







1 VIEW FROM NORTHWEST

MILLICOMA SCHOOL REROOF & CLASSROOM ADDITION





COOS BAY PUBLIC SCHOOLS 260 2ND AVE, COOS BAY, OREGON

PROJECT TEAM	<u>SHEE</u>	<u>T INDEX</u>
OWNER	GENERAL	
COOS BAY SCHOOL DISTRICT	G-000	COVER SHEET
1255 HEMLOCK AVE	G-001	CODE SUMMARY
COOS BAY, OR 97420 PHONE ¹ (541) 267-3104		
	ARCHITEC	TURAL DEMO
	AD201	OVERALL DEMO FLOOR
18525 VAN HORN ROAD	AD221	ROOF DEMO PLAN
ALSEA, OR 97324		
		SITE PLANS & DETAILS
CONTACT: CHRIS GIGGT	A-201	OVERALL FLOOR PLANS
<u>CONTRACTOR</u>	A-202	ENLARGED PLAN & INT.
SCOTT PARTNEY CONSTRUCTION	A-203	ENLARGED PLANS & INT
NORTH BEND, OR 97459	A-211	REFLECTED CEILING PL
PHONE: (541) 756-7060	A-212	ENLARGED REFLECTED
CONTACT: SCOTT PARTNEY	A-222	ROOF PLAN - WEST
ARCHITECT	A-223	ROOF PLAN - EAST
HGE ARCHITECTS INC.	A-301	BUILDING SECTIONS
333 SOUTH 4TH STREET	A-302	BUILDING SECTIONS
COOS BAY, OR 97420 PHONE: (541) 269 1166	A-303	ENLARGED BUILDING SE
CONTACT: JOE SLACK	A-401	EXTERIOR ELEVATIONS
	A-402	
STRUCTURAL	A-501	
921 SW WASHINGTON STREET. SUITE 560	A-502	EXTERIOR DETAILS
PORTLAND, OR 97205	A-504	EXTERIOR DETAILS - SK
	A-505	OPENING DETAILS & INT
CONTACT. TODD FOONG	A-701	SCHEDULES & ABBREVIN
PLUMBING		
INTERFACE ENGINEERING INC.	STRUCTU	RAL
SUITE 1600	S-001	GENERAL NOTES, LEGE
PORTLAND, OR 97204	S-002	GENERAL NOTES CONTI
PHONE: (503) 382-2266	S-202	ENLARGED PLAN - CLAS
CONTACT. MOR SILENZI	S-231 S 201	
MECHANICAL - OWNER CONSULTANT	S-301 S-401	FOUNDATION DETAILS
COMFORT FLOW HEATING	S-405	ROOF OVER-FRAMING D
SPRINGFIELD, OR 97477	0 400	
PHONE: (541) 726-0100	PLUMBING	
CONTACT: JARED ECK	P-001	SYMBOLS LIST & GENER
ELECTRICAL - OWNER CONSULTANT	PD201	MAIN FLOOR PLAN - DEN
KYLE ELECTRIC	PD232	ROOF PLAN - DEMOLITIC
1085 S 2ND ST	P-201	MAIN FLOOR PLAN
COOS BAY, OR 97420 PHONE: (541) 756-2723	P-232	ROOF PLAN
CONTACT: JASON MAULT		
	MECHANIC M1.00	AL - FOR REFERENCE ON
	M1.00 M1.10	
	M1.10 M1.11	SCHEDULES
	M2.00	HVACIOWERIEVELDE
	M2.10	HVAC INTERMEDIATE LE
	M2.20	HVAC MAIN LEVEL DEMO
	M2.21	HVAC ROOF LEVEL DEM
	M2.30	HVAC ROOF LEVEL DEM
	M3.00	HVAC LOWER LEVEL
	M3.10	HVAC INTERMEDIATE LE
	M3 20	HVAC MAIN LEVEL - WES

ECTRIC	AL - FOR REFERENCE ONLY
E1.0	ONE-LINE DIAGRAM
E1.1	PANEL SCHEDULES
E2.0	NEW CLASSROOMS
E2.1	LIGHTING REPLACEMENT
E3.0	HVAC REPLACEMENT - LOWER
E3.1	HVAC REPLACEMENT - UPPER
E3.2	HVAC REPLACEMENT - ROOF

M3.30 HVAC ROOF LEVEL

DETAILS

M3.21

M4.00

M4.01

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LOOR PLANS

ANS & INT. ELEVATIONS - CLASSROOM ADDITION & INT. ELEVATIONS - WORKROOMS **G** PLANS CTED CEILING PLANS NG SECTIONS & DETAILS DNS OR ELEVATIONS & ROOF MONITOR - SKYLIGHTS / ROOF MONIT INTERIOR DETAILS REVIATIONS LEGEND, & ABBREVIATIONS ONTINUED CLASSROOM ADDITION IING DETAILS ENERAL NOTES - DEMOLITION OLITION CE ONLY SYMBOLS, & ABBREVIATIONS L DEMOLITION TE LEVEL DEMOLITION **DEMOLITION - WEST** DEMOLITION -EAST DEMOLITION ATE LEVEL WEST HVAC MAIN LEVEL - EAST CONTROL SCHEMATICS AND SEQUENCES NLY LOWER & INTERMEDIATE LEVELS UPPER LEVEL TOP OF WALL LIMITS OF SURVEY -80.99' TOP OF RETAINING WALL -HANDRAIL 80.99' 0 0 TOP OF WALL 1 81.15' 72.55' TOP OF WALL 81.78' TOP OF WALL 80.99' F.F. 82.08'

PROJECT NO.	DRAWING NO.
900.245	S1
DATE	SHEET NO.
JULY 2022	1 <i>o</i> ⊧ 1



2010 Inclusional Electron Building Code 2010 Inclusion Action of the State of State			Clurar		010 0 0 0			
Building Construction Type 68, non-spinkered (Table 601; Alexation Level 1 per EB (2003)) Addition Occupancy: E Building Cocupancy: E Build		2018 International	Existing	Building Code				
Exercise Constraints of the Barty A Mentation Level 1 per LB Addition Consugaries: Part B Part B Addition Consugaries: Part B Addition B Part B Addition Consugaries: Part B Part B Part B Addition B Part B Part B Part B Part B Part B Part B Part B Part B Part B Part B Part B Part B	<u>BUIL</u>	<u>-DING CONSTRUC</u>	<u>TION:</u>	_				
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Heater and the second seco	<u>BUIL</u>	DING AREA (GRO	<u>SS SQ. I</u>	-T.):				
<pre>Chain Floor Example of the set of the s</pre>		(E) Basement: (E) Lower Floor:	(9,794 SF 18,744 SF				
<pre>High Floor Addition 1 1/2 States is been as the set of the se</pre>		(E) Main Floor: EXISTING TOTAL	بر بر	52,563 SF 31.101 SF				
ALCOMBLE HEIGHTS & AREASE Presenter Presen		Main Floor Additio		<u>2,720 SF</u> 33,821 SF				
Exeling Type 58, non-equivalent 0, Occupancy Type E Height (Table 504.3); Allowable 18 to (X) Exelution table 504.0) Exelution table 504.00 Exelution table 504.00 Exelution table 504.00 Exelution table 504.00 Academic status 27.44 59: CVC Therefore wells, the separation of < 5.8, Occupancy Group E, L-hour (Table 602.7) Market 20, 2019 (S)	<u>ALL(</u>	OWABLE HEIGHTS	3 & ARE	AS:				
<pre>representation provide a constraint of the constraint of the</pre>		Existing:	nklorad		ωĒ			
Advances in the second		י אר אר אר אין	.3).	υσσαματικά της				
Addition adducts 1911: OK Structure (Table 506.2) Addition to the 1101 SP 3: 000 SF; N.G. Addition to a considered separate building with shared facilities. FIE WALLS Executing adducts 19, 101 SF 3: 000 SF; N.G. Addition to a considered separate building with shared facilities. FIE WALLS Consistent 20, 476 45; 000 Three wells - 2000 (Table 706.1) Structure (Table 702.1) (2000 and 5) Consistent 2000 (Table 706.1) Structure (Table 702.1) (2000 and 5) Structure (Table 702.1		Allowable: 4 Existing act	40 ft ual: 46 ft	:> 40 ft; N.G				
Adventure 11 Style		Addition act Stories (Table 504	tual: 18 ft 1.4)	t; OK				
Area (Table 1962) Provide 1990 SF Existing actual 81,101 SF > 500 SF: N.G. Addition tackual 274 45 C. (X) Therefore, existing building is non-compilient with surrent code. Addition tackual 274 45 C. (X) Construction (Table 72),1(2), kern on: 14-15,15 Construction 22, 17,2, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,2, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 22, 17,3, 07,35 F, E, 20, 49, 1, 1 Construction 24, 10,000 C, 10		Allowable: Existing act	ual: 3 story	ories > 1; N.G.				
Existing partial \$1,101 SP > 9,000 SF; N.G. Addition to be considered separate building with started facilities. FET VALUE Experience walls, fire separation of < 5 ft, Occupancy Group E: 1-hour (Table 602; Fire value, 2-hour (Table 1712; Ham rule, 14-15); Concision (Table 1712; Ham rule, 14-15); Allowable opening size (707.0); 160 SF; actual; 117 SF; OK ATTE DISTANCE MAXIMUM (Table 1008:11) Doids able into considered separate building with started facilities are paraget required (708 SF); 1-100 SF; 7/18.4%; OK: see Rood Plant Werthaltion (1202.1%; 1500 of area, with 40-50% of versing located in upper parton of atter. TEXPLOSE TABLE 1004:5 Doids able into areas of maximum 3.000 SF; 7/18.4%; OK: see Rood Plant Cocupaneyr Type E; no spithate; 75 fee; OK COCUPANY LOADS (TABLE 1004:5) Doids able into areas of maximum 3.000 SF; 7/18.4%; OK: see Rood Plant TEXPLOSE TABLE 1004:5 TEXPLOSE TABLE 1004:5 Doids able into areas of maximum 3.000 SF; 7/18.4%; OK: see Rood Plant TEXPLOSE TABLE 1004:5 Doccupaneyry Type E; no spithate; 75 fee; OK COCUPANY LOADS (TABLE 1004:5) Doccupaneyry Type E; no spithate; 75 fee; OC COCUPANY LOADS (TABLE 1004:5) Distants A: 16 housing area of maximum 3.000 SF; 7/18.4%; OK: see Rood Plant Doccupaneyry SD ceach sex; 1 Datable A: 16 housing area of maximum 3.000 SF; 7/18.4%; OK: see Rood Plant Doccupaneyry SD ceach sex; 1 Datable A: 16 housing area of maximum 3.000 SF; 7/18.4%; OK: see Rood Plant Doccupaneyry SD ceach sex; 1 Datable A: 16 housing area of maximum 3.000 SF; 7/18.4%; OK: see Rood Plant Doccupaneyry SD ceach sex; 1 Datable A: 16 housing area of maximum 3.000 SF; 7/18.4%; OK: see Rood Plant Doccupaneyry SD ceach sex; 1 Datable A: 16 housing area of maximum 3.000 SF; 7/18.4%; Doceupaneyry Docupaneyry SD ceach sex; 1 Datable A: 16 housing area of maximum 3.000 SF; 7/18.4%; Doceupaneyry Docupaneyry Docupaneyry Doceupaneyry Doceupaneyry Doceupaneyry Doceupaneyry Doceupaneyry Doceupane		Addition act Area (Table 506.2 Allowable: 0	ual: 1 st()),500 SF	ury, UK				
Therefore, existing building is non-compliant with current code. Addition to be considered separate building with shared facilities. EXETURY WILL Fire separation of < 5.1 , Occupancy Group E: 1-hour (Table 602, Fire walls: 2-hour (Table 7064, note A); Compared (Table		Existing act Addition act	ual: 81,1 tual: 2.74	01 SF > 9,500 \$ └4 SF; OK	SF; N.G.			
Addition to be considered separate building with shared facilities. FIEFULS Extension (Table 76.5.4, note A) Construction (Table 76.6.1) Construction (Table 76.6.1) Construction (Table 76.1.1) Addition (Table 76.1.1) Mode addit into areas of maximum 3.000 SF (718.4). OK: see Rood Plans Ventiliser (102.2.1). 11:00 a ventiling located in upper parties of addite TRAVEL DISTANCE MAXIMUM (TABLE 1096.2.11 Cocupancy Type E, no apinkler: 75 feet; OK OCUPAN LOADS (TABLE 104.5): Baom Name Baom Name Cocupancy Type E , no apinkler: 75 feet; OK Cocupancy Type E , and apinkler: 76 feet; OK Cocupancy Type E , and apinkler: 78 feet Classroom 27 173 978 SF E 20 49 1 Classroom 27 173 978 SF E 20 49 1 Classroom 27 173 978 SF Classroom 20 10000000000000000000000000000000000		Therefore, existing	g buildinc	ı is non-complia	int with curre	ent code.		
CITELY MULTICE Preferror walls, fire separation of < 5.10, Cotupancy Group E: 1-hour (Table 002); Fire walls, Exteur (Table 700.4, not (4.1.5); Sor parapetric required (70.6); 1-12-hour door (Table 716.11)); 1-12-hour door (Table 716.11)); 1-12-hour door (Table 716.11); 1-12-hour door (Table 716.11); 1-12-	Fa :	Addition to be con	sidered s	separate buildin	g with share	ed facilities.		
Clearly was, the sequence of the V-COUPARY strong E1-1hout (1able 602). Fire values, the sequence of the V-CA - hote A). Construction (Table 72-1 (12), harm no. 14-1.5): 30 paper treative (76-6). E1-12-hour door (Table 716.11): Allowable perpending size (77-6). 156 SR sectual: 117 SF, OK. ETHE DISTANCE MAXIMUM (TABLE 1002.11) Occupanty Type E, no spiritike: 75 feet OK. COCUPANT LOADS (TABLE 1002.11) Occupanty Type E, no spiritike: 75 feet OK. COCUPANT LOADS (TABLE 2002.1): Requires: 10 cocupanty Type E, no spiritike: 75 feet OK. Cocupant To Data (Table 202.1): 730 SR sF E 20 49 1 Classroom 27 173 978 SF E 20 49 1 Classroom 27 173 10 class 16 10 class 16 10 class 16 10 class 16 10 class 175 feet Occupant Load Schedule on A-7(Assemble set 10 class 16 10 class 16 10 class 16 10 class 17 10 cla	<u>r IRE</u>	Evtorior	2015	on of < c "		אווט די 4 י	Table Cost	
Provide the set of the		Fire walls: 2-hour	उच्parati (Table 70 n (Table	טו ט < 5 tt, Occ 06.4, note A) 721_1(2)_itcm	-upancy Gro	יקע ⊑: 1-hour (i aule 602)	
1-1/2-hour door (Table 716/11) ATIC DRAFTSTOPS Didde attic into areas of maximum 3,000 SF (718.4); OK; see Roof Plans Ventilation (1202.1): 1300 of area, with 40-60% of venting located in upper particle of attic of TRAFE DISTANCE MAXIMUM (TABLE 1066.21) Cocupanty Type E, no spirikler 75 feet; OK OCCUPANT LOADS (TABLE 1004.50) Room Name Room No. Area (171 S00 SF E) 0.L.E. Max.Ooo Req. E 20 49 1 Occupant Loads (TABLE 2002.1) PUMBING TURIES (TABLE 2002.1): Required: 1 tolled per 60 each sex 1 driving 108 makes, 788 females. 1 driving 100 makes 10 uninate = 6 tollets, per Table 2902.1) Max Heistorice: 18 Therefore, building with addition is in compliance; OK UNING UNING UNING: 1 driving is in compliance; OK UNING UNING UNING: 1 driving is in compliance; OK UNING UNING UNING: 1 driving is in compliance; OK UNING UNING UNING: 1 driving unit addition is in compliance; OK UNING UNING UNING: 1 driving unit addition is in compliance; OK UNING UNING UNING: 1 driving unit addition is in compliance; OK UNING UNING UNING: 1 driving unit addition is in compliance; OK UNING UNING UNING: 1 driving unit addition unit addition unit addition unit addition unit addition unit		2x4 1 30" parapet	aטופ 16" O.C. required	, ∠, nem ۱ w/ (2) layers 5/8 I (706.6)	3" type X gy	psum wallboar	d each side	
ATIC DRAFTSTOPS Dide attic into areas of maximum 3,000 SF (718.4); DK; see Rod Plans Ventilation (1202.1); 1/300 of area, with 40-50% of venting located in upper portion of attic a TRAVE DISTANCE MAXIMUM (TABLE 1006.2) Occupanty Type E: no sprinker: 75 fet; DK Occupanty Type E: no sprinker: 75 fet; DK Occupant LOADS (TABLE 1004.5) PLUIBING CTABLE 2002.1) Reguine: 1 tolial per 50 parts as: 1 dinking foundain per floor 1 tolial per 50 parts as: 1 dinking foundain per floor 1 tolials: 21 (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 28 Travel 1 tolial per 50 parts as: 1 tolials: 21 (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per Table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per table 2902.1) Maximum 27 SF (15 tolials, plus 10 unitials = 6 tolials, per table 2		1-1/2-hour of Allowable of	door (Tal pening s	ble 716.1(1)) ize (707.6): 156	SF; actual [.]	117 SF; QK		
Divide attic into areas of maximum 3,000 SF (718.4); OK; see Roof Plans TRAVEL DISTANCE MAXIMUM TABLE 1006.2.1 Coccurrent Loods (TABLE 1004.3): Coccurrent Loods (TABLE 1004.3): Room Name <u>Note State 1005 (TABLE 1005.21)</u> Room Name <u>Note State 1005 (TABLE 1005.21)</u> <u>Note State 1005 (TABLE 1005.21)</u> Room Name Total Cocupant Loods (TABLE 1005.21) Room Name Room Name (Table 1005.3): Room Name <u>Note State 1005 (TABLE 2002.11)</u> Room Name <u>Note State 1005 (TABLE 2002.11)</u> Reputited: <u>Note State 1005 (TABLE 2002.11)</u> Reputited: <u>Note State 1005 (TABLE 2002.11)</u> Reputited: <u>Note State 2002.11</u> Reputited: <u>Note State 2002.11</u> Reputited: <u>Note State 2002.11</u> Reputited: <u>Note State 2002.11</u> Mate Interes: 18 <u>Note State 2002.11</u> <td> <u>ATT</u>I</td> <td>C DRAFTSTOPS</td> <td></td> <td></td> <td>~ \/</td> <td>Y Y</td> <td>\sim</td> <td>\langle</td>	 <u>ATT</u> I	C DRAFTSTOPS			~ \/	Y Y	\sim	$\langle $
TRAVEL ISTANCE MAXIMUM (TABLE 1006.2.1) Cocupancy Type E, no sprinkler: 75 feet: OK OCCUPANT LOODS (TABLE 1004.5): Room Name Room Area Type E of OLE Max Occ Req. E Classroom 28 173 978 SF E 20 49 1 Classroom 28 16 love on the set 1 Classroom 28 173 978 SF E 20 49 1 Classroom 28 16 love on the set 1 Classroom 28 173 978 SF E 20 49 1 Classroom 28 16 love on the set 1 Classroom 28 178 Provide ST Class 10 Classroom 28 178 Provide ST Class 10 Classroom 28 178 Provide ST Class 10 Classroom 28 16 love on the set 1 Classroom 28 178 Provide ST Class 10 Classroom 28 10 C	-	Divide attic into an	eas of m	aximum 3,000 S	SF (718.4); (OK; see Roof I	Plans	on of
Occupancy Type E, no sprinkler: 75 feet: OK Occupancy Type E, no sprinkler: 75 feet: OK <u>Addition Hall</u> 171 <u>Soen No. Area</u> <u>Addition Hall</u> 171 Classroom 26 172 <u>Classroom 27</u> 173 978 SF <u>E</u> <u>20</u> <u>49</u> <u>Classroom 27</u> 173 978 SF <u>E</u> <u>20</u> <u>49</u> <u>1</u> tollet per 50 each sex <u>16</u>	TP ^ '		т). 1/300 \XIMI IP	(TABLE 4000 f	ມ-ວບ≫ of ve 2.1)	ining located in	, _ч µµer porti	טי attic a
OCCUPANT LOADS (TABLE 1004.5): Recombane Recombane Recombane Classroom 26 173 978 SF E 20 PLUMBING FIXTURES LTABLE 202.11: Require PLUMEING FIXTURES TABLE 202.11: Require 1 lavadory per 30 each sex Assuming 78 males, 788 termales: Assuming 78 males, 788 termales: 1 lavadory per 30 each sex 1 lavadory per 30 each se	<u> 1 IXA</u>			inkler: 75 feet. (<u></u> 2K			
Boom None Classroom 26 Top 17 Output 978 SF E Output 20 Max Occ 98 Res. F PLUMBING FIXTURES TABLE 2802.11: Required: Classroom 27 17.3 978 SF E 20 49 1 PLUMBING FIXTURES TABLE 2802.11: Required: Classroom 27 17.3 978 SF E 20 49 1 PLUMBING FIXTURES TABLE 2802.11: Required: Classroom 27 Total occupant load, including addition: 1.575 (see Occupant Load Schedule on A-7C Assuming 789 males, 789 formales: 16 tolets 8: 16 lavatories required for males 16 tolets 8: 16 lavatories required for females Actual: Male tolets: 21 (15 tolets, plus 10 urinals = 6 tolets, per Table 2902.1) Male tolets: 23 Female lavatories: 18 Therefore, building with addition is in compliance; OK Image: Classroom 20 Image: Classroom 20 Image: Classroom With addition is in compliance; OK Image: Classroom 20 Image: Classroom 20 Image: Classroom With addition is in compliance; OK Image: Classroom 20 Image: Classroom 20 Image: Classroom With addition is in compliance; OK Image: Classroom 20 Image: Classroom 20 Image: Classroom 20 Image: Classroom 20 Image: Classroom 20 Image: Classroom 20 Image: Classroom 20 Image: Classroom 20 Image: Class	ىد 22 <u>0</u>	UPANT LOADS (T	<u>ABLE</u> 10			\sim	\nearrow	
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Classroom 27 173 978 F E 20 49 1 PLUMBING FIXTURES (TABLE 2902.1): Required: 1 load per 50 each sex 1 load or per 50 each		Addition Hall Classroom 26	171 172	508 SF 978 SF	E E E	- 20	98 49	1 1
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5 73' TOTAL 69' TO 1 1 1 23.5' 1 1 1 1 1 1 1 1 9.5' 1 1 1 1 1		Actual: Male toilets Male toilets Male toilets Male lavato Female toilets Therefore, building	50 each s ber 50 each ountain p bant load, ming 788 16 toile 16 toile : 21 (15 the ories: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer ts & 16 lavatorie ts & 16 lavatorie toilets, plus 10 t 8 dition is in comp	ion: 1,575 (s males: es required es required urinals = 6 to pliance; OK	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	ule on A-70
5 73' TOTAL 69' TO 1 1 1 1 23.5' 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Required: 1 toilet per 8 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female toile Female lava Therefore, building	50 each s ier 50 each ountain p oant load, ming 788 16 toile 16 toile 16 toile 121 (15 for the second 16 toile 18 ets: 23 atories: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer ts & 16 lavatorie ts & 16 lavatorie toilets, plus 10 t 8 dition is in comp	ion: 1,575 (s males: es required es required urinals = 6 to	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	ule on A-70
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C ACS DM 22 C ACS		Required: 1 toilet per 8 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each puntain p iant load, ming 788 16 toile 16 toile : 21 (15 t ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer ts & 16 lavatorie toilets, plus 10 t 8 dition is in comp	ion: 1,575 (s males: es required es required urinals = 6 to	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
23.5' 1 23.5' 1 20 EV 1 20		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female toilet Female lava Therefore, building	50 each s ier 50 each ountain p iant load, ming 788 16 toile 16 toile : 21 (15 t ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer ts & 16 lavatorie toilets, plus 10 t 8 dition is in comp	ion: 1,575 (s males: es required es required urinals = 6 to	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
23.5 WT 249 YE WT 24		Required: 1 toilet per 9 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female toile Female lava Therefore, building	50 each s ier 50 each pointain p pant load, ming 788 16 toile 16 toile : 21 (15 the ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer ts & 16 lavatorie toilets, plus 10 u 8 dition is in comp	ion: 1,575 (s males: es required arinals = 6 to pliance; OK	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	
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Image: Second		Required: 1 toilet per 9 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each pointain p pant load, ming 788 16 toile 16 toile : 21 (15 t ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer ts & 16 lavatorie ts & 16 lavatorie collets, plus 10 u 8 dition is in comp	ion: 1,575 (smales: es required es required urinals = 6 to pliance; OK	see Occupant for males for females bilets, per Tabl	Load Schedu	Jle on A-70
CLASS DM 22		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ver 50 each point load, ming 788 16 toile 16 toile 121 (15 the ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie its & 16 lavatorie collets, plus 10 u 8 dition is in comp	ion: 1,575 (s males: es required arinals = 6 to pliance; OK	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
9.5' 30' 9.5' 30' 1 1 1 1 20-MIN DOOR W/ CLOSER 49 49 20-MIN DO 13' 171 508 SF 1-1/2-H 14.7'' 38' 72'' 1-HR WALL CORRIDOR WALL		Required: 1 toilet per 8 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each puntain p iant load, ming 788 16 toile 16 toile : 21 (15 t iries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie its & 16 lavatorie coilets, plus 10 u 8 dition is in comp	ion: 1,575 (smales: es required es required urinals = 6 to pliance; OK 73' TOTA 1 1 1 1 73' TOTA 1 1 1 1 1 1 1 1 1 1	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	
30' 9.5' 10 10 10 10 10 10 10 10 10 10		Required: 1 toilet per 8 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female toile Female lava Therefore, building	50 each s ier 50 each puntain p iant load, ming 788 16 toile 16 toile : 21 (15 t iries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie its & 16 lavatorie collets, plus 10 u 8 dition is in comp	ion: 1,575 (s males: es required es required urinals = 6 to pliance; OK	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	
30' 30' 20-MIN DOOR W/ CLOSER 49 49 20-MIN DOOR W/ CLOSER 49 49 20-MIN DOOR 49 49 20-MIN DOOR 49 49 20-MIN DOOR 49 49 49 20-MIN DOOR 49 49 20-MIN DOOR 49 49 49 20-MIN DOOR 49 49 49 49 49 49 49 49 49 49		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female toilet Female lava Therefore, building	50 each s ier 50 each pant load, ming 788 16 toile 16 toile : 21 (15 t ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie its & 16 lavatorie coilets, plus 10 u 8 dition is in comp	ion: 1,575 (smales: es required es required urinals = 6 to pliance; OK 73' TOTA 1 1 1 1 1 1 1 1 1 1	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
20-MIN DOOR W/ CLOSER 49 49 20-MIN DO HALL ADDITION 13' 171 508 SF 1-1/2-H FIRE D 38' 1-HR WALL CORRIDOR WALL CLASS DM 22		Required: 1 toilet per 9 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each pant load, ming 788 16 toile 16 toile : 21 (15 t ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie its & 16 lavatorie coilets, plus 10 u 8 dition is in comp	ion: 1,575 (smales: es required es required urinals = 6 to pliance; OK 73' TOTA 1 1 1 1 1 1 1 1 1 1	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
20-MIN DOOR W/ CLOSER 20-MIN DOOR W/ CLOSER 49 49 20-MIN DO 6' 9.5' HALL ADDITION 13' 171 508 SF FIRE D 38' 1-HR WALL CORRIDOR WALL CLASS DM 22		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female toile Female lava Therefore, building	50 each s ver 50 each pant load, ming 788 16 toile 16 toile 121 (15 th ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie its & 16 lavatorie coilets, plus 10 u 8 dition is in comp	ion: 1,575 (smales: es required es required urinals = 6 to oliance; OK 73' TOTA 13' TOTA	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
20-MIN DOOR W/ CLOSER 49 49 20-MIN DO 6' 9.5 HALL ADDITION 13' 171 508 SF 1-1/2-H FIRE D 14.7" 72" 1-HR WALL CORRIDOR WALL CLASS DM 22		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each pant load, ming 788 16 toile 16 toile : 21 (15 t ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie ts & 16 lavatorie coilets, plus 10 u 8 dition is in comp	ion: 1,575 (smales: es required es required urinals = 6 to oliance; OK 73' TOTA 1 1 1 1 1 1 1 1 1 1	see Occupant for males for females pilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
98 14.7" 13' 171 508 SF 1-1/2-H FIRE D 14.7" 1-1/2-H FIRE D 1-1/2-H FIRE D 1-1/2-H FIRE D		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each pant load, ming 788 16 toile 16 toile 16 toile 15 toile 16 toile 16 toile 17 toile 18 toile 19 toi	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie its & 16 lavatorie coilets, plus 10 u 8 dition is in comp	ion: 1,575 (smales: es required es required urinals = 6 to oliance; OK 73' TOTA 1 1 1 1 1 1 1 1 1 1	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
0 6' 9.5' HALL ADDITION 171 13' 171 508 SF 1-1/2-H 98 14.7" 14.7" 38' 72" 1-HR WALL CORRIDOR WALL		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female toile Female lava Therefore, building	50 each s ier 50 each pant load, ming 788 16 toile 16 toile : 21 (15 t ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie ts & 16 lavatorie coilets, plus 10 u 8 dition is in comp	ion: 1,575 (smales: es required es required urinals = 6 to oliance; OK 73' TOTA 11 $1123.5'1$ 1111 11	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
98 14.7" 72" HALL ADDITION 13' 171 508 SF FIRE D 38' 1-1/2-H FIRE D 1-HR WALL CORRIDOR WALL		Required: 1 toilet per s 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each prant load, ming 788 16 toile 16 toile 16 toile 15 toile 16 toile 16 toile 17 toile 18 ets: 23 atories: 18 ets: 23 atories: 11 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie its & 16 lavatorie collets, plus 10 u 8 dition is in comp	ion: 1,575 (smales: es required es required urinals = 6 to oliance; OK 73' TOTA 1000 10	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
98 14.7" 72" 1-HR WALL CORRIDOR WALL CLASS PM 22		Required: 1 toilet per s 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each prant load, ming 788 16 toile 16 toile 15 toile 16 toile ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie its & 16 lavatorie collets, plus 10 to 8 dition is in comp	ion: 1,575 (s males: es required arinals = 6 to oliance; OK	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
1-HR WALL CORRIDOR WALL		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female toile Female lava Therefore, building	50 each s ier 50 each prant load, ming 788 16 toile 16 toile : 21 (15 the ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer ts & 16 lavatorie ts & 16 lavatorie collets, plus 10 u 8 dition is in comp	ion: 1,575 (smales: es required es required urinals = 6 to oliance; OK	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
		PIEING FIXTURES Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each prant load, ming 788 16 toile 16 toile 15 toile 16 toile 16 toile 17 toile 18 toile 19 with ad	sex ch sex er floor including addit males, 788 fer ts & 16 lavatorie ts & 16 lavatorie collets, plus 10 t 8 dition is in comp 5^{-1}	ion: 1,575 (s males: es required arinals = 6 to pliance; OK	see Occupant for males for females pilets, per Tabl	Load Schedu e 2902.1)	Je on A-70
		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each ountain p iant load, ming 788 16 toile 16 toile : 21 (15 t ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit 3 males, 788 fer ts & 16 lavatorie ts & 16 lavatorie collets, plus 10 u 8 dition is in comp 10^{-1}	ion: 1,575 (s males: es required arinals = 6 to oliance; OK 73' TOTA 1000R W/ CLOS	See Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
		Required: 1 toilet per f 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each ountain p iant load, ming 788 16 toile 16 toile : 21 (15 t ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorio ts & 16 lavatorio toilets, plus 10 to 8 dition is in comp 5^{-}	ion: 1,575 (s males: es required arinals = 6 to oliance; OK	See Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female toilets Therefore, building	50 each s ier 50 each pant load, ming 788 16 toile 16 toile : 21 (15 t ries: 18 ets: 23 atories: 1 g with ad	sex ch sex er floor including addit males, 788 fer its & 16 lavatorie its & 16 lavatorie collets, plus 10 u 8 dition is in comp $\sqrt{5}$ $\sqrt{5}$ $\sqrt{5}$ $\sqrt{20-MIN I}$ $\sqrt{98}$ $\sqrt{72"}$	ion: 1,575 (s males: es required arinals = 6 to bliance; OK 73' TOTA 1000 TOTA 10000 T	see Occupant for males for females bilets, per Tabl	Load Schedu e 2902.1)	Jle on A-70
		Required: 1 toilet per 4 1 lavatory p 1 drinking for Total occup Assu Actual: Male toilets Male lavato Female lava Therefore, building	50 each s ier 50 each ountain p iant load, ming 788 16 toile 16 toile 15 toile 16 toile 16 toile 16 toile 17 toile 18 toile 19 to	sex ch sex er floor including addit males, 788 fer ts & 16 lavatorie collets, plus 10 u 8 dition is in comp $10^{-5^{-1}}$	ion: 1,575 (s males: es required arinals = 6 to oliance; OK	See Occupant for males for females oilets, per Table CLASS RM 27 SER CLASS RM 27 SER CLASS RM 27 SER SER SER SER SER CLASS RM 27 SER SER SER SER SER SER SER SE	Load Schedu e 2902.1)	Jle on A-70

4 CLASSROOM ADDITION - FIRE LIFE SAFETY

e 601) $\frac{1}{7}$ Alteration Level 1 per IEBC \sim

DCCUPANT LOAD SCHEDULE									
ROOM NAME	NO.	AREA	OCCUPANCY TYPE	OCCUPANCY LOAD FACTOR					
WEST HALL	102A	2385 SF							
NORTH HALL 1	102B	1361 SF							
SOUTH HALL 1	102C	2261 SF							
NORTH HALL 2	102E	1115 SF							
	102F	2915 SF	D	150					
	103	334 SF	B	150					
	104	342 SF	B	150					
	105	110 SF	B	150					
	100	156 SE		240					
NURSE	107	150 SF		240					
ST	110	82 SF	S	300					
PRINCIPLE	112	129 SF	B	150					
ST.	113	148 SF	S	300					
STAFF RM	114	629 SF	B	150					
LIBRARY	119	2732 SF	A	200					
OFFICE	120	86 SF	В	150					
WORK RM	121	379 SF	В	150					
OFFICE	122	133 SF	В	150					
CONF.	123	87 SF	В	150					
CONF.	124	254 SF	В	150					
AUDITORIUM	129	6007 SF	E	20					
OFFICE	129A	452 SF	В	150					
PRACTICE	130	86 SF	S	300					
PRACTICE	131	125 SF	S	300					
PRACTICE	132	275 SF	S	300					
OFFICE	133	291 SF	S	300					
ST.	134	158 SF	S	300					
OFFICE	135	128 SF	В	150					
OFFICE	136	148 SF	В	150					
LIBRARY	137	159 SF	S	300					
PRACTICE	138	87 SF	S	300					
PRACTICE	139	86 SF	S	300					
CLASS RM 1	143	928 SF	E	20					
CLASS RM 2	144	928 SF	E	20					
CLASS RM 3	145	929 SF	E	20					
CLASS RM 4	146	929 SF	E	20					
CLASS RM 5	147	928 SF	E	20					
WORK RM 1	148	535 SF	E	20					
CLASS RM 6	149	929 SF	E	20					
CLASS RM 7	150	929 SF	E	20					
CLASS RM 8	151	929 SF	E	20					
CLASS RM 9	152	929 SF	E	20					
	153	534 SF	E	20					
CLASS RM 10	154	920 SF	E	20					
	100	927 SF		20					
	150	929 SF		20					
	157	920 SF		20					
	150	155 SF	E B	150					
	160	135 SE	E	20					
CLASS RM 14	161	928 SF	F	20					
CLASS RM 15	162	920 OF	F	20					
CLASS RM 16	163	929 SF	F	20					
CLASS RM 17	164	928 SF	F	20					
WORK RM 5	165	535 SF	F	20					
CLASS RM 22	166	1048 SF	F	20					
CLASS RM 23	167	1049 SF	F	20					
STORAGE	168	337 SF	S	300					
CLASS RM 24	169	1049 SF	E	20					
CLASS RM 25	170	1050 SF	E	20					
CLASS RM 26	172	978 SF	E	20					
CLASS RM 27	173	978 SF	E	20					
	1								





BASEMENT FLOOR PLAN - FIRE LIFE SAFETY 1" = 30'-0"



2 LOWER FLOOR PLAN - FIRE LIFE SAFETY



1 MAIN FLOOR PLAN - FIRE LIFE SAFETY



HGE ARCHITECTS 333 S. 4TH STREET COOS BAY, OR 97420 P: 541.269.1166 general@hge1.com www.hge1.com JOSEPHA. SLACK HY pep A Stack G COOS BAY, OREGON OF OF ORT ADDITION ASSROOM CL 8 REROOF ____ SCHOOL STRICT MILLICOMA COOS BAY SCHOOL DIS 260 2ND AVE COOS BAY, OR 97420 BIDDING **REVISIONS**: # DATE DESCRIPTION A 1/20/23 BID SET DATE: JANUARY 2023 SHEET TITLE: CODE SUMMARY G-001 Copyright © 2023 HGE ARCHITECTS, Inc.

















1GE ARCHITECTS. 333 S. 4TH STREET COOS BAY, OR 97420 P: 541.269.1166 general@hge1.com www.hge1.com JOSEPHA. SLACK pep A. Stack + COOS BAY, OREGON FIL OF OREC Ζ 0 \square \square С S ک \frown С Ш SCHOO LICOMA BAY SCHOOL DIS MIL coos | coos | coos B BIDDING **REVISIONS**: # DATE DESCRIPTION A 1/20/23 BID SET DATE: JANUARY 2023 SHEET TITLE: SITE PLANS & DETAILS A-101 Copyright © 2023 HGE ARCHITECTS, Inc.

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					HGE ARCHITECTS. ARCHITECTS. 333 S. 4TH STREET COOS BAY, OR 97420 P: 541.269.1166 general@hge1.com www.hge1.com
					JOSEPHA. SLACK JOSEPHA. SLACK COOS BAY, OREGON OF ORTU
ROOI TYPE	F TYPE LEG SLOPE 1/2" / 12"	SEND ROOF SYSTEM ASSEMBLY MECHANICALLY-FASTENED SINGLE PLY ROOF MEMBRANE; 1/2" HIGH-DENSITY BOARD INSULATION; SELF-ADHERED AIR & VAPOR BARRIER	LOCATION TYPICAL AT OVER-FRAMING AREAS		
2 3	1/4" / 12" SLOPES EXCEEDING 1/2" / 12"	MECHANICALLY-FASTENED SINGLE PLY ROOF MEMBRANE; 1/4" ROOF COVER BOARD; TAPERED BOARD INSULATION; SELF-ADHERED AIR & VAPOR BARRIER MECHANICALLY-FASTENED SINGLE PLY ROOF MEMBRANE; 1/2" ROOF COVER BOARD; 1" BOARD INSULATION:	ALL LOW SLOPE AREAS (EXISTING) AUDITORIUM; WEST SLOPE		
4 5 ROOF - 1.	1/2" / 12" SLOPES EXCEEDING 1/2" / 12" TYPE NOTES: REFER TO RC	SELF-ADHERED AIR & VAPOR BARRIER MECHANICALLY-FASTENED SINGLE PLY ROOF MEMBRANE; 1/4" ROOF COVER BOARD; 5-1/2" BOARD INSULATION; SELF-ADHERED AIR & VAPOR BARRIER MECHANICALLY-FASTENED SINGLE PLY ROOF MEMBRANE; 1/2" ROOF COVER BOARD; 5-1/2" BOARD INSULATION; SELF-ADHERED AIR & VAPOR BARRIER	CLASSROOM ADDITION ROOF MONITORS (ALT. BID) BLY TAGS.		
1. 2. 3. 4. 1. 1. 1.	ROOF F MECHANIC RE-INSTAL REMOVE & HEIGHT IS INSTALL R LOCATION (E) PLUN	PLAN KEYNOTES CAL EQUIPMENT, SEE MECHANICAL LED SALAVAGED MECHANICAL EQUIPMENT, SE A REPLACE 36" x 60" ROOF HATCH, SAME LOCAT SUFFICIENT FOR THICKNESS OF RIGID INSULA EPLACEMENT 36" x 60" ROOF HATCH AT NEW R UNLESS NOTED OTHERWISE. PROVIDE LADDE	EE MECHANICA TION. ENSURE TION. OOF IN SAME ERS TO (E) ROO	L CURB DF CAVITY.	CHOOL REROOF & CLASSROOM ADDITION
- DOV - CON GUT - EXT BEL - 1-1/2 - (E) 2 3 -501	WNSPOUT, TYF NTINUOUS ITER ERIOR WALLS OW, TYP. 2" SOFFIT VEN 2" SOFFIT VEN				PROJECT NO.: 22.25 PROJECT NO.: 22.25 PROJECT NO.: 22.25 MILLICOMA SC COOS BAY SCHOOL DISTRIC SG0 2ND AVE COOS BAY, OR 97420 T/20/23 BID SET
			KEY	PLAN	DATE: JANUARY 2023 SHEET TITLE: ROOF PLAN - EAST A-223 Copyright © 2023 HGE ARCHITECTS, Inc.

1 NS SECTION @ HALL ADDITION

	ROOF VENT TYPICAL	
STORAGE	CLASS RM 24 169	CLASS RM 25 170

	3 A-303 4 2-HR FIRE WALL PARAPET
	LSL BLOCKING PER STRUCTURAL
SUSPENDED ACOUSTICAL CEILING	CLASS RM 26 172 11/2" SEISMIC GAP-
CLASSROOM ADDITION	
1 1 1	2 ROOF LADDER, PROVIDE BLOCKING WHERE REQ. 2-HR FIRE WALL
	ROOF TOP UNIT
	GL & LSL BLOCKING PER STRUCTURAL
indication indication indication indication	SUSPENDED ACOUSTICAL CEILING SUSPENDED ACOUSTICAL CEILING HALL ADDITION 171 2 A-503 A-503

1 NORTH ELEVATION - CLASSROOM ADDITION

2 EAST ELEVATION - CLASSROOM ADDITION

2' - 0"

TYP.

TYP.

PLAN OF DRAIN PAN

8 ROOF DRAIN 1 1/2" = 1'-0"

- PVC COATED DRIP EDGE W/ FACTORY WELDED SKIRT - NAILER FROM 2x10. RIP FRAMING, NAILER & TRIM TO DRIP EDGE ANGLE TYP. 1x8 FASCIA BOARD, OVER 2X4 NAILER

- SINGLE PLY ROOF MEMBRANE, EXTEND UP PARAPET WALL & OVER PARAPET FASCIA 3", SET IN SEALANT ALONG EDGE

SINGLE PLY ROOF MEMBRANE, EXTEND UP PARAPET WALL & OVER PARAPET FASCIA 3", SET IN SEALANT ALONG EDGE CONTINUOUS EDGE NAILER, MATCH INSULATION THICKNESS

PVC COATED DRIP EDGE W/ FACTORY WELDED SKIRT LAP VAPOR BARRIER OVER BLOCKING & WRB

- NAILER FROM 2x10. RIP FRAMING, NAILER & TRIM TO DRIP EDGE ANGLE TYP. 1x8 FASCIA BOARD, OVER 2X4 NAILER 2x8 CEDAR SUB FASCIA BOARD OVER 2X10 NAILER

INSECT SCREEN AT TOP AND BOTTOM CEMENT BD SIDING ON 1X VERTICAL FURRING STRIPS @ 16 OC TYP. WRB OVER 1/2" PLYWOOD SHEATHING, WRAP OVER 2X8 NAILER

1 ENLARGED SECTION - ROOF MONITOR - ALT. BID 3/4" = 1'-0"

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	COOS BAY, OREGON
	PROJECT NOI: 22.26 PROJECT NOI: 22.26 MILLICOMA SCHOOL REROOF & CLASSROOM ADDITION COOS BAY SCHOOL DISTRICT COOS BAY, OR 97420 TI TOTAL COOS BAY, OR 97420 TI TOTAL TI TOTAL TI TOTAL TI TOTAL TI TOTAL TI TOTAL TI TOTAL TI TOTAL
À	DATE: JANUARY 2023 SHEET TITLE: EXTERIOR DETAILS - SKYLIGHTS / ROOF MONITORS A-504

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OVER 5/8" PLYWOOD 5/8" GYP. BD. - GUTTER - PANEL SIDING - 2x6 ROOF JOISTS @ 24" O.C. - DOUBLE 2x6 HEADER - DOWNSPOUT BEYOND - VINYL WINDOW MECHANICALLY-FASTENED SINGLE PLY ROOF MEMBRANE

 MECHANICALLY-FASTENED
 SINGLE PLY ROOF MEMBRANE OVER 1/2" ROOF COVER BOARD

SELF-ADHERED AIR / VAPOR BARRIER

5 1/2" RIGID INSULATION

- REMOVE (E) SKYLIGHT & FLASHING

— TAPERED INSULATION CRICKET - 1" RIGID INSULATION

- SELF-ADHERED AIR / VAPOR BARRIER OVER 5/8" PLYWOOD

ROOF OVER-FRAMING, SEE STRUCTURAL

— 6x12 BEAM PER STRUCTURAL — 2x4 INFILL WALL @ 16" O.C. - 5/8" GYP. BD., BLEND W/ (E) GYP. BD.

— (E) SKYLIGHT CURB TO REMAIN

(E) INSULATION, RESTORE OVER
 W/ BLOWN-IN INSULATION, 3" TYP.

