS
VANES		RETURN GRILLE
		EXHAUST GRILLE
JP	K	SQUARE 3-WAY CEILING DIFFUSERS
IP		SQUARE 2-WAY CEILING DIFFUSERS
DOWN		SQUARE 1-WAY CEILING DIFFUSERS
OOWN	\$ G \$	NATURAL GAS PIPING
	\$ R \$	REFRIGERANT PIPING
	<u>۶</u>	EXISTING PIPING
ER (TAG)	۲ ب	CROSSING LINES, NON CONNECTING
	ډ ٢	PIPE CONTINUATION
	\bigcirc	PUMP
	E\$	CAP
	۶ × ۰	PIPE ANCHOR
	<u>ب </u>	PIPE GUIDE
	·	FLEXIBLE CONNECTION (PIPE)
	∽	REDUCER
	\boxtimes	SUCTION DIFFUSER
	ß	CURRENT SENSOR
	œ	CURRENT RELAY
	SD	SMOKE DETECTOR
	SP	SPACE PRESSURE SENSOR
	S	SWITCH
	æ	PRESSURE ELEMENT
	œ	DIFFERENTIAL PRESSURE ELEMENT
	H	HUMIDISTAT (H'STAT)
	Æ	HUMIDITY ELEMENT
	FA	FIRE ALARM
	FS	FLOW SWITCH
	\bigcirc	MOTOR/ ACTUATOR
	©\$	OCCUPANCY SENSOR
	(T)	THERMOSTAT (T'STAT)
\P	(1)	TEMPERATURE INDICATOR
	Ē	TEMPERATURE ELEMENT
	F	FLOW INDICATOR
	Ē	FLOW ELEMENT
	Œ	CONDUCTIVITY SENSOR
	ECM	ELECTRONICALLY COMMUTATED MOTOR
	VFD	VARIABLE FREQUENCY DRIVE
	C02	CARBON DIOXIDE SENSOR
	EPO	EMERGENCY POWER OFF SWITCH
	NO	NITROGEN OXIDE SENSOR
	СО	CARBON MONOXIDE SENSOR
	NO2	NITROGEN DIOXIDE SENSOR

8

SCALE: NTS

City of P Development & Pe ISSUED	Puyallup ermitting Services PERMIT
Building	Planning
Engineering	Public Works
Fire OF W	Traffic

										IA								
UNIT	MFR.	MODEL	LOCATION	TOTAL		SUPPLY	FAN DATA			HEATING			COOLING	SECTION		WEIGHT	NOISE	F
NO				CFM	ΗP	BHP	ESP	RPM	INPUT (MBH)	OUTPUT (MBH)	EER	NOMINAL TONS	TOTAL (MBH)	SENSIBLE (MBH)	SEER/IEER (EER)		DB	
AHU-01	TRANE	WHJ300A3S0N	ROOF	10,000	4.2	6.28	1.0	1725	-	122.4	10.4	25	258.79	228.92	16.1 (10.4)	2690	87	N

NOTES:

1. PROVIDE WITH MANUFACTURER'S RECOMMENDED ROOF CURB SLOPED TO MATCH ROOF PITCH.

2. PROVIDE WITH CLASS 1 MOTORIZED SHUT OFF DAMPER.

3. PROVIDE DEMAND CONTROL VENTILATION. MODULATE OSA TO MAINTAIN AVERAGE CO2 BELOW 800 PPM.

4. PROVIDE WITH ECONOMIZER. SET MINIMUM OSA TO 0 CFM.

								C	DEDICA	TED OU		AIR SYS	STEM S	CHEDU	LE				
UNIT NO	MFR	MODEL	LOCATION	CONFIG	AREA		SI	JPPLY FAN DA	ТА			EX	HAUST FAN D	ATA			HEAT EXCH	ANGER DATA	
					SERVED	CFM	HP	BHP	ESP	RPM	CFM	HP	BHP	ESP	RPM	WIN EAT	WIN EFF	SUM EAT	SUM EFF
DOAS-01	RENEWAIRE	HE2XJRTH	ROOF	CROSSFLOW	SEE PLANS	1465	1.5	0.99	0.31	1370	1315	1.5	0.85	0.38	1320	25.2	71	85.3	67.2
DOAS-02	RENEWAIRE	HE1.5XJRTH	ROOF	CROSSFLOW	SEE PLANS	1180	-	-	0.47	1824	1060	-	-	0.35	1762	25.2	69	85.3	65
NOTES																			

1. PROVIDE CONTROLS PER PLANS AND IMC 2018 WASHINGTON AMMENDMENTS.

2. UNIT USES LESS THAN 1 W/CFM.

3. PROVIDE WITH DIRECT DRIVE EC MOTOR OPTION.

	AIR TERMINAL SCHEDULE											
	MED	MODEL	MOUNTING		NOTES							
UNIT NO	WIER	MODEL	TYPE	SILE	NOTES							
SD-01	TITUS	MCD	T-BAR	MODULAR CORE	1, 2							
SD-02	TITUS	MCD	SURFACE	MODULAR CORE	1, 2							
SD-03	TITUS	300RS	SIDEWALL	LOUVER FACE	1, 2							
RG-01	TITUS	50F	T-BAR	EGGCRATE	1,2							
RG-02	TITUS	50F	SURFACE	EGGCRATE	1, 2							
TG-01	TITUS	50F	SURFACE	EGGCRATE	1, 2							
TG-02	TITUS	50F	SIDEWALL	EGGCRATE	1, 2							
EG-01	TITUS	50F	SURFACE	EGGCRATE	1, 2							
EG-02	TITUS	50F	T-BAR	EGGCRATE	1, 2							
EG-03	TITUS	50F	SIDEWALL	EGGCRATE	1, 2							

					V	rf Indoor	SPLIT SYST	EM UNIT SC	HEDULE		
	MED	MODEL	TYDE	SYSTEM	AREA	AIRFLOW	ESP	COOLIN	IG (MBH)	HEATING (MBH)	WEIGHT
	WIER	MODEL	ITFE	SERVED	SERVED	CFM	IN. W.C.	TOTAL	SENSIBLE	TOTAL	
IU-01	DAIKIN	FXSQ05TAVJU	DUCTED	SEE PLANS	SEE PLANS	200	0.6	5.8	4.7	6.5	55
IU-02	DAIKIN	FXSQ12TAVJU	DUCTED	SEE PLANS	SEE PLANS	400	0.6	12.0	9.7	13.5	55
IU-03	DAIKIN	FXSQ18TAVJU	DUCTED	SEE PLANS	SEE PLANS	600	0.6	18.0	13.6	20.0	77
IU-04	DAIKIN	FXSQ24TBVJU	DUCTED	SEE PLANS	SEE PLANS	800	0.6	24.0	17.1	27.0	77
IU-05	DAIKIN	FXMQ72MVJU	DUCTED	SEE PLANS	SEE PLANS	2400	1.1	72.0	57.0	81.0	302
IU-06	DAIKIN	FXZQ05TAVJU	CEILING CASSETTE	SEE PLANS	SEE PLANS	-	-	5.8	4.7	6.5	55
IU-07	DAIKIN	FXZQ12TBVJU	CEILING CASSETTE	SEE PLANS	SEE PLANS	-	-	12.0	7.8	13.5	36.4
IU-08	DAIKIN	FXZQ18TBVJU	CEILING CASSETTE	SEE PLANS	SEE PLANS	-	-	18.0	13.0	20.0	41.9
NOTES											

NOTES:

1. PROVIDE AIR BALANCING DEVICE AT EACH AIR TERMINAL.

2. COORDINATE FINISH WITH ARCHITECT.

1. PROVIDE WITH CONDENSATE DRAIN PAN AND CONDENSATE PUMP OPTION.

2. PROVIDE WITH ALL APPURTUNANCES NECESSARY FOR A COMPLETE INSTALLATION.

3. SEE CORRESPONDING OUTDOOR UNIT SCHEDULE FOR CAPACITY AND EFFICIENCY DATA.

4. OSA AIR PROVIDED BY DEDICATED OUTDOOR AIR UNIT PER WSEC C403.3.5.3.

5. PROVIDE WITH OEM CONDENSATE PUMP ACCESSORY AND 120V POWER TRANSFORMER.

6. AIRFLOW IN DESIGN BASED ON 400 CFM/ TON

	В	RANCH SEL	ECTOR SC	CHED	ULE										FAN SC	HEDUL	.E		
UNIT NO	MFG	MODEL	WEIGHT		ELECTR	ICAL	DISCON	NOTES	UNIT NO	MFR	MODEL	CONFIGURATION	AREA SERVED		PERFORMANCE		SPEED	CONTROLLED BY OR	WEI
			LBS	MCA	MOP	V PH	FURN BY							CFM	EX. S.P.	RPM	CONTROL	INTERLOCKED WITH	Lf
BS-01	DAIKIN	BSF6Q54TVJ	73	0.6	15	208 1	EC	1	EF-01	GREENHECK	SP-LP0511-1	CEILING	RESTROOM	70	0.5	773	ECM	SWITCH	1
BS-02	DAIKIN	BSF8Q54TVJ	73	0.8	15	208 1	EC	1	GENERAL NO	DTES:									
NOTES:									1. PROVIDE	EALL FANS WITH 70% OR GREATER	EFFICIENCY MOTORS OR ELEC	CTRONICALLY COMMUTATED MO	TORS AS REQUIRED BY 2021 WSEC SE	ECTION C405.8 F	OR FRACTIONAL HO)RSEPOWER F	FAN MOTORS THA	T ARE 1/2 HP AND LARGER.	

1. PROVIDE WITH BALL VALVES ON EACH PORT.

City of P Development & Pe ISSUED	Puyallup ermitting Services PERMIT
Building	Planning
Engineering	Public Works
Fire of w	Traffic

NOTES:	
1. PROVIDE WITH RC)U
2. PROVIDE WITH IN	TE
UNIT NO	Γ
OU-03	
NOTES	
1. COOLING CAPA	CI
2. HEATING CAPA	CI
3. PROVIDE ADDIT	10
4. PROVIDE WITH	AI
5. PROVIDE WITH	R4

R410-A REFRIGERANT.

6. PROVIDE ALL UNITS LOCATED OUTDOORS WITH LOCKING REFRIGERANT ACCESS PORT PER IMC 1101.10

PACKAGED ROOFTOP AIR HANDLING UNIT SCHEDULE

2. EQUIPMENT MAY BE SUBSTITUTED UPON ENGINEER'S APPROVAL FOR EQUAL OR OTHER MFG/MODEL. REFER TO EQUIPMENT SCHEDULES FOR FINAL SELECTIONS.

OUND OUTLET, BACKDRAFT DAMPER, GRILL AND ASSOCIATED MOUNTING KIT.

TERNAL FAN SPEED SWITCH.

OUTDOOR UNIT SCHEDULE

MFR	MODEL	LOCATION	COOLING (MBH)			HEATIN	G (MBH)	WEIGHT	NOISE
			TOTAL	SENSIBLE	SEER (EER)	TOTAL	COP (HPSF)	(LBS)	(DBA)
DAIKIN	RXL24UMVJUA	ROOF	21.2	16.74	20.0 (12.5)	24	1.8 (10.3)	130	55

CITY MBH AT 95 D.B. OUTDOOR AND 77 D.B./67 W.B. INDOOR.

CITY AND EFFICIENCY AT 47 D.B. OUTDOOR AND 70 D.B. INDOOR.

IONAL REFIRGERANT CHARGE AS REQUIRED TO FULLY CHARGE SYSTEM.

ALL APPUTUNANCES NECESSARY FOR A COMPLETE INSTALLATION.

TILTEF	RS 13	MCA 214	ELEC MOP 225	CTRICAL V 208	PH 3	DISCON FURN EC	INECT I. BY C	NOTES 1,2,3,4		ENGINEERING, LLC	6216 174TH AVE SW LONGBRANCH, WA 98351 253.765.8292
	FILTER MERV 8 MERV 8	WE L 6	IGHT	MCA 18.5 7.7	ELECTRICAL MOP V 25 208 15 208	PH 1 1	DISCON FURN BY EC EC	NOTES 1, 2, 3 1, 2, 3		SOTT MI SOF WAS	9/18/2024
			ELECT	RICAL		DISC	CON	NOTES		SCHEDULES	
	0.8	8 8 8	15.0 15.0	208 208	PH 1 1		C C	1, 2, 3, 4, 5, 6 1, 2, 3, 4, 5, 6	SHEET TITLE		
	1.6 1.8 9.8	o 8 5 8	15.0 15.0 15.0	208 208 208 208	1 1 1 1	E		1, 2, 3, 4, 5, 6 1, 2, 3, 4, 5, 6 1, 2, 3, 4, 5, 6 1, 2, 3, 4, 5			
	0.6	6	15.0	208	1	E	c	1, 2, 3, 4, 5			
GHT 3S 6	HP -	BHP -	ELECTRIC/ WATT 16	AL VOLTS 120	PH I 1	SCONNECT FURN. BY EC	N	OTES 1,2		DUYALLUP, WA 98372	DATE 9/18/2024
									DRAWN CHECK PROJEC REUSE THESE DC MIDLEBR COPIED, C	I BY: ED BY: CT MANAGER: OF DOCUMENTS CUMENTS ARE THE PR COOK ENGINEERING, LLL R REPRODUCED WITH R REPRODUCED WITH	RPG BSM RC OPERTY OF C AND SHALL NOT BE JUT WRITTEN
	MCA 18.9	E	IOP	V 208	РН 1	DISCON FURN BY EC	1,	NOTES 2,3,4,5,6		NN.	
						~ ~			SHEET	лΗα	501

			RADI	ANT CEILI	NG PA	NEL					
	MED	MODEL	AREA	WEIGHT		I	ELECTRICAL	-		DISCON	
UNITINO		MODEL	SERVED	WEIGITI	WATTS	MCA	MOP	V	PH	FURN BY	
RCP-01	INDEECO	AS2424-250-120	VESTIBULE 101	15	250	-	-	120	1	EC	ſ

ELECTRIC HEATER SCHEDULE														VRF OUT	DOOR U	NIT SCHEDU	ILE									
			AREA	WEIGHT			ELECTRICAL			DISCON			MFR	MODEL		COC	OLING (MBH)	HE	ATING (MBH)	WEIGHT		ELECTRICAL M	ODULES		DISCON	NOTES
UNIT NO	MFR	MODEL	SERVED		WATTS	MCA	MOP	V	PH	FURN BY	NOTES		WILL Y	rk MODEL		TOTAL	IEER (EER)	TOTAL	COP (HPSF)	(LBS)	MCA	MOP	V	PH	FURN BY	NOTED
WH-01	INDEECO	WRI	SEE PLANS	9	500	-	-	208	1	EC	1,2,3	OU-01	DAIKIN	REYQ168AATJA	ROOFTOP	160.0	21.4 (11.1)	180	3.2	787	54.9	60	208	3	EC	1, 2, 3, 4, 5, 6
WH-02	INDEECO	WRI	PER PLANS	9	1250	-	-	120	1	EC	1,2,3	OU-02	DAIKIN	REYQ96AATJB	ROOFTOP	92.0	19.3 (11.9)	108	3.6	710	34.1	35	208	3	EC	1, 2, 3, 4, 5, 6

NOTES

1. PROVIDE WITH REMOTE, SINGLE POLE THERMOSTAT.

2. MOUNT HEATER AT 12" AFF.

3. PROVIDE WITH RECESSED INSTALLATION KIT.

PIPE INSULATION SCHEDULE									
FLUID OPERATING	INSULATION	E SIZE (inches)							
AND USAGE (°F)	BTU ⋅ in./(h ⋅ ft² ⋅ °F)	TEMPERATURE, °F	< 1	1 to 1-1/2	1-1/2 to < 4	4 to < 8	≥8		
> 350	0.32 - 0.34	250	4.5	5.0	5.0	5.0	5.0		
251 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5		
201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0		
141 - 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0		
105 - 140	0.21 - 0.28	100	1	1.0	1.5	1.5	1.5		
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0		
< 40	0.20 - 0.26	75	0.5	1.0	1.0	1.0	1.5		

GENERAL NOTES:

1. FOR PIPING SMALLER THAN 1-1/2 INCH (38mm) AND LOCATED IN PARTITIONS WITHIN CONDITIONED SPACES, REDUCTION OF THESE THICKNESESS BY 1 INCH (25mm) SHALL BE PERMITTED (BEFORE THICKNESSES REQUIRED IN FOOTNOTE b) NOT TO A THICKNESS LESS THAN 1 INCH (25mm).

2. FOR INSULATION OUTSIDE THE STATED CONDUCTIVITY RANGE, THE MINUMUM THICKNESS (T) SHALL BE DETERMINED AS FOLLOWS:

 $T = r\{(1 + t/r) / K/k - 1\}$

WHERE:

T = MINIMUM INSULATION THICKNESS,

r = ACTUAL OUTSIDE RADIUS OF PIPE,

t = INSULATION THICKNESS LISTED IN THE TABLE FOR APPLICABLE FLUID TEMPERATUREAND PIPE SIZE.

K = CONDUCTIVITY OF ALTERNATE MATERIAL AT MEAN RATING TEMPERATURE INDICATED FOR THE APPLICABLE FLUID TEMPERATURE (Btu \cdot in/h \cdot ft² x °F)

k = THE UPPER VALUE OF THE CONDUCTIVITY RANGE LISTED IN THE TABLE FOR THE APPLICABLE FLUID TEMPERATURE.

3. FOR DIRECT-BURIED HEATING AND HOT WATER SYSTEM PIPING, REDUCTION OF THESE THICKNESSES BY 1-1/2 INCHES (38mm) SHALL BE PERMITTED (BEFORE THCKNESS ADJUSTMENT REQUIRED IN FOOTNOTE b BY BUT NOT TO THICKNESS LESS THAN 1 INCH (25mm)

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			RADI	ANT CEIL	ING PA	NEL										IND	OOR UNIT S	CHEDULE							
	MED	MODEL	AREA	WEIGHT		ELECTRIC	CAL		DISCON	NOTES	UNIT NO	MFR	MODEL	TYPE	AREA	COOLIN	NG (MBH)	HEATING (MBH)	WEIGHT		ELEC	CTRICAL		DISCON	NOTES
		MODEL	SERVED	WEIGHT	WATTS	MCA MOP	V	PH	FURN BY	NOTES					SERVED	TOTAL	SENSIBLE	TOTAL		MCA	MOP	V	PH	FURN BY	
RCP-01	INDEECO	AS2424-250-120	VESTIBULE 101	15	250		120	1	EC	1,2	IU-07	DAIKIN	FTX24UVJU	WALL MOUNTED	MECH/IT	21.2	16.74	24	33	18.9	-	208	1	EC	1,2,3,4
NOTES											NOTES										•				
1. PROVIDE W	PROVIDE WITH FACTORY REMOTE, LINE VOLTAGE THERMOSTAT. INDEECO #: R-101									1. PROVIDE WITH	CONDENSATE DRAIN	PAN AND CONDENSATE	PUMP OPTION.												
2. PROVIDE F	. PROVIDE FIELD-INSTALLED SURFACE MOUNTING FRAME. INDEECO #: SF-24.								2. PROVIDE WITH ALL APPURTUNANCES NECESSARY FOR A COMPLETE INSTALLATION.																
	- TIELD-INSTALLED SONTAGE MOONTING TRAME. INDELGO #. 31-24.																								

3. SYSTEM INCLUDES A SINGLE POINT POWER CONNECTION; INDOOR UNIT WIRED FROM OUTDOOR UNIT.

4. SEE CORRESPONDING OUTDOOR UNIT SCHEDULE FOR EFFICIENCY DATA.

NOTES

1. COOLING CAPACITY MBH AT 95 D.B. OUTDOOR AND 80 D.B./67 W.B. INDOOR.

2. HEATING CAPACITY AND EFFICIENCY AT 47 D.B./43 W.B. OUTDOOR AND 70 D.B. INDOOR.

3. PROVIDE ADDITIONAL REFIRGERANT CHARGE AS REQUIRED TO FULLY CHARGE SYSTEM.

4. PROVIDE WITH ALL APPUTUNANCES NECESSARY FOR A COMPLETE INSTALLATION.

5. PROVIDE WITH R410-A REFRIGERANT.

6. PROVIDE ALL UNITS LOCATED OUTDOORS WITH LOCKING REFRIGERANT ACCESS PORT PER IMC 1101.10

Development & Permitting Services										
Building	Planning									
Engineering	Public Works									
Fire	Traffic									

	SUPPLY, RETURN, EXHAUST, AND RELIEF AIR DUCTWORK INSULATION SCHEDULE											
DUCT SYSTEM	DUCT LOCATION AND USE	CLIMATE ZONE	MINUMUM INSTALLED DUCT INSULATION R-VALUE	NOTES								
SUPPLY AIR OR RETURN AIR	OUTSIDE THE BUILDING (OUTDOORS AND EXPOSED TO WEATHER)*	4C	R-8	SEE SECTION C403.10.1.2 FOR DETAILS								
SUPPLY AIR OR RETURN AIR	UNCONDITIONED SPACE (ENCLOSED BUT NOT IN THE BUILDING CONDITIONED ENVELOPE)	4C AND 5B	R-5	SEE SECTION C403.10.1.2 FOR DETAILS								
SUPPLY AIR OR RETURN AIR	UNCONDITIONED SPACE WHERE THE DUCT CONVEYS AIR THAT IS WITHIN 15°F OF THE AIR TEMPERATURE OF THE SURROUNDING UNCONDITIONAL SPACE.	4C AND 5B	R-3.3	SEE IMC SECTION 603.12 FOR ADDITIONAL REQUIREMENTS FOR CONDENSATION CONTROL AT DUCTWORK								
SUPPLY AIR OR RETURN AIR	WHERE LOCATED IN A BUILDING ENVELOPE ASSEMBLY	4C AND 5B	R-16	DUCT OR PLENUM IS SEPARATED FROM BUILDING ENVELOPE ASSEMBLY WITH THE MINIMUM INSULATION VALUE								
SUPPLY AIR	WITHIN CONDITIONED SPACE WHERE THE SUPPLY DUCT CONVEYS AIR THAT IS LESS THAN 55°F OR GREATER THAN 105°F	4C AND 5B	R-3.3	SEE SECTION C403.10.1.2 FOR DETAILS								
SUPPLY AIR	WITHIN CONDITIONED SPACE THAT DUCT DIRECTLY SERVES WHERE THE SUPPLY DUCT CONVEYS AIR THAT IS KLESS THAN 55°F OR GREATER THAN 105°F	4C AND 5B	NONE	SEE SECTION C403.10.1.2 FOR DETAILS								
SUPPLY AIR	WITHIN CONDITIONED SPACE WHERE THE SUPPLY DUCT CONVEYS AIR THAT IS LESS THAN 55°F OR GREATER THAN 105°F OR LESS	4C AND 5B	NONE									
RETURN OR EXHAUST AIR	WITHIN CONDITIONED SPACE, DOWNSTREAM OF AN ENERGY RECOVERY MEDIA, UPSTREAM OF AN AUTOMATIC SHUT OFF DAMPER.	4C	R-8									
RELIEF OR EXHAUST AIR	CONDITIONED SPACE DOWNSTREAM OF AN AUTOMATIC SHUT OFF DAMPER.	4C AND 5B	R-16									
GENERAL NOTES:												

1. INSULATION R-VALUES, MEASURED IN h · ft² x °F/BTU, ARE FOR THE INSULATION AS INSTALLED AND DO NOT INCLUDE FILM RESISTANCE. THE REQUIRED MINIMUM THICKNESSES DO NOT CONSIDER WATER VAPOR TRANSMISSION AND POSSIBLE SURFACE CONDENSATION. INSULATION RESISTANCE MEASURED ON A HORIZONTAL PLANE IN ACCORDANCE WITH ASTM C518 AT A MEAN TEMPERATURE OF 75°F AT THE INSTALLED THICKNESS.

