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## PRCTI20221788 - REVISION **#5 - MECHANICAL** #6 - ARCTHITECT STRUCTURAL SHEETS

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# PROVIDE ALL REVISED SHEETS IN PLAN SET ON SITE FOR **INSTALLATION AND INSPECTIONS.**

And	IONS	PROJECT CONTACTS			SHEET LIST	DoH DEFERRED SUBMIT
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	S 78 DEG 58 MIN 52 SEC BEING SUBTENDED BY A C/A OF 86 DEG 05 MIN RAD OF 55.98 FT & C/A 27 FT ALG SD CURVE SEC & BEING G A RAD OF 63 FT & A O POB EXC POR DETER	Owner:       MultiCare 401 15th Ave SE Puyallup, WA 98372 TEL: 206.290.4251 ATTN: Jeffrey Ristoff EMAIL: jeffrey.ristoff@multicare.org         Architect:       CLARK/KJOS ARCHITECT LLC 621 SW Alder Street Portland, OR 97205 TEL: 503.224.4848 ATTN: Scott Combs, Principal EMAIL: scottcombs@ckarch.com ATTN: Dennis Beyer, Project Manager TEL: 503.860.1326 EMAIL: dennisbeyer@ckarch.com         Contractor:       HOWARD S. WRIGHT 415 1ST AVE #400 N Seattle, WA 98100 TEL: 206.999.3046 ATTN: Theo Boyles EMAIL: TBoyles@hswc.com         ATBREEVIATIONS	Structural:       PCS Structural Solutia         1250 Pacific Ave, Sui         Tacoma, WA 98402         TEL: 253.383.2797, E         ATTN: Todd Parke, P         EMAIL: tparke@pcs-s         Mechanical:       Mazzetti         2013 4th Ave #200         Seattle, WA 98121         TEL: 971.221.2308         ATTN: Stephanie Coo         EMAIL: scook@mazz         Electrical:       Mazzetti         2013 4th Ave #200         Seattle, WA 98121         TEL: 971.221.2308         ATTN: Stephanie Coo         EMAIL: scook@mazz         Electrical:         Mazzetti         2013 4th Ave #200         Seattle, WA 98121         TEL: 206.963.2091         ATTN: Eric Sweet         EMAIL: esweet@mazz	ons   te 701   Extension 1005 broject Engineer structural.com   vitil com   zetti.com	GENERAL G0.0 GENERAL NOTES, PROJECT INFORMATION & CONTACT GODE CODE CP1.1 LEVEL 02 - FIRE LIFE SAFETY PLAN & CODE REVIEW CP1.2 FGI COMPLIANCE AD1.2 LEVEL 02 - DEMOLITION FLOOR & REFLECTED CEILING PLAN A1.2A LEVEL 02 - DEMOLITION FLOOR & REFLECTED CEILING PLAN A1.2B LEVEL 02 - SECURITY ELECTRONICS A1.3 ROOF PLAN A3.1 LEVEL 02 - ENLARGED FLOOR PLAN A3.1 LEVEL 02 - ENLARGED REFLECTED CEILING PLAN A4.1 PARTITION TYPES AND WALL DETAILS A4.1 PARTITION TYPES AND WALL DETAILS A4.1 INTERIOR ELEVATIONS A11.1 INTERIOR ELEVATIONS	C-ARM VIBRATION CONTROL (ARCHITECTURAL, STRUCTU
		A COUSTICAL CEUNS TILE FFT ACTU A COUSTICAL CEUNS TILE FFT ACT A COUSTICAL CEUNS TILE FFT AD A ACCUTETURAL FFT AD A ACCUTETURAL COUST AGGR A AGRECATE GA ALUM A ALUMANIM GA ALUMANIA ALUMANIM GA ACONT ACCUTETURAL GA BTUM ACCUTETURAL GA BTUM BTUMNOUS H BTUM BUMCET ALUMANI CCC COCK CAB CANNA H BTUM BLANKET WARKER HO CO CAB CANNET ACCT CEUN CONST COCK CO COCK COCK	FOOTUPEET FIRE TREATED PLYWOOD FIRE TREATED PLYWOOD RR FURENEED GAUGE FIRE TREATED PLYWOOD RR GAUSA GA	RD ROOF DRAM REFER RECERPENCE REFER RECERPENCE REC RECURED RM ROOM RO ROUGH OPENING S SOUTH SCW SOLD CORE WOOD SCO SEAT COVER DISPENSER SCM SCHEDULE SU SOLD CORE WOOD SCM SCHEDULE SU SOLD CORE WOOD SCM SCHEDULE SU SOLD CORE WOOD SCH SCHEDULE SU SOLD CORE WOOD SCH SCHEDULE SCM SCHEDULE SCT SECTION SF SCLARE FOOT FRET SG SSPLASH CALKARD SHARE T SM SIMILAR SM SIMILA	<text></text>	