⁴ ENLARGED SECTION - SKYLIGHT - ALT. BID 3/4" = 1'-0"

WALL	WALL TYPE LEGEND							
TYPE	RATING	DESIGN #	WALL ASSEMBLY					
1	STC-49	GA WP 3377#	5/8" TYPE-X PROPRIETA INSULATION; 5/8" PLYW(
2	2-HR	GA WP 4136#	(2) LAYERS 5/8" TYPE-X INSULATION; 5/8" PLYW(
3	1-HR STC-49	GA WP 3377#	5/8" TYPE-X PROPRIETA INSULATION; 5/8" TYPE-2					
4			5/8" GYP. BD.; 2x6 @ 16" PLYWOOD; WRB; CEMEI					

(18) WALL TYPE 4

	DULE	EL OOD							
	NO.	FLOOR FINISH	BASE				WESTWALL	CEILING	NOTES / REMARKS
	101					SOOTHWALL			
NORTH HALL 1	102A 102B				KET NOTE 0.				
NS HALL 1	102C								SEE OVERALL PLAN FOR
NORTH HALL 2	102E								KEY NOTE 7, TYP.
SOUTH HALL 2 OFFICE	102F 103			KEY NOTE 8.		KEY NOTE 8.		ACT-1	KEY NOTE 7, TYP.KEY NOTE 2.
WAITING RM COUNSELOR	104 105					KEY NOTE 8.	KEY NOTE 8.	ACT-1 P-2	KEY NOTE 2. KEY NOTE 3.
COUNSELOR SICK RM	106 107					KEY NOTE 8.		P-2	KEY NOTE 3.
T.	107							P-2	KEY NOTE 3.
ST.	110							ACT-1	KEY NOTE 2.
T. PRINCIPLE	111 112						KEY NOTE 8.	P-2 ACT-1	KEY NOTE 3. KEY NOTE 2.
ST. STAFF RM	113 114						KEY NOTE 8.	ACT-1 ACT-1	KEY NOTE 2. KEY NOTE 2.
WOMEN T.	115 116					KEY NOTE 8.		P-2 P-2	KEY NOTE 6. KEY NOTE 6.
CORRIDOR	117							ACT-1	KEY NOTE 2.
LIBRARY	110					KEY NOTE 8.		1 -2	KEY NOTE 5.
OFFICE WORK RM	120 121					KEY NOTE 8.			KEY NOTE 3. KEY NOTE 3.
OFFICE CONF.	122 123					KEY NOTE 8.			KEY NOTE 3. KEY NOTE 3.
CONF. COURTYARD	124 125								KEY NOTE 3.
GIRLS T.	126							D 2	KEY NOTE 3.
BOYS T.	127							F-2	KEY NOTE 3.
OFFICE	129 129A			REY NULE 8.	KEY NUIE 8.	KEY NUIE 8.			RET NULE 3 AND 5.
PRACTICE PRACTICE	130 131			KEY NOTE 8.	KEY NOTE 8.		KEY NOTE 8. KEY NOTE 8.	ACT-1	KEY NOTE 7. KEY NOTE 7.
PRACTICE OFFICF	132 133			KEY NOTE 8.	KEY NOTE 8	KEY NOTE 8.		ACT-1 ACT-1	KEY NOTE 2. KEY NOTE 2.
ST.	134							ACT-1	KEY NOTE 2
OFFICE	135				KEY NOTE 8.	KEY NOTE 8.		ACT-1	KEY NOTE 2.
LIBRARY PRACTICE	137 138				KEY NOTE 8.	KEY NOTE 8.	KEY NOTE 8. KEY NOTE 8.	ACT-1 ACT-1	KEY NOTE 7.
PRACTICE GIRLS T.	139 140				KEY NOTE 8.	KEY NOTE 8.	KEY NOTE 8.	ACT-1	KEY NOTE 7. KEY NOTE 3.
BOYS T.	141								KEY NOTE 3.
CLASS RM 1	142								KEY NOTE 5.
CLASS RM 2 CLASS RM 3	144 145			KEY NUTE 8.		KEY NOTE 8.			KEY NOTE 5. KEY NOTE 5.
CLASS RM 4 CLASS RM 5	146 147			KEY NOTE 8.		KEY NOTE 8.			KEY NOTE 5.KEY NOTE 5.
WORK RM 1	148				KEY NOTE 8.			P-4 & @ UPPER	KEY NOTE 4.
CLASS RM 6	149			KEY NOTE 8.				WALLS	KEY NOTE 5.
CLASS RM 7 CLASS RM 8	150 151					KEY NOTE 8.			KEY NOTE 5.
CLASS RM 9	152			KEY NOTE 8.				P 4 8 @	KEY NOTE 5.
WORK RM 2	153				KET NOTE 0.			UPPER WALLS	KEY NOTE 4.
CLASS RM 10	154			KEY NOTE 8.					KEY NOTE 5.
CLASS RM 12	156					KET NOTE 8.			KET NOTE 5.
WORK RM 3	157 158			KEY NOTE 8.				P-2	KEY NOTE 5. KEY NOTE 4.
MDF	159							P-4 & @ UPPER	KEY NOTE 4.
					KEY NOTE 8.			P-4 & @	
WORK RM 4	160							UPPER WALLS	KEY NOTE 4.
CLASS RM 14 CLASS RM 15	161 162			KEY NOTE 8.		KEY NOTE 8.			KEY NOTE 5. KEY NOTE 5.
CLASS RM 16 CLASS RM 17	163 164			KEY NOTE 8.		KEY NOTE 8.			KEY NOTE 5. KEY NOTE 5.
WORK RM 5	165				KEY NOTE 8.			P-4 & @ UPPER	KEY NOTE 4.
CLASS RM 22	166				KEY NOTE 8.		KEY NOTE 8.	WALLS ACT-1	KEY NOTE 1.
CLASS RM 23	167							ACT-1 P-4 & @	KEY NOTE 1.
STORAGE	168							UPPER	KEY NOTE 4.
CLASS RM 24	169 170						KEY NOTE 8.	ACT-1	KEY NOTE 1.
HALL ADDITION	171	WOT-1/LVT-1	RB-1	P-2 OVER WP-1	P-2 OVER WP-1	P-2 OVER WP-1	P-2 OVER WP-1	ACT-1	SEE ELEVATIONS
CLASS RM 20 CLASS RM 27	172	LV1-2 LVT-2	кв-1 RB-1	P-1	P-1	P-1	P-1	ACT-1 ACT-1	SEE ELEVATIONS SEE ELEVATIONS
GYMNASIUM ST.	201 202								KEY NOTE 5.
GIRLS T. CLASS RM 19	203 204								KEY NOTE 7. KEY NOTE 5.
PE CLASS RM	205					KEY NOTE 8.			KEY NOTE 5.
ST.	207			KEY NOTE 8.					KEY NOTE 5.
CAFETERIA	208 209					KEY NOTE 8.			KEY NOTE 5.
T. ST.	210 211			KEY NOTE 8.		KEY NOTE 8.			
KITCHEN ST.	212 213			KEY NOTE 8. KEY NOTE 8.	KEY NOTE 8	KEY NOTE 8. KEY NOTE 8.	KEY NOTE 8.	P-2	KEY NOTE 2.
	301 302				KEY NOTE 8.		KEY NOTE 8.		KEY NOTE 5
T.	303								
GIKLS LOCKER SHOWER	304 305								KEY NUIE 5.
ST.	306 CHEDÎIÎI F								
T.	308		I IIV	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
BOYS LOCKER	310								KEY NOTE 5.
SHOWER	312								
OFFICE	313 314								
Т.	315								

1. REPLACE CEILING TILE & REMOVE DIRECT LAY BATT INSULATION. CEILING GRID TO REMAIN.

- REMOVE HARD LID CEILING & ADD BACK SUSPENDED ACOUSTICAL CEILING @ (E) HEIGHT.
- 3. PATCH BACK CEILING, STRUCTURE AND FINISH, AS REQUIRED FOR HVAC REMOVAL AND WORK. PROTECT EXISTING LIGHTS.
- 4. REMOVE CEILING. CLEAN & PAINT BOTTOM OF EXISTING ROOF STRUCTURE, AND WALLS, PER
- FINISH SCHEDULE AND PER ELEVATIONS, BEFORE MEP WORK. EXPOSED DUCT WORK THIS ROOM.
- REMOVE AND REPLACE HARD LID CEILING AFTER MECH. WORK.
- 7. LOCATE GRILLS TO MINIMIZE DAMAGE TO EXISTING TO REMAIN ACOUSTICAL CEILING TILE 8. PATCH BACK WALL FLUSH, MATCH (E) FINISH, AFTER EQUIPMENT REMOVAL. SEE MECH. AND

ELECTRICAL FOR LOCATION AND EXTENT OF WORK.

CEILING PLAN KEY NOTES (KN)

FINISH LIST

BASIS OF DESIGN LEGEND: FINISH TAG PRODUCT TYPE

MANUFACTURE STYLE COLOR

ACT-1 SUSPENDED ACOUSTICAL CEILING TILE ARMSTRONG ULTIMA 2X4

ACT-2 ACOUSTICAL CEILING TILE

ARMSTRONG MATCH EXISTING <u>CG-1</u> WALL PROTECTION

CS ACROVYN FOLKSTONE, 927 <u>LVT-1</u>

MOHAWK GROUP MATUTO PLUS STONE BARELY BEIGE STONE, 123A

<u>LVT-2</u> MOHAWK GROUP MATUTO PLUS STONE AGREEABLE GREY STONE, 926A

INTERIOR PAINT (CLASS RM WALLS) SHERWIN WILLIAMS ORIGAMI WHITE, SW 7636

<u>P-2</u> INTERIOR PAINT SHERWIN WILLIAMS

MATCH EXISTING HALL UPPER WALL / CEILINGS <u>P-3</u> INTERIOR PAINT (TRIM)

SHERWIN WILLIAMS COLOR TBD

<u>P-4</u> INTERIOR PAINT SHERWIN WILLIAMS DOMINO SW 6989 - MATTE

<u>P-5</u> INTERIOR PAINT SHERWIN WILLIAMS MATCH EXISTING GRAY HALL PAINT

<u>P-6</u> EXTERIOR PAINT SHERWIN WILLIAMS MATCH EXISTING FIELD

<u>P-7</u> EXTERIOR PAINT SHERWIN WILLIAMS

MATCH EXISTING TRIM <u>P-8</u> EXTERIOR PAINT (FIBER CEMENT PANEL COLOR) SHERWIN WILLIAMS COLOR TBD

<u>PL-1</u> PLASTIC LAMINATE FORMICA

NEUTRAL TWILL, 8826-58 <u>PL-2</u> PLASTIC LAMINATE

FORMICA FOSSIL, 5349-58

<u>RB-1</u> RESILIENT BASE TARKETT **BURNT UMBER 63**

<u>S-1</u> ROLLER SHADE SHEER WEAVE

3% OPEN BROOME (LIGHT GREY), 1903

<u>WOT</u> WALK OFF TILE SHAW WELCOME II MODULAR 5T031 CHARCOAL 31549

<u>WP-1</u> WALL PROTECTION CS ACROVYN FOLKSTONE, 927

				DOOR SCHEDU	LE			
ROOM NAME	DOOR NO.	SIZE (WxH)	TYPE	MATERIAL	FRAME	HARDWARE GROUP	RATING	C
HALL ADDITION	171A	8' - 0" X 8' - 0"	В	HM	HM	HW-2FS	1-1/2 HR	DOOR TO EXCEPT I
HALL ADDITION	171B	6' - 0" X 7' - 0"	С	HM / GLASS	HM	HW-50	-	ACCESS (SEE ELEV
CLASS RM 26	172	3' - 0" X 7' - 0"	B1	WD	WD	HW-20F	20 MINS	
CLASS RM 27	173	3' - 0" X 7' - 0"	B1	WD	WD	HW-20F	20 MINS	

COMMENTS

ROOF MONITORS - ALT. BID

W/ INSECT SCREEN

WINDOW SCHEDULE

2 FIXED

4 SLIDER

COUNT

16

2

TYPE

FIXED

FIXED

WINDOW SIZE

6' - 0" 3' - 0"

5' - 8"

5' - 8"

5' - 8"

W

2' - 7"

5' - 0"

5' - 0"

MARK

Α

В

С

D

1 DOOR TYPES 1/4" = 1'-0"

' = 1'-0"				
			\sim	
ONS				
	FA	FIELD ADJUSTABLE	NA	
EILING TILE EILING PANEL	FV FD FDN FE FEC	FIELD VERIFY FLOOR DRAIN FOUNDATION FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET	NIC NO NOM NS NTS	NOT IN CONTRAC NUMBER NOMINAL NON-SHRINK NOT TO SCALE
E H FLOOR IG UNIT	FHC FIN FIX FLEX	FIRE HOSE CABINET FINISH FIXTURE FLEXIBLE	NWC OA OC	NORMAL WEIGH OVERALL ON CENTER
ΓΕ JRAL	FLR FLRG FOS FP FR	FLOOR FLOORING FACE OF STUD FIREPROOF/FIRE PROTECTION FIRE RETARDANT	OD OFF OPNG OPP OZ	OUTSIDE DIAME OFFICE OPENING OPPOSITE OUNCE
SH CEILING	FS FT FTG	FULL SIZE/FULL SCALE FEET FOOTING	PART PC	PARTITION PIECE
	FURG GA GAL GALV GB GC	FURRING GAUGE GALLON GALVANIZED GRAB BAR GENERAL CONTRACTOR	PCC PCPL PDWR PH PL PLAM PLAS PLAS	PRECAST CONC PORTLAND CEM PAPER TOWEL D PHILLIPS HEAD/F PLATE/PROPERT PLASTIC LAMINA PLASTER PLUMPING
ISURE	GEN GFCI GFGI GFRC	GENERAL GOVERNMENT FURNISHED, CONTRACTOR INSTALLED GOVERNMENT FURNISHED, GOVERNMENT INSTALLED GLASS FIBER REINFORCED CONCRETE CLASS FIBER REINFORCED CYPSUM	PLBG PLYWD PM PNL PNL	PLOMBING PLYWOOD PROTECTED ME PANEL PANEL
N MASONRY UNIT	GFRG GL GLB GMU GWB	GLASS FIBER REINFORCED GTPSUM GLASS GLUE LAM BEAM GLAZED MASONRY UNIT	PNLG POL PR PRE FAB	PANELING POLISHED PAIR PREFABRICATEE
r∈ N/CONNECT ION S	GYP H	GYPSUM WALL BOARD GYPSUM HEIGHT	PRE FIN PSF PSI PT	POUNDS PER SC POUNDS PER SC POUNDS PER SC POINT/PAINT
CURTAIN ROD	HDBD HDCP HDWD HDWE	HANDICAPPED HARDWOOD HARDWARE	PVC QTY	QUANTITY
.E JNTER INK IT HEATER	HM HP HR HT	HOLLOW METAL HIGH POINT HANDRAIL HEIGHT	RAD RAH RB RC	RADIUS ROOFTOP AIR H/ RUBBER BASE REINFORCED CO
R DUNTAIN BLE PARTITION	HVAC HWS ID IMP IN INFO INSUL INT IPW IRF	HEATING VENTILATION AND AIR CONDITIONING HEAD WELDED STUDS INSIDE DIAMETER INSULATED METAL PANEL INCHES INFORMATION INSULATION INTERIOR INSULATED PLENUM WALL INSULATED ROOF FILL	RCP RD REC REF REINF REL REM REQD RES RET RI RM	REFLECTED CEI ROOF DRAIN RECESSED REFERENCE REINFORCING RELOCATE REMAINDER REQUIRED RESILIENT RETURN ROUGH IN ROOM
_	JAN JS JST JT	JANITOR JANITOR SINK JOIST JOINT	RO RT RUB	ROUGH OPENING RUBBER TILE RUBBER
T WELDED STUD	KD KO	KNOCKED DOWN KNOCK-OUT / KNEE OPENING	SAMF SAT SAWRB SB	SELF ADHESIVE STANDARD AGG SELF ADHESIVE SOIL BEARING
CONTRACTOR	L LAB LAM LB LBS	LENGTH LABORATORY LAMINATED POUND POUNDS	SC SCF SCHD SD SE	SEAMLESS COA SPECIAL CONCR SCHEDULE SOAP DISPENSE SHELF EDGE
JOINT	LD LDG LF LG	LINEAR DIFFUSER LANDING LINEAR FOOT LONG	SECT SF SG SGL	SECTION SAND FLOAT SUPPLY AIR GRI SINGLE
LEVATION	LGT LKR LLH LLV LONG LP	LIGHT LOCKER LONG LEG HORIZONTAL LONG LEG VERTICAL LONGITUDINAL LOW POINT	SH SHD SHT SIM SJ SLV	SHELF SHOWER DOOR SHEET SIMILAR STEEL JOIST SHORT LEG VER
Y SHOWER IC SHEET ROOFING REMAIN YL COATING	LSH LTG LVR LWC	LONG SLOTTED HOLE LIGHTING LOUVER LIGHTWEIGHT CONCRETE MACHINE	SM SND SNV SOG SPEC SPP	SMOOTH SANITARY NAPK SANITARY NAPK SLAB ON GRADE SPECIFICATION SPRINKI EP
ATER COOLER	MACH MAN MAR MAS	MACHINE MANUAL MARBLE MASONRY	SPK SQ SR SS	SCHINNLER SQUARE SHOWER ROD STAINLESS STEE
PROOF	MATL MAX MB MBW MC MDO MECH	MATERIAL MAXIMUM MACHINE BOLT MASONRY BEARING WALL MECHANICAL CONTRACTOR MEDIUM DENSITY OVERLAY MECHANICAL	SI STD STL STO STRU SUSP SV	STREET STANDARD STEEL STORAGE STRUCTURAL/ST SUSPENDED SHEET VINYL

MEMB MEMBRANE

MEZZANINE

MINIMUM

METAL LATH

MIRROR

MARK

MLDG MOLDING

MTD MOUNTED MTG MOUNTING

MANUFACTURER

MISCELLANEOUS

MASONRY OPENING

MACHINE SCREW

METAL PARTITION

MET METAL

MEZZ

MFR

MIN MIR

MISC

MK

ML

MO

MP

MS

NA NIC NO NOM	NOT APPLICABLE NOT IN CONTRACT NUMBER NOMINAL	T (TE TE TC
NS NTS NWC	NON-SHRINK NOT TO SCALE NORMAL WEIGHT CONCRETE	TC TC TE TE
OA OC OD OFF OPNG OPP OZ	OVERALL ON CENTER OUTSIDE DIAMETER/OVERFLOW DRAIN OFFICE OPENING OPPOSITE OUNCE	TE TF T & TF TC TC TC
PART PC PCC PCPL PDWR PH PL PLAM PLAS PLBG PLYWD PM PNL PNLG POL PR PRE FAB PRE FIN PSF PSI PT PTM PVC	PARTITION PIECE PRECAST CONCRETE PORTLAND CEMENT PLASTER PAPER TOWEL DISPENSER & WASTE RECEPTACLE PHILLIPS HEAD/PHASE PLATE/PROPERTY LINE PLASTIC LAMINATE PLASTER PLUMBING PLYWOOD PROTECTED METAL PANEL PANELING POLISHED PAIR PREFABRICATED PRE-FINISHED POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POINT/PAINT PAINT TO MATCH POLYVINYL CHLORIDE	TC TC TC TC TC TC TC TC TC TC TC TC TC T
QTY RAD RAH RB RC RCP RD REC REF REINF REL REM REQD RES RET RI RM RO RT RUB	QUANTITY RADIUS ROOFTOP AIR HANDLING UNIT RUBBER BASE REINFORCED CONCRETE REFLECTED CEILING PLAN ROOF DRAIN RECESSED REFERENCE REINFORCING RELOCATE REMAINDER REQUIRED RESILIENT RETURN ROUGH IN ROUGH OPENING RUBBER TILE RUBBER	
SAMF SAT SAWRB SB SC SCF SCHD SD SE SECT SF SG SGL SHD SHT SIM SJ SLV SMD SNV SOG SPEC SPR SQ SR ST STD STL STD STL STD STRU SUSP SV SYM	SELF ADHESIVE MEMBRANE FLASHING STANDARD AGGREGATE TOPPING SELF ADHESIVE WEATHER RESTISTANT BARRIER SOIL BEARING SEAMLESS COATING SPECIAL CONCRETE FINISH SCHEDULE SOAP DISPENSER SHELF EDGE SECTION SAND FLOAT SUPPLY AIR GRILLE SINGLE SHOWER DOOR SHEET SIMILAR STEEL JOIST SHORT LEG VERTICAL SMOUTH SANITARY NAPKIN DISPENSER SANITARY NAPKIN VENDER SLAB ON GRADE SPECIFICATION SPRINKLER SQUARE SHOWER ROD STAINLESS STEEL STREET STANDARD STEEL STORAGE STRUCTURAL/STRUCTURE SUSPENDED SHEET VINYL SYMMETRICAL	

ABBREVIATIONS ABOVE ARE FOR ARCHITECTURAL SHEETS ONLY.

STRUCTURAL - GENERAL NOTES

GENERAL REQUIREMENTS

GOVERNING CODE: The design and construction of this project is governed by the "Oregon Structural Specialty Code" (OSSC), 2019 Edition, hereafter referred to as the OSSC, as adopted and modified by the City of Coos Bay, Oregon understood to be the Authority Having Jurisdiction (AHJ).

REFERENCE STANDARDS: Refer to Chapter 35 of 2019 OSSC. Where other Standards are noted in the drawings. use the latest edition of the standard unless a specific date is indicated. Reference to a specific section in a code does not relieve the contractor from compliance with the entire standard. DEFINITIONS: The following definitions cover the meanings of certain terms used in these notes:

"Architect/Engineer" - The Architect of Record and the Structural Engineer of Record.

- . "Structural Engineer of Record" (SER) The structural engineer who is licensed to stamp & sign the structural documents for the project. The SER is responsible for the design of the Primary Structural System. "Submit for review" - Submit to the Architect/SER for review prior to fabrication or construction.
- "Per Plan" Indicates references to the structural plans, elevations and structural general notes.
- "Seismic Force Resisting System (SFRS)" A recognized structural system of components (beams, braces drags, struts, collectors, diaphragms, columns, walls, etc) of the primary structure that are specially designed and proportioned to resist earthquake-induced ground motions and maintain stability of the structure. Fabrication and installation of components designated as part of the SFRS require the general contractor, subcontractor, or supplier who is responsible for any portion of SFRS fabrication or installation to comply with special requirements (including, but not limited to, material control, compliance certifications, personnel qualifications, documentation, reporting requirements, etc) and to provide the required Quality Control including the required coordination of Special Inspections (Quality Assurance – QA). Special provisions apply to any member designated as part of the SFRS. Refer to plans, elevations, details, Design Criteria and Symbols and Legends for applicable members and connections.
- "Specialty Structural Engineer" (SSE) A professional engineer (PE or SE), licensed in the State where the project is located, (typically not the SER), who performs specialty structural engineering services for selected specialty-engineered elements identified in the Contract Documents, and who has experience and training in the Specialty, Documents stamped and signed by the SSE shall be completed by or under the direct supervision of the SSE.
- "Bidder-designed" Components of the structure that require the general contractor, subcontractor, or supplier who is responsible for the design, fabrication and installation of specialty-engineered elements identified in the Contract Documents to retain the services of an SSE. Submittals of "Bidder-designed" elements shall be stamped and signed by the SSE.

SPECIFICATIONS: Refer to the project specifications issued as part of the contract documents for information supplemental to these drawings.

OTHER DRAWINGS: Refer to the architectural, mechanical, electrical, civil and plumbing drawings for additional infornation including but not limited to: dimensions, elevations, slopes, door and window openings, non-bearing walls, stairs, finishes, drains, waterproofing, railings, mechanical unit locations, and other nonstructural items.

STRUCTURAL DETAILS: The structural drawings are intended to show the general character and extent of the project and are not intended to show all details of the work. Use entire detail sheets and specific details referenced in the plans as "typical" wherever they apply. Similarly, use details on entire sheets with "typical" in the name wherever they apply. STRUCTURAL RESPONSIBILITIES: The structural engineer (SER) is responsible for the strength and stability of the

primary structure in its completed form. **COORDINATION:** The Contractor is responsible for coordinating details and accuracy of the work; for confirming and correlating all quantities and dimensions; for selecting fabrication processes; for techniques of assembly; and for performing work in a safe and secure manner.

EXISTING CONDITIONS: Information shown on the drawings related to existing conditions represent the present knowledge, but without guarantee of accuracy. Report conditions that conflict with contract documents to the architect or SEOR. Do not deviate from the contract documents without written direction from the architect and/or SEOR. All existing dimensions and information shall be field verified prior to fabrication as required to coordinate with new construction.

NEW CONSTRUCTION: The contractor shall remove all interfering items for new construction and shall repair or replace all removed items to match the existing conditions in accordance with the architectural drawings. New construction elements shall be designed and installed per current International Building Code 2018, hereafter referred to as OSSC as allowed by IEBC.

MEANS, METHODS and SAFETY REQUIREMENTS: The contractor is responsible for the means and methods of construction and all job related safety standards such as OSHA and DOSH (Department of Occupational Safety and Health). The contractor is responsible for means and methods of construction related to the intermediate structural conditions (i.e. movement of the structure due to moisture and thermal effects; construction sequence; temporary bracing, etc).

BRACING/SHORING DESIGN ENGINEER: The contractor shall at his discretion employ an SSE, a registered professional engineer for the design of any temporary bracing and shoring. Submit construction sequence to Architect/Engineer for review.

TEMPORARY SHORING, BRACING: The contractor is responsible for the strength and stability of the structure during construction and shall provide temporary shoring, bracing and other elements required to maintain stability until the structure is complete. It is the contractor's responsibility to be familiar with the work required in the construction documents and the requirements for executing it properly.

CONSTRUCTION LOADS: Loads on the structure during construction shall not exceed the design loads as noted in DE-SIGN CRITERIA & LOADS below or the capacity of partially completed construction as determined by the Contractor's SSE for Bracing/Shoring.

CHANGES IN LOADING: The contractor has the responsibility to notify the SER of any architectural, mechanical, electrical, or plumbing load imposed onto the structure that differs from, or that is not documented on the original Contract Documents (architectural / structural / mechanical / electrical or plumbing drawings). Provide documentation of location, load, size and anchorage of all undocumented loads in excess of 400 pounds. Provide marked-up structural plan indicating locations of any new equipment or loads. Submit plans to the Architect/Engineer for review prior to installation.

NOTE PRIORITIES: Plan and detail notes and specific loading data provided on individual plans and detail drawings supplements information in the Structural General Notes DISCREPANCIES: In case of discrepancies between the General Notes, Specifications, Plans/Details or Reference Standards, the Architect/Engineer shall determine which shall govern. Discrepancies shall be brought to the attention of the Architect/Engineer before proceeding with the work. Should any discrepancy be found in the Contract Documents,

the Contractor will be deemed to have included in the price the most expensive way of completing the work, unless prior to the submission of the price, the Contractor asks for a decision from the Architect as to which shall govern. Accordingly, any conflict in or between the Contract Documents shall not be a basis for adjustment in the Contract Price. SITE VERIFICATION: The contractor shall verify all dimensions and conditions at the site. Conflicts between the draw-

ings and actual site conditions shall be brought to the attention of the Architect/Engineer before proceeding with the work. ADJACENT UTILITIES: The contractor shall determine the location of all adjacent underground utilities prior to earthwork, foundations, shoring, and excavation. Any utility information shown on the drawings and details is approximate and

not necessarily complete. ALTERNATES: Alternate products of similar strength, nature and form for specified items may be submitted with adequate technical documentation (proper test report, etc.) to the Architect/Engineer for review. Alternate materials that are submitted without adequate technical documentation or that significantly deviate from the design intent of materials specified may be returned without review. Alternates that require substantial effort to review will not be reviewed unless au-

NARRATIVE: The following items will be repaired, modified, or added for this project: Addition of new classrooms, building is seismically separated from the existing building.

ADDITIONS/ALTERATIONS/REPAIRS: Additions, alterations, and/or repairs to the existing structure has been analyzed or additional loading and/or modification due to the addition, the alteration or the repair. All affected existing member have been analyzed or reinforced as required per IEBC. All Demolition or removal of architectural, mechanical or structural elements shall not damage structural items to remain,

DESIGN CRITERIA AND LOADS

thorized by the Owner.

OCCUPANCY: Risk Category of Building per 2019 OSSC Table 1604.5 = 11

WIND DESIGN:	MAIN WIND FORCE RESISTING SYSTEM		
	Ultimate Design Wind Speed, VULT (MPH)	1	
	Exposure Category	C	
	Internal Pressure Coefficient Cpi =	+/- 0	.18
	Topographic Factor Kzt =	1.0	
	Wind Analysis procedure used:	Dire	ctional
SEISMIC	Seismic Design Category: SDC =	_	F
DESIGN:	ocisine Design outegory. obd		-
	Basic Structural System	Bearing Wall	
	Seismic Force Resisting System	Shear Walls	
	Response Modification Factor: R =	6	
	System Over Strength Factor Omega =	2.5	
	Deflection Amplification Factor Cd =	5	
	Site Classification per OSSC 1613.3.2 & ASCE 7- Site Class =	D	
	Seismic Importance Factor per ASCE 7-10 Table 1	1.0	
	Spectral Response Acceleration (Short Period) $\boldsymbol{S}_{\boldsymbol{s}}$	1.581 g	
	Spectral Response Acceleration (1-Second Period	0.799 g	
	Spectral Design Response Coefficient (Short Peric	1.265 g	
	Spectral Design Response Coefficient (1-Second F	0.906 g	
	Seismic response coefficient(s) Cs =	0.195	
	Redundancy Factor (North/South Direction) N/S rh	1.0	
	Redundancy Factor (East / West Direction) E/W rh	1.0	
	Design Base Shear (North/South Direction) (KIPS)	15.5	
	Design Base Shear (East / West Direction) (KIPS)	15.5	
	Base shear governed by:		Seismic
	Seismic Analysis procedure used:	Equivalent Latera Force (ELF)	

SNOW LOAD: (1)	Flat Roof Snow Load, (PSF) p , =	25 ⁽²⁾
	Snow Drift Loading required by Authority Having Jurisdiction?	Yes
	Snow Load Importance Factor I s =	1.0 (3)
	Ground Snow Load, (PSF) p g =	1
	Snow Exposure Factor C _p =	В
	Thermal Factor C t =	1.0

1) Snow Load is un-reducible and includes 5 psf rain-on-snow surcharge where ground snow load is greater than zero and 20 psf or less per ASCE 7-1 Section 7.10.

Snow Load based on ASCE Fig 7-1. 3) Snow Load Importance Factor per ASCE 7-16 Table 1.5-2.

DESIGN LIVE	AREA	LIVE LOADS (PSF) UNO	REMARKS & FOOT- NOTES (2)
and Theory and	Corridors at First Floor	100	
	School Classrooms	40	1000 lb
	Roofs	20 PSF or 300 LB	Area load is reducible Point load per note (1), See above for Snow Load

(1) Place 300 lb concentrated load over 2"x2" area at any point to produce maximum stress. Area load and concentrated load are to be considered separately with worst case used for design. (2) Unless otherwise noted, point loads to be distributed over a 2.5ft x 2.5ft area and located to produce maximum load effects on structural members.

DESIGN DEAD	BIDDER DESIGN	DEAD LOADS (PSF) UNO	REMARKS & FOOTNOTES
	Roof Dead Load, Total	15 PSF	For Pre-Fabricated Wood I- Joists design,
	Roof Dead Load, Total Top Chord Bottom Chord	12 PSF 8 PSF 4 PSF	For Pre-Fabricated Wood Truss design,

SUBMITTALS

SUBMIT FOR REVIEW: SUBMITTALS of shop drawings, and product data are required for items noted in the individual materials sections and for bidder designed elements.

SUBMITTAL REVIEW PERIOD: Submittals shall be made in time to provide a minimum of TWO WEEKS or 10 WORK-ING DAYS for review by the Architect/Engineer prior to the onset of fabrication. GENERAL CONTRACTOR'S PRIOR REVIEW: Prior to submission to the Architect/Engineer, the Contractor shall review the submittal for completeness. Dimensions and quantities are not reviewed by the SER, and therefore, must be verified by the General Contractor. Contractor shall provide any necessary dimensional details requested by the Detailer

and provide the Contractor's review stamp and signature before forwarding to the Architect/Engineer. SHOP DRAWING REVIEW: Once the contractor has completed his review, the SER will review the submittal for general conformance with the design concept and the contract documents of the building and will stamp the submittal accordingly. Markings or comments shall not be construed as relieving the contractor from compliance with the project plans and specifications, nor departures there from. The SER will return submittals in the form they are submitted in (either hard copy or electronic). For hard copy submittals, the contractor is responsible for submitting the required number of copies to the SER for review.

SHOP DRAWING DEVIATIONS: When shop drawings (component design drawings) differ from or add to the requirements of the structural drawings they shall be designed and stamped by the responsible SSE. DEFERRED SUBMITTALS

BIDDER-DESIGNED ELEMENTS

Submit "Bidder-Designed" deferred submittals to the Architect and SER for review. The deferred submittals shall also be submitted to the city for approval, if required by the city. Design of prefabricated, "bidder designed", manufactured, pre-engineered, or other fabricated products shall comply with the following requirements:

- Design considers tributary dead, live, wind and earthquake loads in combinations required by OSSC. Design within the Deflection Limits noted herein and as specified or referenced in the OSSC. Design shall conform to the specifications and reference standards of the governing code.
- Submittal shall include: Calculations prepared, stamped and signed by the SSE demonstrating code conformance. Engineered component design drawings are prepared, stamped and signed by the SSE.
- c. Product data, technical information and manufacturer's written requirements and Agency approvals as applicable. d. SSE may submit to the Architect/Engineer, a request to utilize relevant alternate design criteria of similar nature and generally equivalency which is recognized by the Code and acceptable to the Authority Having Jurisdiction. Submit adequate documentation of design.

DEFLECTION	VERTICAL	LIMIT
LIMITS FOR SSE / BIDDER	Roof Members, Dead + Live or Snow or Wind, Total Load (TL) Deflection	L / 240, where (L is span length inches)
	Roof, Live or Snow or Wind Load (RLL)	L/360

GENERAL CONTRACTOR'S PRIOR REVIEW: Once the contractor has completed his review of the SSE component drawings, the SER will review the submittal for general conformance with the design of the building and will stamp the submittal accordingly. Review of the Specialty Structural Engineer's (SSE) shop drawings (component design drawings) is for compliance with design criteria and compatibility with the design of the primary structure and does not relieve the SSE of responsibility for that design. All necessary bracing, ties, anchorage, proprietary products shall be furnished and installed per manufacturer's instructions or the SSE's design drawings and calculations. These elements include but are

 Prefabricated Wood Roof Trusses Solid Web Wood Joists

not limited to:

Engineered Wood Products, (Glulam)

INSPECTIONS, QUALITY ASSURANCE VERIFICATIONS AND TEST REQUIREMENTS

INSPECTIONS: Foundations, footings, under slab systems and framing are subject to inspection by the Building Official in accordance with OSSC 110.3. Contractor shall coordinate all required inspections with the Building Official. SPECIAL INSPECTIONS, VERIFICATIONS and TESTS: Special Inspections, Verifications and Testing shall be done in accordance with OSSC Chapter 17, the STATEMENT AND SCHEDULES OF SPECIAL INSPECTIONS listed in these drawings.

STRUCTURAL OBSERVATION: per OSSC Section 1704.6

Structural Observation is the visual observation of the structural system by a registered design professional for general conformance to the approved construction documents. It is not always required on a project, does not include or waive the responsibility for the special inspections and tests required by a Special Inspector per OSSC Chapter 17, is not continuous, and does not certify conformance with the approved construction documents.

Required for Seismic Design Category D, E, or F for any of the following: 1) Risk Category III or IV Height greater than 75ft above base

Seismic Design Category E with Risk Category | or II and greater than two stories By DCI 5) By the building official

Structural Observation for this project is required per OSSC Section 1704.6. Contractor shall notify the SER in a timely manner to allow required Structural Observations to occur. Reports will be distributed to the Architect, the Contractor, Special Inspector and the Authority Having Jurisdiction.

The frequency and extent of observations is at the discretion of the structural observer. Only significant stages of construction identified by the Structural Observer require observation. For repetitive or similar structural elements identified as significant, only the first element of a stage requires observation unless noted otherwise. The following significant stages of construction require observation: prior to foundation concrete placement, and after roof diaphragm is complete prior to roofing.

CONTRACTOR RESPONSIBILITY: Prior to issuance of the building permit, the Contractor is required to provide the Authority Having Jurisdiction a signed, written acknowledgement of the Contractor's responsibilities associated with the above Statement of Special Inspections addressing the requirements listed in OSSC Section 1704.4. Contractor is referred to OSSC Sections 1705.12.5 and 1705.12.6 for architectural and MEP building systems that may be subject to additional inspections (based on the building's designated Seismic Design Category listed in the CRITERIA), including anchorage of HVAC ductwork containing hazardous materials, piping systems and mechanical units containing flammable, combustible or highly toxic materials, electrical equipment used for emergency or standby power, exterior wall panels and suspended ceiling systems.

SOILS AND FOUNDATIONS

REFERENCE STANDARDS: Conform to OSSC Chapter 18 "Soils and Foundations."

CONTRACTOR'S RESPONSIBILITIES: Contractor shall be responsible to review the Geotechnical Report and shall follow the recommendations specified therein including, but not limited to, subgrade preparations, pile installation procedures, ground water management and steep slope Best Management Practices."

GEOTECHNICAL SUBGRADE INSPECTION: The Geotechnical Engineer shall inspect all sub-grades and prepared soil bearing surfaces, prior to placement of foundation reinforcing steel and concrete. Geotechnical Engineers shall provide a letter to the owner stating that soils are adequate to support the "Allowable Foundation Bearing Pressure(s)" shown below, Assumed values shall be field verified by the Building Official or the Geotechnical Engineer prior to placing concrete.

DESIGN SOIL VALUES: Safety Factor per Soils Report... Allowable Foundation Bearing Pressu

Safety Factor per Soils Report	1.5	
Allowable Foundation Bearing Pressure	1500	PSF
Passive Lateral Pressure	300	PSF/FT
Active Lateral Pressure (unrestrained)	35	PSF/FT
At-Rest Lateral Pressure (restrained)	55	PSF/FT
Seismic Lateral Pressure	8H	PSF
Coefficient of Sliding Friction	0.35	

OUNDATIONS and FOOTINGS: Foundations shall bear on either on competent native soil or compacted structural fill as per the geotechnical report. Exterior perimeter footings shall bear not less than 12 inches below finish grade, unless otherwise specified by the geotechnical engineer and/or the building official.

FOOTING DEPTH: Tops of footings shall be as shown on plans with vertical changes as indicated with steps in the footngs; locations of steps shown as approximate and shall be coordinated with the civil grading plans. SLABS-ON-GRADE: All slabs-on-grade shall bear on compacted structural fill or competent native soil per the geotechnical report. All moisture sensitive slabs-on-grade or those subject to receive moisture sensitive coatings/covering shall be provided with an appropriate capillary break and vapor barrier/retardant over the subgrade prepared and installed as noted in the geotechnical report, barrier manufacturer's written recommendations and coordinated with the finishes spec-

CAST-IN-PLACE CONCRETE

ified by the Architect.

Interior Slabs on Grade

REFERENCE STANDARDS: Conform to: (1) ACI 301-16 "Specifications for Structural Concrete"

(2) OSSC Chapter 19 "Concrete" (3) ACI 318-14 "Building Code Requirements for Structural Concrete" (4) ACI 117-10 "Specifications for Tolerances for Concrete Construction and Materials"

3000

FIELD REFERENCE: The contractor shall keep a copy of ACI Field Reference manual, SP-15, "Standard Specifications for Structural Concrete (ACI 301) with Selected ACI and ASTM References."

CONCRETE MIXTURES: Conform to ACI 301 Section 4 "Concrete Mixtures" and OSSC Section 1904.1. MATERIALS: Conform to ACI 301 Section 4.2.1 "Materials" for requirements for cementitious materials, aggregates, mix-

ing water and admixtures. SUBMITTALS: Provide all submittals required by ACI 301 Section 4.1.2. Submit mix designs for each mix in the table below. Substantiating strength results from past tests shall not be older than 24 months per ACI 318 Section 26.4.3.1 (b).

ABLE OF MIX DESIGN REQUIREMENTS							
Member Type/Location	Strength f'c (psi)	Test Age (days)	Nominal Maximum Aggregate	Exposure Class	Max W/C Ratio	Air Con- tent	Notes (1 to 8 Typica UNO)
Footings	4000	28	- 1ª	1.1	· 8 ·		- e
Exterior Slabs on Grade	3000	28	-1"	14601	0.45	5%	1012-07

- (1) W/C Ratio mum ratio given in A
- (2) Cementitie а.
- b.
- c, Cer (3) Air Conter freezin
- tent shall I (4) Aggregat
- (5) Slump: C
- (6) Chloride (
- (7) Non-chlor atures be
- (8) ACI 318, classes a
- (9) Shrinkage measured

- Testing: Ob required to Cure inder and the co
- streng The additio
- ments Acceptance (1) The :
- (2) No A "test" the spec

<u>Table</u> (1)	<u>of Mix Design Requirements Notes</u> . W/C Ratio: Water–cementitious material ratios shall be based on the total weight of cementitious materials. Maxi-
(0)	mum ratios are controlled by strength noted in the Table of Mix Design Requirements and durability requirements given in ACI 318 Section 19.3.
(2)	 a. The use of fly ash, other pozzolans, silica fume, or slag shall conform to ACI 318 Sections 19.3.2 and 26.4.2.2. Maximum amount of fly ash shall be 25% of total cementitious content unless reviewed and approved otherwise by SER. b. For concrete used in elevated floors, minimum cementitious-materials content shall conform to ACI 301 Table 4.1.2.9, Acceptance of lower cement content is contingent on providing supporting data to the SER for review and acceptance.
(3)	c. Cementitious materials shall conform to the relevant ASTM standards listed in ACI 318 Section 26,4,1,1,1(a). Air Content: Conform to ACI 318 Section 19.3.3.1. Minimum standards for exposure class are noted in the table. If freezing and thawing class is not noted, air content given is that required by the SER. Tolerance is $\pm 1-\frac{1}{2}$ %. Air con- tent shall be measured at point of placement.
(4)	Aggregates shall conform to ASTM C33.
(5)	Slump: Conform to ACI 301 Section 4.2.2.2. Slump shall be determined at point of placement. Chloride Content: Conform to ACI 318 Table 19.3.2.1.
(7)	Non- chloride accelerator: Non-chloride accelerating admixture may be used in concrete placed at ambient temper- atures below 50°F at the contractor's option.
(8)	ACI 318, Section 19.3.1.1 exposure classes shall be assumed to be F0, S0, W0, and C0 unless different exposure classes are listed in the Table of Mix Design Requirements that modify these base requirements.
(9)	Shrinkage Limit: Concrete used in elevated slabs and beams shall have a shrinkage limit of 0.045% at 28 days measured in accordance with ASTM C157. Submit laboratory test results to SER for approval prior to construction.
FORM shall d	IWORK & RESHORING: Conform to ACI 301 Section 2 "Formwork and Form Accessories." Removal of Forms conform to Section 2.3.2 except strength indicated in Section 2.3.2.5 shall be 0.75 f' c.
	URING, MIXING, AND DELIVERY: Conform to ACI 301 Section 4.3.
creting	shall conform to ACI 305R-10 and cold weather concreting shall conform to ACI 306R-10.
CONS detaile prova ment-	TRUCTION JOINTS: Conform to ACI 301 Sections. 2.2.2.5 and 5.3.2.6. Construction joints shall be located and ad as on the construction drawings. Submit alternate locations per ACI 301 Section 5.1.2.4(a) for review and ap- by the SER two weeks minimum prior to forming. Use of an acceptable adhesive, surface retardant, portland ce- grout or roughening the surface is not required unless specifically noted on the drawings.
EMBE structi tectur	DED ITEMS: Position and secure in place expansion joint material, anchors and other structural and non- ural embedded items before placing concrete. Contractor shall refer to mechanical, electrical, plumbing and archi- al drawings and coordinate other embedded items.
SHRII tracto pecteo finish,	<u>NKAGE</u> : Conventional concrete slabs will continue to shrink after initial placement and stressing of concrete. Con- and subcontractor shall coordinate jointing and interior material finishes to provide adequate tolerance for ex- structural frame shrinkage and shall include, but not be limited to: curtain wall, dryvit, storefront, skylight, floor and ceiling suppliers. Contact Engineer for expected range of shrinkage.
FLOC sion jo concre	<u>R FINISHES</u> . The contractor must provide and correctly install an isolation membrane and properly detailed expan- bints to help minimize cracking of finishes with cementitious setting beds or finish properties (tile, stone, terrazzo, ete topping, etc). The expansion joints shall be sized for an expected shortening movement of 0,01 inches per foot.
CONC years the st slabs	CRETE CRACK REPAIR AND MAINTENANCE PROGRAM: Concrete shrinks and continues to shrink for up to two after construction and as a result, cracking will typically occur. These cracks do not typically impair the integrity of ructure. However, DCI recommends a one-time crack repair and maintenance program be implemented for those exposed to water or chemicals. The maintenance program shall consist of:
÷	Inspect slabs and supporting members two years after construction Determine cracks in the structure to be repaired Repair cracks
The to serve	otal length of cracking can be estimated at 0.009 feet of cracks per square feet of slab area. The owner should re- funds for this one-time maintenance program, which is to take place two years after the completion of construction.
Even contra repair	though cracking is normal and most often not structurally significant, when cracking occurs during construction the ctor shall contact the Architect/Engineer for review. The contractor should budget 0.004 ft of epoxy injected crack per square foot of slab.
STRE	NGTH TESTING AND ACCEPTANCE:
re	 Obtain samples and conduct tests in accordance with ACI 301 Section 1.8.3.2. Additional samples may be quired to obtain concrete strengths at alternate intervals than shown below. Cure 4 cylinders for 28-day test age [Cure 6 cylinders for 28-day test age post-tensioned concrete. Test 2 cyl-inders at 2 or 3 days for post-tensioned concrete only,] test 1 cylinder at 7 days, test 2 cylinders at 28 days, and hold 1 cylinder in reserve for use as the Engineer directs. After 56 days, unless notified by the Engineer to the contrary, the reserve cylinder may be discarded without being tested for specimens meeting 28-day strength requirements.
	 The number of cylinders indicated above reference 6 by 12 in cylinders. If 4 by 8 in cylinders are to be used, additional cylinders must be cured for testing of 3 cylinders at test age per the table of mix design require- ments.
<u>A</u>	 (1) The averages of all sets of 3 consecutive tests equal or exceed the specified strength. (2) No individual test falls below the specified strength by more than 500 psi. A "test" for acceptance is the average strength of two 6 by 12 in. cylinders or three 4 by 8 in. cylinders tested at the specified test age.
CONC	RETE PLACEMENT TOLERANCE: Conform to ACI 117-10 for concrete placement tolerance.
FLOO mum of flat that w requir	<u>R FLATNESS and FLOOR LEVELNESS</u> : Minimum values of flatness, F(F) 30; and of levelness, F(L) 20; with mini- ocal values of flatness, F(F) 24; and of levelness, F(L) 15; for slabs-on-grade are required. Overall minimum values ness, F(F) 30; with minimum local values of flatness, F(F) 24; for suspended slabs are required. Concrete slabs ill receive wood flooring shall have a minimum F(F) 35. The preceding values are minimums unless specifications e higher values. Measured values shall be in accordance with ACI 117.
CON	CRETE REINFORCEMENT
REFE (1)	RENCE STANDARDS: Conform to: ACI 301-16 "Standard Specifications for Structural Concrete", Section 3 "Reinforcement and Reinforcement Sup- ports."
(2) (3) (4) (5) (6) (7)	ACI SP-66(04) "ACI Detailing Manual" CRSI MSP-09, 28 th Edition, "Manual of Standard Practice," ANSI/AWS D1.4: 2005, "Structural Welding Code - Reinforcing Steel." OSSC Chapter 19-Concrete. ACI 318-14 "Building Code Requirements for Structural Concrete."
SUBM and pl	IITTALS: Conform to ACI 301 Section 3.1.2 "Submittals." Submit placing drawings showing fabrication dimensions acement locations of reinforcement and reinforcement supports.
MATE	RIALS:
R	einforcing Bars
DBTS	eformed Welded Wire Fabric ASTM A1064 ar Supports
FABR	ICATION: Conform to ACI 301, Section 3.2.2. "Fabrication", and ACI SP-66 "ACI Detailing Manual."
WELD "Weld	DING: Bars shall not be welded unless authorized. When authorized, conform to ACI 301, Section 3.2.2.2. ing", AWS D1.4, and provide ASTM A706, grade 60 reinforcement.
PLAC	ING: Conform to ACI 301, Section 3.3.2 "Placing." Placing tolerances shall conform to ACI 117.
C C Ti Bi	oncrete cast against earth
Bars E	terior bars in Tilt-up Panels

Ties in colur Bars in slab Bars in walls Exterior bars

ule" for typical reinforcement splices. Splices indicated on indivi connections may be used when approved by the SER. FIELD BENDING: Conform to ACI 301 Section 3.3.2.8. "Field Bending or Straightening." Bar sizes #3 through #5 may be field bent cold the first time. Subsequent bends and other bar sizes require preheating. Do not twist bars. Bars shall no

be bent past 45 degrees.