2. SEE INTERNATIONAL MECHANICAL CODE SECTIONS 603.12 AND 604 FOR FURTHER DETAILS ON DUCT INSTALLATION REQUIREMENTS. 3. INCLUDES ATTIC ABOVE INSULATED CEILINGS, PARKING GARAGES AND CRAWL SPACES.

DUCT SYSTEM	DUCT LOCATION AND USE	CLIMATE ZONE	AIRFLOW	MINUMUM INSTALLED DUCT INSULATION R-VALUE	NOTES				
OUTDOOR AIR	INSIDE CONDITIONED SPACE AND UPSTREAM OF AUTOMATIC SHUT OFF DAMPER.	4C AND 5B	≥2800 CFM	4.5	SEE SECTION C403.10.1.1 FOR ADDITIONAL REQUIREMENTS				
OUTDOOR AIR	INSIDE CONDITIONED SPACE AND DOWNSTREAM OF AUTOMATIC SHUT OFF DAMPER TO HVAC UNIT OR ROOM.	4C	≥2800 CFM	3.0					
OUTDOOR AIR	INSIDE CONDITIONED SPACE	4C AND 5B	<2800	1.5	SEE EXCEPTION 1 TO SECTION C403.10.1.1 FOR ADDITIONAL DETAILS				
GENERAL NOTES:			-						
1. INSULATION R-VALUES, MEASURED IN h · ft ² x °F/BTU, ARE FOR THE INSULATION AS INSTALLED AND DO NOT INCLUDE FILM RESISTANCE. THE REQUIRED MINIMUM THICKNESSES DO NOT CONSIDER WATER VAPOR TRANSMISSION AND POSSIBLE SURFACE CONDENSATION. INSULATION RESISTANCE MEASURED ON A HORIZONTAL PLANE IN ACCORDANCE WITH ASTM C518 AT A MEAN TEMPERATURE OF 75°F AT THE INSTALLED THICKNESS.									
2. SEE INTERNATIO	DNAL MECHANICAL CODE SECTIONS 603.12 AND 604 FOR FURTHER DETAILS ON DUC	T INSTALLATION	REQUIREMENTS.						

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	РН 1	D	ISCON JRN BY EC	NOTES 1,2,3,4	DDLEBROOK JINEERING, LLC	6216 174TH AVE SW	253.765.8292
DP	DULES V 208	PH 3	DISCON FURN BY EC	NOTES 1, 2, 3, 4, 5, 6	ENG BRANCA BRANC	MIDD NASHING 2770 STERED AL ENGIN	0/18/2024
。 ION S	²⁰⁸ 6CHEDU	JILE	EC	1, 2, 3, 4, 5, 6	SCHEDULES II		
SEE IM DUCT	SEE SEG	CTION C40 CTION C40 D3.12 FOR / SATION CC IS SEPARA ITH THE M CTION C40 CTION C40 CTION C40 SIDER WA SIDER WA	3.10.1.2 FOR DE 3.10.1.2 FOR DE ADDITIONAL RE NTROL AT DUC TED FROM BUI INIMUM INSULA 3.10.1.2 FOR DE 3.10.1.2 FOR DE TER VAPOR TRANSIT	ETAILS ETAILS EQUIREMENTS FOR CTWORK LDING ENVELOPE TION VALUE ETAILS ETAILS ANSMISSION AND	STEP BY STEP ELC 3303 8TH AVE SE MEN 1	PUYALLUP, WA 98372	DATE 18/2024
JMUM INS ISULATIOI 4.	TALLED DUCT N R-VALUE 5	SEE ADD	NG SECTION C403 DITIONAL REQU	DTES 3.10.1.1 FOR IREMENTS	RAWN BY: HECKED BY: ROJECT MANAGEF EUSE OF DOCUMENTS ARE DDLEBROOK ENGINEER DDLEBROOK ENGINEER	R: INTS ING, LLC AND SI MUTCHOILT WRI	RPG BSM RC
3. 1. EQUIRED ASTM C5	U 5 MINIMUM THIC 18 AT A MEAN	SEE C40 CKNESSES TEMPERA	EXCEPTION 1 3.10.1.1 FOR AL DO NOT CONS TURE OF 75°F	TO SECTION DDITIONAL DETAILS SIDER WATER VAPOR AT THE INSTALLED	ipied, or reproduced RMISSION.) WITHOUT WRI	ITEN
					MH	60)2

SEQUENCE OF OPERATIONS

PROVIDE AND INSTALL ALL NECESSARY DEVICES INCLUDING BUT NOT LIMITED TO: ACTUATORS, RELAYS, SWITCHES, SENSORS, DAMPERS, CONDUIT, AND WIRING NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.

TIMING OF CONTROL WORK

THE CONTROL SYSTEM SHALL BE COMPLETE PRIOR TO BALANCING OF THE PROJECT, CONTROL PERSONNEL ARE TO ASSIST IN SYSTEM OPERATION FOR THE BALANCER, THE CONTROL SYSTEM SHALL BE COMPLETE PRIOR TO HVAC SYSTEM COMMISSIONING AND CONTROL PERSONNEL ARE TO ASSIST IN SYSTEM OPERATION AND TESTING DURING COMMISSIONING. THE CONTROL SYSTEM SHALL BE COMMISSIONED PRIOR TO OWNER OCCUPANCY.

TYPICAL SYSTEM SCHEDULE

OFF HOURS ARE 6:00 PM TO 6:00 AM AND WEEKENDS, ADJUSTABLE. MORNING WARM-UP IS TO BE STARTED AT AN "OPTIMAL START" TIME.

COOLING SPACE TEMPERATURE - 75 DEGREES FAHRENHEIT

TYPICAL SETPOINTS (ADJUSTABLE) HEATING SPACE TEMPERATURE - 70 DEGREES FAHRENHEIT

FIRE ALARM SYSTEM SHUTDOWN

PROVIDE ALL NECESSARY CONDUIT, WIRING, AND ACCESSORIES TO SHUTDOWN EACH UNIT UPON ACTIVATION OF THAT UNITS SMOKE DETECTORS (SMOKE DETECTORS WITH DPDT ARE PROVIDED AND INSTALLED BY OTHERS). CONNECTIONS SHALL BE HARDWIRED, INDEPENDENT OF ANY CONTROL SYSTEM LOGIC, SO THE FAILURE OF THE CONTROL SYSTEM OR LOSS OF CONTROL SYSTEM POWER WILL IN NO WAY PREVENT THE ALARMED SMOKE DETECTOR SHUTDOWN OF THE EQUIPMENT. UPON RESET OF ALARMED DEVICE, SYSTEM SHALL AUTOMATICALLY RETURN TO NORMAL OPERATION. PROVIDE A TIME DELAY FOR EQUIPMENT START-UP TO PREVENT EXCESS LOAD STARTING AT THE SAME TIME.

DEDICATED OUTDOOR AIR SYSTEM

- ZONE SPACE TEMPERATURE SENSORS SHALL BE AUGMENTED TO INCLUDE A UNOCCUPIED OVERRIDE REQUEST. OVERRIDE RUNTIME SHALL BE 2 HOURS (ADJUSTABLE). DEDICATED OUTDOOR AIR UNITS SHALL SHARE OPERABILITY WITH ZONE AIR HANDLING UNIT(S).
- UNIT SHALL BE PROGRAMMED FOR START/STOP BASED ON DESIGNED OCCUPIED MODES WITH WEEKDAYS, WEEKEND, AND HOLIDAY SCHEDULES.

SUPPLY FAN

- SUPPLY FAN SHALL START VIA A SCHEDULE (ADJUSTABLE) OR OVERRIDE COMMAND (ADJUSTABLE). OVERRIDE COMMAND CAN BE TRIGGERED BY A ZONE SPACE TEMPERATURE SENSOR UNOCCUPIED OVERRIDE REQUEST
- OUTSIDE AIR DAMPER SHALL OPEN UPON ACTIVATION AND FAN SHALL START VIA DAMPER END SWITCH. DAMPER SHALL FAIL CLOSED
- FAN ALARMS FAN ALARM ACTIVATES IF FAN STATUS FAILS TO ACTIVATE AFTER FAN Α
 - HAS BEEN STARTED.
- HARDWIRE FAN SHUTDOWN UPON ACTIVATION OF FIRE/SMOKE ALARM. Β.

- EXHAUST FAN OPERATES WHENEVER THE SUPPLY FAN IS PROVEN ON.
- EXHAUST DAMPER SHALL OPEN UPON ACTIVATION AND FAN SHALL START VIA DAMPER END SWITCH. DAMPERS SHALL FAIL CLOSED.
- FAN ALARMS FAN ALARM ACTIVATES IF FAN STATUS FAILS TO ACTIVATE AFTER FAN
- HAS BEEN STARTED.
- HARDWIRE FAN SHUTDOWN UPON ACTIVATION OF FIRE/SMOKE ALARM.

SPLIT SYSTEM CONTROL SEQUENCE (DUCTED)

GENERAL

- SPLIT SYSTEMS INDOOR/OUTDOOR UNITS SHALL BE CONTROLLED BY LOCAL THERMOSTAT. UNITS SHALL OPERATE ON INTERNAL CONTROLS TO MAINTAIN ROOM SETPOINT.
- SPACE STATS SHALL BE EQUIPPED WITH PUSHBUTTONS TO PROVIDE UNOCCUPIED OVERRIDE REQUEST AND SPACE TEMPERATURE SETPOINT ADJUSTMENT AS REQUIRED. OVERRIDE RUNTIME SHALL BE 2 HOURS (ADJUSTABLE). NIGHT SETBACK TEMPERATURE SETPOINT SHALL BE 55°F HEATING AND 85°F COOLING (ADJUSTABLE).
- UNIT SHALL BE PROGRAMMED FOR START/STOP THROUGH THE LOCAL STAT BASED ON DESIGNED OCCUPIED MODES WITH WEEKDAY, WEEKEND AND HOLIDAY SCHEDULES.
- REDUCE FANS TO LOW SPEED (<0.12 W/CFM) WGEN SPACE IS WITHIN DEADBAND SETPOINT.

- SUPPLY FAN SHALL START VIA A SCHEDULE (ADJUSTABLE), WARM-UP MODE COMMAND (ADJUSTABLE) OR OVERRIDE COMMAND (ADJUSTABLE). WARM-UP MODE COMMAND IS GENERATED BY LOCAL STAT. OVERRIDE COMMAND IS TRIGGERED BY SPACE STAT UNOCCUPIED OVERRIDE REQUEST OR SPACE STAT CALLING FOR NIGHT SETBACK CONDITIONING
- FAN SHALL OPERATE AT CONSTANT SPEED AS DETERMINED BY THE AIR BALANCE CONTRACTOR. FAN SHALL OPERATE AT LOW SPEED BETWEEN DEADBAND.
- OUTSIDE AIR DAMPER SHALL OPEN UPON ACTIVATION AND FAN SHALL START VIA DAMPER END SWITCH. DAMPER SHALL FAIL CLOSE. FAN ALARMS:
- FAN ALARM ACTIVATES IF FAN STATUS FAILS TO ACTIVATE AFTER FAN HAS BEEN STARTED. EMCS RECORDS FAN ALARM.
- HARDWIRE FAN SHUTDOWN UPON ACTIVATION OF FIRE/SMOKE ALARM.

HEAT PUMP HEATING

- HEAT PUMP HEATING ENABLE IS OFF WHEN FAN STATUS IS OFF.
- HEAT PUMP STAGES TO MAINTAIN SPACE TEMPERATURE SETPOINT. AUXILIARY HEAT ACTIVATES ONLY IF HEAT PUMP IS UNABLE TO MAINTAIN ROOM SETPOINT.

- DX COOLING ENABLE IS OFF WHEN FAN IS OFF.
- DX COOLING ACTIVATES TO MAINTAIN SPACE TEMPERATURE SETPOINT AS THE SECOND STAGE OF COOLING. (STAGE COMPRESSOR WHERE AVAILABLE)

FEMPERATURE SETPOINT

SPACE AIR TEMPERATURE SETPOINT IS 70°F (ADJUSTABLE) FOR HEATING CONTROL AND 75°F (ADJUSTABLE) FOR COOLING CONTROL. IDF ROOMS: SPACE AIR TEMPERATURE SETPOINT IS 75°F (ADJUSTABLE) FOR COOLING CONTROL.

FIRE ALARM SHUTDOWN

UPON A GENERAL FIRE ALARM ALL AIR HANDLING EQUIPMENT SHALL SHUTDOWN. THE FIRE ALARM CONTROL PANEL SYSTEM SHALL COMMAND A SOFTWARE SHUTDOWN OF ALL HANDLING EQUIPMENT. THIS CONTRACTOR TO RUN WIRES FROM RELAYS PROVIDED BY THE FIRE ALARM CONTRACTOR TO THE AIR HANDLING UNITS. COORDINATE WITH FIRE ALARM CONTRACTOR AND DOCUMENTS FOR LOCATION OF RELAYS.

ELECTRIC DUCT HEATERS

DUCT HEATER SHALL NOT ACTIVATE UNLESS FAN AIRFLOW IS PROVEN.

ELECTRIC HEATING

ELECTRIC HEATING IS OFF WHEN FAN STATUS IS OFF. ELECTRIC HEAT ACTIVATE TO MAINTAIN TEMPERATURE SETPOINT.

TEMPERATURE SETPOINT

TEMPERATURE SETPOINT IS 70°F (ADJUSTABLE).

WALL HEATERS

I. UNIT SHALL ACTIVATE TO MAINTAIN TEMPERATURE

TEMPERATURE SETPOIN

TEMPERATURE SETPOINT IS 70°F (ADJUSTABLE).

RADIANT CEILING PANELS

VESTIBULES SHALL HAVE CONTROLS CONFIGURED TO SHUT OFF HEAT WHEN OUTDOOR AIR IS OVER 45°F (ADJUSTABLE).

 TEMPERATURE SETPOINT

 1.
 TEMPERATURE SETPOINT IS 60°F (ADJUSTABLE).

VRF CONTROL SEQUENCE

<u>GENERAL</u>

- ON/OFF CONTROL: THE INDOOR UNITS CAN BE COMMANDED ON/OFF EITHER BY A SCHEDULE IN THE CENTRAL CONTROLLER OR AT THE REMOTE CONTROLLER. IF ALL INDOOR UNITS ARE OFF, THE OUTDOOR UNIT SHALL TURN OFF.
- NIGHT SETBACK MODE: THE SYSTEM SHALL CYCLE ON DURING UNOCCUPIED PERIODS AS NEEDED TO MAINTAIN UNOCCUPIED TEMPERATURE SET POINT.
- SPACE TEMPERATURE CONTROL: THE INDOOR UNIT SHALL MODULATE ITS INTERNAL LINEAR EXPANSION VALVE TO MAINTAIN THE TEMPERATURE SET POINT VIA THE INDOOR UNIT'S INTERNAL CONTROLS.
- A. THE SET POINT IS ADJUSTABLE AT THE REMOTE CONTROLLER OR CENTRAL CONTROLLER. THE TEMPERATURE SET POINT CAN ALSO BE SCHEDULED AT THE REMOTE CONTROLLER OR THE CENTRAL CONTROLLER.

MODE CONTROL AUTO MODE Α.

- THE INDOOR UNIT SHALL DETERMINE WHETHER IT SHOULD BE IN AUTO-HEAT MODE OR AUTO-COOL MODE BASED ON SPACE TEMPERATURE RELATIVE TO TEMPERATURE SET POINT. IF THE INDOOR UNIT IS IN AUTO HEAT MODE, THE INDOOR UNIT CONTROL BOARD SHALL FOLLOW THE HEAT MODE SEQUENCE. IF THE INDOOR UNIT IS IN AUTO COOL MODE, THE INDOOR UNIT CONTROL BOARD SHALL FOLLOW THE COOL MODE SEQUENCE
- THE INDOOR UNIT SHALL SWITCH FROM AUTOHEAT TO AUTOCOOL WHEN THE SPACE TEMPERATURE RISES ABOVE AND REMAINS ABOVE THE TEMPERATURE SET POINT PLUS THE DEAD BAND FOR 3 MINUTES.
- THE INDOOR UNIT WILL SWITCH FROM AUTOCOOL TO AUTOHEAT WHEN THE SPACE TEMPERATURE DROPS BELOW AND REMAINS BELOW THE TEMPERATURE SET POINT MINUS THE DEAD BAND FOR 3 MINUTES. HEATING MODE: THE INDOOR UNIT SHALL MODULATE ITS LINEAR EXPANSION
- VALVE TO MAINTAIN TEMPERATURE SET POINT. COOLING MODE: THE INDOOR UNIT SHALL MODULATE ITS LINEAR EXPANSION
- VALVE TO MAINTAIN TEMPERATURE SET POINT.
- FAN/VANE CONTROL: FAN SPEED AND VANE DIRECTION (IF APPLICABLE) SHALL BE ADJUSTABLE BY THE USER AT THE REMOTE CONTROLLER AND/OR THE CENTRAL CONTROLLER.

TEMPERATURE SETPOINT:

EQUIPMENT ROOMS: SPACE AIR TEMPERATURE SETPOINT IS 70°F D. (ADJUSTABLE) FOR HEATING CONTROL AND 75°F (ADJUSTABLE) FOR COOLING CONTROL.

MASTER CONTROLLER-

TYPICAL REFRIGERANT FLOW DIAGRAM

SCALE: NTS

3

SPLIT SYSTEM FLOW DIAGRAM NOT TO SCALE

GENERAL CONTRACT REQUIREMENTS

- MECHANICAL, PLUMBING, AND CONTROLS SCOPE SHALL FALL UNDER THE ULTIMATE RESPONSIBILITY OF ONE CONTRACTOR, WHO IS RESPONSIBLE FOR UNDERSTANDING ALL MECHANICAL AND PLUMBING DOCUMENTS, DISTRIBUTING CONTRACT DOCUMENTS TO ALL SUBCONTRACTORS, AND SHALL BE RESPONSIBLE FOR CONTRACT COMPLETION
- THE DRAWINGS ARE DIAGRAMMATIC. COORDINATE INSTALLATION WITH THE BUILDING. PROVIDE ALL NECESSARY OFFSETS. CHANGES IN DIRECTION. EXTENSIONS AND ASSOCIATED MATERIALS FOR A COMPLETE AND FUNCTIONAL INSTALLATION.
- COORDINATE MECHANICAL WORK WITH ELECTRICAL, ARCHITECTURAL, STRUCTURAL CIVIL, AND LANDSCAPE WORK SHOWN ON OTHER CONTRACT DOCUMENTS. PROVIDE ADDITIONAL PIPE OR DUCT OFFSETS WHERE REQUIRED TO COORDINATE INSTALLATION.
- LOCATIONS AND SIZES OF (FLOOR, WALL, AND ROOF OPENINGS) SHALL BE COORDINATED WITH OTHER TRADES INVOLVED. INCLUDE THE FOLLOWING IN THE COST OF MECHANICAL WORK: CUTTING, CORING, PATCHING AND PAINTING OF EXISTING WALLS, CEILINGS, FLOORS, AND ROOFS AS REQUIRED TO ACCOMMODATE WORK AS INDICATED IN THE MECHANICAL CONTRACT DOCUMENTS UNLESS SPECIFICALLY SHOWN ON ARCHITECTURAL DOCUMENTS.
- MAINTAIN A SET OF PLANS ON SITE. RECORD ALL CHANGES TO ACTUAL ARRANGEMENTS ON THESE PLANS. PROVIDE THIS SET OF PLANS TO THE OWNER'S REPRESENTATIVE WHEN WORK IS COMPLETE.
- ALL WORK PERFORMED SHALL BE DONE IN STRICT ACCORDANCE TO ALL APPLICABLE
- MECHANICAL, BUILDING, ENERGY, FUEL GAS, AND LOCAL CODES, WITH AMENDMENTS. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND CONSTRUCTION FEES. FURNISH FINAL CERTIFICATE TO OWNER SHOWING COMPLIANCE WITH CODE REQUIREMENTS
- PROJECT SCHEDULING: COMPLY WITH OWNER'S REQUIREMENTS OPERATION AND MAINTENANCE MANUAL: PROVIDE COMPLETE OPERATIONS AND MAINTENANCE MANUAL IN HARD COVER. PROVIDE OPERATIONS, MAINTENANCE AND
- PARTS DATA ON ANY ITEM OF EQUIPMENT THAT HAS MOVING PARTS. PROVIDE THE FOLLOWING DOCUMENTS PRIOR TO FINAL ACCEPTANCE OF THE PROJECT. FINAL PAYMENT OF THE CONTRACT WILL BE CONTINGENT UPON
- RECEIVING THESE DOCUMENTS:
- RECORD (AS-BUILT) DRAWINGS. MAINTENANCE AND OPERATING INSTRUCTIONS (3 SETS).
- EXTENDED WARRANTIES (OTHER THAN THE ONE-YEAR).
- BALANCING LOGS (AIR AND HYDRONIC SYSTEMS) (3 SETS).
- FINAL CERTIFICATES OF INSPECTION AND CODE COMPLIANCE. COMMISSIONING DOCUMENTATION PER WSEC
- 11. WARRANTY PROVISIONS: THE CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT AND SYSTEMS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIAL, EQUIPMENT, OR POOR WORKMANSHIP, WHICH MAY SHOW ITSELF DURING THIS WARRANTY PERIOD.