## MECHANICAL REVISIONS REQUIRE DOH APPROVAL -PROVIDE APPROVED PLANS ON SITE





![](_page_1_Figure_0.jpeg)

- CORRECT THE PROBLEM.

# **KEYNOTES** DEMOLISH HARD LID CELING REMOVE EXISTING EQUIPMENT NECESSARY FOR REUSE AS NECESSARY NECESSARY AT NEW LOCATION REPLACE WITH NEW OF LEAD-LINED GYPSUM BOARD. FLOORING.

![](_page_1_Figure_15.jpeg)

![](_page_1_Figure_16.jpeg)

![](_page_1_Figure_17.jpeg)

![](_page_2_Figure_0.jpeg)

![](_page_2_Figure_2.jpeg)

![](_page_2_Figure_3.jpeg)

	F
G	ENERAL NOTES
1.	ALL DIMENSIONS TO FACE NOTED OTHERWISE.
2.	SEE ELECTRICAL AND STRU ADDITIONAL INFORMATION
3.	EQUIPMENT SHOWN IS FOR ACTUAL LOCATIONS OF EQ

REQUIREMENTS.

DRAWINGS AND PHILIPS SHEET E3. LOCATION WITH PHILIPS.

LOCATION WITH PHILIPS.

FINISH FLOOR.

![](_page_2_Picture_16.jpeg)

![](_page_2_Figure_17.jpeg)

	A	B
1		
Ι		
		2 1 1/2" = 1'-0"
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![](_page_3_Figure_1.jpeg)

- TAPER IN INSULATION. TAPERED INSULATION. PENETRATIONS. DRAWING.

![](_page_3_Figure_6.jpeg)

![](_page_4_Figure_0.jpeg)

![](_page_4_Figure_2.jpeg)

D

![](_page_4_Figure_3.jpeg)

![](_page_4_Figure_4.jpeg)

3 ENLARGED RCP - OR #1 - ITEMS IN OR BELOW CEILING 3/8" = 1'-0"

![](_page_4_Figure_6.jpeg)