REFERENCE STANDARDS: Conform to: OSSC Chapter 19 "Concrete"

) ACI 318-14 "Building Code Requirements for Structural Concrete" OSSC Chapter 21 "Masonry" 4) TMS402-16 "Building Code Requirements for Masonry Structures" POST-INSTALLED ANCHORS: Install only where specifically shown in the details or allowed by SER. All post-Installed anchors types and locations shall be approved by the SER and shall have a current ICC-Evaluation Service Report that provides relevant design values necessary to validate the available strength exceeds the required strength. Submit current manufacturer's data and ICC ESR report to SER for approval regardless of whether or not it is a pre-approved anchor. Anchors shall be installed in strict accordance to ICC-ESR and the manufacturer's printed installation instructions (MPII) in conjunction with edge distance, spacing and embedment depth as indicated on the drawings. The contractor shall arrange for a manufacturer's field representative to provide installation training for all products to be used, prior to the commencement of work. Only trained installer shall perform post installed anchor installation. A record of training shall be kept on site and be made available to the SER as requested. Adhesive anchors installed in horizontally or upwardly inclined orientation shall be performed by a certified adhesive anchor installer (AAI) as certified through ACI/CRSI or approved equivalent. Proof of current certification shall be submitted to the engineer for approval prior to commencement of installation. No reinforcing bars shall be damaged during installation of post-installed anchors. Special inspection

shall be per the TESTS and INSPECTIONS section. Anchor type, diameter and embedment shall be as indicated on drawings. ADHESIVE ANCHORS: The following Adhesive-type anchoring systems have been used in the design and shall be used for anchorage to CONCRETE as applicable and in accordance with corresponding current ICC ESR report. Reference the corresponding ICC ESR report for required minimum age of concrete, concrete temperature range, moisture condition, light weight concrete, and hole drilling and preparation requirements. Drilled-in anchor embedment lengths shall be as shown on drawings, or not less than 7 times the anchor nominal diameter (7D). Adhesive anchors are to be installed in concrete aged a minimum of 21 days, unless otherwise specified in the ICC ESR report.

a. SIMPSON "SET-XP" - ICC ESR 2508 for anchorage to CONCRETE b. SIMPSON "ET-HP" - ICC ESR-3372 for anchorage to CONCRETE . EXPANSION ANCHORS: The following Expansion type anchors are pre-approved for anchorage to CON-CRETE or MASONRY in accordance with corresponding current ICC ESR report. a. SIMPSON "STRONG-BOLT 2" – ICC ESR-3037 for anchorage to CONCRETE Only

b. SIMPSON "WEDGE-ALL" - ICC ESR-1396 for anchorage to MASONRY Only

SCREW ANCHORS: The following Screw type anchor is pre-approved for anchorage to CONCRETE or MA-ONRY in accordance with corresponding current ICC ESR report: a SIMPSON "TITEN HD" - ICC ESR-2713 for CONCRETE Only and ICC ESR-1056 for MASONRY Only

Concrete ex

SPLICES: Conform to ACI 301, Section 3.3.2.7, "Splices". Refer to "Typical Lap Splice and Development Length Sched-

POST-INSTALLED ANCHORS (INTO CONCRETE AND MASONRY)

10	yproci	Eab e	phoe ai	10 00	ACIC	spinoin Loi	igui oonou	
idual	sheets	shall	control	over	the	schedule.	Mechanical	ļ

DRAWING LEGEND MARK DESCRIPTION MARK FOOTING SYMBOL (REFER TO SPREAD F2.0 INDICA FOOTING SCHEDULE) INDICA PILE CAP SYMBOL (REFER TO $\langle P1 \rangle$ SECTIO PILE CAP SCHEDULE) INDIC TILT-UP/PRECAST CONCRETE WALL (1)SECTIO CONNECTION SYMBOL (REFER TO CONNECTION DETAIL) STEEL SHEAR WALL SYMBOL (REFER TO 2W4 INDICA \boxtimes SHEAR WALL SCHEDULE) REVISION TRIANGLE INDICA TILT-UP/PRECAST CONCRETE WALL PANEL NUMBER (REFER TO TILT-UP/ INDICA[®] PRECAST CONCRETE WALL ELEVATIONS CMU WALL REINFORCING SYMBOL INDICA $\langle 1 \rangle$ (REFER TO CMU WALL REINFORCING CONCR SCHEDULE) INDICA CONTINUITY PLATE LENGTH 8" CONNE (REFER TO TYPICAL DETAIL) INDICATES DOUBLE SHEAR INDICA[®] DS> CONNECTION (REFER TO THE DOUBLE CONNE SHEAR PLATE CONNECTIONS DETAIL) INDICATES REINFORCING TYPE 00TB (REFER TO THE REINFORCING INDICA[®] •-----SCHEDUI F INDICATES NUMBER OF STUD RAIL (SR_) REQUIRED AT COLUMN (REFER TO STUD RAIL DETAILS) ROOF/FLOOR DIAPHRAGM NAILING SYMBOL (REFER TO DIAPHRAGM BEARIN -----NAILING SCHEDULE) PFR K STEEL/CONCRETE COLUMN INDIC C1 SYMBOL (REFER TO STEEL SHEAR OR COLUMN SIZE | COLUMN SCHEDULE) PFR K ELEVATION SYMBOL (T/ REFERS 577777 -T/FTG = X'-X" | TO COMPONENT THAT THE INDICA ELEVATION REFERENCES) STUD BUBBLE (INDICATES NUMBER INDICA[®] OF STUDS REQUIRED IF EXCEEDS CONCE NUMBER SPECIFIED IN PLAN NOTE) INDICATES STEP IN FOOTING をニニニニネ INDICA \bigcirc (REFER TO TYPICAL STEP IN FOOTING DETAIL) X DETAILS OR SECTION CUT (DETAIL NUMBER/SHEET NUMBER) SX.X / 00 DETAILS OR SECTION CUT IN PLAN POST-1 SO.0 / VIEW (DETAIL NUMBER/SHEET NUMBER) INDICATES LOCATION OF CONCRETE XX/SXX.XX INDICATES LOCATION OF CONCRETE WALLS, SHEAR WALLS OR BRACED POST-1 FRAME ELEVATIONS POST-STRUCTURAL EXTENT SYMBOL IN INCH SINGLE ARROW - END OF EXTENT DOUBLE ARROW - CONTINUOUS EXTENT ALONG THE ELEMENT LINE └─**╡╌┤╞**─┤ INTERM UNTIL THE ELEMENT IS INTERRUPTED INDICATES DIRECTION OF DECK SPAN ABBREVIATIONS FB Factory-Built Angle Anchor Bolt Floor Drain FD ADDL Additional FDN Foundation ADH Adhesive FIN Finish FLR Alternate Floor FRP Fiberglass Reinforced Plastic P ARCH Architectural FRT B or BOT Bottom Fire Retardant Treated FTG Bottom Of Footing BLDG Building Face of BLKG Blocking Gage Brick Masonry Unit BMU GAI V Galvanized GEOTECH Geotechnical Baseplate BRBF Buckling Restrained Glue Laminated Timber Braced Frame GWB Gypsum Wall Board HDR BRG Bearing Header SCI BTWN HF Hem-Fir Between SCI HGR Camber Hanger Castellated Beam HD Hold-down SFF C'BORE HORIZ Counterbore Horizontal HP High Point SEF Centerline CL or € Cross-Laminated Timber HSS = TS (Hollow Structural Section) Cast in Place International Building Code SHT Construction or Inside Diameter Invert Elevation Control Joint Inside Face Complete Joint Penetration Interior Clear Kips Kips Per Square Foot Ceiling KSF Concrete Masonry Unit CMU I F Lineal Foot COL Column Live Load CONC Concrete LLBB Long Leg Back-to-Back CONN Connection LLH Long Leg Horizontal CONST Construction LLV Long Leg Vertical CONT Continuous LP Low Point C'SINK Countersink LONGIT Longitudinal CTRD Centered LSL Laminated Strand Lumber Diameter LVL Laminated Veneer Lumber ST MAS Drop Beam Masonrv DBA Deformed Bar Anchor MAX Maximum Double MECH Mechanical DEMO MEP Demolish Mechanical, Electrical DFV Development Plumbing Douglas Fir MEZZ Mezzanine MFR DIAG Diagonal Manufacture MIN Distributed Minimum MISC Dead Load Miscellaneous Down Not In Contract NIC Ditto NI T Nail-Laminated Timber Depth/Deep NTS Not To Scale

	STRUCTURAL SHEET LIST
SHEET NUMBER	SHEET TITLE
S-001	STRUCTURAL - GENERAL NOTES, LEGEND, AND ABBREVIATIONS
S-002	STRUCTURAL - GENERAL NOTES CONTINUED
S-202	STRUCTURAL - ENLARGED PLAN - CLASSROOM ADDITION
S-231	STRUCTURAL - ROOF FRAMING PLAN
S-301	STRUCTURAL - FOUNDATION DETAILS
S-401	STRUCTURAL - FRAMING DETAILS
S-405	STRUCTURAL - ROOF OVER-FRAMING DETAILS
Sheet Total: 7	

OCBF

OD

OF

OPNG

OWSJ

OWWJ

OPP

PL

PAF

PC

PERP

PLWD Plywood

DWG

ELEC

ELEV

EMBED

EQUIP

EXP JT

F\//

Drawing

Existing

Each Face

Elevation

Elevator

Equal

Electrical

Embedment

Equipment

Each Way

Expansion

Exterior

Expansion Joint

Each

WING)	
	MARK	C	DESCRIPTION
PREAD	I	INDICATES WI	DE FLANGE COLUMN
		INDICATES HO SECTION (HSS TUBE STEEL (1	DLLOW STRUCTURAL) COLUMN OR (S) COLUMN
/ALL TO	0	INDICATES HO SECTION (HSS STEEL PIPE CO	DLLOW STRUCTURAL) COLUMN OR DLUMN
ТО	⊠	INDICATES WO	DOD POST
		INDICATES BU	INDLED STUDS
/ALL T-UP/ EVATIONS)		INDICATES CC	NCRETE COLUMN
BOL RCING		INDICATES PR CONCRETE CO	ECAST DLUMN
		INDICATES MO	DMENT FRAME
OUBLE ETAIL)	Ţ	INDICATES CA CONNECTION	NTILEVER
	•	INDICATES DR	AG CONNECTION
RAIL TO	<u>ب ب</u>	INDICATES A L	EDGER
_ING M	÷	INDICATES WO BEARING WAL PER KEY ON S	DOD OR STEEL STUD LL LINE HEET
		INDICATES WO SHEAR WALL PER KEY ON S	DOD OR STEEL STUD LINE AND HOLD-DOWNS HEET
6	\$7777	INDICATES MA	ASONRY/CMU WALL
1BER DS	<u> </u>	INDICATES CC CONCRETE W	NCRETE/TILT-UP
JIE)	\$\$	INDICATES BE	ARING WALL BELOW
		INDICATES EX	ISTING WALL
		POST-TENSIOI	N DEAD END (PLAN)
		POST-TENSIOI	N STRESSING END (PLAN)
	3	POST-TENSIO	N PROFILE (PLAN)
NT S LINE		(IN INCHES)	E STRESSING (PLAN)
UPTED			
BRFV	ΊΔΤΙΩΝς		
Factory-E	Built	PJP preend	Partial Joint Penetration
Foundati Finish Floor	ion	PSF PSI PSL	Pounds per Square Foot Pounds Per Square Inch Parallel Strand Lumber
Fiberglas Fire Reta Footing	ss Reinforced Plas ardant Treated	ic P-T PT R	Post-Tensioned Pressure Treated Radius
Face of Gage	ed	RD REF BEINE	Roof Drain Refer/Reference Beinforcing
Geotechi Glue Lan Gypsum	nical minated Timber Wall Board	REQD RET SB	Required Retaining Site-Built
Header Hem-Fir Hanger	vvai Doard	SCBF	Special Concentric Braced Frame Schedule
Hold-dov Horizonta	wn al	SER	Structural Engineer of Record
(Hollow S Internation	Structural Section) onal Building Code	SHTHG	Resisting System Sheathing Similar
Invert Ele Inside Fa	evation ace	SLBB SMF SOG	Short Leg Back-to-Back Special Moment Frame
Kips Kips Per Lineal Fo	Square Foot	SP SPEC SO	Southern Pine Specification Square
Live Load Long Leg	d g Back-to-Back g Horizontal	SR SF SST	Studrail Square Foot Stainless Steel
Long Leg Long Leg Low Poir	g Vertical nt dinal	STAGG STD STIFF	Stagger/Staggered Standard Stiffener
Laminate	ed Strand Lumber ed Veneer Lumber ,	STIFF STL STRUCT	Steel Structural
Masonry Maximur Mechani	/ m ical ical Electrical	SYM T	Solid Web Wood Joist Symmetrical Top
Plumbing Mezzanir	g ne ne	T&B TC AX LD	Top & Bottom Top Chord Axial Load
Minimun Miscellar	neous	TDS T&G THKND	Tie Down System Tongue & Groove
Not in Co Nail-Lam Not To S	ontract hinated Timber Scale	THRND THRD THRU	Thickened Threaded Through
On Cente Ordinary Frame	er Concentric Brace	TRANSV TYP UNO	Transverse Typical Unless Noted Otherwise
Outside Outside Opening	Face	VERT	Unit Vertical
Open We Open We	e /eb Steel Joist /eb Wood Joist	W/ W/O	With Without Welded Headed Stud
Powder / Precast Perpendi	Actuated Fastener	WP WWF +	Working Point Welded Wire Fabric Plus or Minus
Perpendi Plywood		±	Plus of Minus
URAL	_ SHEET L	IST	
LEGEND, A	SHEET TITLE AND ABBREVIATIO	DNS	
CLASSRO	DOM ADDITION		
AILS			
IIING DETA	AILO		

SCRIPTION DATE: JANUARY 2023 SHEET TITLE: STRUCTURAL -**GENERAL NOTES** LEGEND, AND **ABBREVIATIONS** S-001 Copyright © 2022 HGE ARCHITECTS, Inc.

WOOD FRAMING

REFERENCE STANDARDS: Conform to:

	(1)	USSC Chapter 23 WOOD
	(2)	NDS - "2018 National Design Specification (NDS) for Wood
	(3)	ANSI/AWC - SDPWS-15: Special Design Provisions for Wi
	(4)	APA D510C-12 Plywood Design Specification
	(5)	ANSI/TPI 1-2014 "National Design Standard for Metal-Plate
	(6)	BCSI B1 "Guide to Good Practice for Handling, Installing, R
	(7)	TPI DSB "Recommended Design Specification for Tempora
	(8)	APA Report TT-045B "Minimum Nail Penetration for Wood
	(9)	APA Report TT-061 *1-5/16 Inch-Thick I-Joist Flanges and
	1.0	
S	UBN	<u>/ITTALS</u>: Submit shop drawings to the Architect/Engineer

r for review. Shop drawings shall include member size, spacing, camber, material type, grade, shop and field assembly details and connections, types and location of bolts and other fasteners. Supply shop drawings for the following: Glued laminated members (2) Tapered & Parallel Wood I Joists (Solid web-wood joists)

nections designed by others along with shop drawings. All necessary bridging, blocking, blocking panels and web stiffeners shall be detailed and furnished by the supplier. Temporary and permanent bridging shall be installed in conformance with the manufacturer's specifications. Deflection limits shall be as noted under DEFFERRED SUBMITTLALS section specific details. Products included are:

Solid web wood joists (I-joists)

MATERIALS:

ceptable at interior walls only. TABLE of SOLID SAWN LUMBER

Member Use	Size	Specie	
Wall Stud/ Top & Bot- tom Plates	2x4, 3x4, 2x6, 3x6	Doug Fir L	
Sill Plate (at concrete)	2x4, 3x4, 2x6, 3x6	PT Doug Fir	
Post	4x4, 4x6, 4x8	Doug Fir L	
Floor or Roof Joist	2x6 through 2x12	Doug Fir L	
Beam	4x8 through 4x12	Doug Fir L	
Beam	6x8 through 6x12	Doug Fir L	
Post or Timber	6x6, 8x8	Doug-Fir L	

 Glued Laminated Timber: Conform to ANSI 117-2015 "Standard Specifications for Structural Glue-laminated Timber of Softwood Species, Manufacturing and Design" and ANSI A190.1 "Structural Glued Laminated Timber." Camber all glued laminated beams, except cantilevered and continuous beams, to 3000' radius, unless shown otherwise on the plans. Fabricate cantilevered and continuous beams flat, unless shown otherwise on plans.

TABLE of GLULAM and GRADE

Member	Sizes	Species	Comb. Sym- bol	Uses
Beams	All	DF/DF	24F-V4	Simple Spans
Beams	All	DF/DF	24F-V8	Continuous or with Cantilevel Spans
Columns	AII	DF	L2	Post, Truss Member

 Wood Structural Sheathing (Plywood): Wood APA-rated structural sheathing includes: all veneer plywood, oriented strand board, waferboard, particleboard, T1-11 siding, and composites of veneer and wood based material with T&G joint. Architect may disallow OSB. Confirm with Architect. Conform to "Construction and Industrial Plywood" based on Product Standard PS 1-09 by the U.S. Dept. of Commerce, and "Performance Standard for Wood-Based Structural-Use Panels" based on Product Standard PS 2-10 by the U.S. Dept. of Commerce and "Plywood Design Specification" based on APA D510C-12 by the American Plywood Association. Unless noted otherwise, sheathing shall comply with the following table:

TABLE of SHEATHING - Use, Minimum Thickness and Minimum APA Rating Location Thickness Span Rating Plywood Grade Exposure

Root	15/32	32/16	C-D	1
Walls	15/32"	32/16	C-D	t:
Unless noted panel continu	otherwise on o ous over two or	frawings, install ro more spans. End j	of and floor panels joints shall occur ov	with long dir er supports.

. Timber Connectors: Shall be "Strong Tie" by Simpson Company as specified in their latest catalog. Alternate connectors by other manufacturers may be substituted provided they have current ICC approval for equivalent or greater load capacities and are reviewed and approved by the SER prior to ordering. Connectors shall be installed per the manufacturer's instructions. Where connector straps connect two members, place one-half of the nails or bolts in each member. Where straps are used as hold-downs, nail straps to wood framing just prior to drywall application, as late as possible in the framing process to allow the wood to shrink and the building to settle. Premature nailing of the strap may lead to strap buckling and potential finish damage. Where connectors are in exposed exterior applications in contact with preservative treated wood (PT) other than CCA, connectors shall be either batch hot-dipped galvanized (HDG), mechanically galvanized (ASTM B695, Class 55 minimum) stainless steel, or provided with 1.85 oz/sf of zinc galvanizing equal to or better than Simpson ZMAX Nail straps to wood framing as late as possible in the framing process to allow the wood to shrink and the building to settle. Premature nailing of the strap may lead to strap buckling and potential finish damage.

 Fasteners (nails, bolts, screws, etc) attaching timber connectors (joist hangers, post caps and bases, etc) to PT wood shall have similar corrosion resistance properties (matching protective treatments) as the protected connector. Fasteners (nails, bolts, screws, etc) attaching sawn timber members or sheathing (shear walls) to PT wood shall be corrosion resistant; nails and lag bolts shall be either HDG (ASTM A153) or stainless steel. Verify the suitability of the fastener protection/coating with the wood treatment chemical manufacturer/supplier. Provide washers under the heads and nuts of all bolts and lag screws bearing on wood.

 Lag Bolts/Bolts: Conform to ASTM A307 and OSSC Section 2304.10. Nails and Staples: Conform to ASTM F1667 and OSSC Sections 2303.6 and 2304.10.

NAILING REQUIREMENTS: Conform to OSSC Section 2304.10 "Connections and fasteners." Unless noted on plans, nail per Table 2304.10,1, Nailing for roof/floor diaphragms/shear walls shall be per drawings. Nails shall be driven flush and shall not fracture the surface of sheathing. Alternate nails may be used but are subject to review and approval by the Structural Engineer. Substitution of staples for the nailing of rated sheathing is subject to review by the structural engineer prior to construction.

STANDARD LIGHT-FRAME CONSTRUCTION: Unless noted on the plans, construction shall conform to OSSC Section 2308 "Conventional Light-Frame Construction." NAILERS ON STEEL COLUMNS and BEAMS: Wood 3x nailers are generally required on all HSS columns and steel beams abutting or embedded within wood framing. Unless noted otherwise, attach with 5/8" diameter bolts or welded studs at 16" on centers. Unless noted otherwise, wood nailers on beams supporting joist hangers shall not overhang the beam flange by more than 1/4".

changes in moisture.

MOISTURE CONTENT: Wood material used for this project shall have maximum moisture content of 19% except for the pressure-treated wood sill plate. Refer to TESTING & INSPECTIONS for the verification of these limits. The maximum moisture content required may be less than 19% when based on a particular cladding/insulation system. Refer to the Architect's drawings, and project specifications, or with cladding installer for maximum recommended moisture content. SHRINKAGE COMPENSATION FOR MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS: MEP systems, including ductwork, pipes, and other elements that run continuously between levels shall be installed/designed in such a manner to accommodate shrinkage in the wood framing. Wood shrinkage amounts will vary depending on the construction process and materials used. The anticipated shrinkage under typical conditions is expected to range between 1/8" and 1/4" per floor. CLADDING COMPATIBILITY: The Architect/Owner shall review the cladding and insulation systems proposed for the

project with respect to their performance over wood studs with moisture contents greater than 19%. EIFS systems should be avoided on wood-framed projects due to problems with moisture proofing. Note that DCI is not responsible for the attachment of the cladding to the wood studs which needs to be verified and provided by the cladding supplier. PRESERVATIVE TREATMENT (PT): Wood materials that are required to be "treated wood" in accordance with OSSC Section 2304.12. "Protection Against Decay and Termite Protection" shall conform to the appropriate standards of the American Wood-Preservers Association (AWPA) for sawn lumber, glued laminated timber, round poles, wood piles and marine piles. Follow American Lumber Standards Committee (ALSC) quality assurance procedures. Products shall bear the appropriate mark. Fasteners or anchors in treated wood shall be of stainless steel or hot-dipped galvanized or as per OSSC 2304.10.5.

rahydrate) as recent studies have noted less connector corrosion potential than other available wood treatments or the original CCA treated sill plates. Wood treated with Sodium Borate shall be protected during shipment, storage and installation to minimize leaching of the water-soluble preservative from the lumber. Sodium borate pressure treated plates do not require hot-dipped galvanized connectors. If using preservative treatments other than CCA or sodium borate, fasteners must be hot dipped galvanized or stainless steel. Wood treated with Alkaline Copper Quaternary (ACQ) requires steel components in contact with the wood to be stainless (nails, bolts, screws, washers & lag screws). Fasteners (nails, bolts, screws, washers & lag screws) attaching timber connectors (joist hangers, post caps and bases, etc) to PT wood shall have similar corrosion resistance properties (matching protective treatments) as the protected connector; that is, use hot dipped galvanized or stainless-steel fasteners. Fasteners (nails, bolts, screws, washers & lag screws) attaching sawn timber members or sheathing (shear walls) to

Pressure Treated wood shall be corrosion resistant (hot dipped galvanized or stainless steel). Always verify the suitability of the fastener protection/coating with the wood treatment chemical manufacturer/supplier. Fire Retardant Treated (FRT) Wood: Wood material that is required to be Fire Retardant Treated Wood to conform to OSSC section 2303.2 - "Fire Retardant Treated Wood." Submit ICC report to EOR for review and approval prior to construction.

d Construction" /ind and Seismic

te-Connected Wood Truss Construction Restraining & Bracing of Trusses" rary Bracing of Metal Plate Connected Wood Trusses"

Structural Panel Connections Subject to Lateral Loads" Diaphragm Nail Penetration

DEFERRED SUBMITTALS: Submit product data and proof of ICC approval for framing members and fasteners that have been designed by others. Submit calculations prepared by the SSE in the state of [Washington] for all members and con-

<u>IDENTIFICATION</u>: All sawn lumber and pre-manufactured wood products shall be identified by the grade mark or a cer-tificate of inspection issued by the certifying agency.

· Sawn Lumber: Conform to grading rules of WWPA, WCLIB or NLGA and Table below. Finger jointed studs ac-

	Grade	
rch	No, 2	
arch	No. 2	÷
rch	No. 2	
rch	No. 2	-
rch	No. 2	
rch	No. 1	7
rch	No. 1	-

1.1 r panels with long dimension across supports and with

WOOD SHRINKAGE AND EXPANSION: Wood materials will expand or contract based on relative changes in moisture. The contractor is responsible for means and methods of construction related to mitigating and managing the effects of

Mud sill plates in normally dry interior applications may be treated with Sodium Borate (DOT - Disodium Octaborate Tet-

SPECIAL INSPECTIONS

The following Statement and Schedules of Inspections are those Special Inspections and Tests that shall be performed for this project. Special Inspectors shall reference these plans and IBC Chapter 17 for all special inspection requirements. The owner shall retain to provide special inspections for this project. Special Inspectors shall be qualified per-

sons per IBC 1704.2.1. Special inspection reports shall be provided on a weekly basis. Submit copies of all inspection reports to the Architect/Engineer and the Authority Having Jurisdiction for review. In addition to special inspection reports and tests, submit reports and certificates noted in IBC 1704.5 to the Authority Having Jurisdiction. Final special inspection reports will be required by each special inspection firm per IBC 1704.2.4.

STATEMENT OF SPECIAL INSPECTIONS: This statement of Special Inspections has been written with the understanding that the Building Official will: Review and approve the qualifications of the Special Inspectors Monitor the special inspection activity on the project site to assure that Special Inspectors are qualified and performing their duty as state within this statement. Review all Special Inspection Reports submitted to them by the Special Inspector Perform inspections as required by IBC Section 110.3.

The following Special Inspections are applicable to this project: Special Inspections for Standard Buildings (per IBC 1705.1)

Special Inspections for Seismic Resistance (per IBC 1705.12) Testing for Seismic Resistance

(per IBC 1705.13) Special Inspections for Wind Resistance (per IBC 1705.11)

SPECIAL INSPECTION OF SHOP FABRICATED GRAVITY LOAD-BEARING MEMBERS AND ASSEMBLIES: Special Inspection of shop fabricated Gravity Load Bearing Members & Assemblies shall be verified by the Special Inspector as stated in Section 1704.2.5 which includes the following:

 Fabricator shall have available for Inspector's review, detailed procedures for material control lhat demonstrates the fabricator's ability to maintain suitable records and procedures such that, at any time during the fabrication process, the material specification, grade and applicable test reports for primary load-carrying members, are capable of being determined.

STRUCTURAL STEEL per IBC 1705.2.1

A qualified Special Inspector of an "approved agency" providing Quality Assurance (QA) Special Inspections for the project shall review and confirm the Fabricator and Erector's Quality Control (QC) procedures for completeness and adequacy relative to AISC 360-16 Chapter N, AISC 303-16 Code of Standard Practice, AWS D1.1-2015 Structural Welding Code, and 2018 IBC code requirements for the fabricator's scope of work.

- OA Agency providing Special Inspections shall provide personnel meeting the minimum qualification requirements for Inspection and Nondestructive Testing NDT per AISC 360 Section N4.
- Verify Fabricator and Erector QC Program per AISC 360 Section N2. Inspection of welds and bolts by both QC and QA personnel shall be per the Schedule of Special Inspections below. All provisions of AWS D1.1 Structural Welding Code for statically loaded structures
- shall apply. Additional Inspection tasks per AISC 360 Section N5.8.
- Inspection for Composite Construction shall be done per AISC 360 Section N6.

POST-INSTALLED ANCHORS TO CONCRETE AND MASONRY: shall comply with IBC Section 1703. Inspections shall be in accordance with the requirements set forth in the approved ICC Evaluation Report and as indicated by the design requirements specified on the drawings. Refer to the POST INSTALLED ANCHORS section of these notes for anchors that are the basis of the design. Special inspector shall verify anchors are as specified in the POST INSTALLED ANCHORS section of these notes or as otherwise specified on the drawings. Substitutions require approval by the SER and require substantiating calculations and current 2018 IBC recognized ICC Evaluation Services (ES) Report. Special Inspector shall document in their Special Inspection Report compliance with each of the elements required within the applicable ICC Evaluation Services (ES) Report.

PREFABRICATED CONSTRUCTION: All prefabricated construction shall conform to IBC Section 1703.

SCHEDULES OF SPECIAL INSPECTIONS:

TABLE 1705.6 REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPEC- TION
 Verify materials below shal- low foundations are adequate to achieve the design bearing capaci- ty 	-	×
 Verify excavations are ex- tended to proper depth and have reach proper material 		×
3. Perform classification and testing of compacted fill materials	~	×
 Verify use of proper materi- als, densities and list thickness during placement and compaction of compacted fill 	×	
 Prior to placement of com- pacted fill, inspect subgrade and verify that site has been prepared properly 	-	x

TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL IN- SPECTION	PERIODIC SPE- CIAL INSPEC- TION	REFERENCED STANDARD	IBC REFERENCE
1. Inspection, reinforce- ment, and verify placement.	1.0	x	ACI 318 Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
 Reinforcing bar weld- ing: Verify weldability of reinforcing bars other than ASTM A706 	-	x	AWS D1.4 ACI 318: 26.6.4	
 b. Inspect single pass fillet weld maximum 5/16" 	-	×	1	
c.Inspect all other welds	x	~		
3. Inspect anchors cast in concrete		x	ACI 318: 17.8.2	1
 Verify use of required design mix 	. в.	х	ACI 318; Ch. 19, 26,4,3, 26,4,4	1904.1, 1904.2, 1908.2, 1908.3
 Prior to concrete placement, fabricate speci- mens, for strength tests, perform slump and air con- tent tests, and determine the temperature of the con- crete 	*		ASTM C172 ASTM C31 ACI 318: 26.5, 26.12	1908.10
 Inspect concrete and shotcrete placement for proper application tech- niques 	×		ACI 318: 26.5	1908.6, 1908.7, 1908.8
 Verify maintenance of specified curing tempera- ture and techniques 	-	x	ACI 318 :26.5.3 - 26.5.5	1908.9
 Inspect formwork for shape, location and dimen- sions of the concrete mem- ber being formed 	-	x	ACI 318: 26.11.1.2 (b)	1

TABLE 1705.2.3 REQUIRED SPECIAL INSPECTIONS OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS

REQUIRED SPECIAL INSPECTIONS OF WOOD CONSTRUCTION CONTINUOUS PERIODIC SPE-

TYPE	SPECIAL IN- SPECTION	CIAL INSPEC- TION	REFERENCED STANDARD
 Shear Walls (where fastener spacing of the sheathing is 4 inches or less on center) 			IBC Section 1705.11.1 IBC Section 1705.12.2
 Anchor Bolts including proper bottom plate sizes (2x and 3x) and plate washers 	-	x	
 Hold-downs (HD) and Continuous Rod Tie- Down Systems (TDS) including squash blocks and anchors to concrete 		×	
c. A35 and LPT shear connectors	1	х	
d. Strap Connectors	~	x	
e. Boundary Edge Nailing	1	х	
r. Plate Nailing and Panel Edge Nailing for size and spacing	~	×	
g. Blocking	and the second sec	x	A design of the second se
2 Blocked and Unblocked Diaphragms (where fas- tener spacing of the sheathing is 4 inches or less on center)		-	IBC Section 1705.11.1 IBC Section 1705.12.2
a Blocking and strap connections		x	
 Boundary edge and panel shear nailing size and spacing 	-	x	
3. Moisture Content of wood studs, plates, beams, decking, and joists	×		As directed by the Con- tractor to meet moisture content requirements
4. Roof truss 'hurricane clips'		X	

REQUIRED REQUIRED

NOT REQUIRED NOT REQUIRED

ARCHITECT 333 S. 4TH STREET COOS BAY, OR 97420 P: 541.269.1166 general@hge1.com www.hgel.com 74858PE OREGON EXPIRES: 12-31-23 0 \square MO Ŷ S S \mathbf{C} య С С Ш С \mathbf{O} S JIL BIDDING **REVISIONS**: # DATE DESCRIPTION DATE: JANUARY 2023 SHEET TITLE: STRUCTURAL -**GENERAL NOTES** CONTINUED S-002 Copyright © 2022 HGE ARCHITECTS, Inc.

ROOF FRAMING PLAN NOTES:

- SHALL BE FIELD VERIFIED.
- ROOFING WARRANTY.

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

SCALE: 1/2" = 1'-0"

01403A		GRADE 60 REINFORCING					
BAR	MISCE	ELLANEOUS BARS	TC (see	PBARS e note #3)	HOOKED BARS		
SIZE	Ld	Splice	Ld	Splice	Ldh		
f'c = 3000	psi						
#3	17	22	22	28	9		
#4	22	29	29	38	11		
#5	28	36	36	47	14		
#6	33	43	43	56	17		
#7	48	63	63	81	20		
#8	55	72	72	93	22		
#9	62	81	81	105	25		
#10	70	91	91	118	28		
#11	78	101	101	131	31		
#14	93	N/A	121	N/A	38		
#18	124	N/A	161	N/A	50		

NOTES:

1. ALL TABULATED VALUES ARE IN INCHES.

2. VALUES FOR UNCOATED REINFORCING AND NORMAL WEIGHT CONCRETE WITH CLEAR SPACING > db, CLEAR COVER > db AND MINIMUM STIRRUPS OR TIES THROUGHOUT Ld OR CLEAR SPACING > 2db AND

CLEAR COVER > db.

3. TOP REINFORCING = HORIZONTAL REINFORCING WITH MORE THAN 12" OF FRESH CONCRETE BELOW OR AS NOTED ON DOCUMENTS AS "TOP BAR".

LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE SCALE: 3/4" = 1'-0" (01403A)

NOTES:

1. USE 5/8"Ø ANCHOR BOLT PER 8/S-301. 2. EACH SILL PLATE PIECE SHALL HAVE (2) BOLTS MINIMUM. HOLD-DOWN ANCHORS ARE NOT

TO BE CONSIDERED AN ANCHOR BOLT.

3. LOCATE BOLTS WITHIN 1'-0" OF SILL PLATE PIECE ENDS AND AT 6'-0"OC MAXIMUM.

4. USE PLATE WASHER PER SHEAR WALL SCHEDULE AT EACH BOLT. STANDARD CUT WASHERS ARE ACCEPTABLE AT NON-SHEAR WALLS.

ANCHORAGE TO CONCRETE

5. DO NOT DRILL OVERSIZE HOLES THRU SILL PLATE. USE 11/16"Ø DRILL BIT.

6. SILL PLATE THICKNESS AND FASTENING AT SHEAR WALLS PER SHEAR WALL SCHEDULE

7. CONTACT THE ENGINEER-OF-RECORD FOR POST INSTALLED ANCHOR OPTIONS. PLAN - TYPICAL SILL PLATE

10/011	WALL SHEATHING	NAIL SIZE & SPACING	BLOCKING & STUD	RIM JOIST OR BLOCKING	2x PLATE ATTACHMENT	SILL PLATE /	ATTACHMENT
TVDE	APA-RATED	AT ALL PANEL EDGES	SIZE AT ADJOINING	CONN TO TOP PLATE	NAILING TO WOOD RIM JOIST	ANCHOR BOLT TO	SILL PLA
	[1, 2, 12, 13]	[4, 5]	PANEL EDGES [3, 6, 14]	BELOW [7, 8]	OR BLOCKING BELOW	CONCRETE BELOW [10]	FOUNDAT
W6	15/32"	0.131"Øx2 1/2" @ 6"OC	2x	CLIP @ 16"OC	0.148"Øx3 1/4" @ 8"OC	5/8"Ø @ 48"OC	2>
W4	15/32"	0.131"Øx2 1/2" @ 4"OC	2x	CLIP @ 16"OC	0.148"Øx3 1/4" @ 6"OC	5/8"Ø @ 48"OC	2>
W3	15/32"	0.131"Øx2 1/2" @ 3"OC STAGGERED	Зx	CLIP @ 12"OC	0.148"Øx3 1/4" @ 4"OC	5/8"Ø @ 32"OC	2>
W2	15/32"	0.131"Øx2 1/2" @ 2"OC STAGGERED	Зx	CLIP @ 16"OC EACH SIDE	0.148"Øx3 1/4" @ 6"OC (2) ROWS [9]	5/8"Ø @ 24"OC	2>

MONITOR UPPER ROOF PERPENDICULAR TO PONY WALL SCALE: 1" = 1'-0"

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bbrevia	tions	General
(A) ADA	ABANDON IN PLACE AMERICANS WITH DISABILITIES ACT	
& CO	AND CLEANOUT	
CONT. (X)	CONTINUATION DEMOLISH	EXTENT OF DEMOLITION
DS DSN DFU	DOWNSPOUT DOWNSPOUT NOZZLE DRAINAGE FIXTURE UNIT	X FIXTURE TAG (LEVEL BELOW FIXTURE)
(E) (N)	EXISTING NEW	X KEYED NOTE
# OD	NUMBER OVERFLOW DRAIN, OUTSIDE DIAMETER	
POC RD	POINT OF CONNECTION ROOF DRAIN	POINT OF CONNECTION
SAN SD W	SANITARY STORM DRAIN WASTE	
		EXISTING WORK
		NEW WORK
		Piping Fittings
		∃ CAP
		• OVERFLOW ROOF DRAIN
		> PIPE DROP
		O ROOF DRAIN
		TEE DOWN ON PIPE
		WCO WALL CLEANOUT
		Piping Systems
		COLD WATER PIPING
		HOT WATER PIPING
		HOT WATER RETURN PIPING
		OVERFLOW DRAIN PIPING ABOVE GRAD
		SANITARY VENT PIPING
		SANITARY WASTE OR SOIL PIPING ABOY FLOOR
		SANITARY WASTE OR SOIL PIPING BELC
		SD STORM DRAIN PIPING ABOVE GRADE O
		sd - STORM DRAIN PIPING BELOW GRADE O
		Valves

	Pl		NG FIXT	URE SCHEDULE							GENERAL PL
				BASIS OF DESIGN		CONN	IECTION				
SYMBO	FIXTURE TYPE DESCRIPTION	MFR	MODEL	ACCESSORIES	W	V	CW	HW	NOTES	А.	CONSULT ALL DRAWINGS AND SPECI
DSN-1	DOWNSPOUT NOZZLE SIDEWALL TERMINATION, CAST BRONZE, NICKEL BRONZE FINISH, BIRD SCREEN	JR SMITH	1770-NB-BS		SEE DWGS						FAMILIAR WITH ALL EQUIPMENT TO B
OD-1	ROOF DRAIN (OVERFLOW DRAIN)LARGE AREA, EPOXY COATED CAST IRON BODY WITH FLANGE, FLASHING RING WITH GRAVEL STOP, UNDER DECK CLAMP, EXTENSION, SUMP RECEIVER, 2-INCH WATER DAM, ALUMINUM DOME	JR SMITH	1080-AD-C-E-R-Y		SEE DWGS			-			ALL WORK AND MATERIALS REQUIRE OPERATIONAL FACILITY ARE INCLUDI PRECEDENCE OVER DRAWINGS.
RD-1	ROOF DRAIN LARGE AREA, EPOXY COATED CAST IRON BODY WITH FLANGE,	JR SMITH	1010-AD-C-E-R-Y	~	SEE						
	FLASHING RING WITH GRAVEL STOP, UNDER DECK CLAMP,				DWGS		\downarrow			В.	CONDITIONS SHOW ON THE PLANS R
\downarrow										$\left\{ \right. \right\}$	PERFORMED ARE BASED ON THE BE
>										{	SUBJECT TO VERIFICATION. VERIFY
<u>ک</u>										5	UTILITIES TO BE CROSSED OR CONN
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{									· · · · · · · · · · · · · · · · · · ·	}	CONFLICT WITH THE DETAILS/PLANS
\$										С.	COORDINATE INSTALLATION OF PIPIN
Ş										$\left\{ \right\}$	STRUCTURAL COMPONENTS AND OT
>										ζ D.	COORDINATE FIXTURES, EQUIPMENT
\$										$\left\{ \right\}$	LOCATIONS AND DRAIN LOCATIONS V
>										ζ _{Ε.}	PIPING ROUTED THROUGH ROOF TO
{										}	REQUIREMENTS (SEE ARHICTECTUR
ζ										ζ F.	LOCATE VALVES FOR SERVICE ACCE
Lin		~~~~~	·····		~~~~	~~~~	~~~~	~~~~	·····	ノ	CEILING SHALL BE WITHIN 18" OF CEII

E GRADE OR FINISHED FLOOR

NG ABOVE GRADE OR FINISHED

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RADE OR FINISHED FLOOR

RADE OR FINISHED FLOOR

ERAL PLUMBING NOTES

WINGS AND SPECIFICATIONS IN THIS PROJECT AND BECOME _ EQUIPMENT TO BE INSTALLED. COORDINATE ALL ASPECTS CTION WITH THE OTHER TRADES ON THE JOB TO ENSURE THAT ATERIALS REQUIRED TO PROVIDE A COMPLETE AND CILITY ARE INCLUDED IN THE BID. SPECIFICATIONS TAKE

V ON THE PLANS RELATIVE TO THE WORK TO BE BASED ON THE BEST INFORMATION AVAILABLE BUT ARE FICATION. VERIFY LOCATIONS AND ELEVATIONS OF ROSSED OR CONNECTED. CORRECT DEFICIENCIES JRE TO PERFORM SUCH VERIFICATIONS AT NO EXPENSE TO ATELY NOTIFY ARCHITECT AND ENGINEER OF CONDITION IN

ALLATION OF PIPING BELOW AND ABOVE GRADE WITH IPONENTS AND OTHER SYSTEMS INSTALLATION.

URES, EQUIPMENT, PIPE ROUGH-IN/CONNECTION DRAIN LOCATIONS WITH ARCHITECTURAL DRAWINGS.

HROUGH ROOF TO BE INSTALLED PER ARCHITECTURAL (SEE ARHICTECTURAL DETAILS).

FOR SERVICE ACCESSIBILITY. VALVES INSTALLED ABOVE WITHIN 18" OF CEILING.

INSTALL OVERHEAD PIPING AS CLOSE TO STRUCTURE AS POSSIBLE IN AREAS WITH EXPOSED ROOF STRUCTURE.

PROVIDE CLEANOUTS FOR SANITARY WASTE AND STORM DRAINAGE SYSTEMS WHERE SHOWN AND AS OTHERWISE REQUIRED BY CODE.

CONTRACTOR TO PROVIDE LOCATE/SCOPING SERVICES FOR EXISTING PIPING BELOW GRADE AND DOCUMENT/RECORD, COORDINATE WITH NEW WORK PRIOR TO START OF CONSTRUCTION.

ALL FIRE ASSEMBLY PENETRATIONS SHALL COMPLY WITH 2014 OSSC SECTIONS 714, 715 & 717. REFER TO SPEC BOOK DIVISION 07 8400 "FIRESTOPPING" FOR APPROVED LISTED PENETRATION SYSTEMS. AT THE TIME OF INSPECTION PROVIDE CUTSHEETS TO THE AHJ OF SYSTEMS USED FOR EACH TYPE OF PENETRATION.

DEMOLITION PLUMBING NOTES

COORDINATE DEMOLITION, CUTTING, PATCHING, ETC. WITH GENERAL CONTRACTOR AND EXISTING FIELD CONDITIONS PRIOR TO SUBMITTING CONSTRUCTION CONTRACT BIDS. SEE SPECIFICATIONS GENERAL PROVISIONS,

B SAW CUTTING OF ANY FLOOR, AND CORE DRILLING HOLES LARGER THAN EIGHT INCHES DIAMETER IN STRUCTURAL WALLS, FLOOR OR ROOF REQUIRES THE APPROVAL OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON. CONTRACTOR TO RETAIN THE SERVICES OF THE

NOT ALL PIPING IS ILLUSTRATED.

WORK.

STRUCTURAL ENGINEER AND FORWARD WET STAMPED STRUCTURAL CALCULATIONS TO THE ARCHITECT PRIOR TO BEGINNING WORK. HOLES SMALLER THAN EIGHT INCHES DIAMETER IN STRUCTURAL WALLS, FLOOR OR ROOF SHALL BE REVIEWED BY THE ARCHITECT AND AUTHORIZED IN WRITING PRIOR TO BEGINNING OF WORK.

REFER TO ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR SPACE ALLOTMENT, BEAM LOCATION AND COORDINATION PURPOSES. CONFLICTS REGARDING SPACE REQUIREMENTS, CLEARANCES, INTERFERENCE WITH STRUCTURE OR OTHER WORK, ETC., SHALL BE DIRECTED TO THE ARCHITECT FOR RESOLUTION PRIOR TO INSTALLATION OF

D THE COST OF CUTTING, PATCHING AND PAINTING OF EXISTING WALLS, CEILINGS, AND FLOOR AS REQUIRED TO ACCOMMODATE WORK AS SHOWN OR SPECIFIED HEREIN, SHALL BE INCLUDED IN THE COST OF THE WORK FOR EACH TRADE. EMPLOY SKILLED WORKMEN TO PERFORM CUTTING AND PATCHING AND RESTORE DISTURBED SURFACES TO ORIGINAL CONDITION. THE MATERIALS AND WORKMANSHIP FOR ALL PATCHING SHALL BE AS SPECIFIED IN THE RESPECTIVE SECTIONS OF THE ARCHITECTURAL SPECIFICATIONS, OR AS DIRECTED BY THE ARCHITECT.

ALL REVIEWED DOCUMENTS SHALL BE KEPT AT THE SITE OF WORK AND AVAILABLE AT THE TIME OF EACH INSPECTION. OSSC SECTION 107.3.1

P-001 SYMBOLS LIST AND GENERAL NOTES - PLUMBING PD201 MAIN FLOOR PLAN - PLUMBING - DEMOLITION PD232 ROOF PLAN - PLUMBING - DEMOLITION P-201 MAIN FLOOR PLAN - PLUMBING P-232 ROOF PLAN - PLUMBING

\bigcirc SHEET KEYNOTES 1 EXISTING ROOF DRAIN PIPING TO REMAIN FOR RECONNECTION TO NEW ROOF DRAIN. ARCHITECTS. 2 CAP STORM IN WALL OR CEILING SPACE AND REMOVE ALL PIPING UP TO ROOF DRAIN. 3 REMOVE ROOF DRAIN AND PIPING. 333 S. 4TH STREET COOS BAY, OR 97420 4 REMOVE ROOF DRAIN AND PIPING TO 18" BELOW SOFFIT FOR CONNECTION TO NEW GUTTER DOWNSPOUT. P: 541.269.1166 www.hge1.com 5 EXISTING UNDERGROUND 2" WATER LINE TO BE REMOVED general@hge1.com AND CAPPED TO THIS POINT. 6 DEMOLISH EXISTING 3/4" WATER LINE ABOVE CEILING TO THIS POINT. PIPING TO REMAIN FOR RE-CONNECTION. INTERFACE ENGINEERING PROJECT 2022-1618 contact Rick Silenzi 100 SW Main Street, Suite 1600 Portland, OR 97204 TEL 503.382.2266 \frown \mathbf{O} www.interfaceengineering.com \sim 17430PE TEW W. FR EXPIRES:12/31/23 N M (L) \searrow Κ \searrow -(| \searrow H \searrow ADDITION \frown G \searrow F ASSROOM \searrow E \searrow CL D Š REROOF C SCHOOI STRICT B \searrow OMA CHOOL DI MILLIC COOS BAY SC 260 2ND AVE COOS BAY, OI Α BIDDING **REVISIONS**: # DATE DESCRIPTION A 01/18/23 REVISIONS DATE: JANUARY 2023

1 MAIN FLOOR PLAN - PLUMBING - DEMOLITION

SHEET TITLE: MAIN FLOOR PLAN -PLUMBING -DEMOLITION

PD201

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2 REMOVE ROOF DRAIN AND CAP PIPING BELOW ROOF LINE. 3 REMOVE ROOF DRAIN BUT MAINTAIN PIPING FOR CONNECTION TO NEW GUTTER DOWNSPOUT.

HGE ARCHITECTS... 333 S. 4TH STREET COOS BAY, OR 97420 P: 541.269.1166 www.hge1.com general@hge1.com INTERFACE ENGINEERING PROJECT 2022-1618 CONTACT Rick Silenzi 100 SW Main Street, Suite 1600 Portland, OR 97204 TEL 503.382.2266 www.interfaceengineering.com 17430PE FEW W. FRY EXPIRES:12/31/23 NOI ADDIT MO Š \bigcirc SCHOO STRICT OMA CHOOL DI MILLIC COOS BAY SC BIDDING REVISIONS: # DATE DESCRIPTION DATE: JANUARY 2023 SHEET TITLE: ROOF PLAN -PLUMBING -DEMOLITION PD232 Copyright © 2022 HGE ARCHITECTS, امد.

3 DOWNSPOUT CONNECTION WITH CO TEE NO SCALE

2 OVERFLOW TERMINATION FITTING NO SCALE

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

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P-201

PLUMBING

NO SCALE

GENERAL SHEET NOTES

A. FIELD VERIFY ALL BELOW GRADE UTILITIES PRIOR TO INSTALLING AND CONNECTING NEW LINES.

\bigcirc SHEET KEYNOTES

ROUTING.

1. NEW ROOF AND OVERFLOW DRAIN. CONNECT ROOF DRAIN TO EXISTING PIPING. ROUTE NEW OVERFLOW PIPING AS SHOWN. FIELD VERIFY ALL

2. NEW DOWNSPOUT LOCATION. COORDINATE WITH ARCHITECTURAL PLANS. 3. FIELD VERIFY LOCATION AND SIZE OF ALL PLUMBING VENTS AND EXTEND THROUGH NEW ROOF PER DETAIL 2/P-232.