SEISMIC AND VIBRATION REQUIREMENTS

- HANGERS AND SEISMIC BRACING FOR THE MECHANICAL SYSTEMS SHALL BE DESIGNED AND PROVIDED BY THE MECHANICAL CONTRACTOR. REFER TO CONTRACTOR SHOP DRAWINGS FOR LOCATIONS OF EQUIPMENT AND HUNG MECHANICAL SYSTEMS. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE SUPPORT SYSTEMS AND DESIGN LOADS FOR HUNG MECHANICAL SYSTEMS WITH THE GENERAL CONTRACTOR AND OTHER TRADES THAT MAY BE IMPACTED. PROVIDE ALL SEISMIC RESTRAINT REQUIRED BY THE AUTHORITY HAVING
- JURISDICTION AND THE APPLICABLE CODES. EMPLOY A LICENSED STRUCTURAL ENGINEER, IF NECESSARY, TO ACHIEVE COMPLIANCE.
- THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA) SEISMIC RESTRAINT MANUAL GUIDELINES MAY BE USED FOR PIPING AND DUCTWORK. INSURE THE PROPER HAZARD LEVEL IS EMPLOYED FOR THE AREA OF INSTALLATION.
- VIBRATION CRITERIA: PROVIDE VIBRATION ISOLATION IN ACCORDANCE WITH THE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE): APPLICATIONS HANDBOOK.

BASIC MATERIALS AND METHODS

- 1. ALL MATERIALS AND EQUIPMENT SHALL BE LISTED OR LABELED BY A RECOGNIZED AGENCY. UL, AGA, FM, CSA, ARI, ETC.
- EQUIPMENT SHALL BE AS INDICATED ON THE DRAWING SCHEDULES. THE DRAWING SCHEDULES ESTABLISH THE LEVEL OF QUALITY. SUBSTITUTIONS WILL BE CONSIDERED, SUBMIT TECHNICAL DATA (PERFORMANCE AND CONSTRUCTION) TO THE OWNER'S REPRESENTATIVE FOR APPROVAL. ALLOW TWO WEEKS FOR TURN-AROUND.
- MECHANICAL SYSTEM PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH THE BUILDING CODE IN FORCE IN THE AUTHORITY HAVING JURISDICTION FOR THIS PROJECT. THIS INCLUDES PIPING, DUCTWORK, SUPPORTS, CONDUIT, AND ANY OTHER SYSTEM AND APPURTENANCE PROVIDED AS PART OF THE MECHANICAL WORK OF THIS CONTRACT. IN ADDITION. ALL THROUGH-PENETRATION SEALING METHODOLOGIES SHALL BE LISTED IN THE UNDERWRITER'S LABORATORIES (UL) FIRE RESISTANCE DIRECTORY, ISSUE CURRENT AT TIME OF BID.
- MOTORS SHALL COMPLY WITH THE WSEC. ALL MOTORS SHALL BE ELECTRONICALLY COMMUTATED UNLESS NOTED ON SCHEDULE.
- ELECTRICAL INSTALLATION SHALL COMPLY WITH THE NEC. PROTECT STORED MATERIALS. REPLACE DAMAGED MATERIALS PRIOR TO
- INSTALLATION.
- PROVIDE WATER-TIGHT SEAL FOR OPENINGS TO THE BUILDING THROUGH WHICH PIPE PASSES.
- PROVIDE AND INSTALL PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY (MSS) STANDARDS, SPECIFICALLY STANDARD SP-69, "PIPE HANGERS AND SUPPORTS -SELECTION AND APPLICATION" AND STANDARD SP-58, "PIPE HANGERS AND SUPPORTS - MATERIALS, DESIGN AND MANUFACTURE". PROVIDE PIPE SUPPORT SPACING IN ACCORDANCE WITH THE UPC OR IMC.
- TESTING: ALL WORK UNDER THIS CONTRACT SHALL BE THOROUGHLY AND SYSTEMATICALLY TESTED, BOTH DURING CONSTRUCTION AND AFTER COMPLETION. PIPE TESTING SHALL BE EITHER AS SPECIFIED IN THE APPROPRIATE SPECIFICATION SECTION, OR AS SPECIFIED IN THE APPLICABLE PLUMBING OR MECHANICAL CODE. DUCTWORK SHALL BE TESTED AS PART OF THE AIR BALANCING PROCESS. NOTIFY THE OWNER'S REPRESENTATIVE 48-HOURS IN ADVANCE OF ALL TESTS. TESTS SHALL BE MAINTAINED UNTIL APPROVED.
- 11. START-UP, BALANCING AND COMMISSIONING.
 - A. EQUIPMENT STARTUP SHALL BE PERFORMED BY QUALIFIED PERSONNEL. THE TECHNICAL SPECIFICATION SECTIONS WILL DETAIL OTHER SPECIAL REQUIREMENTS, IF ANY. PROVIDE A STATEMENT OF THE STARTUP TECHNICIAN'S QUALIFICATIONS IF REQUESTED BY THE OWNER'S REPRESENTATIVE OR ELSEWHERE SPECIFIED.
 - BALANCE ALL AIR AND WATER SYSTEMS. BALANCE IN ACCORDANCE WITH EITHER NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) OR AMERICAN AIR BALANCE COUNCIL (AABC) CRITERIA.
 - C. PROVIDE COMMISSIONING IN ACCORDANCE WITH THE WSEC, UNLESS ENHANCED COMMISSIONING IS REQUIRED. PROVIDE DOCUMENTATION OF COMMISSIONING
 - a. A CERTIFIED COMMISSIONING AGENT SHALL PROVIDE A COMMISSIONING PLAN OUTLINING THE RESPONSIBILITY MATRIX, SCHEDULE, AND EQUIPMENT FUNCTIONAL PERFORMANCE TESTING PER WSEC 408.1.2.
 - THE COMMISSIONING REPORT SHALL BE COMPLETED PRIOR TO FINAL MECHANICAL INSPECTION PER C408.1.3. FINAL REPORT SHALL BE MADE AVAILABLE TO CODE OFFICIAL PER COMPLETION REQUIREMENTS OF WSEC C408.1.4

LOW PRESSURE STEEL DUCTWORK

GALVANIZED CARBON STEEL PER SMACNA STANDARDS. FLEXIBLE DUCTWORK SHALL BE VINYL COATED SPRING STEEL HELIX BONDED TO A VINYL COATED FIBERGLASS MECH LINER WRAPPED WITH FIBERGLASS WOOL INSULATION. JACKET WITH A REINFORCED METALIZED MYLER/ NEOPRENE LAMINATE OUTER CASING

DUCTWORK SOUNDLINER

- MAXIMUM VELOCITY ON MAT OR COATED SIDE SHALL BE 5000 FT/MIN.
- NOISE REDUCTION COEFFICIENT: 0.65 OR HIGHER, TYPE A MOUNTING, ASTM C423. K = 0.25 AT 75 DF, ASTM C518
- PROVIDE ACOUSTIC LINING IN CONNECTING DUCTWORK 10' UPSTREAM AND DOWNSTREAM OF FAN POWERED MECHANICAL UNIT, UNLESS OTHERWISE NOTED ON PLANS.
- APPROVED MANUFACTURERS
- A. MANVILLE PERMACOTE LINACOUSTIC MANVILLE PERMACOTE SPIRACOUSTIC LINER

DUCT INSULATION

- FLEXIBLE FIBERGLASS DUCTWORK SHALL MEET ASTM C553, TYPE 1, CLASS B2
- FLEXIBLE BLANKET. K VALUE SHALL BE 0.27 @ 75 DF. 2 VAPOR BARRIER JACKET: PROVIDE FSK, ALUMINUM FOIL REINFORCED WITH FIBER GLASS YARN AND LAMINATED FIRE RESISTANT KRAFT. SECURE WITH UL LISTED
- PRESSURE SENSITIVE TAPE AND/OR OUTWARD CINCHED EXPANED STABLES. INSULATION SHALL MEET THE REQUIREMENTS OF THE INSULATION SCHEDULE,
- SHOWN ON PLANS. APPROVED MANUFACTURERS: MANVILLE, OWENS CORNING, OR APPROVED EQUAL.

AIR DISTRIBUTION SYSTEM - GENERAL

- PROVIDE PER THE IMC, THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA) "DUCT CONSTRUCTION MANUAL, METAL AND FLEXIBLE", AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. IN ADDITION TO THE REQUIREMENTS ABOVE, INSTALL EQUIPMENT AND COMPONENTS
- IN ACCORDANCE WITH THE PUBLISHED MANUFACTURER'S INSTALLATION REQUIREMENTS. FIRE/SMOKE DAMPERS: UL LISTED FOR SERVICE INTENDED, INSTALL IN ACCORDANCE
- WITH THE LISTING. FLEXIBLE CONNECTIONS: PROVIDE AT EACH FAN AND AIR HANDLING UNIT
- CONNECTION TO DUCT. ACCESS PANELS: PROVIDE FOR MAINTENANCE OF ALL DUCT-MOUNTED EQUIPMENT
- (FIRE DAMPERS, CONTROL DAMPERS, COILS, ETC.). LOCATE VALVES, CLEANOUTS, DAMPERS, CONTROLS AND SIMILAR COMPONENTS SO
- THAT THEY ARE ACCESSIBLE. A. INSTALL TAG ON CEILING GRID FRAME TO INDICATE LOCATION AND TYPE OF
- EQUIPMENT THAT REQUIRES MAINTENANCE. PROVIDE ACCESS DOORS FOR MECHANICAL EQUIPMENT INSTALLED BEHIND WALLS, ABOVE INACCESSIBLE CEILINGS AND BELOW FLOORS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT/ENGINEER. ACCESS DOOR SHALL BE SIZED SO THAT
- ADJACENT EQUIPMENT IS ACCESSIBLE A. PROVIDE 16 GA, STEEL, FLUSH TYPE ACCESS DOOR WITH CONCEALED HINGE AND SLOT SCREWDRIVER TYPE CAM LATCH. PROVIDE FACTORY PRIMED IN PAINTED SURFACE AREAS FOR FIELD PAINTING.
- PROVIDE STAINLESS STEEL FOR ALL OTHER AREAS. PROVIDE UL LISTED AND LABELED DOOR WHERE FIRE-RESISTANCE RATING IS INDICATED ON
- DRAWINGS C. PROVIDE DUCT ACCESS PANELS FOR FIRE DAMPER ACTUATOR ACCESS.ACENT
- EQUIPMENT IS ACCESSIBLE

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10.

- VOLUME DAMPERS A. FABRICATED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS AND AS INDICATED.
- FABRICATE SPLITTER DAMPERS OF SAME MATERIAL AND GAGE AS DUCT TO 24 INCHES (600 MM) SIZE IN EITHER DIRECTION, AND TWO GAGES HEAVIER FOR LARGER SIZES, SECURED WITH CONTINUOUS HINGE OR ROD, OPERATED WITH MINIMUM 1/4-INCH (6 MM) DIAMETER ROD.
- FABRICATE SINGLE BLADE DAMPERS FOR DUCT SIZES TO 9-1/2 X 30 INC FABRICATE MULTI-BLADE DAMPER OF OPPOSED BLADE PATTERN WITH MAXIMUM BLADE SIZES 12 X 72 INCH. ASSEMBLE CENTER AND EDGE CRIMPED BLADES IN PRIME COATED OR GALVANIZED CHANNEL FRAME WITH SUITABLE HARDWARF
- D. EXCEPT IN ROUND DUCTWORK 12 INCHES (300 MM) IN DIAMETER AND SMALLER, PROVIDE END BEARINGS.
- PROVIDE LOCKING, INDICATING QUADRANT REGULATORS ON SINGLE AND MULTI-BLADE DAMPERS. WHERE WIDTH EXCEEDS 30 INCHES (750 MM), PROVIDE REGULATOR AT BOTH ENDS.
- BACKDRAFT DAMPERS A. 0.125 INCH EXTRUDED ALUMINUM FRAME, 0.07 INCH ALUMINUM BLADES WITH VINYL EDGES, SYNTHETIC BEARINGS, COUNTERBALANCE, AND ADJUSTABLE PLATED BAR ON BLADES. LEAKAGE SHALL BE RATED AT NO MORE THAN 20 CFM/SF AT 1" W.C. BALANCE AS NOTED ON PLANS.
- APPROVED MANUFACTURERS:
- RUSKIN а.

GREENHECK b.

MOTORIZED DAMPERS GENERAL Α.

- COORDINATE ACTUATOR TYPE WITH CONTROLS CONTRACTOR. DAMPER ACTUATORS AND ACTUATOR LINKAGES SHALL BE MOUNTED IN THE AIRSTREAM FOR ALL ROOFTOP FANS/ROOF HOODS AND MOUNTED EXTERNAL OF THE AIRFLOW AT ALL OTHER LOCATIONS, UNLESS SPECIFICALLY INDICATED OTHERWISE ON PLANS.
- MULTI SECTION DAMPER ASSEMBLIES SHALL BE PROVIDED WITH A FACTORY INSTALLED COMMON JACKSHAFT. PROVIDE WITH DOUBLE FLANGE DUCT CONNECTION.
- SHALL BE CLASS IA LEAKAGE RATED.
- PROVIDE PARALLEL BLADE AIRFOIL TYPE FOR OPEN/CLOSED CONTROL AND OPPOSED BLADE AIRFOIL TYPE FOR MODULATING/THROTTLING CONTROL
- DAMPER BLADES
- EXTRUDED ALUMINUM OR GALVANIZED STEEL AIR FOILS WITH REPLACEABLE RUBBER BLADE SEALS, 6-INCHES WIDE MAXIMUM. 304 STAINLESS STEEL WHEN INSTALLED IN DISHWASHER HOOD
- DUCTWORK. JAMB SEALS SHALL BE FLEXIBLE METAL COMPRESSION TYPE.
- C. PERFORMANCE: MAXIMUM LEAKAGE RATE SHALL BE 3 CFM/SQ. FT. OF DAMPER AREA а. PER 1.0-INCH W.G. IN ACCORDANCE WITH AMCA STANDARD 500D.
- MAXIMUM PRESSURE DROP FOR A 12"X12" DAMPER SHALL BE 0.08" W.G. AT 1,000 FPM FACE VELOCITY.
- APPROVED MANUFACTURERS RUSKIN (CD50/CD60)
- GREENHECK (VCD-33/VCD-43)

B

FILTERS

AIR TERMINALS

- DRAFTS

AIR BALANCING

- AIR BALANCE LOG: A. TEST AND ADJUST ENTIRE SYSTEM WITHIN SCOPE OF WORK. VOLUMES SHALL **BE WITHIN 10% OF DESIGN REQUIREMENTS** MEASURE TOTAL STATIC PRESSURE INCLUDING DUCT SYSTEM, TERMINAL UNITS, FILTERS, ETC ADJUST AND RECORD SYSTEM TO DESIGN RECIRCULATED AIR CFM. D. DIFFUSERS, GRILLES AND REGISTERS SHALL BE ADJUSTED TO MINIMIZE DRAFTS IN ALL AREAS

Α.

D.

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WIRING:

CONTROLS STAND ALONE CONTROL SYSTEMS Α. SCOPE: PROVIDE UNIT CONTROLS, ZONE TEMPERATURE CONTROLS AND ANY OTHER CONTROL ITEMS REQUIREMENT FOR A COMPLETE AND FUNCTIONAL SYSTEM. PROVIDE ALL REQUIRED WIRING, CONDUIT, COMPONENTS (RELAYS, TRANSFORMERS, ETC) AND EQUIPMENT. OBTAIN AND UNDERSTAND ALL MECHANICAL AND PLUMBING DOCUMENTS BEFORE BIDDING WORK. APPROVED MANUFACTURERS ARE TRANE, MITSUBISHI, AND HONEYWELL. NO OTHER MANUFACTURER IS ACCEPTABLE UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE. SPECIFIC REQUIREMENTS: EACH UNIT SHALL HAVE INDIVIDUAL STANDALONE CONTROLS THAT PERFORM THE FUNCTIONS LISTED IN THE DRAWINGS. PNEUMATIC CONTROLS ARE NOT ACCEPTABLE. ROOM TEMPERATURE SENSORS - ROOM TEMPERATURE SENSORS SHALL BE MOUNTED 54" AFF UNLESS OTHERWISE NOTED ON PLANS. VERIFY ALL LOCATIONS WITH OWNER'S REPRESENTATIVE ACTUATION EQUIPMENT

PROVIDE 2" MERV 8, PLEATED, DISPOSABLE FILTERS. SIZE OF FILTER SHALL BE COMPATIBLE WITH FILTER BOX OR AIR HANDLER.

SCHEDULED GRILLES, REGISTERS, AND DIFFUSERS SHALL BE THE BASIS OF DESIGN. UNITS OF SIMILAR CONSTRUCTION AND CAPABILITIES MAY BE SUBMITTED FOR REVIEW. DEVICES SHALL DISTRIBUTE THE QUANTITY OF AIRFLOW UNIFORMLY THROUGHOUT THE INDICATED SPACE WITHOUT CAUSING NOTICEABLE NOISE OR

PROVIDE ALL DEVICES FOR COMPLETE INSTALLATION DEPENDING ON LOCATION OF INSTALLATION (IE: A.C.T OR HARD LID CEILINGS). INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND AS NOTED ON PLANS.

- SCOPE OF WORK INCLUDES SETTING VOLUME (FLOW) AND SPEED ADJUSTMENTS TO HVAC. INSTRUMENTATION USED TO BALANCE THIS SYSTEM SHALL BE IN GOOD CONDITION AND MAINTAINED. IF REQUIRED BY THE OWNER, THE TESTS SHALL BE DONE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE
- THE BALANCER SHALL BE AN INDEPENDENT FIRM THAT SPECIALIZES IN BALANCING AND TESTING OF PUMPING SYSTEMS AND AIR MOVING EQUIPMENT/ AIR DISTRIBUTION AND EXHAUST SYSTEMS. THE BALANCER SHALL PROVIDE PROOF OF HAVING SUCCESSFULLY COMPLETED FIVE PROJECTS OF SIMILAR SCOPE. TESTING AND ADJUSTING SHALL BE PERFORMED IN ACCORDANCE WITH NEBB OR AABC STANDARDS AND PROCEDURES.
- DAMAGE DONE TO THE SYSTEM BY THE BALANCER SHALL BY HIS/HER RESPONSIBILITY TO RECTIFY. NEATLY TYPED RECORDS SHALL BE MAINTAINED AT ALL STEPS, ADJUSTMENTS, AND BEGINNING AND FINAL READINGS. THE RECORDS SHALL ALSO INCLUDE MEASUREMENT LOCATIONS, DESIGN CAPACITIES, AND DATES AND NAMES OF PERSONNEL INVOLVED. FINAL SETTINGS SHALL BE CLEARLY MARKED ON EACH BALANCING DEVICE
- CHECK OUT TEMPERATURE CONTROLS TO ASSURE PROPER CONTROL SEQUENCE, PROPER CONTROL SETTINGS, AND PROPER CONTROL CALIBRATION. REPORT MALFUNCTIONS IN LOGS UNDER "ADDITIONAL REMARKS."
 - ALL FILTERS SHALL BE CLEAN AND IN PLACE BEFORE STARTING FANS. DATA: RECORD AND CHECK THE FOLLOWING SYSTEMS AND EQUIPMENT.
 - a. AIR TERMINALS: SUPPLY, RETURN, OR EXHAUST IDENTIFICATIONS, CATALOGUE IDENTIFICATION, APPLICATIONS FACTORS, DESIGN AND RECORDED VELOCITIES AND AIR QUANTITIES, AND STATIC PRESSURES.

- SPRING RETURN IS REQUIRED IN ALL EQUIPMENT EXPOSED TO OUTDOOR AIR AND/OR FAILSAFE CONDITIONS
- ALL AIR HANDLER AND DOAS DAMPER AND VALVE ACTUATION SHALL BE SPRING RETURN AND PROPORTIONALLY CONTROLLED.
- ALL 120V ACTUATORS SHALL HAVE DISCONNECTS IN ACCORDANCE WITH ELECTRICAL STANDARDS. ALL CONTROLS ACTUATORS SHALL BE SIZED CAPABLE OF CLOSING AGAINST
- THE MAXIMUM SYSTEM SHUTOFF PRESSURE. ALL CLASS 2 (24VAC OR LESS) CONTROLS WIRING SHALL BE CONCEALED IN
- CONDUIT, UNLESS CONCEALED IN ACCESSIBLE LOCATIONS. WIRE SUPPORTS SHALL BE INSTALLED PER LOCAL WIRING CODE REQUIREMENTS. DEFAULT SUPPORT SPACING SHALL BE 5'. SUPPORTS SHALL HANG FROM THE BUILDING STRUCTURE AND BE DESIGNED FOR THIS
- APPLICATION. PROVIDE FIRE STOPPING FOR ALL PENETRATIONS USED BY CONTROLS
- CONDUIT AND RACEWAYS. WIRING SHALL NOT PENETRATE STRUCTURAL ELEMENTS.
- PROVIDE FULL COMMISSIONING OF THE CONTROL SYSTEM IN ACCORDANCE WITH THE WSEC PROVIDE 2 HOURS OF SCHEDULED INSTRUCTION PERIOD TO THE OWNER. COST
- FOR TIME INVOLVED SHALL BE INCLUDED IN THE BID. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS, THE NEC AND THE REQUIREMENTS OF THE AUTHORITY HAVING
- JURISDICTION.