SPECIFICATIONS	• RETURN OUTDOORS LINER 2" 8.0 • RETURN UNCONDITIONED WRAP 2.5" 6.0 • RETURN CONDITIONED LINER (SHOWN ON DWGS) 1" 4.2	 CAST COPPER ALLOY FITTINGS FOR FLARED COPPER TUBE SHALL CONFORM TO ASME B16.26 AND ASTM B62. BRAZED JOINTS: WROUGHT COPPER FITTINGS, ASME B16.22, OR FORGED BRASS. SOLDER: CADMIUM FREE, AWS A5.8/A5.8M, 45 PERCENT SILVER BRAZING ALLOY, CLASS BAg-5.
SPECIFICATION INDEX 23 00 00 - HVAC GENERAL 23 05 50 - SEISMIC CONTROL 23 05 50 - SEISMIC CONTROL	RETURN INDIRECTLY / DIRECTLY CONDITIONED NONE N/A N/A TYPE INSULATION EXHAUST (ENVIRONMENTAL) NONE	 BRASS OR BRONZE ADAPTERS FOR BRAZED TUBING MAY BE USED FOR CONNECTING TUBING TO FLANGES AND TO THREADED ENDS OF VALVES AND EQUIPMENT. 3 INSULATION
23 05 53 - IDENTIFICATION FOR HVAC EQUIPMENT 23 07 00 - DUCT AND PLENUM INSULATION 23 09 00 - CONTROL FOR HVAC	EXHAUST - TYPE II KITCHEN HOOD NONE 23 09 00 - CONTROL FOR HVAC PROVIDE COMPLETE AND FLILLY OPERATIONAL BAS. INCLUDING HARDWARE ENGINEERING INSTALLATION. CAUBRATION, SOFWARE	 FIELD ERECTED REFRIGERANT PIPING TO BE INSULATED IN ACCORDANCE WITH Stnd 90.1 - PART 6.4.4.1.3, AND TABLE 6.8.3-2. INSULATION TYPE: SEAMLESS ELASTOMERIC FOAM OR POLYETHYLENE CLOSED CELL FOAM ASTM 1427-07 COMPLIANT. UL-723, ASTM E 84 TEST COMPLIANT FOR FLAME SPREAD OF LESS THAN 25 AND SMOKE DEVELOPED OF LESS THAN 50. INSULATION THICKNESS IN ACCORDANCE
23 20 00 - PIPING GENERAL 23 20 10 - CONDENSATE DISPOSAL 23 23 00 - REFRIGERANT PIPING 23 31 00 - DUCTWORK	PROGRAMMING, AND CHECKOUT. HVAC SYSTEM CONTROL PROVIDED THROUGH USE OF A JOHNSON FX NETWORKED DIRECT DIGITAL CONTROL (DDC) SYSTEM. SYSTEM TO BE WEB-ENABLED FOR THIN-CLIENT ACCESS, FULLY PROGRAMMABLE, WITH DYNAMIC SYSTEM GRAPHICS USER INTERFACE. SYSTEM TO BE BACnet, BTL CERTIFIED FOR ALL DEVICES FROM BUILDING CONTROLLER TO ROOM DEVICES. TRIDIUM NIAGRA BASED	 PIPE INSULATION EXPOSED TO WEATHER: PROVIDE PAINT-ON FINISH COATING TO PROTECT AGAINST UV DEGRADATION, WEATHER AND OZONE DAMAGE (Stnd 90.1 - 6.4.4.1.1 - a). COLD WEATHER CRACKING RESISTANT. ARMAFLEX WB FINISH PROTECTIVE COATING, OR APPROVED FOLIAL. COATING APPLICATION IN ACCORDANCE WITH MANUEACTURER'S RECOMMENDATIONS.
23 33 15 - FIRE AND SMOKE DAMPERS 23 35 10 - EXHAUST SYSTEMS - CLOTHES DRYERS 23 35 30 - EXHAUST SYSTEMS - ENVIRONMENTAL	 WITH BACnet DRIVER AND MSTP COMMUNICATION PROTOCOL. THERMOSTAT MOUNTING 48" AFF, MAXIMUM. REFER TO HVAC PLANS FOR LOCATION OF DDC SYSTEM CENTRAL CONTROL PANELS. MATERIALS AND EQUIPMENT SHALL BE CATALOGUED PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN PRODUCTION AND INSTALLATION 	 4 INSTALLATION AND TESTING • REFRIGERANT PIPING SHALL BE INSTALLED, TESTED AND PLACED IN OPERATION IN ACCORDANCE WITH OMSC SECTION 1107, IN
23 37 00 - AIR OUTLETS AND INLETS 23 70 00 - HVAC EQUIPMENT 23 95 00 - TESTING, ADJUSTING AND BALANCING (TAB)	OF AUTOMATIC TEMPERATURE CONTROL SYSTEMS, SHALL BE STANDARD COMPONENTS, REGULARLY MANUFACTURED FOR THIS AND/OR OTHER SYSTEMS AND NOT CUSTOM DESIGNED SPECIALLY FOR THIS PROJECT, SHALL HAVE BEEN THOROUGHLY TESTED, PROVEN IN ACTUAL USE FOR AT LEAST TWO YEARS, AND SHALL BE MANUFACTURER'S LATEST STANDARD DESIGN THAT COMPLIES WITH THE SPECIFICATION REQUIREMENTS.	ACCORDANCE WITH RECOMMENDATIONS OF REFRIGERANT MANUFACTURER, AND RECOMMENDATIONS OF EQUIPMENT MANUFACTURER. PROTECT AGAINST CONTAMINATES ENTERING THE SYSTEM DURING CONSTRUCTION. • REFRIGERANT PIPING CROSSING AN OPEN SPACE THAT AFFORDS PASSAGEWAY IN ANY BUILDING, SHALL BE AT LEAST 7'-3" ABOVE FINISH
23 95 10 - HVAC COMMISSIONING 23 95 25 - PROJECT COMPLETION 23 00 00 - HVAC GENERAL	 STANDARDS CERTIFICATIONS: ELECTRONIC EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS OF FCC REGULATION, PART 15, SECTION 15, GOVERNING RADIO FREQUENCY ELECTROMAGNETIC INTERFERENCE AND BE SO LABELED. 	 FLOOR, UNLESS PIPING IS LOCATED AGAINST THE CEILING OF THE SPACE. PIPING SHALL NOT BE INSTALLED IN AN ENCLOSED PUBLIC STAIRWAY, STAIR LANDING, OR MEANS OF EGRESS PATHWAY. (OMSC 1107.2) REFRIGERANT PIPE JOINTS IN A FIELD ASSEMBLED SYSTEM SHALL BE EXPOSED FOR VISUAL INSPECTION PRIOR TO BEING COVERED OR FUCL ORED (OMBOL 1407.7)
1 CODES: OSSC OREGON STRUCTURAL SPECIALTY CODE - 2019 OMSC OREGON MECHANICAL SPECIALTY CODE - 2019	 PROVIDE OWNER TRAINING IN OPERATION, MAINTENANCE, AND PROGRAMMING OF CONTROL SYSTEM FOR OWNER DESIGNATED PERSONNEL. CONTROL SET-POINTS, LIMITS, AND RESPONSE POINTS LISTED HEREIN, OR IN THE CONTROL DIAGRAMS AND SEQUENCES, ARE ESTIMATED SET-POINTS TO BE USED FOR THE INITIAL START-UP. DURING THE COURSE OF TESTING / MONITORING THE CONTROL SYSTEM, PROVIDE OPERATIONAL PARAMETER AD JUSTMENT TO OPTIMUM SYSTEM PERFORMANCE. FINAL SETTINGS SHALL BE RECORDED IN THE OPERATION AND 	 ENCLOSED (OMSC 1107.7). STOP VALVES USED WITH SOFT ANNEALED COPPER TUBING, OR HARD-DRAWN COPPER TUBING 7/8" OD OR SMALLER, SHALL BE SECURELY MOUNTED INDEPENDENT OF TUBING FASTENINGS OR SUPPORTS (OMSC 1107.8.2).
OEESC OREGON ENERGY EFFICIENCY SPECIALTY CODE - 2021 (ASHRAE/ANSI Standard 90.1 - 2019) (ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS)	 6 PROVIDE AND INSTALL FULL EXTENT OF REQUIRED LOW VOLTAGE WIRING. a OPTION: UTILIZE WIRELESS FIELD BUS SYSTEM (ZigRog TECHNOLOGY WIRELESS MESH NETWORK). 	PIPING SYSTEM SHALL BE TESTED AND PROVED TIGHT AFTER COMPLETE INSTALLATION AND BEFORE OPERATION. TESTS INCLUDE BOTH THE HIGH AND LOW PRESSURE SIDES OF EACH SYSTEM, AT NOT LESS THAN THE LOWER OF THE DESIGN PRESSURES OR THE SETTING OF THE PRESSURE RELIEF DEVICE(S) (OMSC 1108.1).
AHRI AIR CONDITIONING, HEATING. AND REFRIGERATION INSTITUTE AMCA AIR MOVEMENT AND CONTROL ASSOCIATION ANSI AMERICAN NATIONAL STANDARDS INSTITUTE	 OF HON. OF HON. OF HON. OF HON. OF HON OF OUT WITCHESS WILST NETWORKY. INE VOLTAGE ELECTRICAL BY OTHERS. SYSTEM CAPABILITIES AND GENERAL CONFIGURATION: NEW HVAC SYSTEMS INCLUDE ONE TEMPERATURE CONTROL DEVICE PER ZONE RESPONDING TO TEMPERATURES WITHIN THE ZONE. Stnd 	 A CERTIFICATE OF TEST SHALL BE PROVIDED FOR SYSTEMS CONTAINING 55 POUNDS, OR MORE, OF REFRIGERANT. THE CERTIFICATE SHALL LIST THE NAME OF THE REFRIGERANT, FIELD TEST PRESSURE APPLIED TO THE HIGH AND LOW SIDES OF THE SYSTEM. CERTIFICATION SHALL BE SIGNED BY THE INSTALLER AND SHALL BE MADE PART OF THE PUBLIC RECORD (OMSC 1108.4).
ASCE AMERICAN SOCIETY OF CIVIL ENGINEERS ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR CONDITIONING ENGINEERS ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS	 90.1 - 6.4.3.1.1. ZONE THERMOSTATS CAPABLE OF DEAD-BAND, OVERLAP RESTRICTION, OFF-HOUR, OPTIMUM START AND AUTOMATIC SET-BACK TEMPERATURE CONTROL VIA DDC SYSTEM PROGRAMMING. (Stnd 90.1 - 6.4.3.1.2, 6.4.3.2, 6.4.3.3, 6.4.3.3.1, 6.4.3.3.2, 6.4.3.3.3) 	23 31 00 - DUCTWORK 1 GENERAL
ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS MSS MANUFACTURERS STANDARDIZATION SOCIETY NFPA NATIONAL FIRE PROTECTION ASSOCIATION	 DEAD-BAND: 5°F (BETWEEN DUAL SET-POINTS FOR HEATING/COOLING) Stnd 90.1 - 6.4.3.1.2. OFF-HOUR SET-BACK: REFER TO "SET-POINTS", UNDER THIS SECTION. OPTIMUM START: HVAC SYSTEM CONTROLS CAPABLE OF VARYING START TIME OF SYSTEM TO JUST MEET TEMPERATURE SET POINT AT TIME 	 DUCTWORK / FITTINGS TO BE CONSTRUCTED AND SEALED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS AND OMSC CHAPTER 6 REQUIREMENTS. MINIMUM 26 GA., WITH FIRE CAULKING AROUND ANNULAR SPACE, FOR DUCT SYSTEM THAT PENETRATES A 1-HOUR FIRE BARRIER WITHOUT A FIRE DAMPER AT THE PENETRATION (OMSC 607.5.2, EXCEPTION 3).
SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION SEI STRUCTURAL ENGINEERING INSTITUTE UL UNDERWRITERS LABORATORIES	 OF OCCUPANCY VIA DDC SYSTEM PROGRAMMING EQUIPMENT CONTROL: HEAT PUMPS EQUIPPED WITH SUPPLEMENTARY ELECTRIC RESISTANCE HEAT ARE CONTROLLED TO PREVENT THE USE OF SUPPLEMENTAL HEAT EXCEPT DURING DEEPOST. WHEN THE HEAT DUMP CAN MEET THE LOAD (Strd 90.1 - 6.4.2.5). 	 DUCT SIZES SHOWN ON DRAWINGS ARE NET INSIDE DIMENSIONS. SITE DELIVERY - DUCTWORK AND FITTINGS SHOP SEALED BY SHRINK-WRAP CAPPING OPEN ENDS. PLENUM RATED MATERIALS - HVAC CONSTRUCTION MATERIALS NOT SPECIFICALLY RATED FOR PLENUM USE WILL NOT BE INSTALLED IN EARDICATED PLENUMS, PLUL DING INTERSTITIAL SPACES LISED AS PLENUMS, OP INTERIOR OF DUCT SYSTEMS (OMSC 602.2.2.1)
 COORDINATION AND PROJECT MANAGEMENT: DEPICTION OF HVAC SYSTEM IS SCHEMATIC. FINAL INSTALLED LOCATION OF COMPONENTS SUBJECT TO ADJUSTMENT FOR FIELD MEASUREMENTS AND CONDITIONS. LOCATE EQUIPMENT. PIPING. VALVES, DAMPERS, ETC. TO PROVIDE ADEQUATE SPACE FOR NORMAL 	 AIR SIDE ECONOMIZERS: SYSTEMS, WITH COOLING CAPACITY OF 54,000 BTU/HR, OR GREATER, INCLUDE AIR-SIDE ECONOMIZER CONTROLS CAPABLE OF MODULIATING OUTSIDE AIR BELIEF AIR AND RETURN AIR DAMPERS TO LITHIZE 100% OUTSIDE AIR FOR THE FULL DESIGN VOLUME OF 	 RUBBERIZED CANVAS FLEXIBLE DUCT CONNECTIONS PROVIDED AT CONNECTIONS TO ROTATING EQUIPMENT NOT INTERNALLY VIBRATION ISOLATED. MATERIALS OF CONSTRUCTION & PRESSURE CLASSIFICATION FOR DUCTWORK AND OR BLENUMS;
 OPERATING AND MAINTENANCE ACTIVITIES. AND CODE REQUIRED ACCESS CLEARANCE. DRAWINGS DO NOT SHOW ALL REQUIRED ROUTING OFFSETS AND FITTINGS. PROVIDE OFFSETS AND FITTINGS AS REQUIRED TO COORDINATE WITH THE WORK OF OTHER TRADES. 	 CONFIGURE CONTROLS TO SEQUENCE DAMPERS WITH MECHANICAL COOLING, NOT SIMPLY CONTROLLED TO MIXED AIR TEMP. EXCEPTION: MIXED AIR TEMPERATURE LIMIT CONTROL ACCEPTABLE FOR SYSTEMS CONTROLLED FOR SPACE TEMPERATURE 	Z IMATERIALS OF CONSTRUCTION & PRESSURE CLASSIFICATION FOR DUCT WORK AND/OR PLENUMIS: <u>TYPE</u> QUALIFIER MATERIAL PRESSURE CLASS ALUMINUM TYPE ALUMINUM TYPE OUTSIDE AIB WHERE NOTED ON DRAWINGS 3003 ("AL" ON 2" WC NEG (MAX 2" WC NEG)
 COORDINATE FINAL LOCATION OF GRILLES, REGISTERS AND DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLAN AND FIELD LOCATIONS FOR LIGHTING, CELLING MOUNTED DEVICES, AND FIRE SPRINKLER HEADS. MINIMUM REQUIREMENTS, NOT OTHERWISE LISTED HEREIN, SHALL MEET GOVERNING CODES AND STANDARDS. 	 AIR ECONOMIZER SHALL AUTOMATICALLY REDUCE OA INTAKE TO THE DESIGN MINIMUM WHEN INTAKE AIR WILL NO LONGER REDUCE COOLING ENERGY USE. CONTROL TYPE AND ASSOCIATED SET POINTS IN ACCORDANCE WITH Stnd 90.1 TABLE 6.5.1.1.3. 	SUPPLY GALV. STEEL 2" WC POS (MAX 2" WC POS) ALUMINUM TYPE
4 DESIGN CONDITIONS: HEATING, OUTDOOR TEMPERATURE: 30 COOLING, OUTDOOR TEMPERATURE: 71 °F db. 60	 OA, RA, MA & SA SENSORS TO BE CALIBRATED FOR THE FOLLOWING ACCURACIES (Stnd 90.1 - 6.5.1.1.6): > db AND wb TEMPERATURES ACCURATE TO + OR - 2° F OVER RANGE OF 40° TO 80° F. > ENTHALPY AND THE VALUE OF A Δ ENTHALPY SENSOR ACCURATE TO + OR - 3 BTU.LB OF RANGE OF 20 TO 36 BTU/LB. 	SUPPLY WHERE NOTED ON DRAWINGS 3003 ("AL" ON 2" WC POS (MAX 2" WC POS) DWGS)
 REFER TO SPECIFICATION SECTION 23 09 00 FOR INDOOR CONTROL SET-POINTS. HEATING AND COOLING LOADS CALCULATED USING AN ASHRAE-METHODS BASED HVAC LOAD CALCULATION PROGRAM. PROCEDURES COMPLIANT WITH ASHRAE/ACCA STANDARD 183 (Standard. 90.1 - 6.4.2.1). 	 ECONOMIZER FAULT DETECTION AND DIAGNOSTICS (FDD): AIR-COOLED DX COOLING UNITS LISTED IN TABLES 6.8.1-1 AND 6.8.1-2, WITH AIR ECONOMIZERS IN ACCORDANCE WITH 6.5.1, SHALL INCLUDE A FAULT DETECTION AND DIAGNOSTICS SYSTEM COMPLYING WITH 6.4.3.12 SUB-PARTS "a." THROUGH "f." (Stind 90.1 - 6.4.3.12). 	SUPPLY SUPPLY FAN AND TERMINAL DEVICE SUPPLY FAN AND TERMINAL DEVICE SUPPLY BETWEEN SUPPLY FAN AND TERMINAL GALV_STEFL PRESSURE CLASS = 4" WC POS (MAX 4" WC POS)
CUIVIATE ZUIVE (STITE 90.1, 5.1.4 AND 6.1.2 CLIMATE): 4C (ASHRAE STND 169-2013, TABLE B-1) ENERGY CODE COMPLIANCE PATH: Stind 90.1 - SECTION 6.2.1 - REQUIREMENTS FOR ALL COMPLIANCE PATHS.	10 UUTSIDE AIR INTAKE AND EXHAUST OPENINGS EQUIPPED WITH MOTORIZED DAMPERS THAT AUTOMATICALLY SHUT WHEN ASSOCIATED SYSTEMS ARE DE-ENERGIZED, OR SPACES SERVED ARE NOT IN USE. DAMPERS FOR VENTILATION OUTDOOR AIR AND ASSOCIATED EXHAUST/RELIEF DAMPERS SHALL BE CAPABLE OF AND CONFIGURED TO AUTOMATICALLY CLOSE DURING PREOCCUPANCY WARM-UP, COOL-DOWN AND SET-BACK MODES OF OPERATION. EXCEPT WHEN VENTILATION REDUCES ENERGY COSTS OR WHEN VENTILATION MUST BE SUDDUED TO MEET CODE DECUDEMENTS.	DEVICE DEVICE DEVICE SUPPLY DOWNSTREAM OF TERMINAL DEVICES GALV. STEEL PRESSURE CLASS - 1" WC POS (MAX 1" WC POS)
 Stnd 90.1 - SECTION 6.4 - MANDATORY PROVISIONS. 6.1 GENERAL. 6.4 MANDATORY PROVISIONS, 6.7 SUBMITTALS. 6.8 MINIMUM EQUIPMENT EFFICIENCY TABLES 6.4 MANDATORY PROVISIONS. 	 (Stnd 90.1 - 6.4.3.4). EXCEPTIONS (TO Stnd 90.1 - 6.4.3.4): 1. GRAVITY BACK-DRAFT DAMPERS IN LIEU OF AUTOMATIC DAMPERS FOR EXHAUST OR RELIEF AIR IN BUILDINGS LESS THAN 3 STORIES. 	FINAL RUNOUTS MAXIMUM 6 FOOT LENGTH PREFAB INSULATED (R-4.2) FLEX 6" WC POS, 0.5" WC NEG (MAX 6"/0.5" WC POS/NEG) BETURN CALV STEEL 2" WC NEG (MAX 2" WC NEG)
 6 VENTILATION: • THE DESIGN OF LOCAL EXHAUST AND OUTDOOR AIR VENTILATION SYSTEMS DETERMINED IN ACCORDANCE WITH OMSC SECTIONS 403.3.1.1 THROUGH 403.3.1.5 (Stnd 90.1 - 6.5.3.7). SYSTEMS ARE DESIGNED TO DELIVER THE REQUIRED RATE OF OUTDOOR AIRFLOW TO THE 	 GRAVITY BACK-DRAFT DAMPERS IN LIEU OF AUTOMATIC DAMPERS FOR AIR INTAKE OR EXHAUST OF CAPACITY OF 300 CFM OR LESS. DAMPERS ARE NOT REQUIRED IN VENTILATION OR EXHAUST SYSTEMS SERVING UNCONDITIONED SPACES. DAMPERS NOT REQUIRED IN SYSTEMS INTENDED TO OPERATE CONTINUOUSLY. 	RETURN WHERE NOTED ON DRAWINGS GALV. STEEL Z WC NEG (MAX 2 WC NEG) ALUMINUM TYPE ALUMINUM TYPE DWGS)
BREATHING ZONE WITHIN EACH OCCUPIABLE SPACE (OSSC 202. page 44). REFER TO THE VENTILATION AIR COMPLIANCE SCHEDULE INCLUDED ON THE DRAWINGS FOR SPECIFIC CRITERIA, PROCEDURES, AND VENTILATION RATES (OMSC 403.3). VENTILATION RATE PROVIDED DOES NOT EXCEED 135% OF THE REQUIRED MINIMUM OUTDOOR AIR RATE (Stind 90.1 ~ 6.5.3.7, a.).	 AUTOMATIC OUTDOOR AIR, EXHAUST, AND RELIEF SHUT-OFF DAMPERS TO BE CLASS I, MOTORIZED, WITH LEAKAGE RATE OF NOT MORE THAN 4 CFM PER SQ. FT. AT 1.0" WC. TESTED PER AMCA 500D. MISCELLANEOUS DEVICES: 	EXHAUST ENVIRONMENTAL GALV. STEEL 2" WC NEG, SUCTION SIDE OF FAN (MAX 2" WC NEG) 2" WC POS, DISCHARGE SIDE OF FAN (MAX 2" WC POS) ALUMINUM TYPE autor and a substrain offer as sub
 OUTSIDE AIR INTAKE OPENING LOCATION (OMSC 401.4 - 1, 2. 3, 4): INTAKE OPENINGS ARE LOCATED: AT LEAST 10 FEET FROM LOT LINES OR BUILDINGS ON THE SAME LOT, 10 FEET HORIZONTALLY FROM ANY HAZARDOUS OR NOXIOUS CONTAMINANT SOURCE (I.E. GAS METERS. VENTS, STREETS. ALLEYS, PARKING LOTS AND LOADING 	 <u>DAMPER ACTUATORS</u>: 24V, 2-POSITION (A2), OR MODULATING (M), AS NOTED IN DIAGRAMS, SEQUENCES, AND PLANS. <u>OUTSIDE AIR SENSOR</u>: PLATINUM RTD TYPE. TRANSMITTER AND MOUNTING ENCLOSURE. OUTPUT 4-20 mA. <u>CO2 SENSOR</u>: 24V, NDIR TYPE, DIFFUSING SAMPLING, MINIMUM 5 YEAR CALIBRATION INTERVAL. RANGE 0-2000 PPM. REPEATABILITY +/- 	EXHAUST ENVIRONMENTAL SOUTION SIDE OF FAN (MAX 2" WC NEG) 2" WC NEG, SUCTION SIDE OF FAN (MAX 2" WC NEG) 2" WC NEG, SUCTION SIDE OF FAN (MAX 2" WC NEG) ALUMINUM TYPE 2" WC NEG, SUCTION SIDE OF FAN (MAX 2" WC NEG)
DOCKS) OR ARE LOCATED AT LEAST 25 FEET ABOVE THE SOURCE. > WHERE INTAKES ARE WITHIN 10 FEET HORIZONTALLY OF A CONTAMINATE SOURCE / TERMINATION. THE TERMINATION IS ARRANGED SUCH THAT THE AIR INTAKE IS AT LEAST 3 FEET BELOW THE TERMINATION.	 20 PPM. ANALOG OUTPUT 4-20 mA. <u>THERMOSTAT GUARD</u>: ONE-PIECE, CLEAR, HIGH IMPACT MOLDED POLYCARBONATE HOUSING WITH VENTILATION HOLES FOR AIR CIRCULATION. 16 GA. STEEL RING BASE, WHITE FINISH. LOCK WITH TWO KEYS. SIMILAR TO KELE MODEL TG510A, OR APPROVED. REFER TO PLANS FOR ADDUCATION. 	EXHAUST WASHER VAPOR EXHAUST 3003 ("AL" ON DWGS) 2" WC NEG, SUCTION SIDE OF FAN (MAX 2" WC NEG) 2" WC NEG, SUCTION SIDE OF FAN (MAX 2" WC NEG) 4
 INTAKE OPENINGS TO BE PROTECTED WITH CORROSION-RESISTANT SCREENS, LOUVERS AND/OR GRILLES (OMSC 401.5). OPENINGS IN SCREENS, LOUVERS. AND/OR GRILLES SIZED IN ACCORDANCE WITH OMSC TABLE 401.5. MECHANICAL SYSTEMS WHICH PROVIDE VENTILATION AIR TO OCCUPIABLE SPACES ARE PROVIDED WITH CONTROL TO OPERATE DURING OCCUPIED TIMES FOR THE SPACES SERVED (OMSC 405.1). 	 REFER TO NOTES ON EQUIPMENT SCHEDULES FOR EQUIPMENT SPECIFIC MISCELLANEOUS CONTROL COMPONENTS AND PROVISIONS. SET-POINTS 	T1 RESIDENTIAL DRYER VENT TERMINATION: EXTERIOR WALL JACK, ALUMINUM W/ BACKDRAFT FLAP. 23 33 15 - FIRE AND SMOKE DAMPERS
 SPACES WITH OCCUPANT LOAD GREATER THAN OR EQUAL TO 25 PEOPLE PER 1000 SQ. FT. (PER OMSC TABLE 403.3) HAVE DEMAND CONTROLLED VENTILATION (OMSC 405.1.1, Stnd. 90.1 - 6.4.3.8). 	HEATING: • INDOOR (NORMALLY OCCUPIED SPACES) OCCUPIED UNOCCUPIED ON AT 55°F db, OFF AT 60°F db, UNLESS OTHERWISE	1 GENERAL: SEE MECHANICAL PLANS AND DETAILS FOR LOCATIONS FOR FIRE (FD), SMOKE (SD), COMBINATION FIRE/SMOKE (FSD), AND RADIATION (RD) DAMPERS. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RESISTANCE RATINGS, AND/OR SMOKE RESISTANCE RATING, FOR WALLS (BARRIER OR PARTITION), FLOORS, CEILINGS AND SHAFTS. DAMPER MANUFACTURER'S SPECIFICATIONS AND LISTING INFORMATION FOR FACUL DAMPER DAMPER DAMPER DAMPER DAMPER AT THE TIME OF INFORMATION.
23 05 50 - SEISMIC CONTROL 1 NEW DUCTWORK AND EQUIPMENT TO BE DESIGNED, SUPPORTED AND BRACED IN ACCORDANCE WITH OMSC 301.15, OSSC CHAPTER 16 AND ASCE/SEI STANDARD 7-10, CHAPTER 13 AS MODIFIED BY OSSC CHAPTER 16.	OCCUPIED SPACES) OCCUPIED SPACES) OCCUPIED 73° F db.	A PPLICATION: A PPLICATION:
 2 DAMPERS. LOUVERS, DIFFUSERS. AND OTHER SIMILAR APPURTENANCES. SHALL BE POSITIVELY ATTACHED WITH MECHANICAL FASTENERS. 3 UNBRACED PIPING ATTACHED TO IN-LINE EQUIPMENT SHALL BE PROVIDED WITH ADEQUATE FLEXIBILITY TO ACCOMMODATE THE SEISMIC RELATIVE DISPLACEMENTS IN ASCE 13.2.2. 4 EXCEPTIONS FOR DUCTWORK DESIGNED TO CARRY ENVIRONMENTAL AIR EXCEPTIONS DO NOT ADRIX TO DUCTWORK DESIGNED TO CARRY TOYIC 	UNOCCUPIED ON AT 83°F db, OFF AT 78°F db, UNLESS OTHERWISE NOTED IN OPERATIONAL DESCRIPTION. HEATING / COOLING SET-POINTS SHALL BE INDIVIDUALLY ADJUSTABLE THROUGH THE DDC SYSTEM.	 1. 1-1/2-HR RATED FIRE DAMPER (OMSC TABLE 607.3.2.1). SIZE FOR FULL CROSS-SECTIONAL AREA OF DUCT. REFER TO PLANS. FUSIBLE LINK, 165°F RESPONSE TEMPERATURE. B. 3-HR, OR GREATER, RATED BARRIER OR PARTITION -
 4 EAGEPTIONS FOR DUCTWORK DESIGNED TO CARRY ENVIRONMENTAL AIR. EXCEPTIONS DO NOT APPLY TO DUCTWORK DESIGNED TO CARRY TOXIC OR FLAMMABLE GASES, OR THAT ARE USED FOR SMOKE CONTROL. DESIGN FOR SEISMIC FORCES AND RELATIVE DISPLACEMENTS (ASCE 7~10, SECTION 13.3) NOT REQUIRED FOR DUCTWORK WHERE EITHER: DUCTWORK IS SUPPORTED BY TRAPEZE ASSEMBLIES AND THE TOTAL WEIGHT OF THE SUPPORTED DUCTWORK IS LESS THAN 10 LBS / 	 THERMOSTATIC HEATING / COOLING SET-POINTS SHALL BE OCCUPANT ADJUSTABLE WITH THE EXCEPTION OF FREEZE PROTECTED SPACES. RANGE OF ADJUSTMENT ALLOWED FOR OCCUPANT ADJUSTABLE THERMOSTAT SET-POINTS SHALL BE LIMITED THROUGH SOFTWARE LIMITS. COORDINATE WITH OWNER FOR DESIRED RANGE. 	 3-HR RATED FIRE DAMPER (OMSC TABLE 607.3.2.1). SIZE FOR FULL CROSS-SECTIONAL AREA OF DUCT. REFER TO PLANS. FUSIBLE LINK, 165°F RESPONSE TEMPERATURE. C. CONSTRUCTION: GALVANIZED STEEL. ROUND OR RECTANGULAR IN ACCORDANCE WITH DUCT REQUIREMENT.
 DUCTWORK AND EQUIPMENT INSTALLED AND SUPPORTED TO LIMIT HANGER LENGTH TO LESS THAN 12 INCHES WITH SUPPORTS CONFIGURED TO ELIMINATE LATERAL STRAIN (BENDING MOMENT) 	 13 OPERATIONAL DESCRIPTION REFER TO OPERATIONAL SEQUENCES AND SCHEMATICS ON DRAWING SHEET M4.01. GENERAL COMPONENT CHARACTERISTICS AND GENERIC EQUIPMENT OPERATIONAL REQUIREMENTS SHOWN ON DRAWING SHEET M4.01 APPLY IN ADDITION TO THOSE LISTED IN THIS SPECIFICATION 	D. FIRE DAMPERS TO BE LISTED AND LABELED FOR COMPLIANCE WITH REQUIREMENTS OF UL 555.
 WHERE DUCTWORK IS INSTALLED SUCH THAT IMPACT WITH LARGER DUCTS, OR EQUIPMENT IS AVOIDED. AND INDIVIDUAL EQUIPMENT OPERATING WEIGHT IS LESS THAN 400 LBS. AND THE CENTER OF MASS IS MOUNTED LESS THAN 4 FEET ABOVE THE ADJACENT FLOOR OR ROOF LEVEL. AND FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN THE EQUIPMENT AND ASSOCIATED DUCTWORK OR 	SECTION. MINIMUM POINTS AND FEATURES ARE DEPICTED GRAPHICALLY. PROVIDE ANY ADDITIONAL POINTS NECESSARY TO ACCOMPLISH THE LISTED SEQUENCE OF OPERATION. SPECIFIC SYSTEM SEQUENCES AND SCHEMATICS APPLY AS FOLLOWS: > DETAIL 1 / M4.01: RTU-1 THRU RTU-8.	 1. 1-1/2-HR RATED FIRE DAMPER (OMSC TABLE 607.3.2.1). SIZE FOR FULL CROSS-SECTIONAL AREA OF DUCT. REFER TO PLANS. 2. SMOKE DAMPER NOT LESS THAN CLASS II LEAKAGE RATE, WITH ELEVATED TEMPERATURE RATING OF AT LEAST 250° F (OMSC 607.3.2.2). 2. HD OR OPERATED PAPPIED PAPPIED PAPTITION OF SHAFT WALL
COMPONENTS THAT ARE INSTALLED IN-LINE WITH THE DUCT SYSTEM AND HAVE AN OPERATING WEIGHT OF 75 LBS, OR LESS, OR 5 LBS / FOOT OR LESS FOR DUCTWORK OR PIPING.	 > DETAIL 2 / M4.01: AGU-1, RTU-9. > DETAIL 3 / M4.01: AGU-2 > DETAIL 4 / M4.01: FC-1/HP-1, FC-2/HP-2 	 3-III, OR GREATED, FORE DAMPER (OMSC TABLE 607.3.2.1). SIZE FOR FULL CROSS-SECTIONAL AREA OF DUCT. REFER TO PLANS. SMOKE DAMPER NOT LESS THAN CLASS II LEAKAGE RATE, WITH ELEVATED TEMPERATURE RATING OF AT LEAST 250° F (OMSC 607.3.2.2).
23 05 53 - IDENTIFICATION FOR HVAC EQUIPMENT NAMEPLATES:	 DETAIL 5 / M4.01: VARIABLE AIR VOLUME TERMINAL UNITS DETAIL 6 / M4.01: ROOF MOUNTED EXHAUST FANS DETAIL 7 / M4.01: IN-LINE AND CEILING EXHAUST FAN CONTROL. 	C. CONSTRUCTION: GALVANIZED STEEL. ROUND OR RECTANGULAR IN ACCORDANCE WITH DUCT REQUIREMENT. D. ACTUATOR: 120 VAC, ELECTRIC RESETTABLE LINK, 165°F CLOSURE TEMPERATURE, EXTERNALLY MOUNTED, WITH DAMPER TEST SWITCH. FAIL TO CLOSED POSITION.
 TYPE: LAMINATED PLASTIC, WITH ENGRAVED WHITE LETTERS ON BLACK BACKGROUND. LETTER SIZE 1/2' TALL. CEILING TACKS: STEEL WITH 3/4' DIAMETER COLOR-CODED HEAD. SETON, HANSON, MSI. OR APPROVED. 	 DETAIL 9 / M4.01: CONSTANT & TWO-POSITION AIR VOLUME TERMINAL UNITS PROVIDE THE FOLLOWING EQUIPMENT OPERATIONAL INTERLOCKS: RTU-1: N/A 	E. COMBINATION FIRE/SMOKE DAMPERS TO BE LISTED AND LABELED FOR COMPLIANCE WITH REQUIREMENTS OF BOTH UL 555 AND UL 555S.
COLOR CODED AS FOLLOWS: HVAC EQUIPMENT: YELLOW FIRE DAMPERS / SMOKE DAMPERS: RED	 > RTU-2: N/A > RTU-3: N/A > RTU-4: EF-1, EF-2, EF-3 	 PROVIDE DAMPERS WHERE SHOWN ON DRAWINGS, IN ACCORDANCE WITH ARCHITECTURAL LIFE SAFETY PLAN WALL TYPE DESIGNATIONS (SEE ARCHITECTURAL). INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S UL INSTALLATION INSTRUCTIONS. DAMPERS MUST BE ACCESSIBLE TO ALLOW INSPECTION, TESTING, ADJUSTMENT, AND/OR REPLACEMENT OF COMPONENTS.
 DAMPER LOCATOR LABELS: WHITE VINYL, SELF-ADHESIVE, PERMANENT. RED LETTERING, NOMINALLY 1/2' TALL. SETON, BRADY, MSI, OR APPROVED. RED LETTERING, NOMINALLY 1/2' TALL. 	 > RTU-5: EF-4, EF-5 > RTU-6: N/A > RTU-7: EF-6 > DTU 9: N/A 	 4 ACTUATION: • FIRE DAMPERS: CLOSE IN RESPONSE TO ELEVATED TEMPERATURE MELTING FUSIBLE LINK. • COMPLINATION EDECEMORE DAMPERS: CLOSE IN RESPONSE TO ELEVATED TEMPERATURE OPENING ELECTRIC RESETTABLE LINK. OP. IN
 ROOFTOP UNITS. EXHAUST FANS, FAN COILS, TERMINAL UNITS. OUTDOOR CONDENSING UNITS. HEATERS (WALL, DUCT, UNIT), ETC. VARIABLE FREQUENCY DRIVES; NAME TO INDICATE EQUIPMENT SERVED, FOLLOWED BY THE LETTERS 'VFD'. EXAMPLE: A VFD SERVING THE SUPPLY FAN FOR AN RTU WOULD READ - 'RTU-XX SF VFD'. 	> RTU-0: N/A > RTU-9: EF-8, EF-9 > AGU-1: EF-16, EF-17 > AGU-2: EF-10, EF-11, EF-12, EF-13, EF-14, EF-15	 COMBINATION FINDSWORE DAMIFERS: CLOSE IN RESPONSE TO LEEVALED FEMILENATIONE OF ENNING ELECTRIC RESETTABLE EINK OK IN RESPONSE TO A SIGNAL FROM LOCAL DUCT MOUNTED SMOKE DETECTOR VIA FIRE ALARM SYSTEM SIGNAL. DAMPER ALSO CLOSES UPON ASSOCIATED AIR HANDLING SYSTEM SHUTDOWN (OMSC 607.3.3.2).
 CONTROL PANELS. AND MAJOR CONTROL COMPONENTS. APPLICATION: PERMANENTLY AFFIX NAMEPLATES. IF USING SCREWS. PROVIDE WEATHER-PROOF SEALANT FOR OUTDOOR APPLICATIONS WHERE SCREWS 	 FC-1/HP-1: EF-18 FC-2/HP-2: EF-19 EF-7: INTERLOCKED TO OPERATE WHEN DISHWAS MACHINE IS ACTIVATED. PROVIDE DELAY CIRCUIT TO CONTINUE OPERATION OF EF-7 	23 35 10 - EXHAUST SYSTEMS - CLOTHES DRYERS 1 CLOTHES DRYER EXHAUST SYSTEMS DESIGNED AND CONFIGURED IN ACCORDANCE WITH DRYER MANUFACTURER'S REQUIREMENTS AND OMSC 504. DRYER EXHAUST SYSTEMS ARE SEPARATE FROM ALL OTHER EXHAUST SYSTEMS.
 PENETRATE WEATHER-PROOF CASING. AT ROOM THERMOSTATS AND TEMPERATURE SENSORS. WRITE THE NAME OF THE UNIT SERVED ON THE INSIDE OF THE COVER IN PERMANENT INK. 	FOR 15 MINUTES AFTER DISHWASH MACHINE IS DEACTIVATED. 14 PROJECT COMPLETION REQUIREMENTS • REFER TO SPECIFICATION SECTION 23 95 10 HVAC COMMISSIONING (Stad 90 1 - PART 4 2 5 2 AND 6 9 2) SEE ALSO SPECIFICATION SECTION	2 CLOTHES DRYER EXHAUST DUCTS PENETRATING A WALL OR CEILING MEMBRANE TO HAVE AN APPROVED SEAL AROUND THE ANNULAR SPACE. DUCTS TO BE CONSTRUCTED OF GALVANIZED STEEL, GAUGE IN ACCORDANCE WITH OMSC 603.4. DEVICES THAT WOULD OBSTRUCT THE EXHAUST FLOW WILL NOT BE INSTALLED (OMSC 504.2).
 PROVIDE CEILING TACKS TO LOCATE IN COMMENCE AND DEVICES ABOVE 1-BAR TYPE PANEL CEILINGS. LOCATE IN COMMENCE OF PANEL CLOSEST TO EQUIPMENT. COORDINATE WITH OWNER'S REPRESENTATIVE FOR PLACEMENT OF DAMPER LOCATOR LABELS. 	23 95 25 PROJECT COMPLETION. 23 20 00 - PIPING GENERAL	 EXHAUST DUCTWORK WILL HAVE A SMOOTH INTERIOR, BE CONSTRUCTED OF MINIMUM 28 GA. (NOMINAL 0.016" THICK) METAL, AND BE NOMINAL 4" DIAMETER. (OMSC 504.8.1). SUPPORTED AT 4 FOOT INTERVALS AND SECURED IN PLACE (OMSC 504.8.2). USE MINIMUM 26 GA. SHEET METAL WHERE DUCT PENETRATES A 1-HOUR FIRE BARRIER AND PROVIDE FIRE CAULK AROUND ANNULAR SPACE.
23 07 00 - DUCT AND PLENUM INSULATION 1 SUPPLY AND RETURN DUCTWORK AND PLENUMS ASSOCIATED WITH THE HVAC AIR DISTRIBUTION SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE 6.8.2 (Stnd 90.1 - 6.4.4.1.1 & 6.4.4.1.2)	 MECHANICAL PIPING SUPPORTS WILL BE PROVIDED AT INTERVALS EQUAL TO OR LESS THAN THE SPACING LISTED IN THE PIPING SUPPORT TABLE HEREIN, ACCORDING TO THE MATERIAL (OMSC 305.4, MSS SP-69). PIPING SYSTEM SUPPORTS TO BE PROVIDED AND INSTALLED TO PREVENT UNDUE STRAIN ON CONNECTED EQUIPMENT. EACH PIPING SYSTEM TO DE SUPPORTED WITH HANGERS SELECTED FOR THE SPECIFIC DIDNES SYSTEM (OR SPOLD OF DIDNE SYSTEMS WHERE TRADERS ARE 	 EXHAUST DUCT DEVELOPED LENGTH WILL BE 35 FEET, OR LESS (INCLUDING EQUIVALENT LENGTHS FOR FITTINGS FROM OMSC TABLE 504.8.4.1), FROM THE CONNECTION TO THE TRANSITION DUCT AT THE DRYER TO THE OUTLET TERMINAL. (OMSC 504.8.4.1). EXHAUST DUCT MAXIMUM DEVELOPED LENGTH IN ACCORDANCE WITH DRYER MANUFACTURER'S INSTALLATION INSTRUCTIONS (OMSC
 EXCEPTIONS: A. FACTORY-INSTALLED PLENUMS, CASINGS, OR DUCTWORK FURNISHED AS PART OF HVAC EQUIPMENT. B. FOR RUN-OUTS LESS THAN 10 FEET LONG TO AIR TERMINALS OR OUTLETS, INSULATION R-VALUE NEED NOT EXCEED 3.5. 	USED). SUPPORTED WITH HANGERS SELECTED FOR THE SPECIFIC PIPING STSTEM (OR GROUP OF PIPING STSTEMS WHERE TRAPEZE TYPE HANGERS ARE USED). SUPPORT MATERIALS IN DIRECT CONTACT WITH PIPING SELECTED FOR COMPATIBILITY WITH THE PIPING MATERIAL (WILL NOT PROMOTE GALVANIC ACTION). SUPPORTS TO BE ANCHORED TO APPROVED BUILDING STRUCTURAL MEMBERS (OMSC 305.2, 305.3).	 504.8.4.2) WHERE EXHASUT DUCT EQUIVALENT LENGTH EXCEEDS 35 FEET, THE EQUIVALENT LENGTH WILL BE PERMANENTLY LABELED, WITHIN 6 FEET OF THE DRYER CONNECTION, INDICATING THE LENGTH OF THE EXHAUST DUCT (OMSC 504.8.5).
 2 INSULATION MATERIALS SHALL MEET REQUIREMENTS OF NFPA 255 AND UL 723 NOT EXCEEDING 25 FLAME SPREAD RATING OR 50 SMOKE DEVELOPED RATING 	PIPING MATERIAL SIZE RANGE MAX. HORIZ. (FT) MAX. (FT) NOTES COPPER / COPPER ALLOY TUBING < OR = 1-1/4"	23 35 30 - EXHAUST SYSTEMS - ENVIRONMENTAL SINGLE OR COMBINED EXHAUST SYSTEMS FOR ENVIRONMENTAL AIR SHALL BE SHALL BE INDEPENDENT OF ALL OTHER EXHAUST SYSTEM TYPES (OMSC 501.2) AIR EXHAUSTED BY THESE SYSTEMS IS NOT FROM HAZARDOUS OR NOXIOUS SOURCES.
 DUCT WRAP: BONDED FIBERGLASS BLANKET WITH REINFORCED FIBER GLASS SCRIM LAMINATED ALUMINUM FOIL FACING. 0.2 PERMS PERMEANCE. DUCT LINER: FLEXIBLE GLASS FIBER BLANKET BONDED WITH THERMOSETTING RESIN. AIR-SIDE SURFACE PROTECTED BY GLASS MAT FACING 	COPPER / COPPER ALLOY TUBING > OR = 1-1/2" 10 10 PEX TUBING 3/4" - 1-1/2" 2-2/3 10 W/ MID-STORY GUIDE PVC PIPE 3/4" - 2" 4 10 W/ MID-STORY GUIDE	 2 AIR REMOVED BY THE EXHAUST SYSTEM SHALL BE DISCHARGED OUTDOORS WHERE IT WILL NOT CAUSE A PUBLIC NUISANCE, WITH NOT LESS THAN THE FOLLOWING SEPARATIONS (OMSC 501.3, 501.3.1 - 3): • MINIMUM 3 FT FROM PROPERTY LINES.
CONTAINING EPA-REGISTERED ANTIMICROBIAL AGENT. FACTORY APPLIED EDGE COATING. MINIMUM DUCT INSULATION R-VALUE (Adapted from Stnd 90.1, TABLE 6.8.2) DUCT LOCATION	23 20 10 - CONDENSATE DISPOSAL CONDENSATE FROM INDOOR COULING COULS WILL BE COLLECTED VIA DIDING SYSTEM CONNECTION TO THE DRAIN DAN OUTLET (OMSC	 MINIMUM 3 FT FROM OPERABLE OPENINGS INTO BUILDINGS (ALL OCCUPANCIES EXCEPT GROUP U). MINIMUM 10 FT FROM MECHANICAL AIR INTAKES (OMSC 501.3.1 - 3), OR MINIMUM 3 FT ABOVE MECHANICAL AIR INTAKE (OMSC 401.4 - 0UTDOOR EXHAUST TERMINATIONS TO BE PROTECTED WITH EITHER CORROSION RESISTANT SCREEN, LOUVERS, OR GRILLES (OMSC 501.3.2).
CLIMATE EXTERIOR UNCONDITIONED SPACE AND / INDIRECTLY CONDITIONED SPACE ZONE NOTE a OR BURIED DUCTS - NOTE b NOTE c SUPPLY AND RETURN DUCTS FOR HEATING AND COOLING D.10 D.10	 CONDENSATE FROM INDOON COOLING COILS WILL BE COLLECTED VIA THEING STATEM CONNECTION TO THE DRAIN FAN OUTLET (OMSC 307.2.4). CONDENSATE FROM ROOFTOP UNIT COOLING COILS WILL BE COLLECTED VIA PIPING CONNECTION TO THE DRAIN PAN OUTLET (OMSC 307.2). 	SCREEN OPENINGS MINIMUM 1/4 INCH, MAXIMUM 1/2 INCH. OPENINGS TO BE PROTECTED AGAINST LOCAL WEATHER CONDITIONS. 23 37 00 - AIR OUTLETS AND INLETS 1
5 TO 8 R-12 R-6 R-1.9 SUPPLY AND RETURN DUCTS FOR HEATING ONLY NONE NONE	VENTED TRAP TO BE PROVIDED AT THE CONNECTION TO THE PAN (OMSC 307.2.4). CONDENSATE TO BE DISCHARGED TO THE ROOF (OMSC 307.2.1, 3). 307.2.1, 3). 3 CONDENSATE PIPING TO BE PVC OR CROSS-LINKED POLYETHYLENE. PIPE SIZED TO MATCH EQUIPMENT DRAIN CONNECTION, BUT NOT SMALLER	 A. MOUNTING (CEILING, WALL, DUCT) AS INDICATED BY "TYPE". SEE "TYPE" ABBREVIATION LIST BELOW. FRAME STYLE AS REQUIRED FOR MOUNTING. REFER TO MECHANICAL DUCT PLANS AND ARCHITECTURAL REFLECTED CEILING PLANS. REFER TO MECHANICAL DUCTWORK PLANS FOR INLET/OUTLET TYPE, SIZE, THROW PATTERN AND CFM REQUIREMENT.
2 TO 4 R-6 R-1.9 5 TO 8 R-12 R-6 R-1.9 SUPPLY AND RETURN DUCTS FOR COOLING ONLY	THAN NOMINAL ¾ INCH INSIDE DIAMETER. PIPING TO BE SLOPED MINIMUM 1% TO THE POINT OF DISCHARGE. MATERIAL APPLICATION IN ACCORDANCE WITH THE TEMPERATURE RATING FOR THE CONDENSATE FROM THE EQUIPMENT SERVED (OMSC 307.1, 307.2.2). 4 WHERE CONDENSATE SYSTEM IS MANIFOLDED TO SERVE CONDENSATE DRAIN SIZING TABLE (OMSC 307.2.2)	 B. AN "R" OR "REGISTER" INDICATES OUTLET/INLET IS TO BE PROVIDED WITH INTEGRAL BALANCING DAMPER. C. LAY-IN FRAME SIZE NOMINAL 24"x24" FOR T-BAR CEILING MOUNTING. SURFACE MOUNT (CUT-IN) FRAME SIZE = FACE SIZE PLUS MFRS FRAME DIMENSION. RETURN BOOT / DUCT CONNECTION PROVIDED IN FIELD. REFER TO HVAC PLANS & DETAILS FOR REQUIREMENTS.
NOTES: R-1.9 R-1.9 a. Includes ducts exposed to outdoor air, attics above insulated ceilings, parking garages and crawl spaces	MULTIPLE PIECES OF EQUIPMENT. MANIFOLD PIPE SIZING IN ACCORDANCE WITH CONDENSATE DRAIN SIZING TABLE (OMSC 307.2.2).EQUIPMENT CAPACITYMIN. COND. PIPE DIA.VIDE OF CONSTRUCTION3/4 INCHVIDE OF CONSTRUCTION3/4 INCHVIDE OF CONSTRUCTION1 INCHVIDE OF CONSTRUCTION1 INCH	 D. STEEL CONSTRUCTION. E. ALL ALUMINUM CONSTRUCTION FOR OUTLET/INLET IN SYSTEMS WHERE ALUMINUM DUCTWORK IS NOTED / SPECIFIED. 2 AIR OUTLET AND INLET TYPE ABBREVIATION LIST:
 b. Includes unconditioned rooms such as equipment rooms and direct buried ducts. c. Includes return air plenums with or without exposed roofs above. Return ducts in this duct location do not require insulation. REFER TO SPEC SECTION 23 00 00 - GENERAL HVAC, PART 4, FOR CLIMATE ZONE APPLICABLE TO THIS PROJECT. 	5 WHERE CONDENSATE DRAIN PIPING TERMINATES AT SANITARY PLUMBING FIXTURE. MINIMUM 1 INCH GAP PROVIDED BETWEEN DRAIN DISCHARGE AND FIXTURE FLOOD RIM (INDIRECT CONNECTION) (OMSC 307.2.1, 1).	SUPPLY: EXHAUST: SDC - SUPPLY DIFFUSER CEILING EGC - EXHAUST GRILLE CEILING SGW - SUPPLY GRILLE WALL EGD - EXHAUST GRILLE DUCT
4 APPLICATION TO DUCTWORK TYPE LOCATION (SPACE TYPE) INSULATION THICKNESS R-VALUE	 6 CONDENSATE PRODUCING EQUIPMENT LOCATED SUCH THAT CONDENSATE OVERFLOW WILL CAUSE DAMAGE TO BUILDING COMPONENTS. AUXILIARY PROTECTION PROVIDED AS FOLLOWS: • UL 508 COMPLIANT DETECTION DEVICE PROVIDED TO MONITOR THE PRIMARY CONDENSATE DRAIN PAN / DRAIN LINE. DEVICE WIRED TO SUME DOWN THE FOLLOWED TO SUME AS A SUME AS A	SRD - SUPPLY REGISTER DUCT EGW - EXHAUST GRILLE WALL ERD - EXHAUST REGISTER DUCT RETURN: TRANSFER:
OA INTAKE INDIRECTLY / DIRECTLY CONDITIONED / WRAP OA INTAKE INDIRECTLY / DIRECTLY CONDITIONED WRAP I-1/2' 4.2 SUPPLY EXTERIOR LINFR 2' 8.0	SHUT DUWIN THE EQUIPMENT SERVED UPON DETECTION OF WATER LEVEL HIGHER THAN THE PRIMARY DRAIN OUTLET (OMSC 307.2.3, 4). 23 23 00 - REFRIGERANT PIPING 1 REFRIGERANT PIPING	RGC - RETURN GRILLE CEILING TGD - TRANSFER GRILLE DUCT RGD - RETURN GRILLE DUCT TGW - TRANSFER GRILLE WALL RGW - RETURN GRILLE WALL RETURN GRILLE WALL
• SUPPLY UNCONDITIONED WRAP 2.5' 6.0 • SUPPLY INDIRECTLY CONDITIONED WRAP 1' 3.0 • SUPPLY CONDITIONED, >16°F Δ Rm T. WRAP 1-1/2' 4.2	 COPPER SEAMLESS REFRIGERANT TUBE, ASTM B280 COMPLIANT (OMSC 1107.5.3). CLEANED, DEHYDRATED AND SEALED. UP TO 1-1/4" DIAMETER: ANNEALED TUBING MAY BE USED. TUBING COILS TAGGED ASTM B280 BY MANUFACTURER. LARGER THAN 1-1/4" DIAMETER: HARD DRAWN COPPER TUBING. MARKED ACR ON STRAIGHT LENGTHS. 	3 APPLICATION SCHEDULE: MAX TP MAX. CORE VELOCITY
• SUPPLY CONDITIONED LINER (SHOWN ON DWGS) 1' 4.2 • SUPPLY CONDITIONED, <16°F Δ Rm T.	 2 JOINTS • REFRIGERANT LINES UP TO 7/8": MAY USE FLARE JOINT. ALL OTHERS, BRAZED. (OMSC 1107.5.3) 	TYPE DESCRIPTION IN W.G. FPM (SUPPLY) SDC LOUVERED FACE, ADJUSTABLE 0.08 500

SGW SRD SRD-1	DOUBLE DEFLECTION BLADES DOUBLE DEFLECTION BLADES DOUBLE DEFLECTION BLADES		0.08 0.08 0.05	500 500 800
(HI RGC RGD	EJURN) EGG CRATE STYLE SINGLE DEF. ANGLED BLADES.	MOUNT BLOCKING VIEW IN GRILLE.	0.04 0.04	500 500
RGW RGW-1 RRD (Đ	SINGLE DEF. ANGLED BLADES, HEAVY DUTY GYM GRILLE, 3/ SINGLE DEF. ANGLED BLADES, (HAUST)	MOUNT BLOCKING VIEW IN GRILLE. 4' BLADE SPACING, O DEFLECTION MOUNT BLOCKING VIEW IN GRILLE.	0.06 0.05 0.04	600 800 500
EGC EGD EGW ERD	EGG CRATE STYLE SINGLE DEF. ANGLED BLADES. SINGLE DEF. ANGLED BLADES. SINGLE DEF. ANGLED BLADES.	MOUNT BLOCKING VIEW IN GRILLE. MOUNT BLOCKING VIEW IN GRILLE. MOUNT BLOCKING VIEW IN GRILLE.	0.04 0.04 0.06 0.04	500 500 600 500
(TF TGD TGW	RANSFER, OR COMBINED SPACE) SINGLE DEF. ANGLED BLADES. SINGLE DEF. ANGLED BLADES.	Mount blocking view in grille. Mount blocking view in grille.	0.04 0.06	500 600
1 GENER 1 GENER • EQ AN M/ 0 FAN 0 MI 0	AL: UIPMENT INSTALLATION WILL CO ID LISTING FOR THE EQUIPMENT, ANUFACTURER'S INSTALLATION IN 105.1). PERATION OF PROJECT HVAC SYS NTILATION, IS PROHIBITED. AC EQUIPMENT EFFICIENCIES IN STED IN EQUIPMENT SCHEDULES AC UNITS 2000 CFM. OR LARGE 6.2.1). JLTIPLE HVAC UNITS SERVE THE : DUNTED IN THE RETURN DUCT (C AC UNITS WITH 2000 CFM CAPA RVED, THUS SMOKE DETECTORS U-1. FC-1/HP-1. PROHIBITED ON CONSTANT VC WHERE USED. SYSTEM HAS EI HOT GAS LIMITED AS FOLLOW 240,000 BTU/HR COOLING CA OTORS AND MOTOR EFFICIE DTOR SELECTION: MOTORS 1.0 HP, BUT LESS TH NAMEPLATE RATING NO GREAT MOTORS 6 HP AND LARGER: RATING NO GREATER THAN 1.3 BHP LISTED ON EQUIPMENT SI EXCEPTIONS: MOTORS 6 HP AND LARGER: RATING NO GREATER THAN 1.4 BHP LISTED ON EQUIPMENT SI EXCEPTIONS: MOTORS COMPLYING W FAN MOTORS WITH NAM DTORS GREATER THAN 1.12TH HI BE ELECTRONICALLY COMMUT HAVE MEANS TO ADJUST MOT BELT DRIVEN FANS MAY USE SI EXCEPTIONS: MOTORS IN PACKAGED SI EXCEPTIONS: MOTORS IN PACKAGED SI EFFICIENCY TABLES. MOTORS IN PACKAGED SI EXCEPTIONS: MOTORS IN PACKAGED SI EFFICIENCY TABLES. MOTORS NI PACKAGED SI COTORS EXCEEDING 0.75 HP HAVE SHUT OFF FANS WHEN OPERATI (STEM POWER: HERE TOTAL FAN SYSTEM MOTOF DES NOT EXCEED THAT LISTED IN - OR HERE TOTAL FAN SYSTEM MOTOF CED THAT LISTED IN SIN DOLLIDES STEM. PROVIDING COOLING OR IN SYSTEM HP OR BHP INCLUDES STEM. PROVIDING COOLING OR IN ACCEPTIONS: INDIVIDUAL EXHAUST FAN SYSTEM HP OR BHP INCLUDES STEM. PROVIDING COOLING OR IN EXCEPTIONS: INDIVIDUAL EXHAUST FAN CH VAV SYSTEM FAN ARRAY HAS CH VAV SYSTEM FAN ARRAY HAS CH VAV SYSTEM FAN ARRAY HAS CH PONS:	INFORMING VIEW IN GRITTELE. 23 70 00 - HVAC EQUII NORTH DESCRIPTION OF COLSPANSE NORTH STAND VIEW IN GRITTELE. INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE ON THE ISTRUCTIONS SHALL BE AVAILABLE ON THE ACCORDANCE WITH Stind 90.1 - 6.4.1.1. SI FOR THIS PROJECT. R CAPACITY, EQUIPPED WITH SMOKE IONIZA SAME AREA WITH TOTAL CAPACITY OVER 20 INSTALLATION WERE IONIZA SAME AREA WITH TOTAL CAPACITY OVER 20 INSTALL ACCEPTANCE OF CIRC ARE ARE INCAPABLE OF CIRC ARE NOT PROVIDED (OMSC 606.2, EXCEPT SIGIN 490.1 - 6.5.9): JULME SYSTEMS. THER MULTIPLE STEPS OF UNLOADING, OR S. 15% FOR COOLING CAPACITY OF 240,00 PACITY. NCY: VIEW SYSTEMS SIGING 90.1 - 6.5.9): JULME SYSTEMS SIGING 200 CONTROL DEVICES TO ITMES BHP. CHEDULES, ON DRAWINGS, FOR APPLICABL ELECTRICAL INPUT PO	DITIONS AND REQUIREMENTS TONS, AND OMSC (OMSC 304 JOB SITE AT TIME OF INSPECTI PROJECT. TO PROVIDE TEMPOI PECIFIC SELECTED EFFICIENCIES ATION DETECTORS MOUNTED IN 00 CFM. ALL EQUIPPED WITH S ULATING SMOKE OUTSIDE OF T ION). SYSTEMS MEETING THIS CONTINUOUS CAPACITY MODU 00 BTU/HR OR LESS. 10% FOR E NO LARGER THAN FIRST AVAIL R THAN FIRST AVAILABLE MOTO E EQUIPMENT. VARY FAN AIRFLOW AS A FUNI BLE 6.5.3.1-1). AN 0.89 kW. - 6.5.3.6): EFFICIENCY OF 70% (DOE 10 (OTE CONTROL. ICING IN LIEU OF VARYING MO D IN ACCORDANCE WITH Strid S I Strid 90.1 SECTION 6.4.3.3.1). I DESIGN CONDITIONS. THE TO V OR VAV AS APPROPRIATE. I DESIGN CONDITIONS. THE TO S APPROPRIATE. AN POWERED TERMINAL UNITS TORS. ER LIMITATION. R LESS. HER. FEI CALCULATED PER AN GHER. FEI CALCULATED PER AN GHER. FEI CALCULATED PER AN GHER. FEI CALCULATED PER AN	ASSOCIATED WITH APPROVAL 1.1, 304.2 - EXCEPTION). DN (OMSC APPENDIX C. RARY HEATING, COOLING, OR S AND REFERENCED STANDARDS I THE RETURN DUCT (OMSC SMOKE IONIZATION DETECTORS THE WALLS OF THE ROOM BEING EXCEPTION INCLUDE: JLATION. SYSTEMS GREATER THAN ABLE MOTOR SIZE WITH DR SIZE WITH NAMEPLATE CTION OF LOAD. CFDR 431). TOR SPEED. D0.1 PART 6.8 MINIMUM CAPABLE OF AND CONFIGURED TAL MOTOR NAMEPLATE HP TAL MOTOR NAMEPLATE HP TAL MOTOR BHP DOES NOT ASSOCIATED WITH EACH
5 SUPPL • CC • DX CC • DX CC • DX MI SP • MI • EX > 1 HVAC S BY AN II	FANS, THAT ARE NOT EMBEDD EMBEDDED FANS / ARRAYS W Y FAN AIRFLOW CONTROL: DOLING EQUIPMENT, AS LISTED B DX COOLING EQUIPMENT WITH COOLING UNITS WHICH VARY C DINTROL. LOW SPEED DOES NOT COURS DURING LOW COOLING LO COOLING UNITS WHICH VARY C NIMUM FAN SPEED DOES NOT E EED OCCURS DURING LOW COO NIMUM OF 2-SPEEDS OF FAN CO CEPTIONS: IF VOLUME OF VENTILATION AI LOW SPEED SETTING INCREAS 23 YSTEMS SHOWN ON THE DRAWI	ED FANS, WITH MOTOR NAMEPLATE HP < TH COMBINED MOTOR HP - 5HP, OR IN<br ELOW, IS DESIGNED TO VARY SUPPLY FAN / 1 COOLING CAPACITY GREATER THAN 65.00 OOLING DIRECTLY BASED ON SPACE TEMPE EXCEED 66% OF FULL SPEED. POWER DRAY DAD AND/OR VENTILATION-ONLY OPERATION OOLING DELIVERED BY VARYING AIRFLOW T (CEED 50% OF FULL SPEED. POWER DRAW LING LOAD AND/OR VENTILATION-ONLY OPE INTROL DURING ECONOMIZER OPERATION. R REQUIRED (ASHRAE Stnd 62.1, OMSC CH) ED TO PROVIDE REQUIRED VENTILATION AIR. 95 OO - TESTING, ADJUSTING AN NGS (SUPPLY, RETURN, RELIEF, EXHAUST A NGING AGENCY (Stnd 90.1 PART 6.7.3.3.1)	1.0. OR WITH INPUT POWER < IPUT POWER 4.1 kW.<br AIRFLOW AS A FUNCTION OF LC DO BTU/HR (Stnd 90.1 TABLE 6. ERATURE HAVE, AS A MINIMUM W AT LOW SPEED IS MAX 40% I. O THE SPACE (VAV) HAVE MOU A MINIMUM SPEED MAX 30% ERATION. APTER 4) EXCEEDS DELIVERED DBALANCING (TAB) ND OUTSIDE AIR SYSTEMS) AR	0.89 kW. DAD: 5.3.2.1). I, TWO STAGES OF FAN OF FULL SPEED. LOW SPEED DULATING FAN CONTROL. OF FULL SPEED. MINIMUM AIRFLOW AT LOW SPEED. THEN
 A AGI INCLUD 2 HVAC S REQUIRI VERIFY I PRACTIO 3 SUBMI • BE 1 2 • AT 1 2 4 TAB RE • TIT • TA • PR • DA • NA 	ENCY TO PROVIDE ALL INSTRUME ING SHEAVE ADJUSTMENT/CHAN YSTEMS SHALL BE IN FULL OPER EMENTS AND MAINTAINING PRES MINIMUM OUTSIDE AIR VOLUMES CE. OR AABC RECOMMENDATION TTALS: FORE BEGINNING WORK ON SITE: PROVIDE LIST OF PROCEDURE: PROVIDE LIST OF PROCEDURE: PROVIDE TAB PLAN FOR THIS F COMPLETION OF TAB WORK ON PROVIDE ONE (1) ELECTRONIC FLOW HEATING FOR REVIEW AI THEN PROVIDE ONE (1) ELECT SUBSEQUENT PERFORMANCE PORT, AT A MINIMUM, TO IN LE PAGE B AGENCY NAME/ADDRESS/TEL N OJECT NAME. .TE OF REPORT.	INTS, LABOR, AND MATERIALS NEEDED TO F IGE OUT. ATION FOR TAB PROCESS. SYSTEMS SHALL SURE RELATIONSHIPS AS DESIGNED (PRESS 3, AND ECONOMIZER CAPABILITIES. TAB PRI S. AIR SYSTEM BALANCING PROCEDURES I S. AIR SYSTEM BALANCING PROCEDURES I PROJECT. SITE: COPY IN PDF FORMAT OF THE PRELIMINAR ND COMMENT. RONIC COPY IN PDF FORMAT OF THE FINAL ADJUSTMENTS, TO COMFORT FLOW HEATIN CLUDE THE FOLLOWING INFORMATION IUMBER.	ULLY TEST AND BALANCE THE BE BALANCED TO WITHIN + 1 SURE RELATIONSHIPS HAVE PRI DCEDURES TO BE IN ACCORDA JTILIZED SHALL COMPLY WITH R THE SPECIFIC TAB TASKS. Y TEST AND BALANCE REPORT TEST AND BALANCE REPORT, U IG.	Systems for this project, 0% / - 5% of design Drity over tolerance listed). NCE with NEBB Manual of Stnd 90.1 Part 6.7.3.3.2. To be provided to comfort JPDATED to include any
 IA RE INS TA SY BC SP AIF AIF AIF ACOPY VENTILA 	BLE OF CONTENTS. PORT SUMMARY, INCLUDING AN STRUMENT LIST INCLUDING TYPE B DATA LOGS, ORGANIZED BY SY STEMS AND TERMINALS TESTED ITH A TABULATION OF THE DATA ECIFIC DATA TO INCLUDE AIRFLO RELOW. RETURN AIRFLOW. OUTSI A HANDLER PERFORMANCE AT CL RMANCE VERIFICATION DOCU OF THE FINAL TEST AND BALANC TION SYSTEM PERFORMANCE IN	Y PERFORMANCE ISSUES WITH SUGGESTED , MFR. MODEL, CALIBRATION DATE. STEM, SHOWING INITIAL AND ADJUSTED CO SHALL BE CLEARLY IDENTIFIED WITH A UNIC AND ON A COPY OF THE APPLICABLE MECH W IN CFM, STATIC PRESSURE IN INCHES W/ DE AIRFLOW (AT SYSTEM MIN AND MAX FLO .EAN FILTER PRESSURE DROP AND SIMULAT MENTATION: CE REPORT SHALL BE AVAILABLE AT THE PRO ACCORDANCE WITH OMSC 403.3 AND 400	RESOLUTIONS. ONDITIONS DELINEATED BY SYS UE DESIGNATION. THE SAME I ANICAL PLAN SHEET (CODED F ATER COLUMN, FAN RPM, MOT OWS IF VAV). ED DIRTY FILTER PRESSURE DR DIECT SITE, AT THE TIME OF INS 3.3.1.2 (OMSC 403.3.1.5).	STEM. BRANCH. AND TERMINAL. DESIGNATION SHALL APPEER IN PLAN). OR CURRENT DRAW. SUPPLY OP. SPECTION, FOR VERIFICATION OF
	SSIONING (INCLUDING VERIFICAT OJECT (Strid 90.1 - 4.2.5.2 AND	23 95 10 - HVAC COMMIS ION AND FUNCTIONAL PERFORMANCE TEST 6.9.2).	SSIONING ING) OF THE BUILDING SYSTEM	IS, CONTROLS, IS REQUIRED FOR
 The TH TH TH<td>IS PROJECT INCLUDES 10,000 S IS PROJECT DOES NOT USE THE IS DOES NOT INCLUDE AREAS IN IS PROJECT IS NOT A NONREFRIG SSIONING IS BEING PROVIDED BY SSIONING ACTIVITIES. PLANS, AN ND CONTROLS SHALL PROVIDE I ATICS. ETC.) TO THE CX AGENT F IONAL AND PROGRAMMING ASS</td><td>F, OR MORE, OF CONDITIONED AREA (EXCEP SIMPLIFIED APPROACH FOR HVAC SYSTEM THE PROJECT THAT ARE DWELLING UNITS (ERATED WAREHOUSE USE (EXCEPTION 4.2. A THIRD PARTY (CX AGENT). REFER TO DIV D DOCUMENTATION REQUIREMENTS. NFORMATION ABOUT THE PLANNED SYSTEM OR THEIR USE IN PLANNING THE COMMISSI ISTANCE TO THE CX AGENT TO FACILITATE F</td><td>PTION 4.2.5.2 - 1). COMPLIANCE (Stnd 90.1 - 6.3) EXCEPTION 4.2.5.2 - 3). 5.2 - 4). 'ISION 01 SPECIFICATIONS (PRI MS (DRAWINGS, EQUIPMENT IN ONING ACTIVITIES. HVAC AND UNCTIONAL TESTING AND ADJI</td><td>(Exception 4.2.5.2 - 2). Dvided by others) for Formation, control Controls shall provide JSTMENT.</td>	IS PROJECT INCLUDES 10,000 S IS PROJECT DOES NOT USE THE IS DOES NOT INCLUDE AREAS IN IS PROJECT IS NOT A NONREFRIG SSIONING IS BEING PROVIDED BY SSIONING ACTIVITIES. PLANS, AN ND CONTROLS SHALL PROVIDE I ATICS. ETC.) TO THE CX AGENT F IONAL AND PROGRAMMING ASS	F, OR MORE, OF CONDITIONED AREA (EXCEP SIMPLIFIED APPROACH FOR HVAC SYSTEM THE PROJECT THAT ARE DWELLING UNITS (ERATED WAREHOUSE USE (EXCEPTION 4.2. A THIRD PARTY (CX AGENT). REFER TO DIV D DOCUMENTATION REQUIREMENTS. NFORMATION ABOUT THE PLANNED SYSTEM OR THEIR USE IN PLANNING THE COMMISSI ISTANCE TO THE CX AGENT TO FACILITATE F	PTION 4.2.5.2 - 1). COMPLIANCE (Stnd 90.1 - 6.3) EXCEPTION 4.2.5.2 - 3). 5.2 - 4). 'ISION 01 SPECIFICATIONS (PRI MS (DRAWINGS, EQUIPMENT IN ONING ACTIVITIES. HVAC AND UNCTIONAL TESTING AND ADJI	(Exception 4.2.5.2 - 2). Dvided by others) for Formation, control Controls shall provide JSTMENT.
1 RECOR RECORE (Stnd 90 • TH • GE • TE	D DRAWINGS D DRAWINGS SHALL BE PROVIDED 0.1 SECTION 6.7.3.1). RECORD D E LOCATION AND PERFORMANCE NERAL CONFIGURATION OF THE D RMINAL FLOW RATES. TING AND MAINTENANCE MA ANUAL TO BE PROVIDED TO BUIL	D TO BUILDING OWNER, OR DESIGNATED RE DRAWINGS SHALL INCLUDE, AS A MINIMUM DATA ON EACH PIECE OF EQUIPMENT. DUCT AND PIPE DISTRIBUTION SYSTEMS, IN NUAL DING OWNER, OR DESIGNATED REPRESENT/ INCLUDE AS A MINIMUM THE FOLLOWING	PRESENTATIVE, WITHIN 90 DAY I. THE FOLLOWING FOR HVAC S CLUDING SIZES. ATIVE, WITHIN 90 DAYS AFTER S FOR HVAC SYSTEMS AND COI	S AFTER SYSTEM ACCEPTANCE SYSTEMS AND COMPONENTS: SYSTEM ACCEPTANCE (Strid 90.1 MPONENTS:

SYMBO	DLS LIST -	GENERAL
SYM	BOL	DESCRIPTION
		DETAIL REFERENCE:
MX		––– DETAIL NUMBER
		CONNECT TO EXISTING
<u> </u>		
SYMBOL	SYMBOL	
(DOUBLE LINE)	(SINGLE LINE)	DESCRIPTION
12" Ø	1210	ROUND DUCT
	24x10"O	FLAT ÓVAL DUCT
	12X8	
12x8		
\sim	SAME	DUCT. FLEX
		DUCT WITH LINER
		DUCT. HIDDEN
		DUCT. TO BE REMOVED
1 20	_ */)	ELBOW, W/TURNING VANES
\boxtimes	\square	DUCT. SUPPLY
\leq		DUCT, EXHAUST
\Box		DUCT, OUTSIDE AIR
		DAMPER MANUAL
$\begin{array}{c} (A2) \\ 24 \\ 24 \\ 120 \end{array}$	$\begin{array}{c} A2 \\ 24 \\ 120 \end{array}$	DAMPER, AUTOMATIC: A2 ~ 2 POSITION.
T T		24 = 240, 120 = 1200
$\left(\begin{array}{c} \overline{AM} \\ 24 \end{array}\right) \left(\begin{array}{c} \overline{AM} \\ 120 \end{array}\right)$	$\begin{pmatrix} AM \\ 24 \end{pmatrix}$ $\begin{pmatrix} AM \\ 100 \end{pmatrix}$	DAMPER. AUTOMATIC. AM - MODULATING.
		$24 = 24 \forall, 120 = 120 \forall$
(BD)	(BD)	
	——————————————————————————————————————	DAMPER, GRAVITY BACKDRAFT
(c)	(FSD) (FSD)	
		DAMPER. COMBO FIRE / SMOKE 1.5 == 1.5 HR, 3 == 3 HR
		DUCT SMOKE DETECTOR
····	[
∇	SAME	SPACE PRESSURE SENSOR
S	57	
	<u> </u>	DUCT TEMPERATURE SENSOR
B SDC		OUTLET OR INLET TYPE
12x12 400	SAME	LENGTH X WIDTH CEM
, E	SAME	
	C, TWIE	
	SAME	AIRFLOW, GENERAL
	SAME	UNDERCUT DOOR
∇Z_{ab}	SAME	THERMOSTAT. w/ UNIT OR ZONE CONTROLLED
√ <u>10=1</u>		
S ∕TU-1	SAME	SPACE SENSOR, w/ UNIT OR ZONE CONTROLLED
Y	SAME	SPACE PRESSURE SENSOR
(V) (V)	SAME	THERMOSTAT, OR SENSOR W/ LOCKING
(602)	SAIVIE	CARBUN DIOXIDE SENSOR
\odot	SAME	OCCUPANCY SENSOR
SYMBO)LS LIST -	PIPING
SYM	BOL	DESCRIPTION
B3	'BL	REFRIGERANT SUCTION / LIQUID
	-0	PIPING. ELBOW, UP
	_ _ _	PIPING. ELBOW, DOWN
	<u></u> ~	
(
	AGU	AT GRADE UNIT
	AL	ALUMINUM BUILDING AUTOMATION SYSTEM
	C	CONDENSATE
	CFM	CUBIC FEET (PER) MINUTE
	DX	DIRECT EXPANSION
	(E)	EXISTING
	EAL	EXHAUST AIR LOUVER
	EF	EXHAUST FAN
	Lor F	FURNACE
	FC	FAN COIL
	HP	HEAT PUMP
	NTS	NOT TO SCALE
	RA	RETURN AIR
	RF	RETURN FAN
	RL RS	REFRIGERANT, LIQUID (LINE) REFRIGERANT, SUCTION (LINF)
	RTU	ROOF TOP UNIT
	SS TSP	STAINLESS STEEL TOTAL STATIC PRESSURF
	TU	TERMINAL UNIT
	VAV VED	VARIABLE AIR VOLUME
	VI U	

-SHEET INDEX

Dig	ALL GI I ALL OREC MARK XPIRES	NE 2 35 9, 19 9, 19 12/3	g n e d 80 1/24	A 7
1951 Don Street I Springfield 1 OR 97477	OFFICE: (541) 726-0100 FAX: (541) 726-4799 <i>www.comfortflow.com</i>	Engineering, Design, Budgeting, Installation & Service	ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT MAY BE USED, REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MFANS FI FCTRONIC OR MECHANICAI	WITHOUT WRITTEN PERMISSION FROM THE ENGINEERING DEPARTMENT OF COMFORT FLOW HEATING.
COOS R	BAY PUE		CHOOLS	
MILLICOMA SCHOOL REROOF & CLASSROOM ADDITION	COOS BAY SCHOOL DISTRICT		260 2ND AVENUE	COOS BAY, OREGON 97420
SHEET TITLE: SPEC SYI ABBF ISSUANCE: B			TION S, & TION	JS, JS
DRAWN: JS DRAWING SCALE: AS NOT FILE NAME: MS-M1. REV: *	ESIGNED: CN ED	AP DATE: JA PROJE SHEET		KED: CMP 2023

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TITLE	NO.
, SYMBOLS & ABBREVIATIONS	M1.00
	M1.10
	M1.11
/EL DEMOLITION	M2.00
IATE LEVEL DEMOLITION	M2.10
EL DEMOLITION - WEST	M2.20
EL DEMOLITION - EAST	M2.21
EL DEMOLITION	M2.30
/EL	M3.00
IATE LEVEL	M3.10
EL - WEST	M3.20
EL - EAST	M3.21
E	M3.30
	M4.00
IATICS AND SEQUENCES	M4.01

VAV T	ERMIN	AL UNI	TS (TU,	VTU)												PAC	KAGED ELECT	TRIC ROOFT	OP HEAT	ΓΡυΜΡ	UNIT	S (RTU)) - VAR	IABLE AIF	VOLU	UME																			
			PR			NOISE CR	ITERIA (NC)	:)		HEAT												SUPP	PLY FAN				RETUR	N / RELIEF				COOLING	1		HE	ATING			AUX. HEA	AT	'	LECTRICA	<u>_</u>		
TAG	MODEL [A]	INLET SIZE (IN) MAX CFN	MIN. CFM (HEATING	I TOTAL APD) (IN. W.G.)	DISCH.	RAD.	CFM	EAT, °F	LAT, °F	kW N	′ РН	I FLA	WEIGHT LB	NOTES	TAG	MODEL NO. [A]	DISCHARGE	NOMINAL TONS	CFM MAX.	CFM MIN.	ESP (IN W.C.)	MINIMUM OSA (CEM)	1 MOTOR BHP / HP	VFD	CFM C MAX. N	CFM ES VIIN. (IN W	SP MC V.C.) BHP	TOR / HP	FD EAT	LAT (°F)	TOTAL CAPACIT	Y EFF EER / IEE	EAT R (°F)	LAT (°F)	CAPACITY MBH	СОР	kW	STAGES	V PH		чН МСА	МОСР	APPROX WEIGHT	NOTES
TU1-1	VCEF	16	1630	1110	0.010	22	27	1110	55	85	11.0 20	8 3	30.53	121	1		5560104	DOWN	125	<u> </u>	224.0	1.05	(СРМ)			5050 3	2270 0	<u> </u>							64.7									(LB3)	
TU1-2	VCEF	12	1260	550	0.030	24	26	550	55	85	5.5 20	8 3	15.27	93	1		DPS010A		12.5	5890	3310	1.85	2700	4.65/7.5	Y V	5950 3	$\frac{3370}{2790}$ 0.	.6 2.3	36/4	Y 73	56	149		8 47	61./	86	3.42	18	4 2	$\frac{208}{208}$ 3	208	$\frac{3}{3}$ 129	150	2700	1, 2, 3, 4, 5, 6, 7, 8, 9
TU1-3	VCEF	12	1260	550	0.030	24	26	550	55	85	5.5 20	8 3	15.27	93	1	RTU-3	DPS010A		12.5	5560	2790	1.85	2350	4.55/7.5	Y	5280 2	2730 0. 2650 0.	6 17	75/3	Y 73	56	148		8 47	63	86	3.42	18	4 2	$\frac{.08}{208}$ 3	208	3 129	150	2700	1,2,3,4,5,0,7,8,9
TU1-5	VCEF	12	1280	550	0.030	24	20	550	55	85	5.5 20	8 3	15.27	93	1	RTU-4	DPS016A	DOWN	16	7060	3720	1.9	2900	7.26/10	Y	6710 3	3530 0.	.6 1.8	39/3	Y 73	56	184	11.5 / 20	.5 47	63.7	129	<u> </u>	20	4 2	208 3	208	3 186	200	3900	1, 2, 3, 4, 5, 6, 7, 8, 9
	VCEI		1200		0.000						5.5 20		10.27			RTU-5	DPS018A	DOWN	17	9790	4660	1.9	1335	8.98/10	Y	8910 4	4430 0.	.6 3.2	28/5	Y 73	58	200	11.4 / 20	.9 47	60.5	139	3.6	10	2 2	208 3	208	3 156	175	4150	1, 2, 3, 4, 5, 6, 7, 8, 9
TU2-1	VCEF	12	1260	550	0.030	24	26	550	55	85	5.5 20	8 3	15.27	93	1	RTU-6	DPS010A	DOWN	12.5	5410	2610	1.8	2510	4.3/7.5	Y	5140 2	2480 0.	.6 1.6	53/3	Y 73	56	146	11.7 / 1	8 47	63.4	86	3.42	18	4 2	208 3	208	3 129	150	2700	1, 2, 3, 4, 5, 6, 7, 8, 9
	VCEF	12	1260	550	0.030	24	26	740	55	85	5.5 20	8 3 0 2	20.82	93	1	RTU-7	DPS010A	DOWN	12.5	5120	3880	1.85	1765	4.5/7.5	Y	4060 3	3690 0.	.6 0.9	5/1.5	Y 73	56	146	11.7 / 1	8 47	64.2	86	3.42	18	4 2	208 3	208	3 123	125	2700	1, 2, 3, 4, 5, 6, 7, 8, 9
TU2-3	VCEF	14	1210	550	0.010	22	24	550	55	85	5.5 20	8 3	15 27	93	1	RTU-8	DPS016A	DOWN	16	7870	3230	1.9	2810	6.81/10	Y	7480 3	3070 0.	.6 2.5	57/5	Y 73	56	186	12 / 21.	2 47	62	129	3.55	20	4 2	208 3	208	3 186	200	4150	1, 2, 3, 4, 5, 6, 7, 8, 9
TU2-5	VCEF	12	1460	550	0.040	26	29	550	55	85	5.5 20	8 3	15.27	93	1	RTU-9	DPS007A	DOWN	8.5	4390	2195	1.2	3250	2.63/4	Y	3515 2	2375 0.	.6 0.99	9/1.5	Y 73	56	98	12.8 / 19	.6 47	85	90	3.66	54	4 2	208 3	208	3 203	225	2500	1, 2, 3, 4, 5, 6, 7, 8, 9
		12	1200		0.020	24							45.27	02	1													-																	
	VCEF	12	1260	550	0.030	24	26	550	55	85	5.5 20	8 3 0 2	15.27	93	1	<u>NOTES</u> :	S OF DESIGN: DAIKI	N (REBEL) TRANE (I		IP - 040/K/N			μαι σαικί	N (REBEL) MOD	EL SHOW	'N																			
TU3-2	VCEF	12	1030	590	0.030	24	20	590	55	85	<u> </u>	0 3 8 3	15.27	95	1		S OF DESIGN. DAIN					NOVED EQ	UAL: DAIRI																						
TU3-4	VCEF	12	1280	550	0.030	24	24	550	55	85	5.5 20	8 3	15.27	93	1	1. VAR	ABLE AIR VOLUME S	YSTEM.																											
TU3-5	VCEF	12	1280	550	0.030	24	26	550	55	85	5.5 20	8 3	15.27	93	1			CT SMOKE DETECTO	R IN RETURN	PATH. BACn	et/MSTP	COMMUNI	CATION CA	RD.																					
		12	1260	550	0.020	24	26				E E 20	0 2	15.27	02	1	4. SPRI	NG ISOLATED CURB																												
TU4-1	VCEF	12	1260	550	0.030	24	20	550	55	85	5.5 20	8 3	15.27	93	1	5. FIEL	O WIRED 115 V, 15 A	A SERVICE RECEPTA	CLE																										
TU4-3	VCEF	12	1260	550	0.030	24	26	550	55	85	5.5 20	8 3	15.27	93	1	6. INTE	GRAL FACTORY DISC	CONNECT.																											
TU4-4	VCEF	14	1410	970	0.010	24	25	970	55	85	10.0 20	8 3	27.76	108	1		V 8 PLEATED FILTERS STAL ENVIRONMENT	5. 7- FVAPORATOR CO	ILS TO HAVE 9	SS CASING C	OILS WIT	H ELECTROE		ORTIONS OF UN	ΙΤ ΕΧΡΟς	ED DIRECT			O HAVE 60	00-HOUR SA	IT SPRAY	TEST CORR	OSION RESIS	TANCE DA	MPFRS 11	NKAGE ANI		IORS CON'	STRUCTED TO	FO BE SUIT	ABLE FOR MA	RINF FNVI			
TU4-5	VCEF	12	1280	550	0.030	24	26	550	55	85	5.5 20	8 3	15.27	93	1	9. REFF	GERANT: R410A				0.20																	0110 00110		• • • • • • • • •			0111121111		
TU4-6	VCEF	12	1280	550	0.030	24	26	550	55	85	5.5 20	8 3	15.27	93	1] [
TU5-1	VCEF	24X16	4420	1330	0.190	36	37	1330	55	90	15.0 20	8 3	41.64	135	1							_ • _	•																						
TU5-2	VCEF	8	540	180	0.040	25	24	180	55	85	2.0 20	8 3	5.55	67	1	PACK	AGED ELECT	RIC AT-GRA	DE HEAT	ΓΡυΜΡ	UNIT	s (AGU) - VAR	RIABLE AI	r vol	.UME																			
TU5-3	VCEF	10	710	240	0.020	24	24	240	55	85	2.5 20	8 3	6.94	81	1							SUPPL	LY FAN				RETURN	N / RELIEF			. (COOLING	-		HE	ATING			AUX. HEA	AT		LECTRICAI			
TU5-4	VCEF	12	1130	430	0.020	22	24	430	55	85	5.5 20	8 3	15.27	93	1					CENA	CEM	ESD	MINIMUM	МОТОР					тор	БАТ		TOTAL	CCC	БАТ	ТАТ	CADACITY								APPROX	
TU5-5	VCEF	6	550	190	0.090	20	24	190	55	85	2.0 20	8 3	5.55	63	1	TAG		DISCHARGE	TONS	MAX.	MIN.	(IN W.C.)	OSA	BHP / HP	VFD		/IN. (IN W	/.C.) BHP		FD (°F)	(°F)	CAPACIT		R (°F)	(°F)	MBH	СОР	kW f	STAGES	V PH	V P	н мса	МОСР	WEIGHT	NOTES
TU5-6	VCEF	10	1080	540	0.030	27	27	540	55	85	4.5 20	8 3	12.49	81	1							· · ·	(CFM)				`					MBH												(LBS)	
	VCEF	10	/20	570	0.020	25	24	570	55	85	5.5 20	8 3	15.27	81	1	AGU-2	DPS016A	HORIZONTAL	16	7735	5270	1.25	5200	6.39/10	Y	2800 1	400 0.5	5 0.83	5/1.5	Y 73	56	186	11.7 / 20) 47	60	129	3.55	60	4 2	208 3	208	3 277	300	3850	1, 2, 3, 4, 5, 6, 7, 8
TU5-9	VCEF	10	730	580	0.020	25	23	580	55	85	6.0 20	8 3	16.65	81	1													. -	-																
			1400	620	0.040			620					10.05	02	-	NOTES:										N																			
TU6-2	VCEF	12	1400	620	0.040	25	29	620	55	85	6.0 20	8 3	16.65	93			OF DESIGN. DAIRIN	N (NEDEL), INANE (H		- OAD/R/N	, UN APP		JAL. DAININ			Ν.																			
TU6-3	VCEF	6	350	130	0.110	20	25	130	55	85	1.5 20	8 3	4.16	63	1	1. VARI	ABLE AIR VOLUME SY	′STEM.																											
TU6-4	VCEF	12	1400	620	0.040	25	29	620	55	85	6.0 20	8 3	16.65	93	1	2. FACT	DRY MOUNTED DUC	T SMOKE DETECTO	R IN RETURN I	PATH. BACne	et/MSTP (COMMUNIC	CATION CAR	RD.																					
TU6-5	VCEF	12	1400	620	0.040	25	29	620	55	85	6.0 20	8 3	16.65	93	1	3. DRY E	ULB ECONOMIZER.	SERVICE RECEPTAC	IF.																										
TU7-1	VCEF	14	1410	710	0.010	24	25	710	55	85	7.0 20	8 3	19.43	108	1	5. INTEC	GRAL FACTORY DISCO	DNNECT.																											
TU7-2	VCEF	14	1390	700	0.010	24	25	700	55	85	7.0 20	8 3	19.43	108	1	6. MER	8 PLEATED FILTERS.																												
TU7-3	VCEF	14	1410	1410	0.010	24	25	1410	55	85	11.0 20	8 3	30.53	108	1	7. COAS	TAL ENVIRONMENT:	EVAPORATOR COI	LS TO HAVE S	S CASING, CO	DILS WITH	ELECTROFI	IN DIP. PO	RTIONS OF UN	T EXPOSE	ED DI RECTL	LY TO OUTD	OOR AIR TO	D HAVE 600	00-HOUR SA	LT SPRAY T	EST CORR	DSION RESIS	TANCE. DA	MPERS, LI	NKAGE, AND) ACTUAT(ORS CONS	STRUCTED TO	O BE SUITA	BLE FOR MAF	(INE ENVIR	ONMENT.		
TU7-4	VCEF	14	1410	1410	0.010	24	25	1410	55	85	13.0 20	8 3	36.08	108	1, 3	8. KEFK	GERANT: R410A																												
TU8-1	VCEF	8	500	180	0.040	25	22	180	55	85	2.0 20	8 3	5.55	67	1																														
TU8-2	VCEF	16	2405	910	0.020	26	30	910	55	85	9.0 20	8 3	24.98	121	1		PACK	AGED ELECT	RIC AT G		IEAT F	UMP U	JNITS (AGU) - CC	NSTA		DLUME																		
TU8-3	VCEF	16	2405	910	0.020	26	30	910	55	85	9.0 20	8 3	24.98	121	1	-																	2					—			<u> </u>				
TU8-4	VCEF	8	510	190	0.040	25	22	190	55	85	2.0 20	8 3	5.55	67	1								50				r	KETURN / K					<u>,</u>							<u>:AI</u>	-		<u>-</u>	ABBBOY	
TU8-5	VCEF	14	2220	820	0.010	29	31	820	55	85	8.0 20	8 3	22.21	108	1	-	TAG	MODEL NO.	DISCHAR		INAL				TOR	VFD		SP M	OTOR	VFD E/	T LA		ITY EFF.	- EAT	LAT	CAPACITY	COP	kw '	STAGES	VP	н I v	рн МС/		WEIGHT	NOTES
TU8-0	VCEF	6	300	110	0.080	19	24	110	55	85	1.5 20	8 3	4.16	63	1	-		[A]		то	NS	(IN	W.C.) (CFM) BH	P / HP			V.C.) BH	IP / HP	° (°	F) (°F)	MBI	EER / II	EER (°F)	(°F)	МВН		, ,						(LBS)	
				110			27				10 20					1	AGU-1	DPS016A	HORIZON	ITAL 1	6	3000	1 -	3260 5	5/8	γ s	3000 n	.7 7	2.0/3	γ 7	3 56	186	11.7 /	20 47	85	166	3.55	60	4	208 7	3 208	3 287	300	4000	1, 2, 3, 4, 5, 6, 7, 8
	VCEF	16	2775	1390	0.030	26	30	2775	60	80	16 20	8 3	44.5	121	1, 2	-					- '			5				- 2																	
		10	2800	1120	0.030	20	30	2800	60	80	16 20	o 3 g 2	44.5	121	1.3	1	NOTES:			I	1	<u> </u>	I	<u> </u>	I	I	I	<u> </u>		I	<u> </u>	<u> </u>	<u> </u>	I	1		<u> </u>				<u>_</u>		<u> </u>		
NOTES:		14	2100	1 1120	0.010	23		2100		00	10 20	5 5	44.5	171	⊥,∠	1	A. BASIS	OF DESIGN: DAIKIN	N (REBEL), TRA	NE (HOIRZOI	N ASHP - (DAD/K/N), C	OR APPROV	'ED EQUAL. DAI	KIN (REBE	EL) MODEL	SHOWN.																		
A. BASIS	OF DESIGN:	TRANE, NA	AILOR, OR A	PPROVED EQU	JAL. TRANE MO	ODEL SHOV	VN.					1. CONSTANT VOLUME SYSTEM, VED, OR 2-SPEED MOTOR CONTROL FOR OFFSC 503 2 10 3 2 COMPLIANCE																																	
														2. BACnet/MSTP COMMUNICATION CARD.																															
1. WITH	IEATING CO		NTROLLER, 2	24V CONTROL	TRANSFORME	R. DDC CO	NTROLS AN	ID ACTUAT	FOR PROVI	IDED SEPA	RATELY (FIE	D MOU	NTED).				3. DRY B	ULB ECONOMIZER.																											
2. IWO-F	USTITION FL	W IU. All	kflow EITH	IER MIN OR N	IAX DEPENDING	G ON SELEC	LED ROOM	I USE.								1	4. FIELD	WIRED 115 V, 15 A	SERVICE RECE	PTACLE																									

3. CONSTANT VOLUME TU.

PACK	AGED ELECTR		OP HEAT	PUIVII		5 (RIU) - VARI	ABLE AII		LUIVIE																						
					-	SUP	PLY FAN	-			F	RETURN / I	RELIEF				COOLING			н	EATING			AUX. H	IEAT			ELEC	TRICAL			
TAG	MODEL NO. [A]	DISCHARGE	NOMINAL TONS	CFM MAX.	CFM MIN.	ESP (IN W.C.)	MINIMUM OSA (CFM)	MOTOR BHP / HP	VFD	CFM MAX.	CFM MIN.	ESP (IN W.C.)	MOTOR BHP / HP	VFD	EAT (°F)	LAT (°F)	TOTAL CAPACITY MBH	EFF EER / IEER	EAT (°F)	LAT (°F)	САРАСІТҮ МВН	СОР	kW	STAGES	v	РН	v	РН	МСА	МОСР	APPROX WEIGHT (LBS)	NOTES
RTU-1	DPS010A	DOWN	12.5	6140	3310	1.85	2700	4.65/7.5	Y	5950	3370	0.6	2.36/4	Y	73	56	149	11.7 / 18	47	61.7	86	3.42	18	4	208	3	208	3	129	150	2700	1, 2, 3, 4, 5, 6, 7, 8, 9
RTU-2	DPS010A	DOWN	12.5	5890	2940	1.85	2415	4.99/7.5	Y	5600	2790	0.6	2.02/4	Y	73	56	148	11.7 / 18	47	62.2	86	3.42	18	4	208	3	208	3	129	150	2700	1, 2, 3, 4, 5, 6, 7, 8, 9
RTU-3	DPS010A	DOWN	12.5	5560	2790	1.85	2350	4.56/7.5	Y	5280	2650	0.6	1.75/3	Y	73	56	147	11.7 / 18	47	63	86	3.42	18	4	208	3	208	3	129	150	2700	1, 2, 3, 4, 5, 6, 7, 8, 9
RTU-4	DPS016A	DOWN	16	7060	3720	1.9	2900	7.26/10	Y	6710	3530	0.6	1.89/3	Y	73	56	184	11.5 / 20.5	47	63.7	129	3.55	20	4	208	3	208	3	186	200	3900	1, 2, 3, 4, 5, 6, 7, 8, 9
RTU-5	DPS018A	DOWN	17	9790	4660	1.9	1335	8.98/10	Y	8910	4430	0.6	3.28/5	Y	73	58	200	11.4 / 20.9	47	60.5	139	3.6	10	2	208	3	208	3	156	175	4150	1, 2, 3, 4, 5, 6, 7, 8, 9
RTU-6	DPS010A	DOWN	12.5	5410	2610	1.8	2510	4.3/7.5	Y	5140	2480	0.6	1.63/3	Y	73	56	146	11.7 / 18	47	63.4	86	3.42	18	4	208	3	208	3	129	150	2700	1, 2, 3, 4, 5, 6, 7, 8, 9
RTU-7	DPS010A	DOWN	12.5	5120	3880	1.85	1765	4.5/7.5	Y	4060	3690	0.6	0.95/1.5	Y	73	56	146	11.7 / 18	47	64.2	86	3.42	18	4	208	3	208	3	123	125	2700	1, 2, 3, 4, 5, 6, 7, 8, 9
RTU-8	DPS016A	DOWN	16	7870	3230	1.9	2810	6.81/10	Y	7480	3070	0.6	2.57/5	Y	73	56	186	12 / 21.2	47	62	129	3.55	20	4	208	3	208	3	186	200	4150	1, 2, 3, 4, 5, 6, 7, 8, 9
RTU-9	DPS007A	DOWN	8.5	4390	2195	1.2	3250	2.63/4	Y	3515	2375	0.6	0.99/1.5	Y	73	56	98	12.8 / 19.6	47	85	90	3.66	54	4	208	3	208	3	203	225	2500	1, 2, 3, 4, 5, 6, 7, 8, 9

4. FIELD WIRED 115 V, 15 A SERVICE RECEPTACLE

5. INTEGRAL FACTORY DISCONNECT. 6. MERV 8 PLEATED FILTERS.

8. REFRIGERANT: R410A

SPLIT	SYSTE	M HEAT PUMPS	6 (AIR
TA	١G		
INDOOR UNIT	OUT- DOOR UNIT	LOCATION [B]	MO [/
FC-1	HP-1	STORAGE (INTRM. LVL)	ARUF
FC-2	HP-2	CLASSROOM 219N	ASPT6
			-
<u>NOTES</u> : A. BASIS B. REFER C. COOL D. HEATI E. AHRIS	OF DESIG TO DRAV ING PERFO NG PERFO STANDARE	IN: DAIKIN, OR APPROVED VINGS FOR SPECIFIC LOCA ORMANCE AT 95°F AMBIED ORMANCE AT 32°F AMBIEN O 210/240.	D EQUAL. ATION NT, WITH NT, WITH (
 CONST TERMI DRY BI MERV 	TANT VOLU NAL STRIF JLB ECON 8 PLEATEI	JME SYSTEM. P READY FOR CONTROLS IN OMIZER VIA BUILT-UP DU D FILTERS.	ITEGRATIO CT-MOUN

6. REFRIGERANT: R410A

GRAV	ITY HO	OD (GH)							
TAG	MODEL [A]	SERVICE	THROAT VELOCITY FPM	THROAT AREA (SQ. FT.)	CFM	TOTAL PRESS. DROP (INCH W.G.)	APPROX. WEIGHT (LBS)	CURB Y / N	NOTES
GH-1	GRSI-24	INTAKE	525	3.24	1700	0.049	57	Y	1, 2

1. ALL ALUMINUM CONSTRUCTION. CLEAR ANODIZED FINISH. ALUMINUM CURB CAP. ALUMINUM BIRD SCREEN. 2. WEIGHT SHOWN IS GH ONLY. CURB ADDITIONAL.