SPLIT SYSTEM UNITS

- BASIS OF DESIGN SHALL REPRESENT THE QUALITY OF UNITS.
- MAJOR COMPONENTS INCLUDE: EVAPORATOR AND CONDENSER UNITS
 - CONTROLS UNITS SHALL BE CONTROLLED BY MANUFACTURER'S
- PROPRIETARY TEMPERATURE CONTROL SYSTEM. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE ACOUSTIC LINING IN CONNECTING DUCTWORK 10' UPSTREAM AND DOWNSTREAM OF FAN, UNLESS OTHERWISE NOTED ON PLANS.

DEDICATED OUTDOOR AIR UNITS

- BASIS OF DESIGN SHALL REPRESENT THE QUALITY OF UNIT.
- CABINET SHALL INCLUDE FACTORY WIRING, CONTROLS, BLOWERS, FILTERS, INSTALLED INLET AIR THERMISTERS, AND ENTHALPIC HEAT EXCHANGER.
- APPROVED MANUFACTURER: LOSSNAY PROVIDE ACOUSTIC LINING IN CONNECTING DUCTWORK 10' UPSTREAM AND DOWNSTREAM OF FAN, UNLESS OTHERWISE NOTED ON PLANS.

PACKAGED AIR HANDLING UNITS

- BASIS OF DESIGN SHALL REPRESENT QUALITY OF UNIT. UNIT SHALL BE FACTORY CONFIGURED TO OPERATE AS A SINGLE ZONE VAV, MATCHING FAN SPEEDS WITH HEATING AND COOLING LOADS.
- ALL UNITS SHALL BE FACTORY WIRED, CHARGED WITH R-410A, COME WITH ALL NECESSARY INTERNAL CONTROLS, AND RATED IN ACCORDANCE WITH ARI CRITERIA. UNIT CASING SHALL BE CONSTRUCTED OF ZINC COATED, HEAVY GAUGE, GALVANIZED STEEL. EXTERIOR SURFACES SHALL BE FINISHED WITH A WEATHER-RESISTANT
- ENAMEL FINISH. SURFACE OF UNIT SHALL BE TEST 672 HOURS IN A SALT SPRAY TEST IN COMPLIANCE WITH ASTM B117. INTERNALLY FINNED, 5/16" COPPER TUBES MECHANICALLY BONDED TO AN ALUMINUM
- PLATE SHALL BE STANDARD. COMPRESSORS: THE COMPRESSOR SHALL BE INDUSTRIAL GRADE, DIRECT DRIVE 3600 RPM MAXIMUM SPEED SCROLL TYPE. THE MOTOR SHALL BE SUCTION GAS-COOLED HERMETIC DESIGN. COMPRESSOR SHALL HAVE CENTRIFUGAL OIL PUMP WITH DIRT SEPARATOR, OIL SIGHT GLASS, AND OIL CHARGING VALVE. COMPRESSOR SHALL ALSO BE PROVIDED WITH THERMOSTATIC MOTOR WINDING TEMPERATURE CONTROL TO PROTECT AGAINST EXCESSIVE MOTOR TEMPERATURES RESULTING FROM OVER-/UNDER-VOLTAGE OR LOSS OF CHARGE, HIGH AND LOW PRESSURE CUTOUTS, AND RESET RELAY
- SUPPLY FAN: SUPPLY FAN MOTORS SHALL BE OPEN DRIP-PROOF. ALL SUPPLY FANS SHALL BE DYNAMICALLY BALANCED IN FACTORY. SUPPLY FAN SHALL BE TEST RUN IN
- UNIT AND SHALL BEACH RATED RPM. A. 20 TO 75 TONS WITH FORWARD-CURVED SUPPLY FAN: SUPPLY FANS SHALL HAVE TWO DOUBLE -INLET, FORWARD-CURVED FANS MOUNTED ON A COMMON SHAFT WITH FIXED SHEAVE DRIVE. FANS SHALL BE FACTORY-TESTED TO REACH RATED RPM BEFORE THE FAN SHAFT PASSES THROUGH FIRST CRITICAL SPEED. FAN SHAFT SHALL BE MOUNTED ON TWO GREASE
- LUBRICATED BALL BEARINGS DESIGNED FOR 200,000 HOURS AVERAGE LIFE. FAN MOTOR AND FAN ASSEMBLY SHALL BE MOUNTED ON COMMON BASE TO ALLOW CONSISTENT BELT TENSION WITH NO RELATIVE MOTION BETWEEN FAN AND MOTOR SHAFTS. ENTIRE ASSEMBLY SHALL BE COMPLETELY ISOLATED FROM UNIT AND FAN BOARD BY DOUBLE DEFLECTION
- RUBBER-IN-SHEAR ISOLATORS, OR BY OPTIONAL 2" DEFLECTION SPRING ISOLATION. SINGLE ZONE VARIABLE AIR VOLUME: SINGLE ZONE VAV OPTION SHALL PROVIDE ALL NECESSARY CONTROLS TO OPERATE A ROOFTOP UNIT BASED
- ON MAINTAINING TWO TEMPERATURE SETPOINTS; THE DISCHARGE AIR AND ZONE. OPTION SHALL INCLUDE FACTORY-INSTALLED VARIABLE FREQUENCY DRIVE (VFD) TO PROVIDE SUPPLY FAN MOTOR SPEED MODULATION. DURING SINGLE ZONE VAV COOLING, THE UNIT SHALL MAINTAIN ZONE COOLING SETPOINT BY MODULATING THE SUPPLY FAN SPEED MORE OR LESS TO MEET ZONE LOAD DEMAND, AND THE UNIT SHALL MAINTAIN DISCHARGE TEMPERATURE TO THE DISCHARGE COOLING SETPOINT BY MODULATING ECONOMIZER IF AVAILABLE AND STAGING DX COOLING.REFRIGERANT CIRCUIT
- SHALL OFFER THERMAL EXPANSION AS A STANDARD. UNIT SHALL BE PROVIDED WITH PHASE MONITORING.
- PROVIDE 10' OF DUCT LINER UPSTREAM AND DOWNSTREAM OF UNIT TO REDUCE UNIT NOISE. NOTE: DUCTWORK SHOWN ON PLANS REPRESENTS MINIMUM INSIDE DIMENSION REQUIREMENTS.
- 10. REFER TO SCHEDULES AND THESE DOCUMENTS FOR ADDITIONAL REQUIRED ACCESSORIES, DISCHARGE, AND MOUNTING REQUIREMENTS.

VRF UNITS

- BASIS OF DESIGN SHALL REPRESENT THE QUALITY OF UNITS.
- MAJOR COMPONENTS INCLUDE: EVAPORATOR AND CONDENSER UNITS.
- CONTROLS UNITS SHALL BE CONTROLLED BY MANUFACTURER'S PROPRIETARY TEMPERATURE CONTROL SYSTEM.
- INSTALL PER MANUFACTURER'S RECOMMENDATIONS. APPROVED MANUFACTURER: MITSUBISHI

RADIANT CEILING PANEL

- BASIS OF DESIGN SHALL REPRESENT QUALITY OF UNIT.
- CRIMPED PANEL IS MADE OF 22 GAUGE GALVANIZED STEEL WITH A WHITE BAKED-ON POWDER COAT FINISH. EACH PANEL CONTAINS 2" OF HIGH TEMPERATURE/ DENSITY MINERAL WOOL INSULATION.
- HEAT CAN BE INSTALLED IN SUSPENDED HARD LID CEILINGS OR CAN BE SURFACE OR RECESSED MOUNTED. PROVIDE APPROPRIATE MOUNTING FRAMES.
- 4. PROVIDE WITH REMOTE MOUNTED ROOM STAT. COORDINATE CONTROL WIRE
- LENGTH WITH MANUFACTURER. APPROVED MANUFACTURER: INDEECO.

DUCT HEATERS

- HEATING ELEMENT SHALL BE OPEN COIL. 80/20 NICKEL/CHROMIUM. STAINLESS TERMINALS SHALL EXTEND AT LEAST 1" INTO AIRSTREAM. COILS SHALL BE SUPPORTED BY CERAMIC BRACKETS
- HEAT FRAMES AND TERMINALS SHELL BE MADE OF CORROSION-RESISTANT STEEL. UNLESS INDICATED ON SCHEDULE, TERMINAL BOX SHALL BE NEMA 1.
- HEATERS SHALL BE RATED FOR THE VOLTAGE, PHASE, AND NUMBER OF STAGES
- LISTED ON SCHEDULE. ALL INTERNAL WIRING SHALL BE COPPER.
- HEATERS SHALL BE FURNISHED WITH THE CONTROLS OPTION LISTED IN THE SCHEDULE. HEATERS SHALL BE PROVIDED WITH AN AIRFLOW PROVING SWITCH.
- UNLESS INDICATED ON THE PLANS, DUCT HEATERS SHALL BE PROVIDED WITH
- DUCT THERMOSTATS COMPATIBLE WITH CONTROLS OPTION. INSTALL WITH 4' STRAIGHT DUCT BEFORE DUCT HEATER AND 2' AFTER. ENSURE THAT CONTRACTOR SHOP DRAWINGS TAKE THESE MEASUREMENTS INTO
- ACCOUNT BEFORE INSTALLATION. FINAL SIZE OF THE DUCT HEATER SHALL NOT FALL BELOW MINIMUM ALLOWABLE DUCT HEATER VELOCITIES AS DESCRIBED IN THE INSTALLATION/ OPERATIONS MANUAL. PROVIDE PROPER SIZE TO ENSURE THAT MINIMUM VELOCITIES ARE MET.
- APPROVED MANUFACTURERS: A. INDEECO

COPPER LINESE1

- COPPER LINESET SHALL BE USED FOR REFRIGERANT PIPING. SIZE OF PIPING SHALL BE PER THE MANUFACTURER'S RECOMMENDATION AND
- REQUIREMENTS MATERIALS FOR COPPER LINESET SHALL BE SOFT ANNEALED COPPER. CONTRACTOR TO SELECT END FINISHING TO SUIT INSTALLATION AND
- MANUFACTURER'S RECOMMENDATION. LINE SET SHALL BE CONTINUOUS FROM OUTDOOR UNIT TO INDOOR UNIT. SUCH THAT THERE ARE NO JOINTS IN FIRE RATED CORRIDOR OR EXIT PASSAGE WAYS.
- NO REFRIGERANT PIPE SHALL BE INSTALLED IN STAIR WELLS. INSTALL PER IMC CHAPTER 11.

PLASTIC PIPE, DWV & SEWER

PVC PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS SHALL BE PER IAPMO INSTALLATION STANDARD (IS) 09-03, "PVC BUILDING DRAIN, WASTE, AND VENT PIPE AND FITTINGS.'

PIPING SYSTEM SPECIALTIES

- WHICH THE VALVES ARE INSTALLED
- PROVIDE SENSORS WHERE INDICATED ON THE PLANS. PROVIDE DIELECTRIC BREAKS BETWEEN DISSIMILAR METALS.

VALVES

- ARE INSTALLED.
- END OF EACH THREADED VALVE.

<u>PIPE TESTING</u>

- 7. TEST GAUGES SHALL BE PER UPC 318.

REFRIGERANT PIPE INSULATION

- SHALL BE PROVIDED WITH LINESET.
- INSULATION THICKNESSES SHALL COMPLY WITH WSEC.
- BUILDING ENVELOPE OR AREAS THAT ARE SUBJECT TO DAMAGE.

SPECIALITY PIPE SYSTEMS SHALL BE CONSTRUCTED OF MATERIALS THAT ARE COMPATIBLE WITH THE TYPE OF PIPING MATERIAL AND FLUIDS IN THE SYSTEM. THEY SHALL BE RATED FOR THE TEMPERATURES AND PRESSURES OF THE SYSTEMS IN

VALVES SHALL BE CONSTRUCTED OF MATERIALS THAT ARE COMPATIBLE WITH THE TYPE OF PIPING MATERIAL AND FLUIDS IN THE SYSTEM. VALVES SHALL BE RATED FOR THE TEMPERATURES AND PRESSURES OF THE SYSTEMS IN WHICH THE VALVES

LOCATE AND ORIENT VALVES TO PERMIT PROPER OPERATION AND ACCESS FOR MAINTENANCE OF PACKING, SEAT, AND DISK, GENERALLY, LOCATE VALVES IN OVERHEAD PIPING IN HORIZONTAL POSITION. PROVIDE A UNION ADJACENT TO ONE

WASTE AND VENT PIPING SHALL BE TESTED WITH AT LEAST 10 FOOT HEAD OF WATER FOR A PERIOD OF NOT LESS THAN 15 MINUTES. TESTS SHALL BE PER UPC CHAPTER

REFRIGERANT PIPING SHALL BE TESTED FOR A PERIOD OF NOT LESS THAN 60 MINUTES AT A PRESSURE NOT LOWER THAN THE DESIGN PRESSURES OR THE SETTING OF THE PRESSURE RELIEF DEVICES. TEST PER IMC SECTION 1110.

RUBBER OR FLEXIBLE FOAM STYLE INSULATION FOR REFRIGERANT PIPING SYSTEMS

PROVIDE PER THE WSEC AND THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.

LINESET PIPING EXPOSED TO WEATHER SHALL BE PROTECTED FROM DAMAGE. PROVIDE ARMAFLEX SHIELD OR EQUAL IN AREAS THAT ARE EXTERIOR TO THE

City of Puyallup Development & Permitting Services ISSUED PERMIT					
Building	Planning				
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MIDDLEBROOK ENGINEERING, LLC	253.765.8292
ROUTT MID SOF WASHING SOF WASH	9/18/2024
HEETTILE SPECIFICATIONS	
PROJECT PROJECT STEP BY STEP ELC 3303 8TH AVE SE NOTION, WA 98372 PUYALLUP, WA 98372	DATE 9/18/2024
DRAWN BY: CHECKED BY: PROJECT MANAGER: THESE DOCUMENTS ARE THE PROP MIDDLEBROOK ENGINEERING, LLC A COPIED, OR REPRODUCED WITHOUT PERMISSION.	RPG BSM RC ERTY OF ND SHALL NOT BE FWRITTEN
Sheet MH8	801

City of Puyallup Development & Permitting Services ISSUED PERMIT					
Building	Planning				
Engineering	Public Works				
Fire	Traffic				

ELECTRICAL SYMBOLS LEGEND

A B	DETAIL/SECTION IDENTIFICATION: A = DETAIL/SECTION LETTER, B = SHEET NUMBER WHERE DETAIL/SECTION IS DRAWN.	S	LIGHT SWITCH 4 = FOUR WAY
A B	EQUIPMENT CONNECTION CALLOUT. A,B EQUAL EQUIPMENT IDENTIFICATION ON MECHANICAL OR KITCHEN EQUIPMENT CONNECTION SCHEDULES. VERIFY EXACT EQUIPMENT REQUIREMENTS ON SHOP DRAWING EQUIPMENT SUBMITTALS PRIOR TO	6 -	a, b, c, ETC = N FIXTURES COI
	ROUGH-IN. DO NO ROUGH-IN FOR EQUIPMENT PRIOR TO REVIEW OF SUBMITTALS. REPORT ANY DIFFERENCES IN REQUIREMENTS TO ENGINEER IN WRITING.	51	EQUAL.
	CONDUIT CONCEALED. HASH MARKS INDICATE NUMBER OF #12 CONDUCTORS IN CODE SIZE CONDUIT. NO HASH MARKS INDICATES 2-#12 CONDUCTORS PLUS GROUND IN 3/4" CONDUIT, LONG HASH MARKS INDICATES NEUTRAL CONDUCTOR. (INDICATES GROUND CONDUCTOR.	Sy	AUTOMATIC/M SWITCH. SEN PROGRAMMEI
$\langle \nabla$	FLEXIBLE RACEWAY, PROVIDE GROUND CONDUCTORS PER NEC.	Sydl	AUTOMATIC/M PHOTOSENSO
>	A-1,3 ADJACENT TO ARROW INDICATES HOMERUN OF CONDUCTORS IN CONDUIT FOR CIRCUITS 1 AND 3 TO PANEL "A".	-	PROGRAMME
\otimes	EXIT LIGHT WITH BATTERY, UNIVERSAL MOUNTING.	Sм	WIRELESS NE WAY.
	EMERGENCY FLOODLIGHT WITH BATTERY.		WIRELESS INF
	LED LIGHT FIXTURE, SURFACE MOUNTED ON CEILING.	OS	DUAL TECHNO
	LED LIGHT FIXTURE, RECESS MOUNTED IN CEILING.		POWER PACK
	LED LIGHT FIXTURE, WITH EMERGENCY BATTERY PACK.	(PS)	DAYLIGHT PHO
\Box	LED LIGHT FIXTURE, WALL MOUNTED.		DISCONNECT
— —1	LED STRIP LIGHT FIXTURE. SURFACE MOUNTED OR CHAIN HUNG FROM CEILING.	\Box	FUSED DISCO
0	LED DOWNLIGHT FIXTURE.	Sm	
다	LED WALL MOUNT LIGHT FIXTURE.	TTR	NEC AND MAN
J	JUNCTION BOX.		TELEPHONE T RESISTANT TF
A1	LIGHT FIXTURE TYPE. A1 = SPECIFIC LIGHTING FIXTURE REFERENCED ON LIGHTING FIXTURE SCHEDULE.	\bigtriangledown	FLUSH MOUNT PROVIDE 4-11/
PC	PHOTOCELL, MOUNT ON ROOF FACING NORTH.		ACCESSIBLE (
	POWER PANEL	Т	TRANSFORME REQUIRED BY
ф	DUPLEX RECEPTACLE 20A, 125 VOLT WALL MOUNTED AT 18 INCHES AFF.G = GROUND FAULT INTERRUPTING, T = TAMPERPROOF.	Ŧ	GROUND PER
⇔	DUPLEX RECEPTACLE 20A, 125 VOLT WALL MOUNTED HORIZONTALLY 2" ABOVE	F	MANUAL FIRE
₼	COUNTERTOP BACKSPLASH TO THE BOTTOM OF THE RECEPTACLE COVERPLATE.	XX	FIRE ALARM H
₩	FOURPLEX RECEPTACLE 20A, 125 VOLT, WALL MOUNTED AT 16 INCHES AFF.		FIRE ALARM H
~	ONE UN-SWITCHED, WALL MOUNTED AT 18 INCHES AFF. U = USB / 120V, 20A DUPLEX RECEPTACLE.		FIRE ALARM M
固	DUPLEX RECEPTACLE 20A, 125 VOLT MOUNTED IN FLUSH FLOOR BOX WITH CARPET	-	SUBSCRIPT IN
		•	DOOR CONTA
	SURFACE WIREMOLD WITH ZUA, 125 VOLT RECEPTACLES ON 24 INCH CENTERS.	S	SMOKE DETEC
	SPECIAL RECEPTACLE. AMPERAGE AND VOLTAGE AS SHOWN.	H	HEAT DETECT
		DS	DUCT SMOKE

CH TOGGLE TYPE, SINGLE POLE, SUBSCRIPTS; 3 = THREE WAY, AY, D = DIMMER CONTROL, K = KEY OPERATED, P = PILOT LIGHT, NUMBER OF SWITCHES AT THE LOCATION AND SPECIFIC ONTROLLED. MOUNT AT 42 INCHES AFF.

HOUR TIMER SWITCH. SENSORWORX #SWX-843-12H OR

MANUAL OCCUPANCY SENSOR AND SINGLE POLE TOGGLE NSORWORX #SWX-123 OR EQUAL. SWITCH SHALL BE ED FOR MANUAL ON, AUTOMATIC OFF.

MANUAL OCCUPANCY SENSOR SWITCH WITH DAYLIGHT OR. SENSORWORX #SWX-133-D OR EQUAL. SWITCH SHALL BE ED FOR MANUAL ON, AUTOMATIC OFF.

ETWORKED LIGHT SWITCH. D=DIMMER, 3=THREE WAY, 4=FOUR

IPUT/ OUTPUT POWER PACK MODULE FOR LIGHT CONTROLS.

IOLOGY AUTOMATIC OCCUPANCY SENSOR DEVICE WITH K (WATT STOPPER #DT-300).

IOTOSENSOR

SWITCH

ONNECT SWITCH WITH FUSES.

ED TOGGLE SWITCH WITH OVERLOAD HEATER(S), SIZE PER ANUFACTURERS REQUIREMENTS.

TERMINAL BOARD. 4'x8'x3/4" EXTERIOR GRADE, FIRE REATED PLYWOOD

NTED DUAL TELEPHONE/DATA OUTLET, MOUNT AT 18" AFF. 1/16" SQUARE BOX WITH 1-1/4" CONDUIT AND PULL STRING TO E CEILING SPACE.

IER. SIZE AND TYPE AS NOTED. PROVIDE GROUNDING AS Y NEC TABLE 250.102(C)(1).

R NEC.

E ALARM PULL STATION. WALL MOUNT AT 42 INCHES AFF.

HORN WALL MOUNT AT 80 INCHES AFF.

HORN/ADA STROBE. WALL MOUNT AT 80 INCHES AFF. NDICATES CANDELA LEVEL.

MINI ADA STROBE, WALL MOUNT AT 80 INCHES AFF. NDICATES CANDELA LEVEL.

ACT 6" IN FROM STRIKE.