7. COASTAL ENVIRONMENT: EVAPORATOR COILS TO HAVE SS CASING, COILS WITH ELECTROFIN DIP. PORTIONS OF UNIT EXPOSED DIRECTLY TO OUTDOOR AIR TO HAVE 6000-HOUR SALT SPRAY TEST CORROSION RESISTANCE. DAMPERS, LINKAGE, AND ACTUATORS CONSTRUCTED TO BE SUITABLE FOR MARINE ENVIRONMENT.

TO-AI	R) (FC / HP)																											
					IN	DOOR UNIT													OUTDOOR	UNIT				MATCH				
					ESP	COOLING [C]	HEATING	E	LECTRICA	L.		A	UX. HEA	т		APPROX.	CAP. MBH ELECTRICAL			L	APPROX.	WATCH	RATIN	GS [E]				
)EL]	CONFIGURATION	SUPPLY CFM	OA CFM	HP	(IN W.G.)	TOTAL (BTU/HR)	CAPACITY (BTU/HR) [D]	MCA	VOLT	РН	kW	STAGES	v	[Н	AMPS	WEIGHT LBS	LOCATION	MODEL [A]	AT 50°F S.T. (CLG/HTG) [C]	MCA	VOLT	РН	WEIGHT LBS	EER	SEER	СОР	HSPF	NOTES
3C14	HORIZONTAL	1100	540	0.33	0.6	39000	40000	3.8	208	1	17.3	2	208	1	22	130	ROOF	DZ14SA0421	39/40	22	208	1	270	11.5	14	3.7	8.2	1, 2, 3, 4, 5, 6
D14A	HORIZONTAL	1700	845	1	0.6	56500	59000	7.9	208	1	30	2	208	1	38	150	ROOF	DZ14SA0601	57/59	34.3	208	1	292	11.5	14	3.86	8.5	1, 2, 3, 4, 5, 6

H 80°F DB / 67°F WB ENTERING AIR TEMPERATURE AT INDOOR COIL. H 64°F DB ENTERING AIR TEMPERATURE AT INDOOR COIL.

TION WITH DDC SYSTEM. JNTED AUTOMATIC DAMPERS (FIELD).

5. COASTAL ENVIRONMENT: COILS WITH ELECTROFIN DIP. PORTIONS OF UNIT EXPOSED DIRECTLY TO OUTDOOR AIR TO HAVE 6000-HOUR SALT SPRAY TEST CORROSION RESISTANCE. DAMPERS, LINKAGE, AND ACTUATORS CONSTRUCTED TO BE SUITABLE FOR MARINE ENVIRONMENT.

MFR [A]
 CFM
 CFM
 SONES
 ESP (IN. W.C.)
 RPM
 BHP
 VFD
 HP
 INPUT WATTS
 MODEL NO. TYPE SERVICE TAG [A] 130 -- 2.4 0.25 1239 0.01 N -- 50 EF-1 GREENHECK G-070-VG ROOF STORAGE (SW) 190 --- 2.9 0.25 874 0.02 N 0.25 ---EF-2 GREENHECK G-103HP-VG ROOF BOYS RR 323
 190
 -- 2.9
 0.25
 874
 0.02
 N
 0.25
 -

 290
 -- 3.9
 0.25
 1097
 0.04
 N
 0.25
 - EF-3GREENHECKG-103HP-VGROOFEF-4GREENHECKG-103HP-VGROOF BOYS RR 323 RR 328 & 329

 100
 -- 3
 0.25
 922
 0.02
 N
 0.25
 -- 1

 1000
 -- 6.4
 0.35
 934
 0.19
 N
 0.25
 -- 1

 400
 -- 0.3
 0.35
 741
 -- -- 86

 475
 -- 0.3
 0.3
 769
 -- -- 112

 75
 -- 1.2
 0.3
 700
 -- N
 -- 20

 EF-5 GREENHECK G-097-VG ROOF RR 339 & 340 EF-6 GREENHECK GB-141-4 ROOF RR 350, 358, UTIL 349 EF-7 GREENHECK CSP-A700 IN-LINE CAFETERIA: WASH HOOD EF-8 GREENHECK CSP-A700 IN-LINE CAFETERIA: GENERAL EXH. EF-9 GREENHECK SP-B90 CEILING RR 212
 80
 -- 2.0
 0.3
 950
 -- N
 -- 80

 90
 -- 2.0
 0.3
 950
 -- N
 -- 80

 75
 -- 3.0
 0.6
 950
 -- N
 -- 80
 EF-10 GREENHECK SP-B110 CEILING RR 109 EF-11 GREENHECK SP-B110 CEILING RR 106 EF-12 GREENHECK SP-B110 CEILING RR 114
 75
 - 3
 0.6
 950
 - N
 - 80

 3080
 1540
 10.5
 0.5
 752
 0.68
 Y
 0.75
 - 1

 2400
 1200
 11.9
 0.5
 1110
 0.67
 Y
 0.75
 - 1
 EF-13 GREENHECK SP-B110 CEILING RR 101 EF-14 GREENHECK BCF-212-7 CABINET BOYS LOCKER/SHOWER 112 EF-15 GREENHECK BCF-208-7 CABINET GIRLS LOCKER/SHOWER 103
 180
 -- 3
 0.5
 900
 -- N
 -- 52

 180
 -- 3
 0.5
 900
 -- N
 -- 52
 EF-16 GREENHECK SPA200 CEILING BOYS GYM RR EF-17 GREENHECK SPA200 CEILING GIRLS GYM RR

 1100
 540
 6.3
 0.35
 852
 0.13
 N
 0.25
 - 9

 1700
 845
 6.1
 0.35
 632
 0.16
 N
 0.75
 - 1

 - - - - - - - 1

 EF-18 GREENHECK G-143-VG ROOF CLASSROOM 219S EF-19 GREENHECK G-143-VG ROOF CLASSROOM 219N -- -- -- ----

NOTES: A. BASIS OF DESIGN, OR APPROVED EQUAL.

WITH BACKDRAFT DAMPER. WITH 24V AUTOMATIC DAMPER.

EXHAUST FANS (EF)

3. RUN CONTINUOUS DURING OCCUPIED HOURS. REFER TO SPECIFICATION SECTION 23 09 00, CONTROLS, FOR OPERATIONAL INTERLOCKS. 4. INTERLOCK TO OPERATE WHEN DISHWASH MACHINE IS OPERATING, REFER TO SPECIFICATION SECTION 23 09 00, CONTROLS.

5. VFD RATED HIGH EFFICIENCY MOTOR.

6. ECM MOTOR SUITABLE FOR 0-10 VDC INPUT SIGNAL. 7. ECM MOTOR WITH DIAL FOR BALANCING.

B. HIGH WIND RATED. STAINLESS STEEL FASTENERS. ALUMINUM BIRDSCREEN.

9. WHITE DESIGNER GRILLE, ROUND OUTLET COLLAR, POLYMER FAN WHEEL, PLUG TYPE DISCONNECT. 10. POLYMER FAN WHEEL, PLUG TYPE DISCONNECT, SOLID STATE SPEED CONTROL, FIELD MOUNT.

/IOTOR					
RPM	v	РН	APPROX WEIGHT (LBS)	CURB Y or N	NOTES
1725	120	1	45	Y	1, 3, 7, 8
1725	120	1	70	Y	1, 3, 7, 8
1725	120	1	70	Y	1, 3, 7, 8
1725	120	1	70	Y	1, 3, 7, 8
1725	120	1	70	Y	1, 3, 7, 8
1725	120	1	95	Y	2, 3, 8
	120	1	35	N	2,4
	120	1	35	N	2, 3
	120	1	10	N	1, 3, 9
	120	1	10	N	1, 3, 9
	120	1	10	N	1, 3, 9
	120	1	10	N	1, 3, 9
	120	1	10	N	1, 3, 9
1725	208	3	490	N	3, 5, 10
1725	208	3	225	N	3, 5, 10
	120	1	24	N	1, 3, 9
	120	1	24	N	1, 3, 9
900	120	1	80	Y	2, 3, 6, 8
1200	120	1	120	Y	2, 6, 8

D i g.i tatty S OREGON C. MARK PE EXPIRES 12/	igned 800 31/24
Composition flow HEATING 1951 Don Street 1 Springfield 1 OR 97477 OFFICE: (541) 726-0100 1 FAX: (541) 726-4799 www.comfortflow.com Engineering, Design, Budgeting, Installation & Service	ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT MAY BE USED, REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT WRITTEN PERMISSION FROM THE ENGINEERING DEPARTMENT OF COMFORT FLOW HEATING.
COOS BAY PUBLIC	SCHOOLS
MILLICOMA SCHOOL REROOF & CLASSROOM ADDITION COOS BAY SCHOOL DISTRICT	260 2ND AVENUE COOS BAY, OREGON 97420
SHEET TITLE: SCHEDU	JLES
ISSUANCE: BIDDIN REVISION DESCRIPTION	NG DATE
DRAWN: DESIGNED:	CHECKED:
JS CMP DRAWING SCALE: DATE AS NOTED JA FILE NAME: PRO. MS-M1.0 REV: SHEE	CMP ANUARY 2023 JECT NO: *

SHEET: 2 OF 15 M1.10

VING SHEET IS FULL SIZE WHEN PRINTED 34"X44"

SYSTEM TAG	ZONE	ROOM NAME / NUM.	
	TU1-1	Hallways (North, Interior)	
J-1	TU1-2 TU1-3	Classroom 17 Classroom 14	
RT	TU1-4 TU1-5	Work Room 5 Classroom 15	
	TU1-6 	Classroom 16 	
	TU2-1 TU2-2	Classroom 13 Classroom 10	
-2	TU2-3 TU2-3	Workroom 3 MDF	
RTU	TU2-3 TU2-3	Workroom 4 Hallway	
	TU2-4 TU2-5	Classroom 11 	
	TU3-1	Classroom 9	
TU-3	TU3-3 TU3-3	Workroom 2 Hallway	· · · ·
æ	TU3-4 TU3-5	Classroom 8 Classroom 7	
	 TU4-1	 Classroom 5	
	TU4-2 TU4-3	Classroom 2 Classroom 1	
U-4	TU4-4 TU4-5	Workroom 1 Classroom 4	
RT	TU4-4 TU4-4	Hallway Custodial Storage	
	TU4-4 TU4-4	Boys Toilet Girls Toilet	
	 TU5-1	Library 346	
	TU5-2 TU5-2	Office 345 Office 344	
	TU5-3 TU5-3	Storage 343 Storage 342	
	TU5-3 TU5-4 TU5-4	Meeting 341 Office 333 Toilet 339	
	TU5-4 TU5-4	Toilet 340 Office 334	
RTU-5	TU5-4 TU5-4	Office 338 Office 337	
	TU5-4 TU5-4	Office 336 Office 335	
	TU5-5 TU5-5 TU5-6	Office 331 Office 332 Breakroom 326	
	TU5-6 TU5-6	Women's toilet & rest area 327&329 Staff Toilet 328	
	TU5-7 TU5-8	Corridor 325A South Front Corridor	
Ģ	TU6-1 TU6-2	Classroom 22 Classroom 23	
RTU-	TU6-3 TU6-4 TU6-5	Classroom 24 Classroom 25	
	 TI17-1	 Classroom 27	
	TU7-2 TU7-3	Classroom 26 Corridor North, North end	· · · · · · · · · · · · · · · · · · ·
RTU-7	TU7-3 TU7-4	New Hall / Hall Central Women's Toilet 350	
	TU7-4 TU7-4	Men's Toilet 348 Utility Areas 349A&B	
	TU8-1 TU8-1	Band Practice 362 Band Practice 361	
	TU8-1 TU8-1	Band Practice 360 Band Practice 359	
TU-8	TU8-4 TU8-4	Band Practice 357 Band Practice 356	
Ř	TU8-4 TU8-5	Band Office 355 Choir 353	
	TU8-6 TU8-7 TU8-7	Choir Office 354 Choir Practice 352 Choir Practice 351	
	1	Cafeteria 211 - seating area Cafeteria 211 - serving area	
RTU-9	1 1	RR 212 Storage 213	
	1	Wash Room 213 Utility 215	
	1	 Gym 216	95 G
AGO-1			
	VTU2-2 VTU2-1	Activity (Weight Room) Showers (Boys)	66 Sho
	VTU2-1 VTU2-1 VTU2-1	Boys Locker Storage (Boys Locker)	3
3U-2	VTU2-1 VTU2-1	Office (Boys Locker) RR (Office)	
AG	VTU2-3 VTU2-3	Showers (Girls) RR106	66 Sho
	VTU2-3 VTU2-3 VTU2-3	Meeting (Girls Locker) Office (Girls Locker)	3
	VTU2-3	RR (Office)	
⊱1/ ₽-1	 1 1	Classroom E	· · ·
FC-1/ HP-1	 1 	Classroom E Storage 	
FC-2 / FC-1 / HP-2 HP-1	 1 1 	Classroom E Storage Classroom 19 	

										V _{bz} =		V _{oz} =					D =	V _{ou} =	V _{ot =}	
	Az	Default	Pz		Rp	Ra	EXHAUST	EXHAUST	EVHALIST	$(R_p*P_z)+(R_a*A_z)$	Ez	V _{bz} / E _z ZONE	V _{pz}	Zp	Ev	Ps	P _s / Σ _{all zones} P _z			SCHEDULED
		Density # / 1000 Sq.	ZONE POPU-	NUMBER OF SHWR	PEOPLE OSA RATE (CFM /	AREA OSA RATE (CFM /	RATE (CFM / Sq.	RATE (CFM /	AIRLFOW	BREATHING		AIRFLOW	ZONE PRIMARY	PRIMARY OUTDOOR	VENTILA- TION	EVETERA	OCCUPANIT	RECTED OUTDOOR	AIR INTAKE	SYSTEM OUTDOOR
SPACE TYPE	AREA (Sq. ft.)	[1]	[1]	HDS [1]	Person) [1]	Sq. Ft.) [1]	Ft.) [1]	SHWR HD) [1]	PROVIDED (CFM)	ZONE OSA RATE (CFM)	[2]	(CFM) [3]	AIRFLOW (CFM)	AIR FRACTION	[4]	SYSTEM POPULATION	OCCUPANT I DIVERSITY	AIR INTAKE (CFM)	(CFM) REQUIRED	AIR CFM)
64 Corridors 22 Classrooms (age 9 plus)	952 917	35	33		10	0.06				57 441	0.8	71 551	480 1260	0.15	0.7					
22 Classrooms (age 9 plus) 53 Office spaces	921 527	35 5	33 3		10 5	0.12 0.06				441 47	0.8 0.8	551 59	1260 490	0.44 0.12	0.7					
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus)	929 930	35 35	33 33		10 10	0.12				442 442	0.8	553 553	1280 1280	0.43						
				 										 [5] CAL	CULATED % O	95 A & ACTUAL %	6 OF CALCULATE	1706) (MAX 135%) =	36.3%	127.2%
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces	919 919 133	35 35 5	33 33 1		10 10 5	0.12				441 441 13	0.8	551 551 16	1260 1260 140	0.44	0.7					
81 Storage rooms 53 Office spaces	254 135	 5	 1		5	0.12 0.06				30 14	0.8 0.8	38 18	270 140	0.14 0.13						
64 Corridors 22 Classrooms (age 9 plus)	1314 929	35	33		10	0.06				79 442	0.8	99 553	650 1280	0.15						
22 Classrooms (age 9 plus) 	931	35	33			0.12					0.8		1460 	0.38 [5] CAL	 CULATED % O	95 A & ACTUAL 9	0.71	1690 (MAX 135%) =	2415	2415
22 Classrooms (age 9 plus)	919	35	33		10	0.12				441	0.8	551	1260	0.44	0.7				37.470	
53 Office spaces 64 Corridors	521 950	5	3		5	0.06				47 57	0.8	59 71	550 450	0.11						
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus)	929 931	35 35	33 33		10 10	0.12 0.12				442 442	0.8 0.8	553 553	1280 1280	0.43 0.43						
														 [5] CAL	ULATED % O	95 A & ACTUAL 9	0.70 % OF CALCULATED	1637 (MAX 135%) =	2339 38.5%	2350 100.5%
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus)	917 920	35 35	33 33		10 10	0.12				441 441	0.8	551 551	1260 1260	0.44	0.7					
22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus)	925 525 931	35 5 35	33		10 5 10	0.12				441 47 442	0.8	551 59 553	1260 550 1280	0.44						
22 Classrooms (age 9 plus) 64 Corridors	929 830	35	33		10	0.12 0.06				442 50	0.8 0.8	553 63	1280 420	0.43 0.15						
81 Storage rooms 68 Toilet rooms - public	113 124					0.12			170 190	14	0.8		130 150	0.14						
68 Toilet rooms - public 									190 				150 	 [5] CAU	 CULATED % O	117 A & ACTUAL 9		2030	2900	2900
16 Media center	2705	25	68		10	0.12				1005	0.8	1256	4420	0.28					37.370	
53 Office spaces 81 Storage rooms	374 227	5	2		5	0.06				33 27	0.8	41 34	440	0.09						
81 Storage rooms 52 Conference rooms	84 299	 50	 15		5	0.12 0.06				10 93	0.8 0.8	13 116	100 350	0.13 0.33	 0.8					
53 Office spaces 68 Toilet rooms - public	124 20	5	1		5	0.06			 50		0.8	16 	140 	0.11						
68 Toilet rooms - public 53 Office spaces	20 79 155	 5 5	 1 1		5 5	 0.06			50 	 10 15	 0.8	 13 19	 90 180	 0.14 0.11						
53 Office spaces 53 Office spaces	1155 115 110	5	1 1 1		5	0.06				12 12	0.8	15 15 15	130 130	0.12						
53 Office spaces 53 Office spaces	339 143	5	2		5 5	0.06 0.06				31 14	0.8 0.8	39 18	400 170	0.10						
53 Office spaces 53 Office spaces	125 704	5	1 4		5	0.06				13 63	0.8	16 79	380 820	0.04						
68 Toilet rooms - public 68 Toilet rooms - public 64 Corridors	30 1437								75	86	0.8		720	0.15						
64 Corridors 64 Corridors	1512 1451					0.06 0.06				91 87	0.8 0.8	114 109	810 730	0.14 0.15						
										•					1					
														 [5] CAL	ULATED % O	50 A & ACTUAL 9	0.51 % OF CALCULATED	1038 (MAX 135%) =	1298 12.3%	1335 102.9%
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces	 1033 1033 329	 35 35 5	 37 37 2		 10 10	0.12 0.12 0.06				 494 494 30	 0.8 0.8 0.8	 618 618	 1400 1400 350	 [5] CAL4 0.44 0.44	 CULATED % O 0.7 0.7	50 A & ACTUAL %	0.51 % OF CALCULATED	1038 9 (MAX 135%) =	1298 12.3%	1335 102.9%
 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus)	 1033 1033 329 1033 1033	 35 35 5 35 35 35	 37 37 2 37 37 37	 	 10 10 5 10 10	 0.12 0.12 0.06 0.12 0.12		 	 	 494 494 30 494 494	0.8 0.8 0.8 0.8 0.8 0.8 0.8	 618 618 38 618 618	 1400 1400 350 1400 1400	 [5] CAL 0.44 0.44 0.11 0.44 0.44	 CULATED % O 0.7 0.7 0.7 0.7	50 A & ACTUAL 9	0.51 % OF CALCULATED	1038 9 (MAX 135%) =	1298 12.3%	1335 102.9%
 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 	 1033 1033 329 1033 1033 	 35 35 5 35 35 35 	 37 2 37 37 37 	 	 10 10 5 10 10 	 0.12 0.06 0.12 0.12 	 	 	 	 494 494 30 494 494 	 0.8 0.8 0.8 0.8 0.8 0.8 	 618 618 38 618 618 	 1400 1400 350 1400 1400 	 [5] CAL 0.44 0.44 0.11 0.44 0.44 0.44 [5] CAL	 CULATED % O 0.7 0.7 0.7 0.7 CULATED % O	50 A & ACTUAL 9 105 A & ACTUAL 9	0.51 6 OF CALCULATED 0.70 6 OF CALCULATED	1038 (MAX 135%) = 1757 (MAX 135%) =	1298 12.3% 2510 42.2%	1335 102.9% 2510 100.0%
 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus)	 1033 1033 329 1033 1033 1013 1007	 35 35 5 35 35 35 35 35 35 35	 37 2 37 37 37 36 36 36	 	 10 10 5 10 10 10 10 10 10 10	 0.12 0.06 0.12 0.12 0.12 0.12 0.12	 	 	 	 494 494 30 494 494 482 481	0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8	 618 618 38 618 618 603 601	 1400 1400 350 1400 1410 1390	[5] CAL4 0.44 0.44 0.11 0.44 0.44 [5] CAL4 0.43 0.43	 CULATED % O 0.7 0.7 0.7 0.7 CULATED % O 0.7 0.7 0.7	50 A & ACTUAL 9 105 A & ACTUAL 9	0.51 6 OF CALCULATED 0.70 6 OF CALCULATED	1038 (MAX 135%) = 1757 (MAX 135%) =	1298 12.3% 2510 42.2%	1335 102.9% 2510 100.0%
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 64 Corridors 64 Corridors 68 Toilet rooms - public	 1033 1033 329 1033 1033 1013 1007 1381 1439 266	 35 35 35 35 35 35 35 35 	 37 2 37 2 37 37 36 36 36 	 	10 10 5 10 10 10 10 10 10	 0.12 0.06 0.12 0.12 0.12 0.12 0.12 0.12 0.06 0.06	 	 	 	 494 494 30 494 494 482 481 83 83 86	0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8	 618 618 38 618 618 603 601 104 108	 1400 1400 350 1400 1400 1410 1390 690 720 260	[5] CAL4 0.44 0.11 0.44 0.44 0.44 [5] CAL4 0.43 0.43 0.43 0.15 0.15 0.15	 CULATED % O 0.7 0.7 0.7 0.7 CULATED % O 0.7 0.7 0.7 0.7 	50 A & ACTUAL 9 105 A & ACTUAL 9	0.51 6 OF CALCULATED 0.70 6 OF CALCULATED	1038 (MAX 135%) = 1757 (MAX 135%) =	1298 12.3% 2510 42.2%	1335 102.9% 2510 100.0%
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 64 Corridors 64 Corridors 64 Corridors 68 Toilet rooms - public 68 Toilet rooms - public 81 Storage rooms	 1033 1033 329 1033 1033 1013 1007 1381 1439 266 269 263	 35 35 5 35 35 35 35 35 35 	 37 2 37 27 37 37 36 36 36 -	 	10 10 5 10 10 10 10 10	 0.12 0.06 0.12 0.12 0.12 0.12 0.12 0.06 0.06 0.12	 	 	 400 400 	 494 494 30 494 494 482 481 83 83 86 32	0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8	 618 618 38 618 618 603 601 104 108 40	 1400 1400 350 1400 1400 1410 1390 690 720 360 360 360	[5] CAL4 0.44 0.11 0.44 0.44 0.44 [5] CAL4 0.43 0.43 0.43 0.43 0.15 0.15 0.11	 CULATED % O 0.7 0.7 0.7 0.7 0.7 CULATED % O 0.7 0.7 0.7 0.7 	50 A & ACTUAL 9 105 A & ACTUAL 9	0.51 6 OF CALCULATED 0.70 6 OF CALCULATED	1038 (MAX 135%) = 1757 (MAX 135%) =	1298 12.3% 2510 42.2%	1335 102.9% 2510 100.0%
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 64 Corridors 64 Corridors 64 Corridors 68 Toilet rooms - public 68 Toilet rooms - public 81 Storage rooms 64 Corridors	1033 1033 329 1033 1033 1033 1013 1007 1381 1439 266 269 263 650	 35 35 35 35 35 35 35 35 -	37 37 2 37 37 37 36 36 36	 	10 10 5 10 10 10 10 10	 0.12 0.06 0.12 0.12 0.12 0.12 0.12 0.06 0.06 0.12 0.06 0.12 0.06 	 	 	 400 400 	 494 494 30 494 494 482 481 83 83 86 32 32 39 	0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8	 618 618 38 618 618 603 601 104 104 108 40 49 	 1400 350 1400 1400 1400 1410 1390 690 720 360 360 360 330 	[5] CAL4 0.44 0.44 0.44 0.44 0.44 [5] CAL4 0.43 0.43 0.43 0.43 0.15 0.15 0.11 0.15	 CULATED % O 0.7 0.7 0.7 0.7 0.7 CULATED % O 0.7 0.7 0.7 	50 A & ACTUAL 9 105 A & ACTUAL 9	0.51 % OF CALCULATED 0.70 % OF CALCULATED 0.82	1038 (MAX 135%) = 1757 (MAX 135%) = (MAX 135%) =	1298 12.3% 2510 42.2%	1335 102.9% 2510 100.0%
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 64 Corridors 64 Corridors 68 Toilet rooms - public 68 Toilet rooms - public 81 Storage rooms 64 Corridors 53 Office spaces	1033 1033 329 1033 1033 1033 1013 1007 1381 1439 266 269 263 650 83	35 35 35 35 35 35 35 35 35	37 37 2 37 37 37 36 36 36	 	10 10 5 10 10 10 10 10	 0.12 0.06 0.12 0.12 0.12 0.12 0.06 0.06 0.12 0.06 0.12 0.06			 400 400 	 494 494 30 494 494 482 481 83 86 32 32 39 10	0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8	618 618 38 618 618 618 603 601 104 108 40 49 13	1400 1400 350 1400 1400 1400 1410 1390 690 720 360 360 360 330 90	[5] CAL4 0.44 0.44 0.44 0.44 0.44 0.44 [5] CAL4 0.43 0.43 0.43 0.43 0.15 0.15 0.15 0.11 0.15 [5] CAL4 0.14	 CULATED % O 0.7 0.7 0.7 0.7 0.7 CULATED % O CULATED % O	50 A & ACTUAL 9 105 A & ACTUAL 9 59 A & ACTUAL 9	0.51 6 OF CALCULATED 0.70 6 OF CALCULATED 0.82 6 OF CALCULATED	1038 (MAX 135%) = 1757 (MAX 135%) = (MAX 135%) = (MAX 135%) =	1298 12.3% 2510 42.2% 1765 31.4%	1335 102.9% 2510 100.0% 1765 100.0%
 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 23 Classrooms (age 9 plus) 24 Corridors 64 Corridors 68 Toilet rooms - public 68 Toilet rooms - public 81 Storage rooms 64 Corridors 53 Office spaces 53 Office spaces 53 Office spaces 53 Office spaces 53 Office spaces	1033 1033 329 1033 1033 1033 1013 1007 1381 1439 266 269 263 650 269 263 650 83 83 84 158 143	35 35 35 35 35 35 35 35 35 35 35 35 35	37 37 2 37 37 37 37 37 37 36 36 36 36		10 10 5 10 10 10 10 10	 0.12 0.06 0.12 0.12 0.12 0.12 0.12 0.12 0.06 0.06 0.12 0.06 0.12 0.06 0.12 0.06 0.06 0.06 0.06 0.06 0.06 0.06			 400 400 400	 494 494 30 494 494 482 481 83 86 32 32 39 32 39 10 11 11 15 14	0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8	618 618 38 618 618 618 603 601 104 108 40 40 49 13 13 14 19 18	1400 1400 350 1400 1400 1400 1400 1400 1400 1400 14	[5] CAL4 0.44 0.44 0.44 0.44 0.44 0.44 [5] CAL4 0.43 0.43 0.43 0.43 0.15 0.15 0.11 0.15 [5] CAL4 0.16 0.14 0.16 0.11 0.12	 CULATED % O 0.7 0.7 0.7 0.7 0.7 CULATED % O 0.7 0.7 0.7 CULATED % O	50 A & ACTUAL 9 105 A & ACTUAL 9 59 A & ACTUAL 9	0.51 6 OF CALCULATED 0.70 6 OF CALCULATED 0.82 6 OF CALCULATED	1038 (MAX 135%) = 1757 (MAX 135%) = 1235 (MAX 135%) =	1298 12.3% 2510 42.2% 1765 31.4%	1335 102.9% 2510 100.0% 1765 100.0%
 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 23 Classrooms (age 9 plus) 24 Corridors 64 Corridors 68 Toilet rooms - public 68 Toilet rooms - public 81 Storage rooms 64 Corridors 53 Office spaces 53 Office spaces 53 Office spaces 53 Office spaces 18 Music / theater / dance 53 Office spaces	1033 1033 329 1033 1033 1033 1013 1007 1381 1439 266 269 263 650 269 263 650 83 83 84 158 143 4127 82	 35 35 35 35 35 35 35 35 35 -	37 37 2 37 37 37 37 37 36 36 36 36		10 10 5 10 10 10 10 10 10	0.12 0.06 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12			 400 400 400	 494 494 30 494 494 482 481 83 86 32 32 39 32 39 10 11 11 15 14 1698 10	0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8	 618 618 38 618 618 603 601 104 108 40 40 49 40 49 13 14 19 18 2123 13	1400 1400 350 1400 1400 1400 1400 1400 1400 1390 690 720 360 360 360 360 360 360 360 360 300 90 90 170 150 4810 90	[5] CAL 0.44 0.44 0.11 0.44 0.44 0.44 [5] CAL 0.43 0.43 0.43 0.15 0.15 0.15 0.11 0.15 [5] CAL 0.14 0.16 0.14 0.16 0.11 0.12 0.44 0.14	 CULATED % O 0.7 0.7 0.7 0.7 CULATED % O 0.7 0.7 CULATED % O CULATED % O	50 A & ACTUAL 9 105 A & ACTUAL 9 59 A & ACTUAL 9	0.51 OF CALCULATED 0.70 OF CALCULATED 0.82 OF CALCULATED	1038 (MAX 135%) = 1757 (MAX 135%) = 1235 (MAX 135%) =	1298 12.3% 2510 42.2% 1765 31.4%	1335 102.9% 2510 100.0% 100.0%
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 64 Corridors 64 Corridors 68 Toilet rooms - public 68 Toilet rooms - public 81 Storage rooms 64 Corridors 53 Office spaces	1033 1033 329 1033 1033 1033 1033 1013 1007 1381 1439 266 269 263 650 83 650 83 83 84 158 143 4127 82 121 272	 35 35 35 35 35 35 35 35 35 35 35 35 35	37 37 2 37 37 37 37 37 36 36 36 36		10 10 5 10 10 10 10 10 10 10	0.12 0.06 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12			 400 400	 494 494 30 494 494 482 481 83 86 32 39 32 39 10 11 11 15 14 1698 10 11 32 39 	0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8	618 618 38 618 618 618 603 601 104 108 40 40 49 13 13 14 19 18 2123 13 16 34	 1400 1400 350 1400 1400 1410 1390 690 720 360 360 360 360 360 360 360 36	[5] CAL4 0.44 0.44 0.11 0.44 0.44 [5] CAL4 0.43 0.43 0.43 0.43 0.15 0.15 0.11 0.15 [5] CAL4 0.14 0.16 0.11 0.12 0.14 0.14 0.12 0.12 0.12	 CULATED % O 0.7 0.7 0.7 0.7 0.7 0.7 CULATED % O 0.7 0.7 0.7 CULATED % O CULATED % O CULATED % O	50 A & ACTUAL 9 105 A & ACTUAL 9 59 A & ACTUAL 9	0.51 OF CALCULATED 0.70 OF CALCULATED 0.82 OF CALCULATED	1038 (MAX 135%) = 1757 (MAX 135%) = 1235 (MAX 135%) =	1298 12.3% 2510 42.2% 1765 31.4%	1335 102.9% 2510 100.0% 1765 100.0%
22 Classrooms (age 9 plus) 22 Classrooms (age 9 plus) 53 Office spaces 22 Classrooms (age 9 plus) 64 Corridors 68 Toilet rooms - public 81 Storage rooms 64 Corridors 53 Office spaces	1033 1033 329 1033 1033 1033 1033 1033 1013 1007 1381 1439 266 269 263 650 269 263 650 83 83 84 158 143 4127 82 121 272 1850 285	 35 35 35 35 35 35 35 35 35 35 35 5 5 5 5	37 37 2 37 37 37 37 37 37 37 36 36 36		10 10 5 10 10 10 10 10 10 10	 0.12 0.06 0.12 0.12 0.12 0.12 0.12 0.12 0.06 0.06 0.12 0.06 0.			 400 400	494 494 30 494 494 494 494 494 494 494 494 482 481 83 86 322 39 10 10 11 15 14 1698 10 13 27 761 28	0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8	618 618 38 618 618 618 618 603 601 104 108 40 40 49 13 13 14 19 18 2123 13 16 34 951 35 16	 1400 350 1400 1400 1410 1390 690 720 360 360 360 360 360 360 360 36	[5] CAL4 0.44 0.44 0.44 0.44 0.44 0.44 [5] CAL4 0.43 0.43 0.43 0.43 0.15 0.15 0.15 [5] CAL4 0.15 0.15 [5] CAL4 0.14 0.16 0.11 0.12 0.14 0.12 0.12 0.43 0.12 0.43 0.12 0.43 0.12 0.43 0.12 0.44 0.14 0.12 0.43 0.12 0.43 0.12 0.44 0.14 0.12 0.43 0.12 0.43 0.12 0.44 0.14 0.12 0.43 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.14 0.12 0.44 0.14 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.12 0.44 0.14 0.14 0.14 0.14 0.14 0.14 0.14	 ULATED % O 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7	50 A & ACTUAL 9 105 A & ACTUAL 9 59 A & ACTUAL 9	0.51 OF CALCULATED 0.70 OF CALCULATED 0.82 OF CALCULATED OF CALCULATED	1038 (MAX 135%) = 1757 (MAX 135%) = 1235 (MAX 135%) = (MAX 135%) =	1298 12.3% 2510 42.2% 1765 31.4%	1335 102.9% 2510 100.0% 1765 100.0%
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"CALCULATED % OA" IS THE MINIMUM OA TO MEET ASHRAE 62.1. "ACTUAL % OF CALCULATED" IS THE % OF THE CALCULATED OA VOLUME SCHEDULED TO BE PROVIDED

ATE Vot (V_{ot} = V_{oz}), 2019 OMSC 403.3.1.1.2.1

WITHIN 135% OF ASHRAE 62.1 (OEESC 2021, ASHRAE STND 90.1 - 2019, 6.5.3.7, a.). - EXCEPTION: MINIMUM EXHAUST AIR RATE.

2 EAL 56X24 4000 CFM 누ㅋㅋ 48X24 E 2000

- 1. ELECTRIC FURNACE. REMOVE.
- 2. REMOVE CEILING EXHAUST FAN, DUCTWORK TO REMAIN FOR RECONNECTION.
- 3. EXHAUST LOUVER TO REMAIN FOR REUSE.
- 4. EXHAUST FAN. REMOVE. 5. TO REMAIN.
- DEMOLITION INCLUDES ASSOCIATED SUPPORTS, PIPING, CONTROLS, LOW VOLTAGE WIRING AND APPURTENANCES, UNLESS OTHERWISE NOTED.
- DUCTWORK EXCEPTIONS: WHERE SHOWN AS CAPPED AND / OR SPECIFICALLY NOTED TO REMAIN. 2. LINE VOLTAGE DISCONNECT, AND SAFE-OFF, BY ELECTRICIAN.

VING SHEET IS FULL SIZE WHEN PRINTED 34"X44"

⊘ KEYED NOTES

- 1. EXHAUST FAN. REMOVE
- 2. EXHAUST GOOSENECK. REMOVE.
- 3. FRESH AIR INTAKE. REMOVE.
- ATTIC LEVEL EQUIPMENT ACCESS DOOR. REFERENCE.
 SKYLIGHT. REFERENCE.
- SUBFLOOR VENT OUTLET. TO REMAIN. REMOVE AND SAVE FOR REINSTALLATION ON NEW ROOF.
- REINSTALLATION ON NEW ROOF.
- 7. SUBFLOOR VENT OUTLET. TO REMAIN. REMOVE AND SAVE FOR REINSTALLATION ON NEW ROOF.
- 8. GRAVITY MAKEUP AIR INTAKE TO SUBFLOOR. TO REMAIN. REMOVE AND SAVE FOR REINSTALLATION ON NEW ROOF.
- 9. TO REMAIN FOR REUSE. VENT TERMINATION. REMOVE AND SAVE FOR REINSTALLATION ON NEW ROOF.
- 10. CAP / SEAL EXHAUST DUCT BELOW ROOF LEVEL AND ABANDON IN PLACE.
- 11. REMOVE VESTIBULE MINI-SPLIT CONDENSING UNIT AND SAVE FOR REINSTALLATION ON NEW ROOF.

GENERAL NOTES

ANNOTATED ON THIS PLAN.

- 1. DEMOLITION INCLUDES ASSOCIATED SUPPORTS, PIPING, CONTROLS, LOW VOLTAGE WIRING AND APPURTENANCES, UNLESS
- OTHERWISE NOTED.
- LINE VOLTAGE DISCONNECT, AND SAFE-OFF, BY ELECTRICIAN.
 ONLY HVAC RELATED ROOF LEVEL VENT TERMINATIONS SHOWN /

SHEET: 8 OF 15 M2.30

PROVIDE SUPPORTS FOR OUTDOOR MOUNTED DUCTWORK. SEE DETAIL 9 / M4.00. SUPPORT SPACING IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, LATEST EDITION, IN ACCORDANCE WITH OMSC CHAPTER 6. DUCT SUPPORT SPACING SHALL NOT EXCEED 6 LINEAL FOOT OC, WITH AT LEAST ONE SUPPORT AT EACH CHANGE IN DIRECTION.

OTHER CEILING MOUNTED DEVICES. FINAL LOCATION SUBJECT TO APPROVAL BY OWNER AND / OR ARCHITECT. FINAL PLACEMENT OF WALL HUNG DEVICES (SURFACE, OR

RECESSED) SHALL BE COORDINATED WITH FINAL ARRANGEMENT OF ELECTRICAL AND ARCHITECTURAL WALL MOUNTED ELEMENTS. FINAL LOCATION SUBJECT TO APPROVAL BY OWNER AND / OR ARCHITECT.

PROVIDED BY OTHERS. COORDINATE WITH CONCRETE SUB CONTRACTOR. SEE STRUCTURAL DRAWINGS. ()_ __ _ AGU-1 7 M4.00

DOOR ADDED —

⊘ KEYED NOTES

- 1. REINSTALL SAVED SUBFLOOR VENT INLET.
- 2. REINSTALL SAVED GRAVITY MAKEUP AIR INTAKE TO SUBFLOOR.
- 3. CONNECT AND EXTEND EXISTING DUCTWORK UP TO NEW ROOF LEVEL AND RECONNECT RELOCATED VENT TERMINATION.
- 4. REINSTALL SAVED GRAVITY MAKEUP AIR INTAKE TO SUBFLOOR.
- . REINSTALL EXISTING VESTIBULE MINI-SPLIT CONDENSING UNIT ON NEW ROOF, AND RECONNECT TO VESTIBULE CEILING CASSETTE.

GENERAL NOTES

I. COORDINATE ROOF MOUNTED EQUIPMENT AND VENT TERMINATIONS WITH NEW ROOF CONFIGURATION AND STRUCTURAL FRAMING CHANGES. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.

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PROJECT:	1951 Don Street I Springfield I OR 97477 OFFICE: (541) 726-0100 I FAX: (541) 726-4799 www.comfortflow.com	Engineering, Design, Budgeting, Installation & Service	ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT MAY BE USED, REPRODUCED OR TRANSMITTED IN ANY FORM OP BY ANY MEANS ELECTRONIC OD MECHANICAL	WITHOUT WRITTEN PERMISSION FROM THE ENGINEERING DEPARTMENT OF COMFORT FLOW HEATING.
	INILLICUMA SCHOUL RERUUF & CLASSROUM AUDITON COOS BAY SCHOOL DISTRICT		260 2ND AVENUE	COOS BAY, OREGON 97420
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14 OF 15

OPERATING POINTS TO BE OEESC 2021 / ASHRAE 90.1-2019 COMPLIANT FOR MULTI-ZONE VARIABLE AIR VOLUME (GREATER THAN 54K BTU) SYSTEMS. OPERATION CONTROLLED FROM LOCAL PANEL HOA

AUTO: UNIT COMPONENTS OPERATE / MODULATE IN ACCORDANCE WITH SYSTEM CONTROL PROGRAMS, SUBJECT TO SAFETY LIMITS. - OFF: UNIT COMPONENTS INOPERATIVE. - HAND: UNIT COMPONENTS "ON", SUBJECT TO SAFETY LIMITS. OPERATIONAL STATUS FOR THE SUPPLY FAN AND EXHAUST FAN SHALL BE REPORTED THROUGH BAS.

SYSTEM OPERATES CONTINUOUSLY, MODULATING IN RESPONSE TO CONTROLS AND MODE SELECTION TO MAINTAIN SET-POINTS. - SPACE COOLING/HEATING SET-POINTS: REFER TO SPECIFICATION SECTION 23 09 00.

UNOCCUPIED HOURS OPERATION - SPACE COOLING/HEATING SET-BACK SET-POINT: REFER TO SPECIFICATION SECTION 23 09 00. TEMPERATURE MAINTENANCE: AIR HANDLING SYSTEM SHALL OPERATE IN RESPONSE TO NIGHT SET-BACK PROGRAM TO MAINTAIN MINIMUM AND MAXIMUM SPACE TEMPERATURES. SYSTEM MODULATES TO FULL RECIRCULATION. ASSOCIATED EXHAUST FANS OFF. SYSTEM OPERATES AT 50% OF OCCUPIED HOURS AIR FLOW RATE. SYSTEM SHALL ACTIVATE IF: - HEATING: TWO, OR MORE, OF ZONES SERVED BY THIS AIR HANDLER ARE AT LEAST 5 DEG F BELOW SET-BACK SET POINT

- COOLING: TWO, OR MORE, OF ZONES SERVED BY THIS AIR HANDLER ARE AT LEAST 5 DEG F ABOVE SET-BACK HOUR SET POINT ONCE ACTIVATED, SYSTEM SHALL REMAIN ON UNTIL TWO OF THE ZONES ARE 5 DEF F ABOVE/BELOW (HEATING/COOLING) SET-BACK SET-POINT.

SYSTEM SHALL ACTIVATE / RETURN TO OCCUPIED HOUR OPERATION UPON ACTIVATION OF UNOCCUPIED HOUR OVERRIDE SWITCH AT ANY ONE OF ZONES SERVED BY THIS UNIT. AT END OF PROGRAMMED OVERRIDE TIME LIMIT SYSTEM RETURNS TO UNOCCUPIED HOUR OPERATION, OR IF NEW OCCUPIED PERIOD STARTS, SYSTEM STAYS IN OCCUPIED MODE FAN MODULATION AND STATIC PRESSURE CONTROL: - MAINTAIN NORMAL STATIC PRESSURE AS SENSED BY STATIC PRESSURE SENSOR IN SUPPLY PLENUM.

- NORMAL STATIC PRESSURE SET-POINT INITIALLY SET: 0.75" W.G. FIELD ADJUST FOR FINAL SET-POINT DURING START-UP AND SYSTEM TUNING. SYSTEM MODULATES TO PROVIDE CONSTANT VOLUME (AIR HANDLER, INTERLOCKED EXHAUST FANS, TERMINAL UNITS), BASED ON THE OWNER SELECTED ROOM USE STATUS. LOCKER ROOM USE MODE: SYSTEM OPERATES TO PROVIDE AIRFLOWS SHOWN ON THE HVAC PLANS. - STORAGE ROOM USE MODE: SYSTEM MODULATES TO PROVIDE 50% OF AIRFLOWS SHOWN ON THE HVAC PLANS FOR THE LOCKER ROOM AREAS (PROVIDE CAPABILITY TO SELECT EITHER LOCKER ROOM AREA INDIVIDUALLY FOR THIS OPERATIONAL MODE). DEDICATED LOCKER / SHOWER ROOM EXHAUST FANS REDUCE TO 50% AIRFLOW. INTERLOCKED SMALL TOILET ROOM EXHAUST FANS REMAIN AT FULL AIR FLOW. PROVIDE 100% OF AIRFLOWS SHOWN FOR THE WEIGHT ROOM AREA. TEMPERING (HEATING) / COOLING: HEATING: HEATING COMPONENTS TO MODULATE IN RESPONSE TO MIXED AIR TEMPERATURE TO PROVIDE MINIMUM 60 DEG F LEAVING AIR TEMPERATURE FROM HEATING SECTION.

COOLING: COOLING COMPONENTS TO MODULATE, IN CONJUNCTION WITH ECONOMIZER COOLING SEQUENCE (FIRST STAGE OF COOLING) IN RESPONSE TO ZONE TEMPERATURES, REPORTED VIA BAS, TO MAINTAIN ZONE COOLING SET-POINTS. - SUPPLY AIR COOLING TEMPERATURE RESET: SUPPLY AIR TEMPERATURE TO RESET UP/DN BETWEEN A RANGE OF 56 DEG F AND ZONE COOLING SET-POINT. - ALL ZONES SATISFIED: SUPPLY AIR TEMPERATURE = AVERAGE OF ZONE COOLING SET-POINTS. - ALL ZONES CALLING FOR COOLING: SUPPLY AIR TEMPERATURE RESETS DOWN, IN 3-MINUTE INTERVALS, UNTIL AT LEAST TWO OF THE ZONES ARE NOMINALLY 1 DEG F BELOW

ROOM COOLING SET-POINT - SUPPLY AIR HEATING TEMPERATURE RESET: SAME AS COOLING RESET SEQUENCE EXCEPT RESET DOWN BETWEEN RANGE OF 85 DEG F AND ZONE HEATING SET-POINT. CONOMIZER / AUTO DAMPER CONTRO OUTSIDE AIR AND RETURN DAMPERS SHALL MODULATE IN CONJUNCTION. RETURN DAMPERS TRACK OUTSIDE AIR DAMPER.

OUTSIDE AIR DAMPER MODULATES BETWEEN MINIMUM SETTING FOR VENTILATION AIR TO FULL OPEN FOR ECONOMIZER COOLING WHEN OUTDOOR AIR TEMPERATURE PERMITS (OUTDOOR AIR TEMPERATURE LESS THAN ROOM COOLING SET-POINT). OUTSIDE AIR DAMPER CLOSED WHEN UNIT IS DE-ENERGIZED.

ONE HOUR BEFORE START OF SCHEDULED OCCUPANCY PERIOD, IF 50%, OR MORE, OF ZONES ARE AT LEAST 3 DEGREES BELOW HEATING SET-POINT, THEN START AIR HANDLING SYSTEM (RTU AND TERMINAL DEVICES) AND OPERATE IN FOLLOWING CONFIGURATION UNTIL 95% OF ZONES MEET HEATING SET-POINT. STOP IF 2 OR MORE ZONES REACH COOLING SET-POINT OR IF OCCUPIED PERIOD BEGINS. - OUTSIDE AIR DAMPER(S) CLOSED - AIR HANDLER EXHAUST FAN OFF, INTERLOCKED EXHAUST FANS OFF.

- RETURN AIR DAMPER(S) OPEN. - HEATING EQUIPMENT OPERATES AS NEEDED TO SATISFY SPACE REQUIREMENTS.

IF THE LEAVING SUPPLY AIR TEMPERATURE DROPS BELOW 45 DEG F, MODULATE DAMPERS TO REDUCE OA % TO EQUAL THE TOTAL GENERAL EXHAUST VOLUME TAKEN FROM THE AREAS SERVED BY THIS SYSTEM, AND SEND AN ALARM THROUGH THE BUILDING AUTOMATION SYSTEM. IF THE LEAVING SUPPLY AIR TEMPERATURE DROPS BELOW 40 DEG F, MODULATE DAMPERS TO FULL RECIRCULATION, AND SEND AN ALARM THROUGH THE BUILDING AUTOMATION SYSTEM. SYSTEM RETURNS TO NORMAL OPERATION WHEN LEAVING SUPPLY AIR TEMPERATURE REACHES 55 DEG F.

VAV AGU CONTROL

CONTROL DAMPER SHALL MODULATE AND HEATING COIL SHALL ENERGIZE / MODULATE IN RESPONSE TO THE SPACE SENSOR FOR THE ZONE SERVED, IN ACCORDANCE WITH HEATING, COOLING, AND DEADBAND TEMPERATURE SET-POINTS. SENSOR MOUNTED DOWNSTREAM OF EACH TU TO MONITOR SUPPLY AIR TEMPERATURE.

2-POSITION: DAMPER SET IN RESPONSE LOCKER OR STORAGE ROOM MODE OPERATION (SEE VAV AGU CONTROL). - COOLING: HEATING COIL DE-ENERGIZED. DEAD-BAND: HEATING COIL DE-ENERGIZED. - HEATING: HEATING COIL ENERGIZED (MODULATED VIA SCR CONTROL). WHEN ROOM TEMPERATURE IS SATISFIED, COIL DE-ENERGIZED. CONSTANT VOLUME: DAMPER MODULATES TO MAINTAIN SCHEDULED AIRFLOW.

· COOLING, DEAD-BAND, HEATING: SAME AS LISTED PREVIOUSLY. PRIMARY DAMPER CLOSED, REHEAT COIL DE-ENERGIZED.

- SUBJECT TO MORNING WARM UP / COOL DOWN. SUBJECT TO NIGHT (UNOCCUPIED) TEMPERATURE MAINTENANCE. UNOCCUPIED HOUR OVERRIDE SWITCH

WHEN ACTIVATED BY THE SPACE OCCUPANT, SYSTEM (TU AND ASSOCIATED AIR HANDLER) SHALL TEMPORARILY RETURN TO OCCUPIED HOUR OPERATION. SYSTEM RETURNS TO UNOCCUPIED OPERATION AFTER A PRESET TIME LIMIT. TIME LIMIT INITIALLY SET FOR 2 HOURS.

MORNING WARM UP / COOL DOW PRIMARY AIR VALVE INITIALLY MODULATES TO MAX OPEN SETTING IF SPACE REQUIRES COOLING, OR MODULATES TO HEATING SETTING AND HEATING COIL ENERGIZED IF SPACE REQUIRES HEATING. PRIMARY AIR VALVE THEN RETURNS TO MODE SELECTION POSITION, AND COIL DE-ENERGIZED AS APPLICABLE, AS OCCUPIED HOUR SPACE TEMPERATURE SET-POINTS ARE SATISFIED.

NIGHT TEMPERATURE MAINTENANCI OPERATION SAME AS MORNING WARM UP / COOL DOWN SEQUENCE, EXCEPT SET-POINTS. REFER TO SPECIFICATION SECTION 23 09 00 FOR SET-POINTS.

9 CV & 2-POSITION TU CONTROL

AIR HANDLING SYSTEM IS CONSTANT VOLUME WITH OCCUPIED / UNOCCUPIED PERIOD OPERATION. SYSTEM, AND INTERLOCKED EXHAUST FANS, OPERATE IN REDUCED VOLUME MODE

WHEN UNOCCUPIED DURING OCCUPIED HOURS, AND DURING UNOCCUPIED TEMPERATURE MAINTENANCE AS NOTED HEREIN. RETURN AIR MODULATION SHALL TRACK SUPPLY AIR MODULATION. SYSTEM OPERATES IN RESPONSE TO BUILDING AUTOMATION SYSTEM PROGRAMMING IN ACCORDANCE WITH THESE LISTED OPERATIONAL REQUIREMENTS AND SET-POINTS, SUBJECT TO SAFETY LIMITS AND LOCAL DISCONNECT. SEQUENCES AND OPERATING POINTS TO BE OEESC 2021 / ASHRAE 90.1-2019 COMPLIANT FOR SINGLE-ZONE CONSTANT AIR VOLUME (GREATER THAN 54K BTU) SYSTEMS.

OPERATION CONTROLLED FROM LOCAL PANEL HOA: - AUTO: UNIT COMPONENTS OPERATE / MODULATE IN ACCORDANCE WITH SYSTEM CONTROL PROGRAMS, SUBJECT TO SAFETY LIMITS. - OFF: UNIT COMPONENTS INOPERATIVE.

OPERATIONAL STATUS FOR THE SUPPLY FAN AND EXHAUST FAN SHALL BE REPORTED THROUGH BAS.

HAND: UNIT COMPONENTS "ON", SUBJECT TO SAFETY LIMITS.

DURING UNOCCUPIED HOURS SYSTEM SHALL ACTIVATE IF:

FEMPERING (HEATING) / COOLING

- RETURN AIR DAMPER(S) OPEN.

SYSTEM OPERATES CONTINUOUSLY, MODULATING IN RESPONSE TO CONTROLS TO MAINTAIN SET-POINTS. DURING NORMALLY SCHEDULED OCCUPIED HOURS, IF NO OCCUPANCY IS SENSED, SYSTEM SHALL CHANGED TO UNOCCUPIED HOURS OPERATION. SYSTEM SHALL RETURN TO OCCUPIED HOURS OPERATION WHEN OCCUPANCY IS SENSED DURING OCCUPIED HOURS.

- SPACE COOLING/HEATING SET-POINTS: REFER TO SPECIFICATION SECTION 23 09 00.

SPACE COOLING/HEATING SET-BACK SET-POINT: REFER TO SPECIFICATION SECTION 23 09 00. NIGHT (UNOCCUPIED) TEMPERATURE MAINTENANCE: SYSTEM SHALL OPERATE IN RESPONSE TO NIGHT SET-BACK PROGRAM TO MAINTAIN MINIMUM AND MAXIMUM SPACE TEMPERATURES. SYSTEM OPERATES AT 50% OF OCCUPIED HOURS AIR FLOW RATE.

- HEATING: AREA SERVED BY THIS AIR HANDLER IS AT LEAST 5 DEG F BELOW SET-BACK SET POINT COOLING: AREA SERVED BY THIS AIR HANDLER IS AT LEAST 5 DEG F ABOVE SET-BACK HOUR SET POINT ONCE ACTIVATED, SYSTEM SHALL REMAIN ON UNTIL AREAS SERVED IS 5 DEG F ABOVE/BELOW (HEATING/COOLING) SET-BACK SET-POINT.

SYSTEM SHALL ACTIVATE / RETURN TO OCCUPIED HOUR OPERATION UPON ACTIVATION OF UNOCCUPIED HOUR OVERRIDE SWITCH AT AREA SERVED BY THIS UNIT. AT END OF

PROGRAMMED OVERRIDE TIME LIMIT SYSTEM RETURNS TO UNOCCUPIED HOUR OPERATION, OR IF NEW OCCUPIED PERIOD STARTS, SYSTEM STAYS IN OCCUPIED MODE. MODULATE FANS, THROUGH THEIR VFD'S, TO VARY AIR FLOW THROUGH SYSTEM BASED ON OCCUPIED VS. UNOCCUPIED STATUS OR SCHEDULE, AS PREVIOUSLY DESCRIBED.

- DETERMINE VFD OPERATIONAL FREQUENCY SET-POINTS FOR FULL VS. HALF-FLOW BASED ON TAB MEASUREMENTS, THEN PROGRAM OPERATIONAL POINTS.

HEATING COMPONENTS TO MODULATE IN RESPONSE TO MIXED AIR TEMPERATURE TO PROVIDE MINIMUM 55 DEG F LEAVING AIR TEMPERATURE FROM HEATING SECTION. COOLING COMPONENTS TO MODULATE, IN CONJUNCTION WITH ECONOMIZER COOLING SEQUENCE (FIRST STAGE OF COOLING) IN RESPONSE TO SUPPLY AIR TEMPERATURE TO PROVIDE NOMINAL 55 DEG F SUPPLY AIR TEMPERATURE. - SUPPLY AIR COOLING TEMPERATURE RESET: SUPPLY AIR TEMPERATURE TO RESET UP/DN BETWEEN A RANGE OF 56 DEG F AND ZONE COOLING SET-POINT. - ZONE SATISFIED: SUPPLY AIR TEMPERATURE = ZONE COOLING SET-POINTS. - ZONE CALLING FOR COOLING: SUPPLY AIR TEMPERATURE RESETS DOWN, IN 3-MINUTE INTERVALS, UNTIL ZONE IS NOMINALLY 1 DEG F BELOW ROOM COOLING SET-POINT.

SUPPLY AIR HEATING TEMPERATURE RESET: SAME AS COOLING RESET SEQUENCE EXCEPT RESET DOWN BETWEEN RANGE OF 85 DEG F AND ZONE HEATING SET-POINT. UTO DAMPER CONTROL / ECONOMIZER:

OUTSIDE AIR AND RETURN DAMPERS SHALL MODULATE IN CONJUNCTION. OUTSIDE AIR DAMPER MODULATES BETWEEN MINIMUM SETTING FOR VENTILATION AIR TO FULL OPEN FOR ECONOMIZER COOLING WHEN OUTDOOR AIR TEMPERATURE PERMITS (OUTDOOR AIR TEMPERATURE LESS THAN 70 DEG F). RETURN DAMPERS TRACK OUTSIDE AIR DAMPER.

MORNING WARM UF ONE HOUR BEFORE START OF SCHEDULED OCCUPANCY PERIOD, IF AREA SERVED IS LEAST 3 DEGREES BELOW HEATING SET-POINT, THEN START AIR HANDLING SYSTEM (AIR HANDLER AND ANY TERMINAL DEVICES) AND OPERATE IN FOLLOWING CONFIGURATION UNTIL AREA SERVED MEETS HEATING SET-POINT. STOP IF AREA REACHES COOLING SET-POINT OR IF OCCUPIED

SYSTEM RETURNS TO NORMAL OPERATION WHEN LEAVING SUPPLY AIR TEMPERATURE REACHES 55 DEG F.

PERIOD BEGINS. - OUTSIDE AIR DAMPER(S) CLOSED - AIR HANDLER EXHAUST FAN OFF, INTERLOCKED EXHAUST FANS OFF.

OUTSIDE AIR DAMPER CLOSED WHEN UNIT IS DE-ENERGIZED.

- SUPPLY AIR VFD MODULATE TO MAINTAIN OCCUPIED HOUR AIR FLOW. HEATING EQUIPMENT OPERATES AS NEEDED TO SATISFY SPACE REQUIREMENTS.

IF THE LEAVING SUPPLY AIR TEMPERATURE DROPS BELOW 45 DEG F, MODULATE DAMPERS TO REDUCE OA % TO EQUAL THE TOTAL GENERAL EXHAUST VOLUME TAKEN FROM THE AREAS SERVED BY THIS SYSTEM, AND SEND AN ALARM THROUGH THE BUILDING AUTOMATION SYSTEM. IF THE LEAVING SUPPLY AIR TEMPERATURE DROPS BELOW 40 DEG F, MODULATE DAMPERS TO FULL RECIRCULATION, AND SEND AN ALARM THROUGH THE BUILDING AUTOMATION SYSTEM.

CV AGU, RTU CONTROL

GENERAL: CONSTANT VOLUME EXHAUST FAN OPERATES CONTINUOUSLY DURING OCCUPIED HOURS. RELAY WITH LOCAL DISCONNECT PROVIDED BY ELECTRICAL. - ON: 2-POSITION DAMPER OPEN, EF OPERATES IN ACCORDANCE WITH INTERLOCKS AND PROGRAMMING, SUBJECT TO SAFETY LIMITS.

- OFF: 2-POSITION DAMPER CLOSED, EF INOPERATIVE. EXHAUST FAN OPERATION / STATUS MONITORED WITH AN INDIVIDUAL CURRENT TRANSFORMER SWITCH.

7 IN-LINE EF CONTROL

CONTROL DAMPER SHALL MODULATE AND HEATING COIL SHALL ENERGIZE / MODULATE IN RESPONSE TO THE SPACE SENSOR FOR THE ZONE SERVED, IN ACCORDANCE WITH HEATING, COOLING, AND DEADBAND TEMPERATURE SET-POINTS, SENSOR MOUNTED DOWNSTREAM OF EACH TU TO MONITOR SUPPLY AIR TEMPERATURE. OCCUPIED HOURS - COOLING: HEATING COIL DE-ENERGIZED. DAMPER MODULATES BETWEEN MIN AND MAX SETTINGS IN RESPONSE TO ROOM

COOLING DEMAND. - DEAD-BAND: PRIMARY AIR VALVE AT MIN SETTING. HEATING COIL DE-ENERGIZED HEATING: PRIMARY AIR VALVE MODULATES TO MINIMUM SETTING. HEATING COIL ENERGIZED (MODULATED VIA SCR CONTROL). WHEN ROOM TEMPERATURE IS SATISFIED, COIL DE-ENERGIZED.

PRIMARY DAMPER CLOSED, REHEAT COIL DE-ENERGIZED. - SUBJECT TO MORNING WARM UP / COOL DOWN. SUBJECT TO NIGHT (UNOCCUPIED) TEMPERATURE MAINTENANCE.

AUTOMATIC SHUT-OFF DAMPER

REQUIRED FOR EF OVER 300 CFM,

PROVIDED. REFER TO PLANS AND

RELAY WITH LOCAL DISCONNECT PROVIDED BY ELECTRICAL

OTHERWISE GRAVITY BD

EQUIPMENT SCHEDULES FOR

AUTO DAMPER REQUIREMENT.

00 FOR SET-POINTS.

JNOCCUPIED HOUR OVERRIDE SWITCH WHEN ACTIVATED BY THE SPACE OCCUPANT, SYSTEM (TU AND ASSOCIATED AIR HANDLER) SHALL TEMPORARILY RETURN TO OCCUPIED HOUR OPERATION. SYSTEM RETURNS TO UNOCCUPIED OPERATION AFTER A PRESET TIME LIMIT. TIME LIMIT INITIALLY SET FOR 2 HOURS.

MORNING WARM UP / COOL DOWN PRIMARY AIR VALVE INITIALLY MODULATES TO MAX OPEN SETTING IF SPACE REQUIRES COOLING, OR MODULATES TO HEATING SETTING AND HEATING COIL ENERGIZED IF SPACE REQUIRES HEATING. PRIMARY AIR VALVE THEN MODULATES BACK TO MINIMUM, AND COIL DE-ENERGIZED AS APPLICABLE, AS OCCUPIED HOUR SPACE TEMPERATURE SET-POINTS ARE SATISFIED. TEMPERATURE MAINTENANC OPERATION SAME AS MORNING WARM UP / COOL DOWN SEQUENCE, EXCEPT SET-POINTS. REFER TO SPECIFICATION SECTION 23 09

5 VAV TU CONTROL

- 50 TO 90 DEG F SET-POINT CAPABILITY.

DDC SPACE SENSOR WITH DISPLAY. CONFIGURED FOR

DISPLAYED TEMPERATURES. WITH CO2 SENSOR WHERE

- SET POINT ADJUSTMENT LIMITED THROUGH PROGRAMMING.

SEE TU CONTROL DESCRIPTION FOR MULTIZONE SYSTEMS, AND

SYSTEM CONTROL DESCRIPTION FOR SINGLE ZONE SYSTEMS.

PUSH BUTTONS: USER ADJUSTMENT OF SPACE SET POINT.

UNOCCUPIED HOUR OVERRIDE

SPECIFICATIONS: - RTD TYPE. 1000 OHM AT 77 DEG F

- 40 TO 90 DEG F DISPLAY CAPABILITY.

CONTINUOUS DISPLAY OF THE SET-POINT AND THE OFFSET OF

TYPE 1 SPACE SENSOR

INDICATED.

BAS SPACE TEMPERATURE SENSOR

TYPE 2 SPACE SENSOR

PUSH BUTTONS

DDC SPACE SENSOR (NON-DISPLAY TYPE).

SPECIFICATIONS: - RTD TYPE. 1000 OHM AT 77 DEG F

- ON: 2-POSITION DAMPER OPEN, EF OPERATES IN ACCORDANCE WITH INTERLOCKS AND PROGRAMMING, SUBJECT TO SAFETY LIMITS. - OFF: 2-POSITION DAMPER CLOSED, EF INOPERATIVE. EXHAUST FAN OPERATION / STATUS MONITORED WITH AN INDIVIDUAL CURRENT TRANSFORMER SWITCH.

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GENERAL: CONSTANT VOLUME EXHAUST FAN OPERATES CONTINUOUSLY DURING OCCUPIED HOURS.

CORRIDORS. YPE 1 SENSOR AL OTHER LOCATIONS

SERVING HALLWAYS /

TERMINAL UNITS ONLY

TYPE 2 SENSOR FOR

SENSOR

DISCHARGE AIR) TEMPERATURE

AIR HANDLER EXHAUST FAN OFF, INTERLOCKED EXHAUST FANS OFF. - RETURN AIR DAMPER(S) OPEN. - SUPPLY AIR VFD MODULATE TO MAINTAIN OCCUPIED HOUR DUCT PRESSURE - HEATING EQUIPMENT OPERATES AS NEEDED TO SATISFY SPACE REQUIREMENTS. OPERATIONAL START TIME - 4:00 AM. IF 50%, OR MORE, OF ZONES ARE AT 75 DEG F, OR ABOVE, AND OUTSIDE AIR TEMPERATURE IS BETWEEN 45 AND 70 DEGREES F, THEN START AIR HANDLING SYSTEM (AIR HANDLER AND TERMINAL DEVICES) AND OPERATE IN FOLLOWING CONFIGURATION UNTIL 95% OF ZONES ARE BELOW COOLING SET-POINT. STOP IF 2 OR MORE

IF THE LEAVING SUPPLY AIR TEMPERATURE DROPS BELOW 40 DEG F, MODULATE DAMPERS TO FULL RECIRCULATION, AND SEND AN ALARM THROUGH THE BUILDING AUTOMATION

(RTU AND TERMINAL DEVICES) AND OPERATE IN FOLLOWING CONFIGURATION UNTIL 95% OF ZONES MEET HEATING SET-POINT. STOP IF 2 OR MORE ZONES REACH COOLING SET-POINT OR

NE HOUR BEFORE START OF SCHEDULED OCCUPANCY PERIOD, IF 50%, OR MORE, OF ZONES ARE AT LEAST 3 DEGREES BELOW HEATING SET-POINT, THEN START AIR HANDLING SYSTEM IE OCCUPIED PERIOD BEGINS - OUTSIDE AIR DAMPER(S) CLOSED

- OFF: UNIT COMPONENTS INOPERATIVE.

FAN MODULATION AND STATIC PRESSURE CONTROL

MAINTAINED, OR AT START OF NEXT OCCUPIED PERIOD.

CCUPIED HOURS OPERATIO

HAND: UNIT COMPONENTS "ON", SUBJECT TO SAFETY LIMITS.

AREAS SERVED BY THIS SYSTEM, WHICHEVER IS GREATER. FOR THIS SYSTEM. - CO2 CONTROL OPERATION SUBJECT TO ECONOMIZER OPERATION, AND UNOCCUPIED MODE OPERATION.

- DURING OCCUPIED HOURS OPERATION WHEN CO2 CONCENTRATION, REPORTED FROM ALL ASSOCIATED ZONE SENSORS, ARE ALL LESS THAN 750 PPM, MODULATE OUTSIDE AIR,

ROOM CO2 SENSORS ASSOCIATED WITH EACH TERMINAL ZONE (REFER TO HVAC FLOOR PLANS FOR LOCATIONS) TO MONITOR ZONE CO2 LEVELS.

RETURN, AND EXHAUST TO REDUCE THE % OUTSIDE AIR PROVIDED, DOWN TO A 50% OF SCHEDULED OA VOLUME, OR EQUAL TO THE TOTAL GENERAL EXHAUST VOLUME TAKEN FROM THE - WHEN CO2 CONCENTRATION EXCEEDS 900 PPM IN ANY OF THE ZONES ASSOCIATED WITH THIS SYSTEM, MODULATE OUTSIDE AIR, RETURN, AND EXHAUST TO SCHEDULED % OUTSIDE AIR

OUTSIDE AIR DAMPER CLOSED WHEN UNIT IS DE-ENERGIZED.

OUTSIDE AIR DAMPER MODULATES BETWEEN MINIMUM SETTING FOR VENTILATION AIR TO FULL OPEN FOR ECONOMIZER COOLING WHEN OUTDOOR AIR TEMPERATURE PERMITS (OUTDOOR AIR TEMPERATURE LESS THAN 70 DEG F). RETURN DAMPERS TRACK OUTSIDE AIR DAMPER.

COOLING COMPONENTS TO MODULATE, IN CONJUNCTION WITH ECONOMIZER COOLING SEQUENCE (FIRST STAGE OF COOLING) IN RESPONSE TO SUPPLY AIR TEMPERATURE TO PROVIDE

NOMINAL 55 DEG F SUPPLY AIR TEMPERATURE SUPPLY AIR COOLING TEMPERATURE RESET: SUPPLY AIR TEMPERATURE TO RESET UP/DN BETWEEN A RANGE OF 56 DEG F AND ZONE COOLING SET-POINT. - ALL ZONES SATISFIED: SUPPLY AIR TEMPERATURE = AVERAGE OF ZONE COOLING SET-POINTS. - ALL ZONES CALLING FOR COOLING: SUPPLY AIR TEMPERATURE RESETS DOWN, IN 3-MINUTE INTERVALS, UNTIL AT LEAST TWO OF THE ZONES ARE NOMINALLY 1 DEG F BELOW SUPPLY AIR HEATING TEMPERATURE RESET: SAME AS COOLING RESET SEQUENCE EXCEPT RESET DOWN BETWEEN RANGE OF 85 DEG F AND ZONE HEATING SET-POINT AUTO DAMPER CONTROL / ECONOMIZER: OUTSIDE AIR AND RETURN DAMPERS SHALL MODULATE IN CONJUNCTION.

UNOCCUPIED HOURS OPERATION: - SPACE COOLING/HEATING SET-BACK SET-POINT: REFER TO SPECIFICATION SECTION 23 09 00. NIGHT (UNOCCUPIED) TEMPERATURE MAINTENANCE: SYSTEM SHALL OPERATE IN RESPONSE TO NIGHT SET-BACK PROGRAM TO MAINTAIN MINIMUM AND MAXIMUM SPACE TEMPERATURES - DURING UNOCCUPIED HOURS SYSTEM SHALL ACTIVATE IF: - HEATING: 50%, OR MORE, OF ZONES SERVED BY THIS AIR HANDLER ARE AT LEAST 5 DEG F BELOW SET-BACK SET POINT - COOLING: 50%, OR MORE, OF ZONES SERVED BY THIS AIR HANDLER ARE AT LEAST 5 DEG F ABOVE SET-BACK HOUR SET POINT ONCE ACTIVATED, SYSTEM SHALL REMAIN ON UNTIL 50% OF ZONES ARE 5 DEG F ABOVE/BELOW (HEATING/COOLING) SET-BACK SET-POINT. YSTEM SHALL ACTIVATE / RETURN TO OCCUPIED HOUR OPERATION UPON ACTIVATION OF UNOCCUPIED HOUR OVERRIDE SWITCH AT ANY ONE OF ZONES SERVED BY THIS UNIT. AT END OF PROGRAMMED OVERRIDE TIME LIMIT SYSTEM RETURNS TO UNOCCUPIED HOUR OPERATION, OR IF NEW OCCUPIED PERIOD STARTS, SYSTEM STAYS IN OCCUPIED MODE.

AIR HANDLING SYSTEM IS VARIABLE VOLUME WITH OCCUPIED / UNOCCUPIED PERIOD OPERATION. RETURN AIR MODULATION SHALL TRACK SUPPLY AIR MODULATION. SYSTEM, AND

INTERLOCKED EXHAUST FANS, OPERATE IN RESPONSE TO BUILDING AUTOMATION SYSTEM PROGRAMMING IN ACCORDANCE WITH THESE LISTED OPERATIONAL REQUIREMENTS AND SET-POINTS, SUBJECT TO SAFETY LIMITS, LOCAL DISCONNECT, OR LOCAL DSD SHUT DOWN. ADDITIONALLY REFER TO VAV TU CONTROL FOR INTEGRATED TU OPERATION. SEQUENCES

AND OPERATING POINTS TO BE OEESC 2021 / ASHRAE 90.1-2019 COMPLIANT FOR MULTI-ZONE VARIABLE AIR VOLUME (GREATER THAN 54K BTU) SYSTEMS.

- NORMAL STATIC PRESSURE SET-POINT INITIALLY SET: 0.75" W.G. FIELD ADJUST FOR FINAL SET-POINT DURING START-UP AND SYSTEM TUNING.

LEAST ONE TU REPORTS POSITION OF 100% OPEN. RETURN TO NORMAL STATIC PRESSURE SET-POINT IF SPACE TEMPERATURE SET-POINTS ARE NOT BEING

STATIC PRESSURE RESET: IF ALL TU'S ON THIS SYSTEM REPORT A DAMPER POSITION OF 90% OPEN, OR LESS, THEN REDUCE STATIC PRESSURE MAINTAINED UNTIL AT

HEATING COMPONENTS TO MODULATE IN RESPONSE TO MIXED AIR TEMPERATURE TO PROVIDE MINIMUM 55 DEG F LEAVING AIR TEMPERATURE FROM HEATING SECTION.

<u>DPERATION CONTROLLED FROM LOCAL PANEL HOA:</u> • AUTO: UNIT COMPONENTS OPERATE / MODULATE IN ACCORDANCE WITH SYSTEM CONTROL PROGRAMS, SUBJECT TO SAFETY LIMITS.

OPERATIONAL STATUS FOR THE SUPPLY FAN AND EXHAUST FAN SHALL BE REPORTED THROUGH BAS.

SPACE COOLING/HEATING SET-POINTS: REFER TO SPECIFICATION SECTION 23 09 00.

MODULATE FANS, THROUGH THEIR VFD'S, TO VARY AIR FLOW THROUGH SYSTEM.

SYSTEM OPERATES CONTINUOUSLY, MODULATING IN RESPONSE TO CONTROLS TO MAINTAIN SET-POINTS.

MAINTAIN NORMAL STATIC PRESSURE AS SENSED BY STATIC PRESSURE SENSOR IN SUPPLY PLENUM.

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CONTROL S

SYMBOL

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C02

VP/

(DSD)

GENERAL NO

CONTROL SYSTEM ARE TO BE ADJUS

- MAINTENANCE PE FIELD PROVIDED
- REMAINDER OF WI CONTROLLER.
- INSTALLED AND W REFER TO HVAC F
- OF ROOM SENSOR OTHER REMOTE S
- . CONTROL POWER MANUFACTURER V
- . LINE VOLTAGE WIF PROVIDED BY ELEC

KEYED NO⁻

- REFER TO HVAC P
- PROTECTIVE LOCH
- PROVIDE CO2 SEN ONLY ONE OA TEM USED AS REFEREN

AIR HANDLING SYSTEM IS CONSTANT VOLUME WITH OCCUPIED / UNOCCUPIED PERIOD OPERATION. SYSTEM OPERATES IN RESPONSE TO BUILDING AU WITH THESE LISTED OPERATIONAL REQUIREMENTS AND SET-POINTS, SUBJECT TO SAFETY LIMITS. SEQUENCES AND OPERATING POINT TO BE OEESC 2

5 NET ------

OPERATION CONTROLLED FROM LOCAL PANEL HOA: - AUTO: UNIT COMPONENTS, INCLUDING INTERLOCKED EXHAUST FAN, OPERATE / MODULATE IN ACCORDANCE WITH SYSTEM CONTROL PROGRAMS, SU

- HAND: UNIT COMPONENTS "ON", SUBJECT TO SAFETY LIMITS.

OPERATIONAL STATUS FOR THE SUPPLY FAN AND EXHAUST FAN SHALL BE REPORTED THROUGH BAS.

SYSTEM OPERATES CONTINUOUSLY, MODULATING IN RESPONSE TO CONTROLS TO MAINTAIN SET-POINTS. DURING NORMALLY SCHEDULED OCCUPIED HOURS, IF NO OCCUPANCY IS SENSED, SYSTEM SHALL CHANGE TO UNOCCUPIED HOURS OPERATION. SYST

OPERATION WHEN OCCUPANCY IS SENSED DURING OCCUPIED HOURS.

- SPACE COOLING/HEATING SET-POINTS: REFER TO SPECIFICATION SECTION 23 09 00. UNOCCUPIED HOURS OPERATION: - SPACE COOLING/HEATING SET-BACK SET-POINT: REFER TO SPECIFICATION SECTION 23 09 00. NIGHT (UNOCCUPIED) TEMPERATURE MAINTENANCE: SYSTEM SHALL OPERATE IN RESPONSE TO NIGHT SET-BACK PROGRAM TO MAINTAIN MINIMUM ANI

- DURING UNOCCUPIED HOURS SYSTEM SHALL ACTIVATE IF: - HEATING: AREA SERVED BY THIS SYSTEM IS AT LEAST 5 DEG F BELOW SET-BACK SET POINT

- COOLING: AREA SERVED BY THIS SYSTEM IS AT LEAST 5 DEG F ABOVE SET-BACK HOUR SET POINT

ONCE ACTIVATED, SYSTEM SHALL REMAIN ON UNTIL AREA SERVED IS 5 DEF F ABOVE/BELOW (HEATING/COOLING) SET-BACK SET-POINT. SYSTEM SHALL ACTIVATE / RETURN TO OCCUPIED HOUR OPERATION WHEN SCHEDULED OCCUPIED TIME STARTS, OR UPON ACTIVATION OF UNOCCUPIE PROGRAMMED OVERRIDE TIME LIMIT SYSTEM RETURNS TO UNOCCUPIED HOUR OPERATION UNLESS A NEW OCCUPIED HOUR PERIOD HAS STARTED.

HEATING COMPONENTS TO MODULATE IN RESPONSE TO MIXED AIR TEMPERATURE IN RESPONSE TO CALL FOR HEAT FROM AREA SERVED. COOLING COMPONENTS TO MODULATE, IN CONJUNCTION WITH ECONOMIZER COOLING SEQUENCE (FIRST STAGE OF COOLING) IN RESPONSE TO CALL

O DAMPER CONTROL / ECONOMIZER:

DUTSIDE AIR AND RETURN DAMPERS SHALL MODULATE IN CONJUNCTION. INTERLOCKED EXHAUST FAN SHALL MODULATE TO INVERSLY TRACK RETURN OUTSIDE AIR DAMPER MODULATES BETWEEN MINIMUM SETTING FOR VENTILATION AIR TO FULL OPEN FOR ECONOMIZER COOLING WHEN OUTDOOR AIR TEMPERATURE LESS THAN 70 DEG F). RETURN DAMPERS TRACK OUTSIDE AIR DAMPER. OUTSIDE AIR DAMPER CLOSED WHEN UNIT IS DE-ENERGIZED. EXHAUST FAN AUTOMATIC DAMPER CLOSED WHEN FAN IS OFF. ROOM CO2 SENSORS ASSOCIATED WITH EACH FAN COIL (REFER TO HVAC FLOOR PLANS FOR LOCATIONS) TO MONITOR ZONE CO2 LEVELS. - DURING OCCUPIED HOURS OPERATION WHEN CO2 CONCENTRATION IS LESS THAN 750 PPM, MODULATE OUTSIDE AIR, RETURN, AND EXHAUST TO REDU

OF SCHEDULED OA VOLUME. - WHEN CO2 CONCENTRATION EXCEEDS 900 PPM MODULATE OUTSIDE AIR, RETURN, AND EXHAUST TO SCHEDULED % OUTSIDE AIR FOR THIS SYSTEM. - CO2 CONTROL OPERATION SUBJECT TO ECONOMIZER OPERATION, AND UNOCCUPIED MODE OPERATION.

ONE HOUR BEFORE START OF SCHEDULED OCCUPANCY PERIOD, IF AREA SERVED IS AT LEAST 3 DEGREES BELOW HEATING SET-POINT, THEN START AIF CONFIGURATION UNTIL AREA SERVED MEETS HEATING SET-POINT. STOP IF AREA SERVED REACHES COOLING SET-POINT OR IF OCCUPIED PERIOD BEG

OUTSIDE AIR DAMPER CLOSED - EXHAUST FAN OFF - HEATING EQUIPMENT OPERATES AS NEEDED TO SATISFY SPACE REQUIREMENTS.

IF THE LEAVING SUPPLY AIR TEMPERATURE DROPS BELOW 45 DEG F, MODULATE DAMPERS TO REDUCE OA % TO 50% OF LISTED MINIMUM, AND SEND A IF THE LEAVING SUPPLY AIR TEMPERATURE DROPS BELOW 40 DEG F, MODULATE DAMPERS TO FULL RECIRCULATION, DE-ENERGIZE EXHAUST FAN AND CLOSE ASSOCIATED DAMPER, AND SEND AN ALARM SYSTEM RETURNS TO NORMAL OPERATION WHEN LEAVING SUPPLY AIR TEMPERATURE REACHES 55 DEG F.

ZONE CV HEAT PUMP SYSTEMS. - OFF: UNIT COMPONENTS INOPERATIVE.

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	SPACE THERMOSTAT				18135		
	SPACE TEMPERATURE SENSOR				OREGON	s la	7
	CARBON DIOXIDE SENSOR			C. M	ARK PE	ROD	
	OCCUPANCY SENSOR			EXP	IRES 12/	31/24	
	ROOM PRESSURE SENSOR		<i>ONI</i>	თ	ervice	ENT ANY	ERING
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	DUCT STATIC PRESSURE SENSOR		H M	OR 97 541) 72	n tallatic	THIS D NSMIT	THE EI
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ND N	IAXIMUM SPACE TEMPERATURES.						
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MS-M1.0

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STWEATS	ONELINE DIAGRAM	NOTES	SYMBOLS	LIGHT FIXTURES	NOTES
<u> </u>	MOLDED CASE CIRCUIT BREAKER] F	WHEN ADDED TO LIGHT FIXTURE SYMBOL-	
	TRANSFORMER			SURFACE OR PENDANT MOUNTED LIGHT FIXTURE OUTLET .	
				INDICATES FIXTURE TYPE, LOWER CASE LETTER	
Е —	CURRENT TRANSFORMER(6)			INDICATES SWITCHING CONTROL , TYPICAL FOR ALL LIGHT FIXTURES)	
<u> 0</u>	METER, TYPE AS NOTED		Ø	RECESSED CEILING LIGHT FIXTURE	
<u>+</u>	GROUND			RECESSED WALL WASHER , UNSHADED SIDE INDICATES DIRECTION OF WALL WASHING	
	NEUTRAL BUS			FLUORESCENT LIGHT FIXTURE	
	MOTOR WITH MOTOR NUMBER (SEE EQUIPMENT SCHEDULE)	2		FLUORESCENT STRIP LIGHT FIXTURE	
		& ∕		SINGLE FACE EXIT SIGN WITH NUMBER OF DIRECTIONAL	
$\langle \mathbf{\tilde{x}} \rangle$				QUADRANT INDICATES FACE.	
	FUSED DISCONNECT SWITCH		SYMBOLS	SWITCHES	NOTES
	EQUIPMENT MANUFACTURERS RECOMMENDATIONS UNO.)			SINGLE POLE LIGHT SWITCH	+ 46"
	SWITCH		\$3	THREE WAY LIGHT SWITCH	+ 46"
	SUB-DISTRIBUTION PANELBOARD OR SWITCHBOARD		₽ M	MOTOR RATED SWITCH	+ 46"
				REALE SENSOR - CECEILING WEWALL FOUNTED	
<u> </u>			SYMBOLS	SECURITY	NOTES
_ <u> </u>				SECURITY CAMERA. PROVIDE J-BOX WITH CAT 6 CABLE	$\overline{()}$
MBOLS	RACEWAYS	NOTES		ELECTRONICALLY CONTROLLED LOCK	
H -	BRANCH CIRCUIT INSTALLED CONCEALED FROM FINISH			DOOR POSITION SWITCH	
	IN PANEL SCHEDULE . GROUND CONDUCTOR AS INDICATED			MOTION DETECTOR (OMNI DIRECTIONAL)	
	INCLUDED IN HASH MARK INDICATION . BRANCH CIRCUIT INATALLED IN OR BELOWELOOD	<u> </u>			+ 44"
11-	PROVIDE GROUND CONDUCTOR AS INDICATED IN PANEL			KETPAD	+ 44''
	SCHEDULE , GROUND CONDUCTOR NOT INCLUDED IN HASH MARK INDICATION .		SYMBOLS	AUDIO / VISUAL	NOTES
	BRANCH CIRCUIT HOME RUN TO PANEL , HASH MARKS		S	CEILING SPEAKER	
LA-	GROUND CONDUCTOR AS INDICATED IN PANEL		нS	WALL MOUNTED SPEAKER	+ 80"
1,3,5	SCHEDULE . GROUND CONDUCTOR NOT INCLUDED IN HASH MARK INDICATION .		F®⊲	WALL MOUNTED SPEAKER HORN	+ 80"
	LOW VOLTAGE EMPTY CONDUIT WITH PULL STRING - 34" UNO			TELEVISION (VIDEO) OUTLET	+ 18''
PR				INTERCOM REQUEST STATION (SPEAKER & PUSH BUTTON)	+ 44''
<u></u>	JUNCTION BOX 4" SQUARE UNLESS OTHERWISE NOTED				NOTES
	4" CONDUIT SLEEVE WITH BUSHINGS AT BOTH ENDS .			MANUAL PULL STATION	+ 44"
	LOCATE AT 6" ABOVE ACCESSIBLE CEILING . EIRESTOP WITH UI APPROVED SYSTEM				+ 80" AFTE
	CONDUIT STUB-OUT, CAP & MARK WITH APPROVED MARKER			VISUAL STROBE ALARM	+ 80" AFTE
 0	CONDUIT, UP			PHOTOELECTRIC SMOKE DETECTOR (CEILING NOUNTED UNO)	
•	CONDUIT, DOWN			IONIZATION SMOKE DETECTOR (CEILING MOUNTED UNO)	
	RECEPTACIES	NOTES	ן 💿	MAGNETIC DOOR HOLDER	
	RECEPTACLES	NOTES		MAGNETIC DOOR HOLDER HEAT DETECTOR (CEILING MOUNTED, 135° UNO)	
•	RECEPTACLES WHEN ADDED TO A SYMBOL, INDICATES OUTLET MOUNTED WITH BOTTOM OF OUTLET AT 2" ABOVE COUNTER TOP OR BACK SPLASH UNO.	NOTES		MAGNETIC DOOR HOLDER HEAT DETECTOR (CEILING MOUNTED, 135° UNO)	NOTES
•	RECEPTACLES WHEN ADDED TO A SYMBOL , INDICATES OUTLET MOUNTED WITH BOTTOM OF OUTLET AT 2" ABOVE COUNTER TOP OR BACK SPLASH UNO. DUPLEX CONVENIENCE OUTLET	NOTES + 18"		MAGNETIC DOOR HOLDER HEAT DETECTOR (CEILING MOUNTED, 135° UNO) ABBREVIATIONS AMPERE INTERRUPTING CAPACITY	NOTES
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WP WEATHERPROOF TYPE

REPLACE EXISTING PANELS -

B AND 5-B WITH (2) NEW

PART 1 — General

Basic Electrical Materials & Methods

1.01Description A. Furnish labor, supervision, permits, materials and equipment to complete the work required in Division 16 and by the contract documents. 1.02 Codes

- A. Meet requirements of State of Oregon Electrical Specialty Code, Oregon Administrative Rules Chapter 437, American Society of Testing and Materials (ASTM) Federal Specifications, American National Standards Institute (ANSI), National Electrical Manufacturers Association (NEMA), National Fire Protection Association (NFPA), Underwriters Laboratory (UL), National Electrical Code, National Electrical Safety Code, all rules and regulations of the local serving utility, National Board of Fire Underwriters and Oregon Structural Specialty Code International Building Code (IBC). All Codes, rules, and regulations shall be the current or latest edition adopted by authorities having jurisdiction at time of permit.
- 1.03 Permits, Licenses And Taxes
- A. The Contractor shall obtain and pay for all licenses, permits and inspections required by laws, ordinances and rules governing work specified herein. The Contractor shall arrange for inspection of work by the inspectors and shall give the inspectors all necessary assistance in their work of inspection. Division 16 Contractor shall make all necessary arrangements for installation of electrical services indicated on plans.
- B. The existence of any wires, conduits, pipes, ducts or other service facilities is shown in a general way only. The Contractor is responsible for making the exact determination of the location and condition of these facilities. C. The general directions and location of homeruns are indicated on Drawings and are to be extended
- to panels as though routes were completely shown. No homeruns or branch circuits are to be combined. Items which are installed other than as shown on Drawings and without receiving prior written approval will be ordered removed and installed as shown without additional cost to Owner. D. Owner shall not be responsible for any loss of unanticipated costs that may be suffered by the successful bidder as a result of such bidder's failure to fully inform himself in advance in regard to all conditions pertaining to the work and character of the work.
- E. Contractor shall consult the Architectural drawings for the exact height and/or location of all outlets, switches, lights, etc. specified herein or on the drawings.
- F. Outlet locations shown on the drawings are approximate. Contractor shall study the building drawings in relation to spaces and equipment surrounding each outlet so that the lighting fixtures are symmetrically located according to ceiling tile and room layout. When necessary, with the Engineer's approval, outlet shall be relocated to avoid interference with structural features of the building. PART 2 – Execution

2.01 Identification

- A. Provide typewritten circuit schedules for panelboards, cross-connect panels and terminal cabinets. Schedules shall be covered with minimum of 0.018 inch thick clear rigid plastic installed in permanently attached metal frame holder located on inside face of door. Schedules to use final assigned room names/numbers, loads not plan designations. B. When making modifications to existing equipment or panelboards, provide labels as indicated in this section. Provide new typewritten circuit schedules for all modified panelboards.
- 2.02 Installation

permitted. 2.04 Fire-Stopping fire-stopping method. B. If existing junctions boxes will be made inaccessible, or it abandoned outlets serve as feed through to shown all of them. D. All materials accumulated during the demolition process are the Owners property and shall be removed from the job site as directed by the Owner. 2.06 Work At Existing Structure A. Connect to and extend all existing electrical systems as required. Verify location of existing raceways stubbed out. If raceways indicated are not of proper size or in proper location, provide new as required for completion of project. B. At areas where new ceilings are being installed, remove existing light fixtures and provide box extensions and reinstall existing fixtures. See Architectural Drawings for areas involved. 2.07 Cleanup

otherwise.

2.03 Noise Control

clean cabinets, panels, wiring devices, cover plates, light fixtures, etc., to remove dirt, cuttings, paint, plaster, mortar, concrete, etc. Blemishes to finished surfaces of apparatus shall be removed and new finish equal to the original applied. 2.08 Asbestos Bearing Materials A. If during the course of his work, the Contractor observes the existence of asbestos or asbestos bearing materials, the Contractor shall immediately terminate further work on the project and notify the Owner of the condition. The Owner will, after consultation with the Architect, determine a further course of action. 2.09 Polychlorinated Biphenyls (Pcb's) A. If during the course of his work, the Contractor observes the existence of polychlorinated biphenyls (PCB's), the Contractor shall immediately terminate further work on the project and notify the Owner of the condition. The Owner will, after consultation with the Architect, determine a further course of action. 2.10 Payment For Work.

END OF SECTION

1 1-LINE DIAGRAM - UPGRADE 1.0 / MILLICOMA SCHOOL

A. Payment for work under this Division shall be covered and included as part of the Basic Bid on the project, or as outlined under any schedules.

A. Contractor shall continually remove debris, cuttings, crates, cartons, etc., created by his work. Such clean up shall be done at sufficient frequency to eliminate hazard to the public, other workmen, the building or the Owner's employees. Before acceptance of the installation, Contractor shall carefully

boxes for other existing electrical equipment that is being retained, new conduit and wire shall be provided to bypass the abandoned outlets. If existing conduits pass through partitions or ceilings which are being removed or remodeled, new conduit and wire shall be provided to route around the ceiling or wall and maintain service to the existing load. C. Locations of items shown on the drawings as existing are partially based on as-built and other drawings which may contain errors. The Contractor shall verify the correctness of the information shown prior to bidding and provide such labor and material as is necessary to accomplish the intent of the contract documents. The plans may shown some demolition conditions, but are not intended

shall be provided to maintain integrity of the fire assembly. 2.05 Demolition And Salvage At Existing Structures accommodate installation of the new work, and for demolition and removal at existing structures.