ECTOR

TOR

FS

TS

XXX

(E)

WP

DETECTOR

WATER SPRINKLER SYSTEM FLOW SWITCH.

WATER SPRINKLER SYSTEM TAMPER SWITCH.

AVAILABLE FAULT CURRENT

TRANSIENT VOLTAGE SURGE SUPPRESSION. TPS3-X-11-15-D2, SIEMENS OR EQUAL. "X" = VOLTAGE/ PHASE (VARIES), SEE POWER RISER DIAGRAM AND/OR PANEL SCHEDULES FOR VOLTAGE AND PHASE REQUIREMENTS.

WEATHERPROOF

EXISTING

JEFF BROWN ARCHITECTURE 12181 C STREET SOUTH TACOMA, WA 98444

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STEP BY STEP EARLY LEARNING CENTER 3303 8TH AVE SE, BLDG E PUYALLUP, WA 98372

PROJECT NUMBER 21015

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SHEET TITLE

ELECTRICAL SYMBOLS LEGEND

SHEET #

E0.0

TYPE	MANUFACTURER	LAMPS	<u>WATTS</u>	MOUNTING	TYPE	MANUFACTURER	Ī
B1	GOTHAM LIGHTING EV04-35/15-AR-FL-LSS-MWD- MVOLT-GZ10	LED	15	RECESSED	L5	PRUDENTIAL LIGHTING O-30-LED35-SO-FWA-TMW-D1- SC-UNV-CA48-X3-DM01	L
B1X	SAME AS TYPE B1 WITH EMERGENCY BATTERY PACK				L5X	SAME AS TYPE L5 WITH EMERGENCY BATTERY PACK	
B2	GOTHAM LIGHTING EVO4PC-35/20-AR-LSS-MWD- MVOLT-GZ10-JBX-PCAN45-SXX	LED	20	PENDANT	L5A	PRUDENTIAL LIGHTING O-20-LED35-SO-FWA-TMW-D1- SC-UNV-CA48-X3-DM01	L
C1	KUZCO LIGHTING VL47225	LED	31	WALL MOUNTED	L5AX	SAME AS TYPE L5 WITH EMERGENCY BATTERY PACK	
C2	AXIS LIGHTING BMPRLED-1000-80-35-SO-FL-X-W- 120-DP-1-DF-X	LED	37 / 4FT	WALL MOUNTED	L6	PRUDENTIAL LIGHTING OLV-40-LED35-SO-FWA-TMW-D1- SC-UNV-CA48-X3-DM01	L
C3	BARN LIGHT - SYDNEY LED SERIES G-ULS12-CC-G26-20FT-X-X-CAP-FST- X-LED16.8-4000K	LED	17	WALL MOUNTED AT 7' AFF	L6X	SAME AS TYPE L6 WITH EMERGENCY BATTERY PACK	
E1	TMS LIGHTING O-17W-35K-120V-WM-X-EMC-G2	LED	17	WALL MOUNTED	L7	AXIS LIGHTING BMRLED-1000-80-35-FL-4-W-120- DP-1-TB	L
E1X	SAME AS TYPE E1 WITH EMERGENCY BATTERY PACK		ممرر	كرمممم	L7X	SAME AS TYPE L7 WITH EMERGENCY BATTERY PACK	
E2	GOTHAM LIGHTING EVO6-40/20-AR-FL-LSS-MWD- MVOLT-GZ10	LED	20	RECESSED	L8	PRUDENTIAL LIGHTING O-40-LED35-HO-FWA-TMW-D1- SC-UNV-CA48-X3-DM01	L
E2X	SAME AS TYPE E2 WITH EMERGENCY BATTERY PACK				L8X	SAME AS TYPE L8 WITH EMERGENCY BATTERY PACK	\sim
E3	PERFORMANCE IN LIGHTING MIMIK 10 POST - #304619 EG000027	LED	10	POST	P1	TMS LIGHTING SM-10-32LED-40K-120-X-00-LNC-PC	L
E4	KICHLER 15805-BKT-4W-15601BKT	LED	4	POST	P1X	SAME AS TYPE P1 WITH	\sim
E5	HK LIGHTING ZX20-1R1-2-A-ABL-120V-SL-X- MHJB-12-BRZ	LED	11	POST	X1 X2	LITHONIA LES1GELN 120/277 SAME AS X1	I
L1	AXIS LIGHTING TBS3DILED-300-1000-80-35-SO- SO-8-W-120-DP-1-CASLX	LED	83	SUSPENDED	X3	WITH DUAL FACE LITHONIA ELM4 N	I
L1X	SAME AS TYPE L1 WITH EMERGENCY BATTERY PACK						
L2	DAY-BRITE LIGHTING FSSEZ-4-40L-UNV	LED	32	SURFACE			_
L2X	SAME AS TYPE L2 WITH EMERGENCY BATTERY PACK						De
L3	LINMORE LED ES40P-A1-08K-2MS-35-80+-FR-LV- CRM-10V	LED	50	PENDANT			
L3X	SAME AS TYPE L3 WITH EMERGENCY BATTERY PACK						
L4	PRUDENTIAL LIGHTING P4018-LED35-SO-FWA-TMW-D1- SC-UNV-CA48-X3-DM01	LED	39	PENDANT			
L4X	SAME AS TYPE L4 WITH EMERGENCY BATTERY PACK						
L4U	PRUDENTIAL LIGHTING P4018-LED35-SO-FWA-TMW-D9- SC-UNV-CA48-X3-DM01	LED	39	PENDANT			

LIGHTING FIXTURE SCHEDULE

LAMPS	<u>WATTS</u>	MOUNTING
LED	76	PENDANT
LED	47	PENDANT
LED	133	PENDANT
LED	37 / 4FT	RECESSED
LED	139	PENDANT
LED	32	12' ROUND POLE
INCLUDED	3	UNIVERSAL
INCLUDED	3	UNIVERSAL

WALL

City of Puyallup Development & Permitting Services ISSUED PERMIT						
Building	Planning					
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Fire F W	Traffic					

INCLUDED 3

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STEP BY STEP EARLY LEARNING CENTER 3303 8TH AVE SE, BLDG E PUYALLUP, WA 98372

PROJECT NUMBER 21015

DRAWING TYPE

SHEET TITLE

FIXTURE SCHEDULE

_____ ____ _____ ____

SHEET #

EO.1

GENERAL NOTES:

- INFORMATION AND INCLUDE COSTS FOR THIS WORK IN THE BID.

- EQUIPMENT SPECIFIED OR FURNISHED THAT IS NOT UL LABELED.

- OCCUPANTS.
- 24 HOURS FOR SECURITY PURPOSES.
- AND 4:00PM TO 10:00PM
- EQUIPMENT SPECIFIED OR FURNISHED THAT IS NOT UL LABELED.

- COORDINATE WITH MECHANICAL CONTRACTOR.
- WITH MECHANICAL CONTRACTOR.

1. ELECTRICAL REQUIREMENTS ARE NOT LIMITED TO ELECTRICAL DRAWINGS AND SPECIFICATIONS. THERE IS ADDITIONAL ELECTRICAL WORK REQUIRED TO BE INCLUDED IN THE BID, INDICATED ON ARCHITECTURAL, LANDSCAPE, CIVIL, MECHANICAL, AND DRAWINGS. ADDITIONAL ELECTRICAL WORK REQUIRED IN THE BID IS ALSO LOCATED IN THE SPECIFICATIONS. CONTRACTOR SHALL REVIEW ALL ARCHITECTURAL, CIVIL, LANDSCAPE, AND MECHANICAL SPECIFICATIONS FOR ADDITIONAL ELECTRICAL

2. CONTRACTOR SHALL INCLUDE IN HIS BID LIGHTING CONTROL COMMISSIONING COSTS. CONTRACTOR SHALL PROVIDE THE OWNER A COMPLETE REPORT OF TEST PROCEDURES AND RESULTS INDICATING ALL LIGHTING CONTROLS HAVE BEEN TESTED, ADJUSTED AND OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS AND THE WASHINGTON STATE NONRESIDENTIAL ENERGY CODE, SECTION C408. CONTRACTOR SHALL PROVIDE A SPREAD SHEET INDICATING ROOM NUMBER, TYPE OF CONTROL (OCCUPANCY SENSOR, LOW VOLTAGE, ETC.), VERIFICATION OF PROPER WORKING ORDER, AND ADJUSTMENTS MADE.

3. CONTRACTOR SHALL CONCEAL CONDUIT WHEREVER POSSIBLE. CONTRACTOR SHALL SUBMIT TO ARCHITECT FOR REVIEW AND APPROVAL, ALL ROUTINGS OF ANY EXPOSED CONDUIT PRIOR TO ROUGH-IN. NO EXPOSED CONDUIT SHALL BE INSTALLED UNTIL APPROVAL IS PROVIDED IN WRITING FROM THE ARCHITECT. ALL EXPOSED CONDUIT SHALL BE ROUTED IN A NEAT AND WORKMANSHIP LIKE MANNER.

4. CONTRACTOR SHALL PROVIDE A HOT-WIRE OF THE SAME CIRCUIT FOR ALL LIGHT FIXTURES WITH BATTERY PACKS, SO THAT THE BATTERY PACK IS BEING CHARGED AT ALL TIMES.

5. CONTRACTOR SHALL SEE ARCHITECTURAL DRAWINGS FOR THE FIRE WALL SEPARATIONS. CONTRACTOR SHALL PROVIDE CAULKING, SEAL-OFFS, ETC. AS REQUIRED BY CODE TO RETAIN FIRE WALL SEPARATION RATINGS.

6. CONTRACTOR SHALL INCLUDE IN THE BID ALL COSTS TO HAVE A DEPARTMENT OF LABOR AND INDUSTRIES APPROVED FIRM TO EVALUATE THE INSTALLATION, SAFETY, AND COMPLIANCE WITH CODE AS REQUIRED PER W.A.C. 296-46B-901. FOR ANY

7. ALL WALL PENETRATIONS SHALL BE NEATLY CORE-DRILLED, CAULKED AND SEALED TO MAINTAIN FIRE, AND WATERPROOF RATING. PATCH, REPAIR, AND PAINT TO MATCH EXISTING.

8. ALL JANITOR CLOSETS, STORAGE ROOMS, MECHANICAL/ELECTRICAL ROOMS, AND BACK OF HOUSE SPACES WILL BE PROVIDED WITH A 0-12 HOUR DIGITAL TIMER SWITCH. THE TIMER SWITCH SHALL BE SET TO 1 HOUR. LIGHTS SHALL BLINK THREE TIMES 1 MINUTE PRIOR TO TURNING OFF TO WARN OCCUPANTS. OCCUPANT MAY ACTIVATE THE SWITCH FOR ADDITIONAL TIME.

9. ALL SINGLE OCCUPANT OFFICES, SMALL CONFERENCE ROOMS, WORK ROOMS, COPY ROOMS, AND SIMILAR SPACES SHALL BE PROVIDED WITH OCCUPANCY SENSORS. OCCUPANCY SENSORS SHALL TURN LIGHTS OFF AFTER 30 MINUTES OF NOT SENSING

10. LARGE OFFICE SPACES SHALL BE CONTROLLED VIA A LOW VOLTAGE CONTROL PANEL WITH AN INTEGRAL TIME CLOCK. THE WINDOW (DAYLIGHTING) ZONES SHALL BE CIRCUITED AND CONTROLLED SEPARATELY FROM THE REMAINDER OF THE ROOM BY SEPARATE SWITCHES. THE TIME CLOCK SHALL SWEEP THE LIGHTS AT 10:00PM AND 12:00AM.

11. CORRIDORS, LOBBIES, ENTRIES, AND SIMILAR SPACES WILL BE CONTROLLED VIA THE LOW VOLTAGE CONTROL PANEL WITH INTEGRAL TIME CLOCK. THESE SPACES WILL TURN ON AT 4:00AM AND TURN OFF AT 12:00AM. SELECT FIXTURES WILL BE LEFT ON

12. EXTERIOR LIGHTING WILL BE CONTROLLED VIA THE LOW VOLTAGE CONTROL PANEL WITH INTEGRAL TIME CLOCK AND PHOTOSENSOR. THE PHOTOSENSOR TAKES PRECEDENCE ON THE LIGHTING CONTROL. IF THE SENSOR MEASURES ADEQUATE NATURAL LIGHT, ALL EXTERIOR LIGHTING WILL BE OFF. PARKING AREA LIGHTING WILL BE CONTROLLED VIA THE TIME CLOCK TO BE ON FROM 4:00AM TO 8:00AM AND 4:00PM TO 12:00AM. BUILDING PERIMETER LIGHTS WILL BE ON FROM 6:00AM TO 8:00AM

13. CONTRACTOR SHALL INCLUDE IN THE BID ALL COSTS TO HAVE A DEPARTMENT OF LABOR AND INDUSTRIES APPROVED FIRM TO EVALUATE THE INSTALLATION, SAFETY, AND COMPLIANCE WITH CODE AS REQUIRED PER W.A.C. 296-46B-901. FOR ANY

14. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 1-(800)-424-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR MAINTAINING ALL LOCATE MARKS ONCE THE UTILITIES HAVE BEEN LOCATED.

15. CONTRACTOR SHALL PROVIDE TRENCHED 1"C-FIRE ALARM CONDUCTORS AND CONNECT THE POST INDICATOR VALVE TO THE FIRE ALARM SYSTEM FOR MONITORING. SEE CIVIL AND MECHANICAL DRAWINGS FOR LOCATIONS.

16. CONDUIT (OR PLENUM RATED CABLE WHERE ALLOWED) AND WIRING IS NOT SHOWN ON THE ELECTRICAL DRAWINGS FOR THE SIGNAL/SYSTEM DEVICES (FIRE ALARM, SECURITY, AND CAMERA) CONTRACTOR SHALL PROVIDE MANUFACTURER'S REQUIRED WIRING IN MINIMUM 3/4"C TO ALL SIGNAL/SYSTEM DEVICES OR PLENUM RATED CABLE WHERE ALLOWED BY CODE.

17. CONNECT FIRE/SMOKE DAMPERS SUPPLIED BY MECHANICAL CONTRACTOR AND POWERED BY 120 VAC FROM MECHANICAL PANEL THRU A CONTROL RELAY SUCH THAT DAMPERS ARE POWERED OPEN WHEN CONTROL RELAY IS ENERGIZED AND DAMPERS ARE CLOSED WHEN PANEL IS IN ALARM. PROVIDE SMOKE DETECTOR OR DUCT SMOKE DETECTOR WITHIN 5' OF EACH FIRE/SMOKE DAMPER. SEE MECHANICAL PLANS. SCHEDULES AND SPECIFICATIONS FOR FIRE/SMOKE DAMPER LOCATIONS.

18. CONNECT ALL DOOR HOLDERS AND DOOR CLOSERS SUPPLIED WITH DOOR HARDWARE. THESE ITEMS SHALL BE POWERED BY THE FIRE ALARM CONTROL PANEL WITH 24V THRU A CONTROL RELAY SUCH THAT ALL DOORS RELEASE TO CLOSE WHEN PANEL IS IN ALARM. PROVIDE A SMOKE DETECTOR WITH AUXILIARY RELAY ON EACH SIDE OF DOOR. SEE ARCHITECTURAL PLANS, SCHEDULES AND SPECIFICATIONS FOR FIRE DOOR LOCATIONS.

19. PROVIDE FIRE ALARM CONDUIT AND WIRE CONNECTION FOR SHUTDOWN OF AIR HANDLING UNIT(S) AND EXHAUST FANS FOR SHUTDOWN ON ALARM AS REQUIRED PER THE UNIFORM MECHANICAL CODE. PROVIDE MONITOR/CONTROL MODULES FOR EXHAUST FANS LOCATED WITHIN 3 FEET OF FAN CONTROLLER, THRU ENERGIZED CONTROL RELAY SUCH THAT THE EXHAUST FANS SHUTDOWN UPON ALARM. SEE MECHANICAL PLANS, SCHEDULES AND SPECIFICATIONS FOR LOCATIONS. COORDINATE

20. FURNISH DUAL CONTACT DUCT SMOKE DETECTOR, INCLUDING SAMPLING TUBE, TO MECHANICAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL LOCATE AND MOUNT THE DUCT SMOKE DETECTOR ENCLOSURE/SAMPLING TUBE FOR FIRE ALARM SYSTEM SHUTDOWN. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR SAMPLING TUBE LENGTH AND SIZE REQUIRED. ELECTRICAL CONTRACTOR SHALL PROVIDE NECESSARY CONDUIT (OR PLENUM RATED CABLE WHERE ALLOWED), WIRING, REMOTE INDICATORS AND ACCESSORIES TO SHUTDOWN EACH UNIT UPON ACTIVATION OF THAT UNIT'S SMOKE DETECTOR(S) REQUIRED PER THE MECHANICAL CODE. CONNECTIONS SHALL BE HARDWIRED, INDEPENDENT OF ANY CONTROL SYSTEM LOGIC, SO FAILURE OF THE CONTROL SYSTEM OR LOSS OF CONTROL SYSTEM POWER WILL NOT PREVENT THE FIRE ALARM SYSTEM, SHUTDOWN OF THE UNIT. IN ADDITION TO SHUTTING DOWN THE UNIT WITH THE ALARMED SMOKE DETECTOR, ALL EQUIPMENT INTERLOCKED OR SERVED BY THAT UNIT SHALL BE OFF. OTHER UNITS SHALL ALSO SHUT OFF TO AVOID BUILDING PRESSURE DIFFERENTIALS AND SIMILAR UNDESIRABLE EFFECTS. UPON RESET OF ALARMED DEVICE, SYSTEM SHALL AUTOMATICALLY RETURN TO NORMAL. MECHANICAL CONTRACTOR TO PROVIDE TIME DELAY START OF EQUIPMENT TO PREVENT EXCESS LOAD STARTING AT THE SAME TIME. CONTRACTOR SHALL PROVIDE CONDUIT AND WIRE AND CONNECT TO FIRE ALARM CONTROL PANEL. SEE MECHANICAL DRAWINGS, SCHEDULES AND SPECIFICATIONS FOR LOCATIONS.

21. CONTRACTOR SHALL PROVIDE CONDUIT, WIRE, AND CONNECT THE EXTERIOR FIRE ALARM BELL FURNISHED BY THE SPRINKLER CONTRACTOR. THE SPRINKLER SYSTEM IS A DESIGN BUILD SYSTEM. COORDINATE FINAL LOCATION WITH THE SPRINKLER CONTRACTOR. FOR 24V SPRINKLER BELLS, CONNECT THE BELL TO THE FIRE ALARM PANEL. FOR 120V SPRINKLER BELLS, CONNECT TO A DEDICATED SPARE 120V CIRCUIT.

City of Puyallup Development & Permitting Services ISSUED PERMIT					
Building	Planning				
Engineering	Public Works				
Fire	Traffic				

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PROJECT NUMBER 21015

DRAWING TYPE

ISSUE DATE	ISSUE DESCRIP.	NO.

SHEET TITLE

GENERAL **ELECTRICAL NOTES**

SHEET #

E0.2

PROJECT NUMBER 21015

DRAWING TYPE

	ISSUE DATE	ISSUE DESCRIP.	NO.
SF	HEET TITLE		

ELECTRICAL SITE PLAN

SHEET #

E1.0

1. SEE SHEET E0.2 FOR ALL APPLICABLE GENERAL NOTES.

City of Puyallup Development & Permitting Services ISSUED PERMIT		
Building	Planning	
Engineering	Public Works	
Fire of W	Traffic	

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SHEET TITLE

MAIN FLOOR LIGHTING PLAN

SHEET #

E2.0

1. SEE SHEET E0.2 FOR ALL APPLICABLE GENERAL NOTES.

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		·

SHEET TITLE

E3.0

NEW PSE TRANSFORMER-

EXTERIOR | INTERIOR

POWER RISER DIAGRAM

NOT TO SCALE

JEFF BROWN ARCHITECTURE

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SHEET TITLE

POWER RISER DIAGRAM

SHEET #

E4.0

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	Traffic

GENERAL NOTES

- 1. ALL WORK PERFORMED SHALL BE DONE IN STRICT ACCORDANCE TO ALL APPLICABLE MECHANICAL, BUILDING, ENERGY, PLUMBING AND LOCAL CODES, WITH AMENDMENTS.
- 2. WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
- 3. COORDINATE MECHANICAL WORK WITH ELECTRICAL, ARCHITECTURAL, STRUCTURAL, CIVIL AND LANDSCAPE WORK SHOWN ON OTHER CONTRACT DOCUMENTS. PROVIDE ADDITIONAL OFFSETS FOR COORDINATED INSTALLATION WHERE REQUIRED.
- COORDINATE HVAC, PLUMBING, AND FIRE PROTECTION WORK PRIOR TO INSTALLATION. DUCTWORK AND EQUIPMENT ACCESS TAKES PRECEDENCE OVER ALL PIPING EXCEPT GRAVITY SYSTEMS FOR AVAILABLE SPACE.
- 5. CONTRACTOR IS RESPONSIBLE FOR CONFORMANCE WITH ALL PLANS AND SPECIFICATIONS. IF A DISCREPANCY EXISTS BETWEEN ANY PLAN AND/OR SPECIFICATION, THE MORE STRINGENT REQUIREMENT SHALL BE FOLLOWED. CONTRACTOR IS ENCOURAGES TO SUBMIT RFI'S BEFORE BID TO CLARIFY PLAN AND SPECIFICATION INTENT.
- 6. COORDINATE EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
- 7. CLEAN THE JOB SITE DAILY AND REMOVE FROM THE PREMISES ANY DIRT AND DEBRIS CAUSE BY THE PERFORMANCE OF THE WORK INCLUDED IN THIS CONTRACT. BEFORE SUBSTANTIAL COMPLETION, CLEAN EQUIPMENT, FIXTURES, EXPOSED DUCTS, PIPING AND SIMILAR ITEMS.
- 8. PROVIDE EQUIPMENT THAT FITS INTO THE SPACE ALLOTTED AND ALLOWS ADEQUATE ACCEPTABLE CLEARANCE FOR INSTALLATION, REPLACEMENT, SERVICING, AND MAINTENANCE. COORDINATE WITH OTHER TRADES TO ENSURE NO CONFLICT WITH REQUIRED CLEARANCES.
- CONTRACTOR SHALL OBTAIN & PAY FOR ALL PERMITS AND CONSTRUCTION FEES. FURNISH FINAL CERTIFICATE TO OWNER SHOWING COMPLIANCE WITH CODE REQUIREMENTS.
- 10. ALL NEW PENETRATIONS IN CONCRETE SLABS REQUIRE CAREFUL COORDINATION WITH CAREFUL COORDINATION WITH EXISTING POST TENSION ELEMENTS OR REBAR. COORDINATE LOCATIONS OF NEW COVE DRILLS WITH ARCHITECT AND GC. FOLLOW CLEARANCE GUIDANCE FOR COVE DRILL TO STRUCTURAL ELEMENTS AS NOTED IN STRUCTURAL ELEMENTS AS NOTED IN STRUCTURAL DOCUMENTS. DO NOT IMPACT REBAR OR PAST TENSION ELEMENTS W/ CORE DRILL.
- 11. REFER TO TYPICAL DETAILS PROVIDED IN THIS DRAWING SET FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR CONFORMANCE WITH DETAILS.
- 12. A SHORT DASH IN A SCHEDULE TABLE CELL INDICATES THAT THE COLUMN HEADING IS NOT USED OR NOT APPLICABLE TO THAT SCHEDULED ITEM.
- 13. ALL PIPING & DUCTWORK IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD LID CEILING. COORDINATE WITH ARCHITECTURAL DOCUMENTS FOR FURRING & CHASE LOCATIONS & SIZES.
- 14. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 70 STANDARDS AND LOCAL REQUIREMENTS.
- 15. ALL FIELD WIRING SHALL REQUIRE AN ELECTRICAL PERMIT AND SHALL BE PERFORMED BY A LICENSED ELECTRICIAN.
- 16. COORDINATE ELECTRICAL REQUIREMENTS SHOWN ON PLANS AND SPECS WITH AVAILABLE VOLTAGES AND PANEL SPACE ONSITE AS WELL AS WITH ELECTRICAL ENGINEER AND ELECTRICAL CONTRACTOR. IF DISCREPANCIES EXIST BETWEEN THESE PLANS AND AVAILABLE ONSITE ELECTRICAL UTILITIES, DO NOT PURCHASE OR INSTALL EQUIPMENT BEFORE FIRST CONTACTING MEL AND RECEIVING INSTRUCTION.
- 17. PROVIDE 4" MINIMUM CONCRETE BASES (HOUSEKEEPING PADS) UNDER FLOOR MOUNTED MECHANICAL EQUIPMENT. THIS INCLUDES, BUT IS NOT LIMITED TO PUMPS, EXPANSION TANKS, WATER HEATERS, AND STORAGE TANKS. COMPLY WITH REQUIREMENTS FOR EQUIPMENT BASES AND FOUNDATIONS SPECIFIED IN DIVISION 03.
- 18. LOCATE VALVES, WATER HAMMER ARRESTERS, CLEANOUTS, DAMPERS, CONTROLS AND SIMILAR COMPONENTS SO THAT THEY ARE ACCESSIBLE. PROVIDE ACCESS DOORS FOR MECHANICAL EQUIPMENT INSTALLED BEHIND WALLS, ABOVE INACCESSIBLE CEILINGS AND BELOW FLOORS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT/ENGINEER.
- 19. ACCESS PANELS SHALL BE 16 GA, STEEL, FLUSH TYPE ACCESS DOOR WITH CONCEALED HINGE AND SLOT SCREWDRIVER TYPE CAM LATCH. PROVIDE FACTORY PRIMED IN PAINTED SURFACE AREAS FOR FIELD PAINTING. PROVIDE STAINLESS STEEL FOR ALL OTHER AREAS. PROVIDE UL LISTED AND LABELED DOOR WHERE FIRE-RESISTANCE RATING IS INDICATED ON DRAWINGS. ACCESS DOOR SHALL BE SIZED SO THAT ADJACENT EQUIPMENT IS ACCESSIBLE. PROVIDE ACUDOR, ELMDOR, MILCOR, OR APPROVED.
- 20. INSTALL TAG ON CEILING GRID FRAME TO INDICATE LOCATION AND TYPE OF EQUIPMENT THAT REQUIRES MAINTENANCE.

PLUMBING:

- DOMESTIC WATER TUBE, PIPE, FITTINGS, JOINING MATERIALS, SPECIAL TIES, PLUMBING EQUIPMENT, PLUMBING FIXTURES, PLUMBING FITTINGS AND ALL OTHER APPURTENANCES IN CONTACT WITH DRINKING WATER SHALL BE LEAD-FREE EXCEPT THOSE EXPLICITLY EXEMPTED IN SECTION 3874 OF THE SAFE WATER DRINKING ACT. LEAD-FREE SHALL MEAN (A) NOT CONTAINING MORE THAN 0.2 PERCENT LEAD WHEN USED WITH RESPECT TO SOLDER AND FLUX; AND (B) NOT MORE THAN A WEIGHTED AVERAGE OF 0.25 PERCENT LEAD WHEN USED WITH RESPECT TO WETTED SURFACES OF DOMESTIC WATER TUBE, PIPE, FITTINGS, JOINING MATERIALS, SPECIALTIES, PLUMBING EQUIPMENT, PLUMBING FIXTURES, AND PLUMBING FITTINGS.
- 2. PROVIDE WATER HAMMER ARRESTORS IN DOMESTIC WATER PIPING IN ACCORDANCE WITH PDI-WH201.
- 3. INSULATE HOT AND COLD WATER PER WASHINGTON STATE ENERGY CODE C403.10.3.
- 4. CIRCULATION SYSTEM SHALL AUTOMATICALLY DISABLE PUMP WHEN THE WATER IN THE CIRCULATION LOOP TEMPERATURE REACHES THE SUPPLY TEMPERATURE AND SHALL NOT ENABLE PUMP UNTIL CIRCULATION LOOP TEMPERATURE IS A MINIMUM OF 10 dF LOWER THAN SUPPLY TEMPERATURE PER WSEC C404.7.1.
- 5. DISCHARGE TEMPERATURE OF PUBLIC LAVATORIES SHALL BE 104 DEGREES FAHRENHEIT.
- 6. PROVIDE R-10 INSULATED SURFACE UNDER ELECTRIC WATER HEATERS.
- VALVES, EXPANSION FITTINGS/LOOPS, AND PIPING SPECIALTIES SHALL BE FULL SIZE OF PIPE UNLESS NOTED OTHERWISE.

NON-STRUCTURAL MECHANICAL COMPONENTS:

1. HANGERS AND SEISMIC BRACING FOR THE MECHANICAL SYSTEMS SHALL BE DESIGNED AND PROVIDED BY THE MECHANICAL CONTRACTOR. REFER TO CONTRACTOR SHOP DRAWINGS FOR LOCATIONS OF EQUIPMENT AND HUNG MECHANICAL SYSTEMS. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE SUPPORT SYSTEMS AND DESIGN LOADS FOR HUNG MECHANICAL SYSTEMS WITH THE GENERAL CONTRACTOR AND OTHER TRADES THAT MAY BE IMPACTED.

APPLICABLE CODES

AS ADOPTED BY THE CITY OF PUYALLUP, WA

INTERNATIONAL MECHANICAL CODE, IMC 2021 INTERNATIONAL BUILDING CODE, IBC 2021 WASHINGTON STATE ENERGY CODE, WSEC 2021 UNIFORM PLUMBING CODE, UPC 2021

AND ASSOCIATED WASHINGTON ADMINISTRATIVE CODE AMENDMENTS

DESIGN CONDITIONS

WATER PRESSURE 47 PSI

SCOPE OF WORK

- 1. COORDINATE LOCATION FOR BUILDING WATER SERVICE ROOM.
- 2. PROVIDE HUB DRAIN AND FLOOR DRAIN IN THE FIRE SPRINKLER ROOM.
- 3. PROVIDE A WATER HEATING PLANT SERVING THE ENTIRE BUILDING.
- 4. PROVIDE RAINLEADER AND OVERFLOW PIPE ROUTING.
- 5. PROVIDE FULL DWV DESIGN FOR ALL FIXTURES SHOWN ON PLAN.

ABBREVIATIONS

(F)

NTS

PH

PSF

PSI

PSIG

PVC

RPM

SD

SF

SPEC

STM

THRD

TYP

UPC

VOLT

VRF

VTR

VAV

VERT

W/

W.C.