A. Contractor shall make all necessary adjustments to the electrical system required to meet code,

A. Where raceways penetrate floors, ceilings, ducts, chases and fire walls, provide fire stopping to maintain integrity of the fire assembly. The code authority having jurisdiction shall approve B. Where electrical boxes exceeding 16 square inches are located in fire resistive walls, fire stopping

shown on Drawings. Size raceways according to governing codes unless otherwise noted. A. To minimize noise transmission between occupied spaces, outlet boxes at opposite sides of partitions are not to be placed back to back and installation of straight-through boxes is not

A. Wiring Requirements: Install wiring complete to every outlet with all devices shown and/or required.

B. Provide raceway connections between outlets, outlets and panels and equipment and panels as

All wiring to be in raceways and concealed throughout finished areas unless specifically noted

μ	ECTRICAL DE
SHEET NO.	SHEE
E1.0	SYMBOLS & 1-LINE DIAGR
E1.1	PANEL SCHEDULES
E2.0	CLASSROOM ADDITION - F
E2.1	LIGHTING REPLACEMENT -
E3.0	MECH REPLACEMENT - LE
E3.1	MECH REPLACEMENT - MA
E3.2	MECH REPLACEMENT - RE

REPLACE 42-POLE WITH	60-PD	LE PANE	IL.			P	ANEL	' A	7 1						FAULT CURRENT	= 16,291	REPL	LACE SEE 1-LINE					P	ANEL '	в'					ł	FAULT C	URRENT	= 16,29
300 AMP	MLO					12Ø	/ 20	8	VOL	TS					3-PHASE,	4-WIRE	400		MLO				120	/ 208	VOL	.TS					3	-PHASE,	4-WIRE
FEEDER SIZE				COP	PER	: 3"	C, 4 *	409	Ø PH	1 , * 4 (GRD				FLUSH MC		FEE	DER SIZE		C	OPPE	R: 2 S	ets -	3" C,	4 #250	ØPH,	*1/0 0	RD			1	FLUSH MC	UNTED
LOAD DISTRIBUTION	LTG	REC MD	TOR	DATA	EXTG	HEA	г		MISC	C PH-	A PH-	B PH-	Ο ΤΟΤΑΙ	_ AMPS	WITH SPARE	25%	LOAD	DISTRIBUTION	LTG	REC MOTI	JR DAT	A EXT	5 HEAT		MISC	C PH-4	A PH-I	3 PH-C	C TOTAL	AMPS		WITH SPARE	. 25'
CONNECTED VA	0	0	0	0	0	6250	0		(2083	3 2083	3 2083	3 6250	0 174	78125 VA	A 217	CONNE	ECTED VA	0	0	0	0	0 67750)	(0 21833	3 24083	8 21833	67750	201		84688 VA	, 25
DI∨ERSITY FACTOR	125%	100% 1	100%	100%	65%	1007			1007	<u>.</u>				257			DIVER	RSITY FACTOR	125%	100% 10	0% 100	65	. 100%	:	1007	<i>.</i>				276			
DIVERSIFIED VA	0	0	0	0	0	6250	0		(2083	3 2083	3 2083	3 6250	0 174	78125 VA	A 217	DIVER	RSIFIED VA	0	0	0	0	0 67750)	(0 21833	3 24083	8 21833	67750	201		84688 VA	, 25
PL T LOAD	VA	HP PF		GND	CON	BKR	PH		BKR	CON	GNI) PHW	' HP	VA	LOAD	TPL	PL	T LOAD	VA	HP PH	√ GNI		BKR	PH	BKR	CON	GND	PHW	HP	VA	L	JAD	TPL
1 L LTS - RM 16	0	1	2	10	1/2	30	1 A	1	30	1/2	10	12		0	LTS - RM 14	4 L 2							-"	SECTION	11			-11					201
3 L LTS & REC: DARK RM	0	1	2	12	1/2	20	1 8	1	30	1/2	10	12		0	LTS - RM 13	3 L 4	1	L LTS - RM 8	0	12	12	1/2	20		1 20	1/2	12	12		0		LTS - RM 6	, L 2
5 L LTS - RM 15	0	1	2	10	1/2	30	1 C	1	30	1/2	10	12		0	LTS - RM 12	2 L 6	3	L LTS - STAFF RM	0	12	12	1/2	20	1 8 1	1 20	1/2	12	12		0		LTS - RM 7	L 4
7 L LTS - RM 10	0	1	2	10	1/2	30	1 4	1	30	1/2	10	12		0	LTS - RM 1	1 L 8	5	L LTS - RM 5	0	12	12	1/2	20	1 C 1	1 20	1/2	12	12		0		LTS - RM 4	, L 6
9 L LTS - RM 9	0	1	2	10	1/2	30	1 8	1	20	1/2	12	12		0	REC - 16-?, S.STAFF	R 10	7	L LTS - RM 3	0	12	12	1/2	20	1 A 1	1 20	1/2	12	12		0		REC - RM 8	, R 8
11 R REC - 13-15, N. STAFF	0	1	2	12	1/2	20	1 C	1	20	1/2	12	12		0	REC - 12-?, S.STAFF	R 12	9	R REC - RM 6	0	12	12	1/2	20	1 B 2	2 20	1/2	12	12		0		KILN	и Н 10
13 R REC - 11-9, N. STAFF	0	1	2	12	1/2	20	1 A	2	60	1/2	10	12		0	PANEL 2	Z P 14	11	R REC - 2-4, S.STAFF	0	12	12	1/2	20	1 C						0			Н 12
15 L LTS - HALLWAY	0	1	2	10	1/2	30	1 8							0	PANEL 2	Z P 16	13	R REC - 1-3, N.STAFF	0	12	12	1/2	20	1 A 3	3 70					0		PANEL B1	. P 14
17 L LTS - STAFF RM	0	1	2	10	1/2	30	1 C	1	20	1/2	12	12		0	WATER HEATER RM S	Э H 18	15							В						2250		PANEL B1	. P 16
19 □ HVAC CONTROLS	0	1	2	12	1/2	20	2 A	1	20	1/2	12	12		0	REC - RM 1	1 R 20	17							C						0		PANEL B1	. P 18
21 0	0						В	1	20	1/2	12	12		0	REC - RM 1	1 R 22	19	H HEAT STAFF RMS	0	12	12	1/2	20	2 🗛 1	1 20	1/2	12	12		0	REC -	SV COMPUTER	R 20
23 R REC - RM 11	0	1	2	12	1/2	20	1 C	1	20	1/2	12	12		0	REC - 10 & 12	2 R 24	21	н	0					B 1	1 20	1/2	12	12		0	REC -	NW COMPUTER	R 22
25 R REC - RM 11	0	1	2	12	1/2	20	1 A	1	20	1/2	12	12		0	REC - 10 & 12	2 R 26	23	R REC - 6-8, S.STAFF	0	12	12	1/2	20	1 C 1	1 20	1/2	12	12		0	REC -	NE COMPUTER	R 24
27 R AC RM 10	0	1	2	12	1/2	20	1 8									28	25	R REC - 5-7, N.STAFF	0	12	12	1/2	20	1 A 1	1 20	1/2	12	12		0	REC -	SE COMPUTER	R 26
29							C									30	27							В									28
31 H TU 1-1	3667	8	8	10	3/4	40	з 🗛	3	20	1/2	12	12		1833	TU 2-1	1 Н 32	29							C									30
33 Н	3667						В						_	1833		Н 34	31							A									32
35 Н	3667						C							1833		Н 36	33							В									34
37 H TU 1-2	1833	1	2	12	1/2	20	з 🗛	3	20	1/2	12	12		1833	TU 2-2	2 Н 38	35							C									36
39 Н	1833						В							1833		H 40	37							A									38
41 H	1833						C							1833		Н 42	39							В									40
43 H TU 1-3	1833	1	2	12	1/2	20	з 🗛	3	30	3/4	10	10	_	2500	TU 2-3	3 H 44	41							C									42
45 H	1833						В						_	2500		H 46		101		1				BECTION	12		-11						
47 H	1833						C							2500		H 48	43							A									44
49 H TU 1-4	1833	1	2	12	1/2	20	з 🗛	3	20	1/2	12	12	_	1833	TU 2-4	4 H 50	45							B									46
51 H	1833						B							1833		H 52	47							C									48
53 Н	1833						C							1833		H 54	49	H TU 3-1	1833	12	12	1/2	20	3 🗛 3	3 20	1/2	12	12		1833		TU 4-1	. н 50
55 H TU 1-5	1833	1	2	12	1/2	20	з А	3	20	1/2	12	12		1833	TU 2-5	5 H 56	51	н	1833					В						1833			Н 52
57 H	1833						B							1833		H 58	53	н	1833					C						1833			Н 54
59 Н	1833						C							1833		Н 60	55	Н ТИ 3-2	1833	12	12	1/2	20	3 🗛 3	3 20	1/2	12	12		1833		TU 4-2	. Н 56
A							11/18/2	2022							FED FROM PANE	L 'MDP'	57	н	1833					В						1833			Н 58
ALL CIRCUIT CONDUCTORS SIZED	for cof	PER															59	н	1833					C	_					1833			Н 60
																	61	Н ТИ 3-3	2000	10	10	3/4	30	3 🗛 3	3 20	1/2	12	12		1833		TU 4-3	Н 62
																	63	н	2000					B						1833			<u>H 64</u>
																	65	н	2000					C						1833			Н 66
																	67	H TU 3-4	1833	12	12	1/2	20	3 🗛 3	3 35	3/4	10	8		3333		TU 4-4	H 68
																	69	н	1833					B						3333			<u> </u>
																	71	н	1833					C	_					3333			Н 72
																	73	Н ТИ 3-5	1833	12	12	1/2	20	3 🗛 3	3 20	1/2	12	12		1833		TU 4-5	<u>H 74</u>
																	75	н	1833					B						1833			<u> </u>
																	77	н	1833					C						1833			<u>H 78</u>
																	79						_	A 3	3 20	1/2	12	12		1833		TU 4-6	H 80
																	81							B		_				1833			Н 82
																	83							C						1833			<u>H 84</u>
																	B							11/18/202	22						FED F	RUM PANE	L 'MDP'
							4	. ~-						<u> </u>						'ER				A \ 100 1 .									
REPLACE SEE 1-LINE						P			י כ	<u> </u>				F,	auli current =	16,300	REPL	LALE EXISTING PAN	NEL				P/	ANEL '	G					F	AULT CL	XXXENT =	18,284
400 AMP	MLO					120	0 / 20	98	VOL	.T S					3-PHASE,	4-WIRE	600		MLO			A-	120	/ 208	VOL	T S					3	-PHASE,	
FEEDER SIZE		<u> </u>	OPP	ER: 2	2 SE1	r s -	2 1/2"	С,	4 *4	/0 PI	H, #1/2	9 GRE	>		SURFACE MO	DUNTED	FEE	DER SIZE		COPF	'ER: 2	SETS	- 3"	C, 3 *4	<i>00</i> P	H, ¶/Ø	2 N, #1/	/Ø GF	\mathcal{D}		i	-lush MC	
LOAD DISTRIBUTION	LTG	REC MO	ITOR	DATA	EXTG	HEA	т		MIS	C PH-	A PH	-B PH-	С ТПТА	L AMPS	WITH SPAR	E 25%		DISTRIBUTION	LTG	REC MOTI	IR DAT	A EXT	5 HEAT		MISC	C PH-A	A PH−B	B PH-C	TOTAL	AMPS		WITH SPARE	. 25;
CONNECTED VA	0	0 1	1830	0	0	3750	0			0 1191	5 132	50 1416	5 3933	n 118	49163 V	A 148		CTED VA	Ο	0 1416	56	0 0	47300		ſ	1 15317	7 21251	24898	61466	208		76833 VA	. 259

40	0	AMP	MLO					120	/	2Ø	8	vol1	·9					3-1PHASE, 4	F-MI	RE
FE	EDE	R SIZE			COPF	PER:	2 SET	<u>'</u> S - 2	1/	2''	С,	4 *4/	0 PH,	#1/Ø	GRD			SURFACE MO	UNT	ED
	יסזת ו		L TG	PEC	мптпр	ΠΛΤΛ	EVIG					MISC				τητλι				254
				REL		DATA	EXIG	HEAT				MISC	11015	12250			AMPS	WITH SPARE		25%
	POIT.		1257	ں ۱۵۵۷	1007	1007	0 65%	1007				1007	11715	13230	14165	37330	110	45165 VA		140
	RSIL		1237.	.1007 . N	1830	.1007 . N	007.	37500				.1007 . N	11915	13250	14165	29230	118	49163 \/A		148
																			1	
PL	Т	LOAD	VA	HP	PHW	GND	CON	BKR		PH		BKR	CON	GND	PHW	HP	VA	LOAD	<u> </u>	PL
		IT						e	Æ		<u>א ו</u>							Tu		
1										A	3	20	1/2	12	12		667	TU 8-1	н	2
3										в							667		н	4
5										С							667		н	6
7	L	LTS - STAGE DIMMER	0		12	12	1/2	20	2	A	3	35	3/4	10	8		3000	TU 8-2	н	8
9	L		0							в							3000		н	10
11	R		0		12	12	1/2	20	1	С							3000		н	12
13	R		0		12	12	1/2	20	1	A	3	35	3/4	10	8		3000	TU 8-3	н	14
15	R	REC - STAGE	0		12	12	1/2	20	1	в							3000		н	16
17	R	REC - STAGE	0		12	12	1/2	20	1	С							3000		н	18
19	R	REC - FILE SER∨ER	0		12	12	1/2	20	1	A	3	20	1/2	12	12		667	TU 8-4	н	20
21	R	REC - CUSTODIAN	0		12	12	1/2	20	1	в							667		н	22
23										С							667		н	24
25										A	3	30	3/4	10	10		2667	TU 8-5	н	26
27										в							2667		н	28
29										С							2667		н	30
31										A	3	20	1/2	12	12		500	TU 8-6	н	32
33										в							500		н	34
35										С							500		н	36
37										A	3	20	1/2	12	12		500	TU 8-7	н	38
39										в							500		н	40
41										С							500		н	42
								e	EC		N 2									
43	L	LTS - HALL & COURT	o o		12	12	1/2	20	1	A	1	20	1/2	12	12		0	LTS - 354-357	L	44
45		LTS - BRR, JANITOR	<u> </u> 0		12	12	1/2	20	1	в	1	20	1/2	12	12		0	LTS - CH RM STRS	L	46
47	L	LTS – GRR, 351, 352	<u> </u> 0		12	12	1/2	20	1	С	1	20	1/2	12	12		0	REC - CH RM, 354	R	48
49	L	LTS - CH RM FRONT	0		12	12	1/2	20	1	A	1	20	1/2	12	12		0	REC - RM 358	R	50
51	L	LTS - CH RM CENTER	0		12	12	1/2	20	1	в	1	20	1/2	12	12		0	LTS – CENTER HALL	L	52
53	L	LTS – CH RM BACK	0		12	12	1/2	20	1	С	1	20	1/2	12	12		0	LTS - NORTH HALL	L	54
55	L	LTS - BAND ROW 2	0		12	12	1/2	20	1	A	1	20	1/2	12	12		0		R	56
57	L	LTS - BAND ROW 4	0		12	12	1/2	20	1	в	1	20	1/2	12	12		0	REC - ∨⊡CAL RM	R	58
59	L	LTS - F1 BAND	0		12	12	1/2	20	1	С	1	20	1/2	12	12		0	BAND RM FAN	м	60
61	L	LTS - BAND ROW 5	0		12	12	1/2	20	1	A	1	20	1/2	12	12		0	LTS - BAND	L	62
63	L	LTS - BAND ROW 1	0		12	12	1/2	20	1	в	1	20	1/2	12	12		0	VOCAL RM FAN	м	64
65	L	LTS - BAND ROW 2	0		12	12	1/2	20	1	С	1	20	1/2	12	12		0	COOLER COMPRESSOR	м	66
67	L	LTS - BAND ROW 3	0		12	12	1/2	20	1	A	1	20	1/2	12	12		0	RECEPTACLES	R	68
69	L	LTS - BAND ROW 5	0		12	12	1/2	20	1	в	1	20	1/2				0	SPARE		70
71	L	LTS - BAND ROW 4	0		12	12	1/2	20	1	С	2	20	1/2	12	12	1	915	COMPRESSOR	м	72
73	R	REC - RM 9	0		12	12	1/2	20	1	A							915		м	74
75	R	REC - RM 9	0		12	12	1/2	20	1	в	2	30	1/2	10	10		2250	WATER HEATER	н	76
77	R	REC - RM 9	0		12	12	1/2	20	1	С							2250		н	78
79										A										80
81										в										82
83										С										84
D	·	·			·				11/3	18/2	022							FED FROM PANEL	_ ′M	DP'
ALL	CIRC	UIT CONDUCTORS SIZED F	OR COP	PER																
RFF								P,	ΔN	EL	' 1	• •					F	AULT CURRENT =	148	374
225	5		MIO					120		20)8		16				•		 4_111	
							020.	2 1/2	, , ,		*/									
								6 1/6		~, -			 , • C (
LDAJ	D DIS	TRIBUTION	LTG	REC	MOTOR	DATA	EXTG	HEAT				MISC	PH-A	PH-B	PH-C	TOTAL	AMPS	WITH SPARE		25%
CON	NECTE	ID VA	0	0	0	0	0	25500				0	8500	8500	8500	25500	71	31875 VA		89
DIVE	ERSIT	Y FACTOR	125%	100%	100%	100%	65%	100%				100%					93			
DIVE	ERSIF	IED VA	0	0	0	0	0	25500				0	8500	8500	8500	25500	71	31875 VA		89
ים	-		1/4		י ייום			סעת				סעם			,d		\/^	· ۲۰۰۳	<u> </u>	ים
			VA			עאים		DKK		<u>РН</u>	$\ $	DKK		עאיט			VA	СПАЛ		∦r'∟
1	н	TU 6-1	2000		10	10	3/4	30	3	A	1	20	1/2	12	12		0	LTS - RM 2	L	2
3	Н		2000							B	1	20	1/2	12	12		0	LTS - RM 2	L	4
5	н		2000							<u>с</u>	1	20	1/2	12	12		0	LTS - RM 3	L	6
7	н	TU 6-2	2000		10	10	3/4	30	3	A	1	20	1/2	12	12		0	LTS - RM 3	L	8
9	H		2000							B		20	1/2	12	12		0	LTS - ALCOVE	<u> </u>	10
11	Н		2000							<u>с</u> ,	1	20	1/2	12	12		0	LTS - RM 5	L	12
13	н	TU 6-3	500		12	12	1/2	20	3	A	1	20	1/2	12	12		0	LTS - RM 5	L	14
15	н		500							B	1	20	1/2	12	12		0	LTS - RM 6	L	16
17	н		500				_			<u>с</u>	1	20	1/2	12	12		0	LTS - RM 6	L	18
19	н	TU 6-4	2000		10	10	3/4	30	3	A	1	20	1/2	12	12		0	WATER HEATER	H	20
21	Н		2000							B	1	20	1/2				0	SPARE		22
23	н		2000							<u>с</u>	1	20	1/2	12	12		0	REC - S.W. 5 & 6	R	24
25	Н	TU 6-5	2000		10	10	3/4	30	3	A	1	20	1/2	12	12		0	REC - RM 4, EXT	L	26
27	н		2000							B	1	20	1/2	12	12		0	REC - E. 4 & 5	R	28
29	Н		2000							<u>с</u>	1	20	1/2	12	12		0	REC - 4 & 5 ALCD∨E	R	30
31										A	1	20	1/2	12	12		0	REC - W. 3 & ALCD∨E	R	32
33										B	1	20	1/2	12	12		0	REC - 2 ALCOVE	R	34
35										С ,		20	1/2	12	12		0	REC - E.S. 2 & 3	R	36
37										A	1	20	1/2	12	12		0	WATER HEATER	H	38
					u	1	1	1	0		11								11	II 40
39																			·	
39 41										C										42

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REPLACE SEE 1-LINE 400 AMP FEEDER SIZE	MLO	CC		<u>2 SE</u>	P/ 120 ETS -	NEL ' / 208 3'' C, 4	B ' VOL' 4 #250	16 2 PH, 1	#1/Ø G	RD	•	AULT CURRENT 3-PHASE, FLUSH MC	= 16,291 4-WIRE DUNTED	REPLAC 400 FEEDE	CE SEE Amp R Size	1-LINE	MLO	CC		2: 2 SE	P/ 120 TS - 2	NEL ' / 208 1/2'' C	C' 3 VOL1 2, 4 * 3/9	19 Ø PH,	#1/0 GRD)	FA	ULT CURRENT = 3-PHASE, 4 FLUSH MO	16,298 -WIRE INTED
LOAD DISTRIBUTION CONNECTED VA	LTG N	REC MOTO	IR DATA	EXTG	HEAT		MISC	PH-A	PH-B 24083	PH-C TI 21833 6	JTAL AMPS 7750 201	WITH SPAR	E 25% A 251	LOAD DIS	STRIBUTION		LTG N	REC MD ⁻ 1080 1'		TA EXT(5 HEAT		MISC	PH-A 17919	PH-B PH- 18777 1877	C TOTAL	AMPS 157	WITH SPARE 69340 VA	25%
DIVERSITY FACTOR DIVERSIFIED VA	125% 0	100% 100 0	0% 100% 0 0	65% 0	100% 67750		100% 0	: 21833	24083	21833 6	276 7750 201	84688 V	A 251	DI∨ERSIT DI∨ERSIF	TY FACTOR		125% 0	100% 1 1080 13	00% 10 392	0% 657 0 0	4 100% 53000		100% 0	17919	18777 1877	7 55472	150 157	69340 VA	196
PL T LOAD	VA	HP PHW	/ GND	CON	BKR	PH ECTION	BKR	CON	GND	PHW	HP VA	LOAD	TPL	PL T		LOAD	VA	HP PH	W GN		BKR	PH Section	BKR	CON	GND PHW	/ HP	VA	LOAD	T PL
1LLTS - RM 83LLTS - STAFF RM	0	12 12	12 12	1/2 1/2	20 20	1 A 1 1 B 1	20	1/2	12 12	12 12	0	LTS - RM C	5 L 2 7 L 4	1 L 3 L	LTS – CE LTS – N.	NTER HALL HALL	0	12 12	2 12 2 12	1/2	20 20	1 A 1 B	1 20 1 20	1/2 1/2	12 12 12 12		0	LTS – FRONT HALL LTS – STAFF RM	L 2 L 4
5 L LTS - RM 5 7 L LTS - RM 3 9 R REC - RM 6	0	12 12 12	12 12 12	1/2 1/2 1/2	20 20 20	1 C 1 1 A 1 1 B 2	20 20 20 20	1/2 1/2 1/2	12 12 12	12 12 12	0	LTS - RM 4 REC - RM 4 KILI	4 L 6 3 R 8 N H 10	5 L 7 L 9 L	LTS - DF LTS - CE LTS - RE	FICE INF. RM CADING RM	0 0		2 12 2 12 2 12	1/2 1/2 1/2	20 20 20	1 C 1 A 1 B	1 20 1 20 1 20	1/2 1/2 1/2	12 12 12 12 12 12		0	LTS – HEALTH LTS – STAFF RM LTS – READING RM	L 6 L 8 L 10
11 R REC - 2-4, S.STAFF 13 R REC - 1-3, N.STAFF	0	12 12	12 12	1/2 1/2	20 20	1 C 1 A 3	3 70				0	PANEL B	H 12 1 P 14	11 L 13 R	LTS – RE REC – E.I	ADING RM LIB & FLOOR	0	12 12	2 12 2 12	1/2 1/2	20 20	1 C 1 A	1 20 1 20	1/2 1/2	12 12 12 12		0	LTS - READING RM REC - RR, DFF, CDNF	L 12 R 14
15 17 19 H HEAT STAFF RMS	0	12	12	1/2	20	B C 2 A 1	20	1/2	12	12	2250 0	PANEL B PANEL B REC - SW COMPUTE	1 P 16 1 P 18 R R 20	15 R 17 R 19 R	REC - CE REC - ST COPIER	INF AFF RM	0	12 12 12	2 12 2 12 2 12	1/2 1/2	20 20 20	1 B 1 C 1 A	1 20 1 20 1 20	1/2 1/2 1/2	12 12 12 12 12 12		0	REC - HEALTH REC - DFF FLOOR COPIER - LIBRARY	R 16 R 18 R 20
21 H 23 R REC - 6-8, S.STAFF	0	12	12	1/2	20	B 1 1 C 1	20 20	1/2 1/2	12 12	12 12	0	REC - NW COMPUTER	R 22 R R 24	21 R 23 R	REC – DF REC – N.	FICE COMP	0	12	2 12 2 12	1/2	20 20	1 B 7 1 C	2 30	1/2	10 10		2250 2250	STAFF WATER HEATER	H 22 H 24
25 R REC - 5-7, N.STAFF 27 29	0	12	12	1/2	20	1 A 1 B C	20	1/2	12	12	0	REC – SE COMPUTE	R 26 28 30	25 27 29								A B C	1 30	1/2	10 12		1392	EX FAN 4 & 5	M 26 28 30
31 33						B							32 34	31 R 33 L	REC STAF EXIT SIG	F SINK NS W.	0	12	2 12 2 12	1/2 1/2	20 20	1 A 1 B							32 34
35 37 39						A B							36 38 40	35 R 37 L 39	REC STAF	F SINK NS E,	0	12 12	2 12 2 12	1/2 1/2	20 20 20	1 C 1 A	1 20 1 20	1/2	12 12 12 12		360	REC STAFF COUNTER	36 R 38 R 40
41					e	ECTION	2						42	41	FIRE ALA	RM PANEL	0	12	2 12	1/2	20		1 20 1 2	1/2	12 12		360	REC STAFF COUNTER	R 42
43 45 47 47 47 47 47 47 47 47 47 47 47 47 47						B							44	43 45 47	-							B							44
47 49 H TU 3-1 51 H	1833 1833	12	12	1/2	20	3 A 3 B	3 20	1/2	12	12	1833	TU 4-	1 H 50 H 52	49 51								AB							50 52
53 H 55 H TU 3-2	1833 1833	12	12	1/2	20	C 3 A 3	3 20	1/2	12	12	1833 1833	TU 4-6	H 54 2 H 56	53 55 H	TU 5-1		5000	6	10	1	60	C 3 A 3	3 20	1/2	12 12		1500	TU 5-6	54 H 56
57 H 59 H 61 H TU 3-3	1833 1833 2000	10	10	3/4	30	B C 3 A 3	3 20	1/2	12	12	1833 1833 1833	TU 4-3	H 58 H 60 3 H 62	57 H 59 H 61 H	TU 5-2		5000 5000 667	12	2 12	1/2	20	B C 3 A	3 20	1/2	12 12		1500 1500 1833	TU 5-7	H 58 H 60 H 62
63 Н 65 Н	2000 2000					BC					1833 1833		H 64 H 66	63 H 65 H			667 667					BC					1833 1833		H 64 H 66
67 H TU 3-4 69 H 71 H	1833 1833 1833	12	12	1/2	20	3 A 3 B C	3 35	3/4	10	8	3333 3333 3333 3333	TU 4-4	4 H 68 H 70 H 72	67 H 69 H 71 H	TU 5-3		833 833 833	12	2 12	1/2	20	3 A 3 B C	3 30	3/4			2000	TU_5-8	H 68 H 70 H 72
73 H TU 3-5 75 H	1833 1833	12	12	1/2	20	3 A 3 B	3 20	1/2	12	12	1833 1833	TU 4-5	5 H 74 H 76	73 H 75 H	TU 5-4		1833 1833	12	2 12	1/2	20	3 A : B	3 30	3/4	10 10		2000 2000	TU 5-9	H 74 H 76
77 H 79 81	1833					C A 3 B	3 20	1/2	12	12	1833 1833 1833	TU 4-0	H 78 5 H 80 H 82	77 H 79 H 81 H	TU 5-5		1833 500 500	12	2 12	1/2	20	3 A B					2000		H 78 80 82
83 B						C	2				1833	FED FROM PANE	<u>н 84</u> L ′MDP′	83 H C			500					C	22					FED FROM PANEL	84 /MDP'
ALL CIRCUIT CONDUCTORS SIZED REPLACE EXISTING PANE	For copp	ER			۴A	NEL '	G '				F,	AULT CURRENT :	8,284	ALL CIRC REPLAC	CE WITH	ictors sized 1 42-POLE	PANEL	ER			P	ANEL '	' J '				FA	ULT CURRENT =	21,938
600 AMP FEEDER SIZE	MLO	COPP	'ER: 2	SETS	12Ø - 3" (/ 208 C, 3 * 4	vol 00 Pi	ts H, # 1/Ø) N, #1/4	ØGRD		3-Phase, Flush Mc	4-WIRE DUNTED	400 FEEDE	AMP Er size		MLO	cc	PPER	2 SE	120 TS - 2	/ 208 1/2'' C	3 VOL1 C, 4 *4/9	19 0 PH,	#1/0 GRD)		3-PHASE, 4 FLUSH MOU	JNTED
LOAD DISTRIBUTION CONNECTED ∨A	LTG 0	REC MDTD 0 1416	IR DATA	EXTG 0	HEAT 47300		MISC 0	PH-A 15317	PH-B 21251	PH-C TE 24898 63	1466 208	WITH SPARE 76833 VA	2 25% A 259	LOAD DIS CONNECTE	TRIBUTION ED VA		LTG 0	REC MOT	OR DA1	A EXTO	5 HEAT 0 48000		MISC 0	PH-A 16840	PH-B PH- 16840 1684	C TOTAL 0 50519	AMPS 140	WITH SPARE 63149 VA	25% 175
DIVERSITY FACTOR	0	0 1416	6 0	0	47300		0	15317	21251	24898 6	300 1466 208	76833 V4	A 259		TED VA		0	0 2	519		48000		0	16840	16840 1684	0 50519	140	63149 VA	175
1 M HP - 1	1830				35 35					PHW F	1P VA				LTS – EL LTS – GI	LUAU .ECT. RM RLS SHWR		<u>HP</u> PH 12 12	<u>w GNI</u> 2 12 2 12	1/2	50 50 BKK	1 A :	BKR 1 20	1/2	12 12 12 12		0 0	REC - S. ELECT RM	R 2
3 M 5 H FC - 1 HEAT	1830 8650	2	6	1 1/4	110	B 2 2 C 2	20	1/2	12	12	2829 832	FC - 2	M 4 M 6	5 L 7 L	LTS - BE LTS - BE	IYS DRESSING	0	12 12	2 12 2 12	1/2 1/2	20 20	1 C 1 1 A 2	1 20 1 20	1/2 1/2	12 12 12 12		0	LTS - GIRLS DRESS LTS - GIRLS CDACH	L 6 L 8
7 H 9 M FC - 1	8650 416	12	12	1/2	20	2 B 2	200	1 1/2	6	3/0	832 15000	FC - 2 HEA	M 8 H 10	9 L 11 R 13	LTS – SE REC – EL SPARF	CURITY ECT, RM	0	12	2 12 2 12	1/2 1/2	20 20 20	1 B : 1 C : 1 A :	1 20 1 20 1 20	1/2 1/2	12 12 12 12 12 12		0	LTS - ACTIVITY RM LTS - ACTIVITY RM	L 10 L 12
13 M EF - 18 15 M EF - 19	1176 1176	1/2 12 1/2 12	12	1/2 1/2	20 20	1 A 1 B							14	15 17								B (C	3 20	1/2	12 12		0	BLEACHERS	M 16 M 18
17 19 21						A							18 20 22	19 21 23	DRYER		0	12	2 12	1/2	20	3 B C					0		M 20 22 24
23 25						C A							24	25 27	DRYER		0	12	2 12	1/2	20	A : 2 B	3 20	1/2	12 12	3/4	420 420	EF - 14 BDYS	M 26 M 28
27 29						B C							28 30	29 31 H 33 H	VTU 2-1		0 5333 5333	6	10	1	60	С 3 А (В	3 20	1/2	12 12	3/4	420 420 420	EF - 15 GIRLS	M 30 M 32 M 34
33 33 35						B C							34 36	35 H 37 H	VTU 2-2		5333 5333	6	10	1	60	C 3 A	3 60	1	10 6		420 5333	VTU 2-3	M 36 H 38
37 39 41						B							38 40	39 H 41 H			5333 5333					B C					5333 5333	FED FROM PANEL	H 40 H 42 'MDP'
43 L LTS - S. CLASSRM	0	12	12	1/2	9 20	ECTION 1 A 1	2	1/2	12	12	0	REC & FAN - N.CLSRM	1 R 44	ALL CIRC	ANFI	ICTORS SIZED	FOR COPPE	ER				NEL '	L '				F,		: 11.923
45 R REC - GYM 47 L LTS - N. CLASSRM 49 L LTS - S. STATPWELL	0	12 12	12 12	1/2 1/2	20 20 20	1 B 1 1 C 1 1 A 1	20	1/2 1/2	12 12	12 12	0	LTS - GYN LTS - GYN LTS - GYN	1 L 46 1 L 48	400 FEEDE	AMP Er size		MAIN E	BREAK Al	ER _UMINU	M: 2 S	120 Ets -	/ 2Ø8 3'' C,	3 ∨OL1 4 #3@@	19 7 PH, 1	#1/0 GRD			3-PHASE, 4 SURFACE MOU	-WIRE INTED
49 L LTS S. STAIRWELL 51 L LTS – GYM 53 L LTS – GYM	0	12 12	12	1/2 1/2 1/2	20 20 20	1 A 1 1 B 1 1 C 1	20 20 20	1/2 1/2 1/2	12 12 12	12 12	0	LTS - GYN LTS - FDYEF	1 L 52 R L 54	LOAD DIS	TRIBUTION		LTG 2217	REC MD1		-A EXTO	5 HEAT		MISC	PH-A 28219	PH-B PH- 26729 2653	C TDTAL 6 81485	AMPS 235	WITH SPARE	25% 294
55 L LTS COMPUTER LAB 57 L LTS COMPUTER LAB	0	12 12	12 12	1/2	20 20	1 A 2 1 B	20	1/2	12	12	0	HEAT - RM 22	2 H 56 H 58	DIVERSIT DIVERSIF	Y FACTOR		125% 2771	100% 1 5860	0 0 0	0% 65% 0 (100% 73408		80% 0	28707	26729 2660	3 82040	239	103 KVA	299
59 L LTS CLMPUTER LAB 61 SPARE 63 SPARE	0	12	12	1/2 1/2 1/2	20 20 20	1 C 1 1 A 1 2 B	20	1/2	12	12			60 62 64	Р <u></u> Т 1 н	RTU - 7		VA 11803	HP PH	W GNI 6) CON	BKR 150	РН 3 А :	BKR 3 30	CDN 3/4	GND PHw 10 10	'HP	VA 2333	LOAD TU 7-1	Т PL н 2
65 65 67 H WATER HEATER	0	12	12	1/2	20	2 A 1	20	1/2	12	12	0		66 68	3 H 5 H			11803 11803					BC					2333 2333		H 4 H 6
69 H N. STORE ROOM 71 H WATER HEATER 73 H S. CUSTODIAN	0	12	12	1/2	20	2 C A 3	20	1/2	12	12	0 0 0	WEST VENT FAN	M 70 M 72 74	7 9 11								А (В С	3 30	3/4	10 10		2333 2333 2333	TU 7-2	H 8 H 10 H 12
75 M EAST VENT FAN 77	0	12	12	1/2	20	2 B /					0		76 78	13 15								A (B	3 40	3/4	10 8		3667 3667	TU 7-3	H 14 H 16
/9 II SECURITY 81 II SECURITY 83 III IIII	0	12 12	12	1/2	20 20	1 A 1 1 B 1 C I	20	1/2	12	12	0	LTS - SHOWER RMS SPARE	L 80 82 84	17 19 21 R	ACCESS C	ONTROL	100	12	2 12	1/2	20	C A 1	3 50	3/4	10 8		3667 4333 4333	TU 7-4	H 18 H 20 H 22
ALL CIRCUIT CONDUCTORS SIZED		ER			I	<u>_</u> 1/18/202	2				H	FED FROM PANE	L'MDP'	23 L 25 L	EXTERIOR	LIGHTS 1 23	267	12	2 12 2 12	1/2	20 20	1 C 1 A	1 20	1/2	12 12		4333 975	LTS - RM 24	H 24 L 26
														27 R 29 R 31 R	REC - RM REC - RM REC - RM	1 23 SW 1 23 N 1 23 E	900 1080 720	12 12	2 12 2 12 2 12	1/2 1/2 1/2	20 20 20	1 B 1 1 C 1 1 A 1	1 20 1 20 1 20	1/2 1/2 1/2	12 12 12 12 12 12		900 720 1080	REC - RM 24 SE REC - RM 24 W REC - RM 24 N	R 28 R 30 R 32
														33 R 35	REC - HA	LLWAY	360	12	2 12	1/2	20	1 B	1 20	1/2			0	SPARE	34
														37 39 41	SPARE SPARE							A B C						SPARE SPARE	38 40
														⊾	1 <u>11 - 111 - 1</u> 11 - 111						<u> </u>	 1/18/202	23	<u>, </u>	I			FED FROM PANEL	<u>+</u> _ 'MDP'

1	2	ADDITION DETAIL - POWER & SIGNAL
	E20	$SCALE \cdot 1/n'' - 1'_0''$

=	XTURE	SCHEDULE
		DESCRIPTION
	TYPE:	VANDAL RESISTANT LED DOWNLIGHT
	HOUSING	5.5″ × 8″ COLD ROLLED STEEL
		SEMI-RECESSED - DROP LENSE
	LAMPS	4000K LED 1000 LUMENS 12W
	TYPE:	4'' LED DOWNLIGHT
	TRIM	SELF FLANGED, SPECULAR CLEAR
		RECESSED
	LAMPS	35K LED 1000 LUMENS 11W / WIDE DIST.
	TYPE:	SAME AS TYPE 'L24' EXCEPT
		SURFACE - CEILING (w/BRACKET)
	TYPE:	VOLUMETRIC LED 1×4 SURFACE
	HOUSING	COLD-ROLLED STEEL, ACRYLIC LENS
	FINISH:	WHITE POLYESTER COATING
	MOUNTING	SURFACE - CETLING
		LED, 80 CRI, 3,500K, 4,000 LUMEN (40 WATTS)
	TYPE:	2 X 4 LED FLAT PANEL
	HOUSING	ALUMINUM FRAME
	FINISH:	WHITE POLYESTER COATING
		T-BAR CEILING GRID
	BATTERY:	L24E – ADD BATTERY PACK
	LAMPS	LED, 80 CRI, 3500K, 5000 LUMEN (42 WATTS)
	TYPE:	8 FOOT LINEAR LED PENDANT
	HOUSING	COLD-ROLLED STEEL
	MOUNTING:	SUSPENDED
	DAYLIGHT:	PR⊡∨IDE DAYLIGHT DIMMING AT WIND⊡W WALLS
	LAMPS	35K, LED 909 LUMEN/FT, 7.2W/FT
	TYPE:	4 FOOT INDUSTRIAL LIGHT
	HOUSING:	COLD ROLLED STEEL
	FINISH:	BLACK
	MOUNTING	SURFACE - CEILING
	LAMPS	LED, 80 CRI, 3500K, 5000 LUMEN, 41 WATTS
	TYPE:	LED WALL PACK
	HOUSING	ALUMINUM HOUSING
	MOUNTING	WALL
	FINISH:	DARK BRONZE
	LAMPS:	50K LED 3000 LUMEN 31 WATTS
	TYPE:	4 FOOT LED VANITY LIGHT
	HOUSING:	COLD-ROLLED STEEL
	MOUNTING	WALL
	FINISH:	WHITE
	LAMPS	3500K LED 2000 LUMEN 18.7 WATTS
	TYPE:	LED EXIT SIGN WITH EGRESS LIGHTS
	HOUSING	POLYCARBONATE - GREEN LETTERS
	MOUNTING	FIELD VERIFY WALL / CEILING
	LAMPS	WHITE LED
	BATTERY:	NI-CAD BATTERY

ALL FIXTURES ARE 120 VOLT

No. C: \Double 'E' Engineering_Projects\22.07 Millicoma\Drawings\Millicoma Electrical Plans.dwg 01/18/2

KEYED NOTES

- DISCONNECT EXISTING MECHANICAL EQUIPMENT SCHEDULED FOR REPLACEMENT. MAINTAIN EXISTING CIRCUIT FOR REUSE. SEE NEW WORK PLAN FOR CIRCUIT AND EQUIPMENT COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO DEMOLITION. VERIFY EXACT LOCATION IN THE FIELD.
- EXISTING MECHANICAL EQUIPMENT TO BE REMOVED AND REPLACED. FIELD COORDINATE ELECTRICAL REQUIREMENTS WITH MECHANICAL CONTRACTOR.
- \bigotimes disconnect and remove electrical connection and associated wiring to existing mechanical equipment. Coordinate with mechanical contractor PRIOR TO DEMOLITION. VERIFY EXACT LOCATION IN THE FIELD.

SHEET NOTES

- 1. WORK SHOWN ON PLAN IS BASED ON AVAILABLE INFORMATION AT THE TIME OF DESIGN. CONTRACTOR IS TO FIELD VERIFY AND COORDINATE PROJECT REQUIREMENTS WITH EXISTING CONDITIONS.
- 2. UNLESS NOTED OTHERWISE, ALL EQUIPMENT AND DEVICES SHOWN ON THIS PLAN ARE TO BE DISCONNECTED AND REMOVED. REMOVE ALL UNUSED WIRING AND CONDUIT BACK TO PANEL OR ORIGIN. WIRING WHICH SERVES USABLE EXISTING LIGHTING AND POWER OUTLETS SHALL BE REROUTED AND RESTORED CLEAR OF CONSTRUCTION. MAINTAIN ELECTRICAL CONTINUITY OF EXISTING SYSTEM.
- GOOD OPERATING CONDITION. UNGUITABLE ITEMS SHALL NOT BE REUSED. RETURN ALL OTHER ITEMS SUITABLE FOR REUSE TO OWNER. 5. EXISTING CIRCUIT BREAKERS IN BRANCH PANEL MAY BE REUSED IF OF THE
- PROPER AMPERAGE AND IN GOOD OPERATING CONDITION (TRIP CHECK REQUIRED). OTHERWISE, REPLACE WITH NEW CIRCUIT BREAKER OF THE SAME MANUFACTURE AND TYPE.
- 6. WIRING WHICH SERVES USABLE EXISTING OUTLETS SHALL BE REROUTED AND RESTORED CLEAR OF CONSTRUCTION. MAINTAIN ELECTRICAL CONTINUITY OF EXISTING SYSTEM. REPAIR AND RECONDITION ASSOCIATED SURFACES TO MATCH ADJACENT SURFACES. VERIFY EXACT LOCATIONS IN THE FIELD.
- 1. DISCONNECT AND REMOVE ELECTRICAL CONNECTION AND ASSOCIATED WIRING TO EXISTING MECHANICAL EQUIPMENT. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO DEMOLITION. VERIFY EXACT LOCATION IN THE FIELD. WIRING WHICH SERVES USABLE EXISTING OUTLETS SHALL BE REROUTED AND RESTORED CLEAR OF CONSTRUCTION.
- 8. DISCONNECT AND REMOVE ELECTRICAL CONNECTION AND ASSOCIATED WIRING TO EXISTING MECHANICAL EQUIPMENT BEING REPLACED WITH NEW EQUIPMENT. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO DEMOLITION. VERIFY EXACT LOCATION IN THE FIELD. WIRING WHICH SERVES USABLE EXISTING OUTLETS SHALL BE REROUTED AND RESTORED CLEAR OF CONSTRUCTION. MAINTAIN CIRCUIT WIRING ABANDONED IN DEMOLITION FOR CONNECTION TO NEW MECHANICAL EQUIPMENT.
- 9. PROVIDE ENGRAVED IDENTIFICATION LABEL ON PANEL AND TYPE-WRITTEN DIRECTORY.

NORTH

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		MECHANICAL		MEN	NT SC		DUL	_E		
ID	DESCRIPTION	LOCATION	CIRCUIT		ELECTRI	CAL		DISCE	INNECT	NOTE
				MCA	MOCP	VOLT	PH	SIZE	FUSED	
RTU - 1	ROOFTOP UNIT	SE CLASSROOMS	MDP SECT. D	129	150	208	3	200/3	Х	2
RTU - 2	ROOFTOP UNIT	S.CENTRAL CLASSROOMS	MDP SECT. D	129	150	208	3	200/3	Х	2
RTU - 3	ROOFTOP UNIT	S.CENTRAL CLASSROOMS	MDP SECT. D	129	150	208	3	200/3	Х	2
RTU - 4	ROOFTOP UNIT	SW CLASSROOMS	MDP SECT. D	186	200	208	3	200/3	Х	2
RTU - 5	ROOFTOP UNIT	W. ADMINISTRATION	MDP SECT. D	156	175	208	3	200/3	Х	2
RTU - 6	ROOFTOP UNIT	NW CLASSROOMS	MDP SECT. D	129	150	208	3	200/3	Х	2
RTU - 7	ROOFTOP UNIT	N.CENTRAL CLASSROOMS	L - 1,3,5	123	125	208	3	200/3	Х	2
RTU - 8	ROOFTOP UNIT	VOCAL / BAND	MDP SECT. D	186	200	208	3	200/3	Х	2
RTU - 9	ROOFTOP UNIT	CAFETERIA	MDP SECT. D	203	225	208	3	200/3	X	2
AGU - 1	AT GRADE HEAT PUMP UNIT	GYM LEVEL	MDP SECT, C	283	300	208	3	400/3	X	2
AGU - 2	AT GRADE HEAT PUMP UNIT	LOWER LEVEL	MDP SECT, C	277	300	208	3	400/3	X	2
FC - 1	SPLIT SYSTEM FAN COIL	CLASSROOM 219S	H-5,7 / H-9,11	4		208	1	30/2	Х	3, 17.3 KW AUX HEAT
HP - 1	SPLIT SYSTEM HEAT PUMP	ROOF	H – 1,3	22		208	1	30/2	Х	2
FC - 2	SPLIT SYSTEM FAN COIL	CLASSROOM 219N	H-6,8 / H-10,12	8		208	1	30/2	Х	3, 30.0 KW AUX HEAT
HP - 2	SPLIT SYSTEM HEAT PUMP	RDDF	H - 2,4	34		208	1	60/2	X	2
EF - 1	EXHAUST FAN	ROOF: SV JANITOR	X - 2	50	W	120	1			1
EF - 2	EXHAUST FAN	ROOF: SW BOYS	X - 5	1/4	HP	120	1			1
EF - 3	EXHAUST FAN	ROOF: SW GIRLS	X - 2	1/4	HP	120	1			1
EF - 4	EXHAUST FAN	RODF: STAFF TOILETS	C – 26	1/4	HP	120	1			1
EF - 5	EXHAUST FAN	RODF: HEALTH TOILETS	C – 26	1/4	HP	120	1			1
EF - 6	EXHAUST FAN	RODF: CENTER TOILETS	EXISTING	1/4	HP	120	1			1
EF - 7	EXHAUST FAN	CAFETERIA WASH HOOD	EXISTING	86	W	120	1			1
EF - 8	EXHAUST FAN	CAFETERIA GENERAL EXH	EXISTING	112	W	120	1			1
EF - 9	EXHAUST FAN	RR 212	EXISTING	20	W	120	1			1
EF - 10	EXHAUST FAN	RR 109	EXISTING	80	W	120	1			1
EF - 11	EXHAUST FAN	RR 106	EXISTING	80	W	120	1			1
EF - 12	EXHAUST FAN	RR 114	EXISTING	80	W	120	1			1
EF - 13	EXHAUST FAN	RR 101	EXISTING	80	W	120	1			1
EF - 14	EXHAUST FAN	BOYS LOCKER/SHWR 112	J - 26,28,30	3/4	HP	208	3			1
EF - 15	EXHAUST FAN	GIRLS LOCKER/SHWR 103	J - 32,34,36	3/4	HP	208	3			1
EF - 16	EXHAUST FAN	BDYS GYM RR	EXISTING	52	W	120	1			1
EF - 17	EXHAUST FAN	GIRLS GYM RR	EXISTING	52	W	120	1			1
EF - 18	EXHAUST FAN	CLASSROOM 219S	H - 13	1/4	HP	120	1			1
EF - 19	EXHAUST FAN	CLASSROOM 219N	H - 15	3/4	HP	120	1			1

KEYED NOTES

1 20 AMP MOTOR RATED SWITCH

2 PRD∨IDE GFCI RECEPTACLE WITHIN 25 FEET DF UNIT

3 PROVIDE MOTOR RATED SWITCH FOR FAN COIL UNIT AND SEPARATE NON-FUSED 30/2 DISCONNECT FOR AUX HEAT STRIP 12/15/2022

	۲Ļ	UNI	TS	CH	EDUL	.E		
ID	DESCRIPTION	HP/KV	A	FLA	VOLT	PH		DISCONNECT SWITCH
							SIZE	NDTE
TU 1-1	TERMINAL UNIT	11.00	КW	30.53	208	3	60/3	
TU 1-2	TERMINAL UNIT	5.50	ΚW	15.27	208	3		MOTOR RATED SWITCH
TU 1-3	TERMINAL UNIT	5.50	КW	15.27	208	3		MOTOR RATED SWITCH
TU 1-4	TERMINAL UNIT	5.50	КW	15.27	208	3		MOTOR RATED SWITCH
TU 1-5	TERMINAL UNIT	5.50	КW	15.27	208	3		MOTOR RATED SWITCH
TU 2-1	TERMINAL UNIT	5.50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 2-2	TERMINAL UNIT	5.50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 2-3	TERMINAL UNIT	7.50	КW	20.82	208	3		MOTOR RATED SWITCH
TU 2-4	TERMINAL UNIT	5.50	КW	15.27	208	3		MOTOR RATED SWITCH
TU 2-5	TERMINAL UNIT	5.50	КW	15.27	208	3		MOTOR RATED SWITCH
TU 3-1	TERMINAL UNIT	5.50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 3-2	TERMINAL UNIT	5.50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 3-3	TERMINAL UNIT	6.00	KW	16.65	208	3		MOTOR RATED SWITCH
TU 3-4	TERMINAL UNIT	5.50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 3-5	TERMINAL UNIT	5.50	КW	15.27	208	3		MOTOR RATED SWITCH
TU 4-1	TERMINAL UNIT	5.50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 4-2	TERMINAL UNIT	5,50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 4-3	TERMINAL UNIT	5.50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 4-4	TERMINAL UNIT	10.00	KW	27.76	208	3		MOTOR RATED SWITCH
TU 4-5	TERMINAL UNIT	5.50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 4-6	TERMINAL UNIT	5.50	КW	15.27	208	3		MOTOR RATED SWITCH
TU 5-1	TERMINAL UNIT	15.00	KW	41.64	208	3	60/3	
TU 5-2	TERMINAL UNIT	2.00	КW	5.55	208	3		MOTOR RATED SWITCH
TU 5-3	TERMINAL UNIT	2.50	KW	6.94	208	3		MOTOR RATED SWITCH
TU 5-4	TERMINAL UNIT	5.50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 5-5	TERMINAL UNIT	2.00	KW	5.55	208	3		MOTOR RATED SWITCH
TU 5-6	TERMINAL UNIT	4.50	KW	12.49	208	3		MOTOR RATED SWITCH
TU 5-7	TERMINAL UNIT	5.50	KW	15.27	208	3		MOTOR RATED SWITCH
TU 5-8	TERMINAL UNIT	6.00	KW	16.65	208	3		MOTOR RATED SWITCH
TU 5-9	TERMINAL UNIT	6.00	КW	16.65	208	3		MOTOR RATED SWITCH
TU 6-1	TERMINAL UNIT	6.00	KW	16.65	208	3		MOTOR RATED SWITCH
TU 6-2	TERMINAL UNIT	6.00	KW	16.65	208	3		MOTOR RATED SWITCH
TU 6-3	TERMINAL UNIT	1.50	KW	4.16	208	3		MOTOR RATED SWITCH
TU 6-4	TERMINAL UNIT	6.00	KW	16.65	208	3		MOTOR RATED SWITCH
TU 6-5	TERMINAL UNIT	6.00	КW	16.65	208	3		MOTOR RATED SWITCH
TU 7-1	TERMINAL UNIT	7.00	KW	19.43	208	3		MOTOR RATED SWITCH
TU 7-2	TERMINAL UNIT	7.00	KW	19.43	208	3		MOTOR RATED SWITCH
TU 7-3	TERMINAL UNIT	11.00	KW	30.53	208	3	60/3	
TU 7-4	TERMINAL UNIT	13.00	KW	36.08	208	3	60/3	
TU 8-1	TERMINAL UNIT	2.00	KW	5.55	208	3		MOTOR RATED SWITCH
TU 8-2	TERMINAL UNIT	9.00	KW	24.98	208	3		MOTOR RATED SWITCH
TU 8-3	TERMINAL UNIT	9.00	KW	24.98	208	3		MOTOR RATED SWITCH
TU 8-4	TERMINAL UNIT	2.00	ΚW	5.55	208	3		MOTOR RATED SWITCH
TU 8-5	TERMINAL UNIT	8.00	КW	22.21	208	3		MOTOR RATED SWITCH
TU 8-6	TERMINAL UNIT	1.50	KW	4.16	208	3		MOTOR RATED SWITCH
TU 8-7	TERMINAL UNIT	1.50	КW	4.16	208	3		MOTOR RATED SWITCH
VTU 2-1	TERMINAL UNIT	16.00	KW	44.50	208	3	60/3	
VTU 2-2	TERMINAL UNIT	16.00	ΚW	44.50	208	3	60/3	
VTU 2-3	TERMINAL UNIT	16.00	КW	44.50	208	3	60/3	
12/15/2022								

KEYED NOTES

	NEW ROOF HATCH: FIELD COORDINATE ANY LIGHTING REQUIREMENT HATCH CONSTRUCTION. PROVIDE BASIC LED WRAP OR OTHER FIXTU ACCOMMODATE THE INSTALLATION AND PROVIDE ADEQUATE LIGHT. SWITCH WHERE ACCESSIBLE.
2>	EXISTING HATCH EXTENDED TO NEW ROOF: EXTEND EXISTING LIGHT HATCH. FIELD COORDINATE ANY LIGHTING REQUIREMENTS WITH FINA CONSTRUCTION. PROVIDE BASIC LED WRAP OR OTHER FIXTURE THA ACCOMMODATE THE INSTALLATION AND PROVIDE ADEQUATE LIGHT. SWITCH WHERE ACCESSIBLE AS APPLICABLE.
Ð	DISCONNECT EXISTING MECHANICAL EQUIPMENT SCHEDULED FOR REMAINTAIN EXISTING CIRCUIT FOR REUSE. SEE NEW WORK PLAN FOR CEQUIPMENT COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO

VERIFY EXACT LOCATION IN THE FIELD. EXISTING MECHANICAL EQUIPMENT TO BE REMOVED AND REPLACED. FIELD COORDINATE ELECTRICAL REQUIREMENTS WITH MECHANICAL CONTRACTOR.