WCO

WSEC

WSFU

WIN

W

UL

V

RP

NOT TO SCALE

POUNDS PER SQUARE FOOT

POUNDS PER SQUARE INCH

REVOLUTIONS PER MINUTE

UNDERWRITERS LABORATORY

VARIABLE REFRIGERANT FLOW

WASHINGTON STATE ENERGY CODE

WATER SUPPLY FIXTURE UNITS

UNIFORM PLUMBING CODE

POLYVINYL CHLORIDE

REDUCED PRESSURE

STORM DRAIN

SQUARE FEET

SPECIFICATION

THREADED

VENT/ VOLT

VENT TO ROOF VARIABLE AIR VOLUME

WATER COLUMN

WALL CLEANOUT

TYPICAL

VOLTAGE

VERTICAL

WITH

WASTE

WINTER

STEAM

POUNDS PER SQUARE INCH, GAUGE

PHASE

EXISTING

	EXISTING AMERICAN AIR RALANCE COUNCIL	SYMBOL
	AMERICAN AIR BALANCE COUNCIL ABOVE FINISHED FLOOR	
AFUE		<u> </u>
AG	AIR GAP	
AGA	AMERICAN GAS ASSOCIATION	SD-X, XX/XX
AHRI	AIR CONDITIONING, HEATING, & REFRIGERATION INSTITUTE	XXX CFM
AMP	AMPERAGE	\frown
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION,	(x)
	AND AIR CONDITIONING ENGINEERS	
ASME	AMERICAN SOCIETY OF MECHANICAL	
	ENGINEERS	
ASIM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	ب –
AW		
BA2		<u> </u>
	CATCH BASIN	, — — — ,
CEH		
CI	CAST IRON	<u>ب</u>
CO	CLEANOUT	
CONFIG	CONFIGURATION	ج W م
CSA	CANADIAN STANDARDS ASSOCIATION	
CW	COLD WATER	노
DB	DRY BULB	
DC	DOUBLE CHECK	ςς
DDC	DIRECT DIGITAL CONTROLS	,
dF		>
DFU		
DIA	DIAMETER	
		~~~
EFE	EFEICIENCY	~
ESP	EXTERNAL STATIC PRESSURE	<u>د ا</u>
FTC	ET CETERA	۲ ۲
FCO	FLOOR CLEANOUT	ر ر
FD	FLOOR DRAIN	, ,
FLA	FULL LOAD AMPS	· • ·
FM	FACTORY MANUAL	,
FPM	FEET PER MINUTE	
FS	FLOOR SINK	\bigcirc
FT	FEET	0
GA	GAUGE	0
GAL		
GPH	GALLONS PER HOUR	Ο
GPM	GALLONS PER MINITE	<u>工</u>
HB	HOSE BIBB	II c
HP	HORSEPOWER	
HR	HOUR	
HW	HOT WATER	$\widetilde{\mathbf{x}}$
HWC	HOT WATER CIRCULATING	
IBC	INTERNATIONAL BUILDING CODE	C
IFGC	INTERNATIONAL FUEL GAS CODE	
IMC	INTERNATIONAL MECHANICAL CODE	O
IN		
	IKUN PIPE SIZE	د۲
		, , ,
LD/LD0/#	I INFAR FEFT	Π
LVL	LEVEL	<u>د لا ر</u>
MAX	MAXIMUM	, ,
MBH	MILLIONS OF BRITISH THERMAL	у Х
	UNITS PER HOUR	
MC	MECHANICAL CONTRACTOR	
MCA	MAXIMUM CIRCUIT AMPACITY	
MERV	MINIMUM EFFICIENCY REPORTING VALUE	
MFG/MFR	MANUFACTURER	
MSS	ΜΑΛΙΜΟΜ ΟVER CORRENT FROTECTION ΜΔΝΙ ΙΕΔΩΤΙ IRER'S STANDARDIZATION SOCIETY	
NFRR		
NEMA	NATIONAL ELECTRICAL MANUFACTURERS	
	ASSOCIATION	
00	ON CENTER	
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	
NO	NUMBER	
NOM	NOMINAL	
NPCW	NON-POTABLE COLD WATER	
NPHW	NON-POTABLE HOT WATER	
NPHWC	NON-POTABLE HOT WATER CIRC	

DESCRIPTION		SYMBOL		DESCRIPTION
EQUIPMENT ABBREVIATION AND NUMBER (TAG)	-ر		<u> </u>	BRANCH-BOTTOM CONNECTION
AIR TERMINAL TYPE, SIZE, AND CFM	<u>ب</u>	一 璨一	 \$	3-WAY CONTROL VALVE
DETAIL NUMBER		C	 \$	CAP
DRAWING NUMBER WHERE DRAWN	-ب	— ×	<u> </u>	PIPE ANCHOR
DOMESTIC COLD WATER (CW)	۶		<u> </u>	PIPE GUIDE
DOMESTIC HOT WATER (HW)	-ب		 \$	FLEXIBLE CONNECTION (PIPE)
DOMESTIC HOT WATER CIRCULATING (HWC)	-ب		<u> </u>	REDUCER
SOIL, WASTE (S, W)		\boxtimes		SUCTION DIFFUSER
VENT (V), OR HIDDEN BELOW WASTE		0		FLOOR DRAIN
EXISTING PIPING				FLOOR FUNNEL DRAIN
DRAIN VALVE				FLOOR SINK
WALL HYDRANT				TRAP PRIMER WITH ACCESS PANEL
CROSSING LINES, NON CONNECTING		آسي ا		DRAIN
PIPE CONTINUATION		(T)		TEMPERATURE INDICATOR
FLOW DIRECTION		Œ		TEMPERATURE ELEMENT
PUMP		F		FLOW INDICATOR
WASTE/ VENT UP, SURFACE/ FLOOR CLEANOUT (SCO/FCO)	Ē		FLOW ELEMENT
WALL CLEANOUT		FS		FLOW SWITCH
CLEANOUT (CO)		Œ		CONDUCTIVITY SENSOR
P-TRAP		P		PRESSURE INDICATOR
PIPE DOWN		Æ		PRESSURE ELEMENT
PIPE UP		0P		DIFFERENTIAL PRESSURE ELEMENT
BRANCH-TOP CONNECTION		(H)		HUMIDISTAT (H'STAT)
WATER HAMMER ARRESTOR		Æ		HUMIDITY ELEMENT
PLUMBING STOP		\mathbb{W}		LOW WATER CUT OFF SWITCH

MECHANICAL LEGEND

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	Traffic

- PIPING IS SCHEMATIC IN NATURE. CONTRACTOR TO PROVIDE ADDITIONAL FITTINGS AND OFFSETS AS REQUIRED TO INSTALL A COMPLETE AND FUNCTIONING SYSTEM.
- 2. THIS DRAWING WAS CREATED FROM AS BUILT DOCUMENTATION AND FIELD NOTES AND MAY NOT REPRESENT ACTUAL AS BUILT CONDITIONS. CONTRACTOR TO VERIFY SCOPE PRIOR TO COMMENCING WORK.
- WASTE PIPING 4" AND LARGE SHALL BE SLOPED AT 1/8" PER FOOT. WAST PIPING 3" AND SMALLER SHALL BE SLOPED AT 1/4" PER FOOT.
- 4. LINES AND EQUIPMENT SHOWN DARK IS NEW WORK. LINES AND EQUIPMENT SHOWN LIGHT IS EXISTING TO REMAIN.
- 5. PLANS ASSUME ELEVATION OF FLOOR IS SET AT 0 FEET. COORDINATE FINAL ELEVATIONS WITH STRUCTURAL AND CIVIL PLANS.

PLAN NOTES

() ROUTE VENT PIPING FROM ISLAND FIXTURE 1" MINIMUM ABOVE WASTE.

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire OF M	Traffic

GENERAL NOTES

- 1. PIPING IS SCHEMATIC IN NATURE. CONTRACTOR TO PROVIDE ADDITIONAL FITTINGS AND OFFSETS AS REQUIRED TO INSTALL A COMPLETE AND FUNCTIONING SYSTEM.
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Image: State of the stateof the stateof the stateof the state of the stateof the stateof th
BEET TILE BLUMBING ROOF PLAN
SHEET

City of Puyallup Development & Permitting Service ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	Traffic

PLAN NOTES

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	

Development & Permitting Services Public Works

NA NA

6216 174TH AVE LONGBRANCH, V 253.765.8292

9/18/2024

DATE

9/18/2024

RPG

BSM

RC

 $\[\]$

City of Puyallup Development & Permitting Services ISSUED PERMIT							
Building	Planning						
Engineering	Public Works						
Fire	Traffic						

,		
ACCESS DOOR & FRAME PER SPECIFICATIONS LOCATE TRAP PRIMER TO /E FIXTURES AND DETAILS /N IN PLANS AND DETAILS OPTIONAL (4) TRAP RIMER DISTRIBUTOR PROVIDE ADDITIONAL PRIMER BRANCH LINES TO SERVE ADDITIONAL TRAPS	 SHUTOFF VALVE TRAP PRIMER PER SPECIFICATIONS, UP TO (4) FOUR TRAPS MAY BE SERVED WITH MULTI-PORT TAP 12" COORDINATE THIS HEIGHT WITH SURROUNDING FIXTURES AND ARCHITECTURE 	FINISHED FLOOR
TRAP PRIME	R PIPING DIAGRAM	<u> </u>

	MIDDLEBROOK ENGINEERING, LLC	6216 174TH AVE SW LONGBRANCH, WA 98351 253.765.8292
	TROPINSSIONAL	9/18/2024
	DETAILS III	
	STEP BY STEP ELC 3303 8TH AVE SE DIVALLIP WA 98372 KEA 1	DATE 9/18/2024
C P R T M M C P	RAWN BY: RAWN BY: HECKED BY: ROJECT MANAGER: EUSE OF DOCUMENTS HESE DOCUMENTS ARE THE PF IDDLEBROOK ENGINEERING, LI DOPIED, OR REPRODUCED WITH RMISSION.	BSM RPG BSM RC ROPERTY OF IC AND SHALL NOT BE IOUT WRITTEN
> >	PP5	03

	EXPANSION TANK SCHEDULE									
UNIT	MER	MODEL		TANK SIZE	ACCEPTANCE	WEIGHT	NOTES			
NO	WIE IN	MODEL	LOCATION	(GAL)	(GAL)	(LBS)	NOTES			
ET-01	BELL & GOSSETS	PTA-60V	MECHANICAL ROOM	26	18	62	1			
NOTES:	NOTES:									
1. FILL PRE	ESSURE SHALL BE SET TO	D 150 PSI RELIEF.								

City of Puyallup Development & Permitting Servic ISSUED PERMIT								
Building	Planning							
Engineering	Public Works							
Fire	Traffic							

UNIT NO
TMV-01
TMV-02
NOTES:

~ ~ ~	<u> </u>		~ ~ ~ ~	PLUMBING FIXTURE SCHEDULE		v v	<u>v v</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
UNIT NO	FIXTURE	MOUNTING		MANUFACTURER AND MODEL NUMBERS	W	V	HW	CW	GPF	GPM	NOTES
5.04		51.000	TOILET:	KHOLER -K25077	4"	2"	-	-	-	-	2,3,4,
P-01	WATER CLOSET ADA	FLOOR	SEAT:	BEMIS - 1955CT	-	-	-	-	-	-	
			LAVATORY:	TOTO LT641	2"	1-1/2"	-	-	-	-	
P-02	LAVATORY ADA	UNDERMOUNT	FAUCET:	TOTO T28S11	-	-	1/2"	1/2"	-	0.5	1,3,4
		-	TRAP:	DEARBORN BRASS - 17GA W/ GROUND JOINT	1-1/2"	-	-	-	-	-	
			SINK:	ELKAY - GE12522R	2"	1-1/2"	-	-	-	-	
D 02			FAUCET:	DELTA-9913-DST	-	-	1/2"	1/2"	-	1.5	
P-03	I-COMPARTMENT SINK		SUPPLIES:	FLUIDMASTER- PRO1F20	-	-	1/2"	1/2"	-	1.5	
			TRAP:	DEARBORN BRASS - 17GA W/ GROUND JOINT	1-1/2"	-	-	-	-	-	
			SINK:	JOHN BOOS 42PB20028-2D	2"	1-1/2"	-	-	-	-	
			FAUCET:	T&S BRASS B-0231	-	-	1/2"	1/2"	-	1.5	
P-04	2-COMPARTMENT SINK	DROP IN	SUPPLIES:	EBC - LAH20-K	-	-	1/2"	1/2"	-	1.5	
			TRAP:	DEARBORN BRASS - 17GA W/ GROUND JOINT	1-1/2"	-	-	-	-	-	
			SINK:	REGENCY-600SM162012C	2"	1-1/2"	-	-	-	-	
P-05	MOP SINK	FLOOR MOUNTED	FAUCET:	CHICAGO FAUCET- 897-RCF	-	-	1/2"	1/2"	-	1.5	
			TRAP:	DEARBORN BRASS - 17GA W/ GROUND JOINT	1-1/2"	-	-	-	-	-	
P-06	DRINKING FOUNTAIN	WALL	UNIT:	ELKAY- EDFPVR217C	2"	1-1/2"	-	3/8"	-	-	
P-07	CLOTHES WASHER WALL BOX	WALL	UNIT:	OATEY - 38957	2"	1-1/2"	1/2"	1/2"	-	-	
HB-01	HOSE BIB	WALL	UNIT:	WOODFORD MODEL 68	-	-	-	3/4"	-	-	
RD-1	ROOF DRAIN	FLOOR	UNIT	JAY R SMITH 1800	-	-	-	-	-	-	3
FCO	FLOOR CLEANOUT	FLOOR	UNIT:	JAY R SMITH - 4040	-	-	-	-	-	-	
WCO	WALL CLEANOUT	WALL	UNIT:	JAY R R SMITH - 4422	-	-	-	-	-	-	
FD	FLOOR DRAIN, 2"	FLOOR	UNIT:	ZURN Z511	2"	1-1/2"	-	-	-	-	
GENERAL NOTES: 1. EQUIPMENT M 2. TRANSISTION 3. IF COLOR/FIN NOTES: 4. MAXIMUM DEL	IAY BE SUBSTITUTED UPON ENGINEER'S APP PIPE SIZE SHOWN ON PLAN TO STOP OR CO ISH OPTIONS EXISIT FOR FIXTURES, COORDII	PROVAL FOR EQUAL OR OTHER MFG/M NNECTION SIZE SHOWN ON SCHEDUL NATE FINAL COLORS/FINISHES WITH A	IODEL. REFER TO EQUIP E. ARCHITECT.	MENT SUBMITTAL FOR FINAL SELECTIONS.							
		ES FARKENREIT. PROVIDE WITH BELC	JVV DECK MIXING VALVE (JETION.							
2. PROVIDE WIT	H BOLTS AND BOLT COVERS.										
3. COORDINATE	SIZES WITH PLANS.										
4. ADA COMPLIA 5. HARDWIRE FL	USH VALVE. COORDINATE FIXTURE HEIGHT	WITH ARCHITECT.									
\sim						\sim	\sim	\sim	\frown		
								\sim -			

/1

UNIT

NO AWHP-01 NOTES

WATER HEATER SCHEDULE

MED	MODEL		DIMENS	SIONS	TANK SIZE	INPUT	OUTPUT	000		ОГМ	RECOVERY	TEMP		ELECT	RICAL		DISCON	WEICHT	NOTES
MFR.	MODEL	LOCATION	HEIGHT	WIDTH	(GAL)	(MBH)	(MBH)	COP	EFF	CFM	(GPH)	RISE (F)	MCA	MOCP	VOLT	PH	FURN. BY	WEIGHT	NUTES
LOCHINVAR	AHP060	MECH ROOM	71.75	38.5	-	-	66,688	4.61	-	17224	-	-	46.6	50	208	3	EC	2032	1,2

1. PROVIDE WITH SINGLE POINT ELECTRICAL BUS PANEL.

2. PROVIDE WITH STEP UP TRANSFORMER

THERMOSTATIC MIXING VALVE SCHEDULE

)	MFR	MODEL	SERVICE	INLET SIZES	OUTLET SIZE	MINIMUM FLOW	PRESSURE DROP	ELECT	RICAL	WEIGHT	NOTES
				(IN)	(IN)		(PSI)	VOLTS	PH	(LBS)	
	HEAT-TIMER	TMV25	LOW TEMP FIXTURES	1	0.75	5 GPM	5	120	1	2.6	1
	BRADLEY	S59-2007	LOW TEMP FIXTURES	0.5	0.5	2GPM	5	-	-	-	-

1. PROVIDE COMPLETE ASSEMBLY PART NO 915672-00.

MIDDLEBROOK ENGINEERING, LLC	253.765.8292
SCOTT MID SECONT MID SECONT MID SECONT MID SECONT MID SECONT SECONT MID SECONT SECONT MID SECONT SECONT MID SECONT SECOND SECONT MID SECONT SECOND SECONT SECOND SECON	9/18/2024
me SCHEDULES I	
SHEET	
REVISIONS NO DESCRIPTION REVISIONS NO DESCRIPTION REVISIONS NO DESCRIPTION REV 1 DRAWN BY: CHECKED BY: PROJECT MANAGER: REUSE OF DOCUMENTS THESE DOCUMENTS ARE THE PROP MIDDLEBROOK ENGINEERING, LLC A COPIED, OR REPRODUCED WITHOUT PERMISSION.	DATE 9/18/2024 9/18/2024 RPG BSM RC
SHEET PP6	D1

PIPE INSULATION SCHEDULE

FLUID OPERATING	INSULATION	CONDUCTIVITY			NOM	NAL OR TUBE	E SIZE (inches)
AND USAGE (°F)	BTU ⋅ in./(h ⋅ ft² ⋅ °F)	TEMPERATURE, °F	< 1	1 to 1-1/2	1-1/2 to < 4	4 to < 8	≥8
> 350	0.32 - 0.34	250	4.5	5.0	5.0	5.0	5.0
251 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5
201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0
141 - 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0
105 - 140	0.21 - 0.28	100	1	1.0	1.5	1.5	1.5
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0
< 40	0.20 - 0.26	75	0.5	1.0	1.0	1.0	1.5

GENERAL NOTES:

1. FOR PIPING SMALLER THAN 1-1/2 INCH (38mm) AND LOCATED IN PARTITIONS WITHIN CONDITIONED SPACES, REDUCTION OF THESE THICKNESESS BY 1 INCH (25mm) SHALL BE PERMITTED (BEFORE THICKNESSES REQUIRED IN FOOTNOTE b) NOT TO A THICKNESS LESS THAN 1 INCH (25mm).

2. FOR INSULATION OUTSIDE THE STATED CONDUCTIVITY RANGE, THE MINUMUM THICKNESS (T) SHALL BE DETERMINED AS FOLLOWS:

 $T = r\{(1 + t/r) / K/K - 1\}$

WHERE:

T = MINIMUM INSULATION THICKNESS,

r = ACTUAL OUTSIDE RADIUS OF PIPE,

t = INSULATION THICKNESS LISTED IN THE TABLE FOR APPLICABLE FLUID TEMPERATUREAND PIPE SIZE.

K = CONDUCTIVITY OF ALTERNATE MATERIAL AT MEAN RATING TEMPERATURE INDICATED FOR THE APPLICABLE FLUID TEMPERATURE (Btu \cdot in/h \cdot ft² x °F)

k = THE UPPER VALUE OF THE CONDUCTIVITY RANGE LISTED IN THE TABLE FOR THE APPLICABLE FLUID TEMPERATURE.

3. FOR DIRECT-BURIED HEATING AND HOT WATER SYSTEM PIPING, REDUCTION OF THESE THICKNESSES BY 1-1/2 INCHES (38mm) SHALL BE PERMITTED (BEFORE THCKNESS ADJUSTMENT REQUIRED IN FOOTNOTE b BY BUT NOT TO THICKNESS LESS THAN 1 INCH (25mm)

City of Puyallup Development & Permitting Services ISSUED PERMIT							
Building	Planning						
Engineering	Public Works						
Fire OF W	Traffic						

					BOOSTER P	UMP SCHEDULE							
				FLOW	HEAD	RPM		EL	ECTRICAL			DISCONNECT	
UNIT NO	GRUNDFOS	MODEL	LOCATION	(GPM)	FT (PSI)		MCA	MOP	VOLTS	SCCR (kVA)	PH	FURN. BY	NOTES
BP-01	ARMSTRONG	NPS-110020-01S-2HP	MECH ROOM	40	25	3600	18	20	240	5	1	EC	1,2,3,4,5,6
NOTES:													

1. PROVIDE WITH CONCRETE PAD.

2. CONNECT TO PIPING SYSTEM WITH FLEXIBLE JOINTS. DO NOT USE PUMPS TO SUPPORT WIEGHT OF PIPE.

3. TWINNED UNIT.

4. UNIT SHALL BE NSF 61 COMPLIANT.

5. PROVIDE 2" THREADED CONNECTION.

6. PROVIDE ARMSTRONG DRAWDOWN TANK MODEL 85L.

7. PROVIDE WITH SINGLE POINT POWER CONNECTION AT CONTROL PANEL.

					PUMP SCI	IEDULE						
	MED	MODEL		FLOW	HEAD	RPM		ELECTRIC	AL		DISCONNECT	NOTES
		MODEL	LOCATION	(GPM)	FT		HP	WATT	VOLTS	PH	FURN. BY	NOTES
CP-1	BELL & GOSSETT	ECOCIRC 20-18	MECHANICAL RM	5	10	3734	0.0257	-	115	1	EC	1
NOTES:												

1. PROVIDE WITH AQUASTAT AND TIMER AS UNIT STARTER.

			BA	CKF	LOV	N PF	REVENTE	R SCHEDULE			
	MED	MODEL			TYPE		SIZE	PRESSURE DROP		NOTES	
UNITINO	MICK	MODEL	LUCATION	RP	DC	AG	(IN)	(PSI)	SERVICE	NOTES	빌
BFP-01	WATTS	LF009	JANITOR'S CLOSET	Х	-	-	2	12	DOMESTIC	1, 2	HEET T
NOTES:											히

1. PROVIDE WITH 1" AIR GAP FITTING.

2. PROVIDE WITH QUARTER TURN VALVES.

								-				
	PLUMBING PIPE SIZING CHART											
COLD WATER				HOT WATER			WA	VENT				
PIPE SIZE	GPM RANGE	TANK UNITS	VALVE UNITS	PIPE SIZE	GPM RANGE	FIXTURE UNITS	PIPE SIZE	VERTICAL	HORIZONTAL (1/4"/FT)	HORIZONTAL (1/8"/FT)	VENT UNITS	MAX VENT LENGTH
1/2"	0-1.8	0-0.8	-	1/2"	0-1.8	0-0.8	1/2"	-	-	-	-	-
3/4"	1.9-4.8	0.9-5.8	-	3/4"	1.9-4.8	0.9-5.8	3/4"		-	-	-	-
1"	4.9-9.9	5.9-12.9	-	1"	4.9-9.9	5.9-12.9	1"	-	-	-	-	-
1-1/4"	10-17.0	13-24	-	1-1/4"	10-17.0	13-24	1-1/4"	1.0	1.0	-	1.0	15'
1-1/2"	18-27	25-46	0-10	1-1/2"	18-27	25-46	1-1/2"	2.0	1.0	-	2-8.0	20'
2"	28-58	47-165	11-69.0	2"	28-46	47-111	2"	3-16.0	2-8.0	-	9-24.0	40'
2-1/2"	59-100	166-380	70-245	2-1/2"	47-73	112-241	2-1/2"	17-32	9-14.0	-	25-48	60'
3"	101-170	381-748	246-700	3"	74-110	242-431	3"	33-48	15-35	-	49-84	70'
4"	171-300	749-1755	701-1755	4"	111-180	432-809	4"	49-256	36-216	1-172	85-256	100'
5"	301-470	1756-3340	1756-3340	5"	181-290	810-1688	5"	257-600	217-428	173-342	257-600	130'
6"	471-670	3341-5110	3341-5110	6"	291-420	1689-2862	6"	601-1380	429-720	343-576	601-1380	170'
8"	671-1300	5111-11500	5111-11500				8"	1381-3600	721-2640	577-2112	1381-3600	250'
							10"	3601-5600	2641-4680	2113-3744	3601-5600	-
							12"	5601-8400	4681-8200	3745-6560	5601-8400	-

NOTES

1. THIS CHART IS BASED ON THE UPC APPENDIX A, WATER PIPE COPPER TYPE L

2. COLD WATER IS BASED ON A MAXIMUM OF 8FPS.

3. HOT WATER IS BASED ON A MAXIMUM OF 5 FPS

4. THIS CHART IS BASED ON 3PSI/100 FT FRICTION LOSS.

	STORAGE TANK SCHEDULE								
UNIT NO	TYPE	MFG	MODEL	DESCRIPTION/ DATA	NOTES				
ST-01	STORAGE TANK	LOCHINVAR	HP500G	450 GAL,1726 LBS					
SWT-01	SWING STORAGE TANK	BOCK WATER HEATERS	SWP119-A-1A	119 GAL, 550 LBS, 72 GPH @100 DEG RISE 18KW, 208V,3PH					
NOTES:									

M [*] DDLEBROOK ENGINEERING, LLC	253.765.8292
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SCHEDULES II	
SHEET TITLE	
DRAWN BY: CHECKED BY: PROJECT MANAGER: REUSE OF DOCUMENTS DRAWN BY: CHECKED BY: PROJECT MANAGER: REUSE OF DOCUMENTS THESE DOCUMENTS ARE THE PROPE MIDDLEBROOK ENGINEERING, LLC A COPIED, OR REPRODUCED WITHOUT PERMISSION.	DATE 9/18/2024 9/18/2024 RPG BSM RC
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PLUMBING - GENERAL

- PROVIDE PLUMBING PER THE UPC AND THE REQUIREMENTS OF THE AUTHORITY
- HAVING JURISDICTION. PLUMBING FIXTURES AND EQUIPMENT SHALL BE AS INDICATED ON THE DRAWING SCHEDULES
- ACCESS PANELS: PROVIDE FOR MAINTENANCE OF VALVES, TRAP PRIMERS, WATER HAMMER ARRESTORS, AND OTHER ITEMS REQUIRING ACCESS WHEN OBSTRUCTED BY WALLS, AND HARD LID CEILING.
- LOCATE VALVES, CONTROLS, AND SIMILAR COMPONENTS SO THAT THEY ARE ACCESSIBLE INSTALL TAG ON CEILING GRID FRAME TO INDICATE LOCATION AND TYPE OF
- EQUIPMENT THAT REQUIRES MAINTENANCE. PROVIDE ACCESS DOORS FOR EQUIPMENT INSTALLED BEHIND WALLS, ABOVE INACCESSIBLE CEILINGS AND BELOW FLOORS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT/ENGINEER. ACCESS DOOR SHALL BE SIZED SO THAT ADJACENT EQUIPMENT IS ACCESSIBLE.
 - PROVIDE 16 GA, STEEL, FLUSH TYPE ACCESS DOOR WITH CONCEALED HINGE AND SLOT SCREWDRIVER TYPE CAM LATCH. PROVIDE FACTORY PRIMED IN PAINTED SURFACE AREAS FOR FIELD PAINTING.
 - PROVIDE STAINLESS STEEL FOR ALL OTHER AREAS. PROVIDE UL LISTED AND LABELED DOOR WHERE FIRE-RESISTANCE RATING IS INDICATED ON DRAWINGS.

PLUMBING - FLOOR DRAINS

- DRAINS SHALL BE JAY R. SMITH, SIOUX CHIEF, ZURN, WADE, OR APPROVED EQUAL FLOOR DRAINS: DUCO CAST IRON BODY WITH FLASHING COLLAR, SQUARE POLISHED NICKEL BRONZE ADJUSTABLE STRAINER HEAD AND GRATE, TRAP PRIMER CONNECTION AND VANDAL PROOF SCREWS. SIZE AS PER PLANS.
- FLOOR SINKS: STAINLESS STEEL FLANGED RECEPTOR FABRICATED OF 304 STAINLESS STEEL WITH 12" HALF GRATE STAINLESS STEEL TOP, SEDIMENT BUCKET AND FLASHING CLAMP. SIZES AS SHOWN ON PLANS.
- TRENCH DRAINS
 - TRENCH DRAINS SHALL BE COMPOSED OF MULTIPLE 0.6% SLOPING SEGMENTS. COORDINATE NUMBER OF SEGMENTS WITH LENGTH
- SHOWN ON PLAN. PROVIDE ALL SEGMENTS. PROVIDE END CAPS.
- PROVIDE GRAVITY OPTIONS AS SHOWN ON SCHEDULE. TRENCH DRAIN SHALL BE CONSTRUCTED OF 100% POLYPROPYLENE
- WITH TONGUE AND GROOVE ENDS.
- INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

PLUMBING - CLEANOUTS

- CLEANOUTS SHALL BE JAY R. SMITH, SIOUX CHIEF, ZURN, WADE OR APPROVED EQUAL
- WALL CLEANOUT, DUCO CAST IRON CAULK FERRULE WITH CAST IRON COUNTERSUNK
- CLOSURE PLUG. PROVIDE WITH STAINLESS STEEL COVER AND SCREW
- INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

PLUMBING FIXTURE AND TRIM

- FIXTURES ARE SPECIFIED IN THE PLUMBING FIXTURE SCHEDULE AND ARE THE BASIS OF THIS DESIGN. SIMILAR FIXTURES OF EQUAL QUALITY CAN BE SUBMITTED TO ENGINEER FOR CONSIDERATION.
- PROVIDE STOP VALVES, WATER SUPPLY, TRAPS, TRAP ARMS, INSULATION, AND WASTE AS APPLICABLE AND INDICATED ON DRAWINGS PROVIDE CARRIER AND/OR MOUNTING BRACKETS.
- PROVIDE ESCUTCHEON PLATES FOR ALL LINES THROUGH WALL OR FLOOR, UNLESS PLANS INDICTATE A DIFFERENT PENETRATION.
- INSTALL FIXTURE PER MANUFACTURER'S RECOMMENDATIONS.

DOMESTIC WATER HEATERS

- TANK SHALL BE RATED AT 1.5 TIMES THE WORKING PRESSURE. WATER HEATER SHALL COMPLY WITH STATE AND LOCAL ENERGY CODES.
- PROVIDE HOUSEKEEPING PAD FOR TANK.
- PROVIDE ASME RATED PRESSURE RELIEF VALVE. INSTALL WATER HEATERS PER THE UPC AND MANUFACTURER'S RECOMMENDATIONS. PROVIDE CATCHPAN. DRAIN TO NEARBY SERVICE SINK.

CIRCULATION PUMPS

- BASIS OF DESIGN REPRESENTS QUALITY OF UNIT. MATERIALS SHALL BE BRONZE OR STAINLESS STEEL
- PUMP MUST BE CAPABLE OF BEING SERVICES WITHOUT DISTURBING PIPING CONNECTIONS. PUMP SHALL BE WATER LUBRICATED FOR HORIZONTAL OR VERTICAL INSTALLATION. PUMP SHALL BE NSF 372 CERTIFIED.
- APPROVED MANUFACTURERS BELL AND GOSSETT
- ARMSTRONG
- GRUNDFOS C.

BOOSTER PUMPS AND PNEUMATIC TANK

- BASIS OF DESIGN REPRESENTS QUALITY OF UNIT.
- SYSTEM: PACKAGED WITH A MINIMUM OF TWO PUMPS, FACTORY ASSEMBLED, TESTED. AND ADJUSTED. SHIPPED AS AN INTEGRAL UNIT CONSISTING OF PUMPS, VALVES, STAINLESS STEEL PIPING AND CONTROL PANEL WITH APPLICABLE CONTROLS. THE CONTROL PANEL SHALL HAVE FACTORY PROGRAMMED, PROGRAMMABLE CONTROLLER, WITH LEAD/LAG CONTROL. MATERIALS SHALL BE BRONZE OR STAINLESS STEEL
- SYSTEM AND PERTINENT COMPONENTS SHALL BE COLD WATER RATED FOR WORKING PRESSURE OF 125 PSI AND SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH THE HYDRAULIC INSTITUTE STANDARDS FOR CENTRIFUGAL PUMPS.
- PROVIDE HYDROPNUEMATIC TANK, DESIGNED TO AMSE CODE AND STAMPED, DESIGNED TO APPROPRIATE WORKING PSI WORKING PRESSURE. SEE SCHEDULES.
- COMPONENTS SHALL BE NSF 61/ NSF 372 CERTIFIED.
- APPROVED MANUFACTURERS
- BELL AND GOSSETT ARMSTRONG
- GRUNDFOS

EXPANSION TANKS

- BASIS OF DESIGN REPRESENTS QUALITY OF UNIT. WELDED STEEL/STAINLESS STEEL CONSTRUCTION, TESTED AND STAMPED IN
- ACCORDANCE WITH AMSE BPVC-VIII-1. RATED FOR WORKING PRESSURE OF 125PSI AT 200 DEGREES FAHRENHEIT, WITH FLEXIBLE BUTYL DIAPHRAGM SEALED INTO TANK. PRECHARGE TO 55 PSIG AND ADJUST AS INDICATED ON PLAN. PROVIDED WITH ANTIMICROBIAL LINER.
- APPROVED MANUFACTURERS
- A. AMTROL

BACKFLOW PREVENTERS

- TYPE AND CONFIGURATION SHALL CONFORM TO LOCAL AHJ REQUIREMENTS. PROVIDE A LETTER OF CERTIFICATION TO OWNER.
- REDUCED PRESSURE BACKFLOW PREVENTERS A. ASSE 1013, CAST BRONZE BODY AND STAINLESS STEEL SPRINGS. TWO INDEPENDENTLY OPERATING, SPRING LOADED CHECK VALVES, DIAPHRAGM TYPE DIFFERENTIAL PRESSURE RELIEF VALVE LOCATED BETWEEN CHECK VALVES, THIRD CHECK VALVE THAT OPENS UNDER BACKPRESSURE IN CASE OF DIAPHRAGM FAILURE.
- DOUBLE CHECK VALVE ASSEMBLIES
- ASSE 1012, BRONZE BODY WITH CORROSION RESISTANT INTERNAL PARTS AND STAINLESS STEEL SPRINGS, TWO INDEPENDENTLY OPERATING CHECK VALVES WITH INTERMEDIATE ATMOSPHERIC VENT. POTABLE WATER SYSTEMS SHALL BE NFS 61 CERTIFIED LEAD FREE.
- APPROVED MANUFACTURERS A. WATTS

THERMOSTATIC MIXING VALVE

- BRONZE BODY CONSTRUCTION WITH CORROSION RESISTANT COMPONENTS. VALVE SHALL BE EQUIPPED WITH CHECKSTOPS. PROVIDE THERMOSTATS, GAUGES, AND STRAINERS AS INDICATED ON PLANS. TMV SHALL CONTROL THE TEMPERATURE TO WITHIN 3 DEGREES FAHRENHEIT FROM THE LOW FLOW TO THE MAXIMUM FLOW RATE APPROVED MANUFACTURERS:
- A. WATTS

SEISMIC AND VIBRATION REQUIREMENTS

- HANGERS AND SEISMIC BRACING FOR THE MECHANICAL SYSTEMS SHALL BE DESIGNED AND PROVIDED BY THE MECHANICAL CONTRACTOR. REFER TO CONTRACTOR SHOP DRAWINGS FOR LOCATIONS OF EQUIPMENT AND HUNG MECHANICAL SYSTEMS. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE SUPPORT SYSTEMS AND DESIGN LOADS FOR HUNG MECHANICAL SYSTEMS WITH THE GENERAL CONTRACTOR AND OTHER TRADES THAT MAY BE IMPACTED. PROVIDE ALL SEISMIC RESTRAINT REQUIRED BY THE AUTHORITY HAVING
- JURISDICTION AND THE APPLICABLE CODES. EMPLOY A LICENSED STRUCTURAL ENGINEER, IF NECESSARY, TO ACHIEVE
- COMPLIANCE. THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA) SEISMIC RESTRAINT MANUAL GUIDELINES MAY BE USED FOR PIPING AND DUCTWORK. INSURE THE PROPER HAZARD LEVEL IS EMPLOYED FOR THE AREA OF INSTALLATION.
- VIBRATION CRITERIA: PROVIDE VIBRATION ISOLATION IN ACCORDANCE WITH THE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE): APPLICATIONS HANDBOOK.

BASIC MATERIALS AND METHODS

- ALL MATERIALS AND EQUIPMENT SHALL BE LISTED OR LABELED BY A RECOGNIZED AGENCY. UL, AGA, FM, CSA, ARI, ETC.
- EQUIPMENT SHALL BE AS INDICATED ON THE DRAWING SCHEDULES. THE DRAWING SCHEDULES ESTABLISH THE LEVEL OF QUALITY. SUBSTITUTIONS WILL BE CONSIDERED, SUBMIT TECHNICAL DATA (PERFORMANCE AND CONSTRUCTION) TO THE OWNER'S REPRESENTATIVE FOR APPROVAL. ALLOW TWO WEEKS FOR TURN-AROUND.
- MECHANICAL SYSTEM PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH THE BUILDING CODE IN FORCE IN THE AUTHORITY HAVING JURISDICTION FOR THIS PROJECT. THIS INCLUDES PIPING, DUCTWORK, SUPPORTS, CONDUIT, AND ANY OTHER SYSTEM AND APPURTENANCE PROVIDED AS PART OF THE MECHANICAL WORK OF THIS CONTRACT. IN ADDITION, ALL THROUGH-PENETRATION SEALING METHODOLOGIES SHALL BE LISTED IN THE UNDERWRITER'S LABORATORIES (UL) FIRE RESISTANCE DIRECTORY, ISSUE CURRENT AT TIME OF BID.
- MOTORS SHALL COMPLY WITH THE WSEC. ALL MOTORS SHALL BE ELECTRONICALLY COMMUTATED UNLESS NOTED ON SCHEDULE.
- ELECTRICAL INSTALLATION SHALL COMPLY WITH THE NEC.
- PROTECT STORED MATERIALS. REPLACE DAMAGED MATERIALS PRIOR TO INSTALLATION. PROVIDE WATER-TIGHT SEAL FOR OPENINGS TO THE BUILDING THROUGH WHICH
- PIPE PASSES. PROVIDE AND INSTALL PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S
- STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY (MSS) STANDARDS, SPECIFICALLY STANDARD SP-69, "PIPE HANGERS AND SUPPORTS SELECTION AND APPLICATION" AND STANDARD SP-58, "PIPE HANGERS AND SUPPORTS - MATERIALS, DESIGN AND MANUFACTURE". PROVIDE PIPE SUPPORT SPACING IN ACCORDANCE WITH THE UPC OR IMC.
- TESTING: ALL WORK UNDER THIS CONTRACT SHALL BE THOROUGHLY AND SYSTEMATICALLY TESTED, BOTH DURING CONSTRUCTION AND AFTER COMPLETION. PIPE TESTING SHALL BE EITHER AS SPECIFIED IN THE APPROPRIATE SPECIFICATION SECTION, OR AS SPECIFIED IN THE APPLICABLE PLUMBING OR MECHANICAL CODE. DUCTWORK SHALL BE TESTED AS PART OF THE AIR BALANCING PROCESS. NOTIFY THE OWNER'S REPRESENTATIVE 48-HOURS IN ADVANCE OF ALL TESTS. TESTS SHALL BE MAINTAINED UNTIL APPROVED.
- START-UP, BALANCING AND COMMISSIONING 11.
- EQUIPMENT STARTUP SHALL BE PERFORMED BY QUALIFIED PERSONNEL. THE TECHNICAL SPECIFICATION SECTIONS WILL DETAIL OTHER SPECIAL REQUIREMENTS, IF ANY. PROVIDE A STATEMENT OF THE STARTUP TECHNICIAN'S QUALIFICATIONS IF REQUESTED BY THE OWNER'S REPRESENTATIVE OR ELSEWHERE SPECIFIED.
- B. BALANCE ALL AIR AND WATER SYSTEMS. BALANCE IN ACCORDANCE WITH EITHER NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) OR AMERICAN AIR BALANCE COUNCIL (AABC) CRITERIA.
- PROVIDE COMMISSIONING IN ACCORDANCE WITH THE WSEC, UNLESS ENHANCED COMMISSIONING IS REQUIRED. PROVIDE DOCUMENTATION OF COMMISSIONING
- a. A CERTIFIED COMMISSIONING AGENT SHALL PROVIDE A COMMISSIONING PLAN OUTLINING THE RESPONSIBILITY MATRIX, SCHEDULE, AND EQUIPMENT FUNCTIONAL PERFORMANCE TESTING PER WSEC 408.1.2.
- THE COMMISSIONING REPORT SHALL BE COMPLETED PRIOR TO FINAL MECHANICAL INSPECTION PER C408.1.3.
- FINAL REPORT SHALL BE MADE AVAILABLE TO CODE OFFICIAL PER COMPLETION REQUIREMENTS OF WSEC C408.1.4

- TRENCH DRAINS
- CLEANOUTS SHALL BE JAY R. SMITH, SIOUX CHIEF, ZURN, WADE OR APPROVED
- EQUAL

PLUMBING FIXTURE AND TRIM

2

- PROVIDE STOP VALVES, WATER SUPPLY, TRAPS, TRAP ARMS, INSULATION, AND WASTE AS APPLICABLE AND INDICATED ON DRAWINGS.
- PROVIDE CARRIER AND/OR MOUNTING BRACKETS. PROVIDE ESCUTCHEON PLATES FOR ALL LINES THROUGH WALL OR FLOOR, UNLESS PLANS INDICTATE A DIFFERENT PENETRATION.
- INSTALL FIXTURE PER MANUFACTURER'S RECOMMENDATIONS.

PLASTIC PIPE, DWV & SEWER

- AND FITTINGS.
- AND FITTINGS."

VALVES

ARE INSTALLED

PLUMBING - FLOOR DRAINS

- DRAINS SHALL BE JAY R. SMITH, SIOUX CHIEF, ZURN, WADE, OR APPROVED EQUAL FLOOR DRAINS: DUCO CAST IRON BODY WITH FLASHING COLLAR, SQUARE POLISHED NICKEL BRONZE ADJUSTABLE STRAINER HEAD AND GRATE, TRAP PRIMER
- CONNECTION AND VANDAL PROOF SCREWS. SIZE AS PER PLANS. FLOOR SINKS: STAINLESS STEEL FLANGED RECEPTOR FABRICATED OF 304 STAINLESS STEEL WITH 12" HALF GRATE STAINLESS STEEL TOP, SEDIMENT BUCKET AND FLASHING CLAMP. SIZES AS SHOWN ON PLANS.
 - TRENCH DRAINS SHALL BE COMPOSED OF MULTIPLE 0.6% SLOPING SEGMENTS. COORDINATE NUMBER OF SEGMENTS WITH LENGTH SHOWN ON PLAN. PROVIDE ALL SEGMENTS. PROVIDE END CAPS.
 - PROVIDE GRAVITY OPTIONS AS SHOWN ON SCHEDULE.
 - TRENCH DRAIN SHALL BE CONSTRUCTED OF 100% POLYPROPYLENE
- WITH TONGUE AND GROOVE ENDS INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

PLUMBING - CLEANOUTS

- WALL CLEANOUT, DUCO CAST IRON CAULK FERRULE WITH CAST IRON COUNTERSUNK CLOSURE PLUG. PROVIDE WITH STAINLESS STEEL COVER AND SCREW.
- INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- FIXTURES ARE SPECIFIED IN THE PLUMBING FIXTURE SCHEDULE AND ARE THE BASIS OF THIS DESIGN. SIMILAR FIXTURES OF EQUAL QUALITY CAN BE SUBMITTED TO ENGINEER FOR CONSIDERATION.
- ABS PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS SHALL BE PER IAPMO INSTALLATION STANDARD (IS) 05-03, "ABS BUILDING DRAIN, WASTE, AND VENT PIPE
- PVC PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS SHALL BE PER IAPMO INSTALLATION STANDARD (IS) 09-03, "PVC BUILDING DRAIN, WASTE, AND VENT PIPE
- VALVES SHALL BE CONSTRUCTED OF MATERIALS THAT ARE COMPATIBLE WITH THE TYPE OF PIPING MATERIAL AND FLUIDS IN THE SYSTEM. VALVES SHALL BE RATED FOR THE TEMPERATURES AND PRESSURES OF THE SYSTEMS IN WHICH THE VALVES
- LOCATE AND ORIENT VALVES TO PERMIT PROPER OPERATION AND ACCESS FOR MAINTENANCE OF PACKING, SEAT, AND DISK. GENERALLY, LOCATE VALVES IN OVERHEAD PIPING IN HORIZONTAL POSITION. PROVIDE A UNION ADJACENT TO ONE END OF EACH THREADED VALVE
- VALVES FOR PROCESS SHALL BE 304 STAINLESS STEEL, SANITARY FITTINGS WITH PTFE SEALS, SEATS, GASKETS, AND THE LIKE. SANITARY PIPE CHECK VALVES SHALL BE INLINE STYLE.
- SOLENOID VALVES SHALL BE PROVIDED FOR PLIMPS IN AIR LINE. SOLENOID VALVES SHALL OPEN UPON SIGNAL FROM TOGGLE SWITCH OR CONTROLLER. SOLENOID VALVE SHALL BE RATED FOR CLASS 1 DIV 2 INSTALLATION.

PIPE TESTING

- DOMESTIC PLUMBING PIPING SHALL BE TESTED AT A PRESSURE NOT LESS THAN THE DESIGN PRESSURE FOR A PERIOD OF NOT LESS THAN 15 MINUTES. TESTS SHALL BE PER UPC CHAPTER 6. TEST GAUGES SHALL BE PER UPC 318. WASTE AND VENT PIPING SHALL BE TESTED WITH AT LEAST 10 FOOT HEAD OF WATER
- FOR A PERIOD OF NOT LESS THAN 15 MINUTES. TESTS SHALL BE PER UPC CHAPTER 7. TEST GAUGES SHALL BE PER UPC 318. PIPING IS CONSIDERED "PASSED" IF THE PRESSURE REMAINS UNCHANGED FOR THE
- DURATIONS LISTED ABOVE.

COPPER LINESET

- COPPER LINESET SHALL BE USED FOR REFRIGERANT PIPING. SIZE OF PIPING SHALL BE PER THE MANUFACTURER'S RECOMMENDATION AND REQUIREMENTS.
- MATERIALS FOR COPPER LINESET SHALL BE SOFT ANNEALED COPPER. CONTRACTOR TO SELECT END FINISHING TO SUIT INSTALLATION AND
- MANUFACTURER'S RECOMMENDATION. LINE SET SHALL BE CONTINUOUS FROM OUTDOOR UNIT TO INDOOR UNIT. SUCH THAT THERE ARE NO JOINTS IN FIRE RATED CORRIDOR OR EXIT PASSAGE WAYS.
- NO REFRIGERANT PIPE SHALL BE INSTALLED IN STAIR WELLS. INSTALL PER IMC CHAPTER 11.

CROSS-LINKED POLYETHYLENE PIPE

EXTERIOR SERVICE: CONFORM TO ASTM F1218, "STANDARD SPECIFICATION FOR CROSSLINKED POLYETHYLENE/ ALUMINUM/ CROSSLINKED POLYETHYLENE (PEX-AL-PEX) PRESSURE PIPE." INTERIOR SERVICE: CONFORM TO ASTM F877, "CROSSLINKED POLYETHYLENE (PEX) PLASTIC HOT- AND COLD- WATER DISTRIBUTION SYSTEMS.

- AIR TO WATER HEAT PUMP
- HEAT PUMP SHALL HAVE A SCROLL COMPRESSOR WITH ADDITIONAL CONTROL FOR MONITORING OPERATION OF COMPRESSOR, CONTROL SHALL PROVIDE DIAGNOSIS OF THE COMPRESSOR WITH INDICATION LIGHTS FOR STATUS AND CODES.
- HEAT PUMP SHALL BE FACTORY CHARGED WITH 513A REFRIGERANT, ECM VARIABLE SPEED CIRCULATOR PUMP, AND DOUBLE WALL STAINLESS STEEL CONDENSER FOR POTABLE WATER APPLICATIONS
- HEAT PUMP SHALL ADJUST THE EVAPORATOR FAN SPEED DEPENDING ON AMBIENT TEMPERATURE TO OPTIMIZE THE PERFORMANCE OF THE HEAT PUMP. HEAT PUMP REFRIGERANT CIRCUIT SHALL CONTAIN AN ELECTRONIC EXPANSION VALVE, RECEIVER, ACCUMULATOR, FILTER DRIER AND SERVICE PORTS FOR
- REFRIGERANT GAUGES. HEAT PUMP SHALL BE CERTIFIED AND LISTED BY UL TO UL 60335-2-40 STANDARD.
- CERTIFIED FOR BOTH INDOOR AND OUTDOOR INSTALLATIONS HEAT PUMP SHALL BE CONSTRUCTED WITH HEAVY GAUGE SHEET METAL ASSEMBLY AND PAINTED ON BOTH SIDES. MANUFACTURER SHALL PROVIDE RESULTS AS OF
- 9,000-HOUR SALT SPRAY TEST HEAT PUMP CONTROL SHALL PROVIDE FOR "CASCADE" TO SEQUENCE AND ROTATE WHILE MAINTAINING OPERATION OF UP TO SIXTY-FOUR HEAT PUMP MODULES.
- HEAT PUMP SHALL BE EQUIPPED WITH TERMINAL STRIPS FOR ELECTRICAL CONNECTION. A HIGH VOLTAGE TERMINAL STRIP SHALL BE PROVIDED FOR SUPPLY VOLTAGE. SUPPLY VOLTAGE SHALL BE 40-480V/3PH/60HZ. OPTIONAL FIELD INSTALLED VOLTAGE TRANSFORMER SHALL BE OFFERED BY MANUFACTURER FOR ADDITIONAL VOLTAGE THAT SHALL BE REQUIRED.

SEQUENCE OF OPERATIONS

- 1. GENERAL
 - HOT WATER SETPOINT SHALL BE 140DF (ADJUSTABLE). ARMSTRONG
 - B. PUMP DELAY SHALL BE SET TO 5 MINUTES (ADJUSTABLE)

AWHP SEQUENCE

- UPON A CALL FOE HEAT, THE CONTROL TURNS ON THE INTERNAL PUMP.
- DAMPERS SHALL OPEN VIA 24V CONTROLS CONNECTION. DAMPERS SHALL FAIL OPEN. SEE MECHANICAL
- INTERNAL CONTROLS CONFIRMS THAT THE REFRIGERANT HIGH AND LOW PRESSURE SWITCHES, BLOCKED DRAIN SWITCH, LIMITS, AND CONTACTS CLOSE
- INTERNAL CONTROLS CONFIRMS THE FAN COMES UP TO THE DESIRED SPEED. COMPRESSOR INITIALS, AND WATER VALVES OPEN.
- ONCE THE DHW CALL FOR HEAT IS SATISFIED, THE INTERNAL CONTROL WILL TURN OFF THE COMPRESSOR. ANY PUMPS THAT ARE RUNNING WILL BEGIN THEIR RESPECTIVE PUMP DELAY CYCLES.
- AT THE END OF THE PUMP CYCLE, THE LOUVER RELAY CONTACTS WILL DE-ENERGIZE.
- AT THE END OF THE PUMP DELAY CYCLE(S), THE PUMP(S) WILL BE TURNED OFF.

PIPING SYSTEM SPECIALTIES

- SPECIALITY PIPE SYSTEMS SHALL BE CONSTRUCTED OF MATERIALS THAT ARE COMPATIBLE WITH THE TYPE OF PIPING MATERIAL AND FLUIDS IN THE SYSTEM. THEY SHALL BE RATED FOR THE TEMPERATURES AND PRESSURES OF THE SYSTEMS IN WHICH THE VALVES ARE INSTALLED
- PROVIDE SENSORS WHERE INDICATED ON THE PLANS. MANUAL AIR VENTS: 1/2" SIZE
- PROVIDE DIELECTRIC BREAKS BETWEEN DISSIMILAR METALS.
- TEST PLUGS: PROVIDE NIPPLES AND COUPLINGS TO MAKE THE TEST PLUGS EXTEND THROUGH THE INSULATED PIPE.
- STRAINERS: BASKETS SHALL BE TYPE-304 STAINLESS STEEL. TEE-TYPE DESIGN SHALL PROVIDE STRAIGHT-THROUGH FLOW. PROVIDE DOUBLE HINGED, 304 STAINLESS STEEL, TRI-CLAMP FITTINGS WITH PTFE
- GASKETS. MATCH GASKET SIZE TO THE APPROPRIATE PIPE SIZES. PROVIDE SANITARY GRADE SIGHT GLASSED FOR LIQUID LEVEL GAUGES ON STORAGE
- TANKS. SIGHT GLASS MATERIAL SHALL BE GLASS. TRAP PRIMERS
- BRASS CONSTRUCTION WITH OPERATING RANGE FROM 20-80 PSI. SUITABLE FOR 1-4 LOW USE FIXTURES.
- APPROVED MANUFACTURERS: PPP 10. A. WATER METERS SHALL BE THREADED, 1.5", STAINLESS STEEL, AND PROVIDED WITH PULSE OUTPUT. NO POWER SOURCE IS REQUIRED FOR THE METER.
 - MINIMUM FLOW SHALL BE 7.06 CUBIC FEET PER HOUR. PROVIDE ONE REMOTE METER READOUT FOR EACH WATER METER. RUN CONTROLS WIRE FROM METER TO REMOTE METER READOUT. MAXIMUM WIRE LENGTH SHALL BE 200'.
 - INSTALL PER MANUFACTURER'S RECOMMENDATION.
 - ACCEPTABLE MANUFACTURERS: EKM

PIPE TESTING

- DOMESTIC PLUMBING PIPING SHALL BE TESTED AT A PRESSURE NOT LESS THAN THE DESIGN PRESSURE FOR A PERIOD OF NOT LESS THAN 15 MINUTES. TESTS SHALL BE PER UPC CHAPTER 6. TEST GAUGES SHALL BE PER UPC 318.
- WASTE AND VENT PIPING SHALL BE TESTED WITH AT LEAST 10 FOOT HEAD OF WATER FOR A PERIOD OF NOT LESS THAN 15 MINUTES. TESTS SHALL BE PER UPC CHAPTER 7. TEST GAUGES SHALL BE PER UPC 318.
- HYDRONIC PIPING SHALL BE TESTED AT 1.5 TIMES THE MAXIMUM SYSTEM DESIGN PRESSURE, BUT NOT LESS THAN 100 PSI. THE DURATION OF THE TEST SHALL NOT BE LESS THAN 15 MINUTES. TEST PER IMC 1208.
- PIPING IS CONSIDERED "PASSED" IF THE PRESSURE REMAINS UNCHANGED FOR THE DURATIONS LISTED ABOVE.

HYDRONIC PIPE INSULATION

- ALL INSULATION MATERIAL, JACKETS, FACINGS, TAPES AND ADHESIVES, EXCEPT AS SPECIFICALLY IDENTIFIED HEREIN, SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AND A SMOKE DEVELOPED RATING NOT TO EXCEED 50, AS DETERMINED BY TEST METHOD SPECIFIED IN ASTM E-84, UL 723 OR NFPA 255.
- INSULATION SHALL BE PRE-FORMED RUBBER WITH HEAT RESISTANCE PER ASTM C-547. DENSITY TO BE 3 TO 5-LBS/CUBIC FOOT AND "K" VALUE SHALL BE 0.25 OR LESS. WATER VAPOR TRANSMISSION RATE SHALL BE LESS THAN 0.02
- PROVIDE ALL SERVICE JACKET AS A MOISTURE BARRIER. PROVIDE FINAL B COVER OF ALUMINUM OVER THE INSULATION ASSEMBLY. SECURE WITH STAINLESS STEEL BANDS.
- EXTERIOR PIPING SHALL BE PROVIDED WITH JACKETING SUITABLE FOR EXTERIOR INSTALLATION.
- THICKNESS SHALL BE PER THE WASHINGTON STATE ENERGY CODE. PROCESS PIPING SHALL NOT BE INSULATED.

WATER PIPE INSULATION

- AND ACCESSORIES 2.
- NSEC PROVIDE INSULATION ON THE FIRST 10' OF OVERFLOW PIPING.
- BUILDING ENVELLOP OR AREAS THAT ARE SUBJECT TO DAMAGE.

PRE-FORMED FIBERGLASS INFORMATION FOR PIPE, VALVES, FITTINGS, EQUIPMENT

PROVIDE PER THE WSEC AND THE MIDWEST INSULATION CONTRACTORS ASSOCIATION (MICA) STANDARDS. INSULATION THICKNESSES SHALL COMPLY WITH

LINESET PIPING EXPOSED TO WEATHER SHALL BE PROTECTED FROM DAMAGE. PROVIDE ARMAFLEX SHIELD OR EQUAL IN AREAS THAT ARE EXTERIOR TO THE

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M [*] DDLEBROOF ENGINEERING, LL(253.765.8292 253.765.8292
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