## **REFLECTED CEILING PLAN** SO **GENERAL NOTES** 0 1. ALL CEILING HEIGHTS ARE RELATIVE TO TOP OF SLAB OR SUBFLOOR, UNO S 2. SEE ELECTRICAL AND MECHANICAL PLANS FOR ≚∟ LOCATIONS OF FIXTURES AND EQUIPMENT. 3. FIELD VERIFY EXISTING CEILING LAYOUTS PRIOR 10 TO ANY WORK. ¥Ш 4. SUSPENSION SYSTEMS FOR NEW AND EXISTING SUSPENDED GYPSUM BOARD CEILINGS SHALL BE - **-**MODIFIED TO FRAME AROUND CEILING INSTALLED ۲. ITEMS. SEE MECHANICAL AND ELECTRICAL DRAWINGS. 5. INSTALL BLOCKING AND BACKING FOR WINDOW C COVERING TRACKS. 6. REMOVE EXISTING CEILINGS WHERE NEW CEILINGS ARE SHOWN TO BE INSTALLED. V∢ 7. FOR TOP OF WALL DETAILS AND HEIGHT OF GYP BOARD ON WALLS, SEE PLANS, PARTITION TYPES, AND DETAILS. 8. RECESSED FIXTURES ARE TO MAINTAIN RATINGS WHERE LOCATED IN RATED CEILING ASSEMBLIES. myhre 9. REFERENCE VENDOR DRAWINGS FROM PHILIPS, PRICE AND STRYKER. STATE OF WASHINGTON **KEYNOTES** INSTALL NEW HARD LID CEILING (CFCI) USING SUSPENDED DRYWALL C.1 GRID SYSTEM. SEE SPECIFICATIONS. INSTALL NEW UNISTRUT RAIL SYSTEM (CFCI). SEE STRUCTURAL C.2 City of Puyallup DRAWINGS AND PRICE DRAWINGS. elopment & Permitting Services NEW PRICE ULTRASUITE OPERATING ROOM DIFFUSER SYSTEM WITH C.3 ISSUED PERMIT INTEGRATED LED LIGHTING (VFCI). REFER TO PRICE ULTRASUUITE Planning Building DRAWINGS, STRUCTURAL DRAWINGS FOR SUPPORT, MECHANICAL DRAWING FOR HVAC CONNECTIONS, AND ELECTRICAL DRAWINGS FOR Engineering ublic Work POWER. Traffic Fire C.4 NEW BOOM ASSEMBLY (VFVI). REFER TO STRYKER DRAWINGS FOR DETAILS, STRUCTURAL DRAWINGS FOR SUPPORT, MECHANICAL DRAWINGS FOR MEDICAL GAS CONNECTIONS, AND ELECTRICAL DRAWINGS FOR POWER AND LOW VOLTAGE CONNECTIONS. INSTALL NEW ACCESS PANEL (CFCI), SEE SPECIFICATIONS. C.5 PROVIDE 23-INCH X 27-INCH RECTANGULAR HOLE CENTERED ON THE STRYKER PRE-INSTALL PLATE IN THE FINISHED CEILING. 18-INCH WIDE X 18-INCH LONG X 6-INCH DEEP CEILING BOX (CFCI), FLUSH E.20 MOUNTED WITH REMOVABLE SCREW-TYPE COVER PLATE. PROVIDE ONE 3" DIA. CUTOUT. E.21 18-INCH WIDE X 18-INCH LONG X 6-INCH DEEP CEILING BOX (CFCI), FLUSH MOUNTED WITH REMOVABLE SCREW-TYPE COVER PLATE. PROVIDE ONE 2-1/2" DIA. CUTOUT. VB7 AND VB8 TO BE MOUNTED ON REAR SIDE OF FLEXVISION MONITOR. Sar 🔁 E.25 4-INCH WIDE X 4-INCH LONG X 2 1/2-INCH DEEP CEILING BOX (CFCI) FOR PHILIPS ITEM M3, FLUSH MOUNTED WITH REMOVABLE SCREW-TYPE COVER PLATE. HARDWIRE 120-240 VAC, 50-60 HZ HOSPITAL POWER TO -E.30 INSTALL STRYKER UDM JUNCTION BOX (VFCI), 10-INCH HIGH X 8-INCH Ŝ WIDE X 4-INCH DEEP MOUNTED WITHIN 18-INCHES OF BOOM MOUNT AND ACCESSIBLE FROM ACCESS PANEL. CONTRACTOR TO PROVIDE AC CIRCUIT TO THIS LOCATION. INSTALL STRYKER S-SERIES JUNCTION BOX (VFCI), 7.4" X 3.5" X 3.74", MOUNT ADJACENT TO THE MEDICAL GAS LINES ABOVE THE CEILING AND E.31 ACCESSIBLE FROM ACCESS PANEL. INSTALL CHROMOPHARE SK ENCLOSURE (VFCI), BELOW CEILING. E.34 PROVIDE CUTOUT FOR STRYKER SPEAKER, 7.25" X 10.75" (SEE STRYKER E.36 SUPPLIED TEMPLATE). PROVIDE JUNCTION BOX (CFCI) FOR STRYKER CAMERA (VFVI). 4X4 JUNCTION BOX WITH SINGLE-GANG MUD RING FLUSH MOUNTED IN E.37 CEILING. PROVIDE STRUCTURAL SUPPORT FOR AND INSTALL STRYKER BOOM D2 MOUNT PLATE (VFCI). BOOM PLATE TO BE MOUNTED 3-INCHES $\hat{A}\pm.25$ -INCH S.1 ABOVE FINISHED CEILING. SEE STRUCTURAL DRAWINGS. PROVIDE STRUCTURAL SUPPORT FOR AND INSTALL STRYKER BOOM D3 S.2 MOUNT PLATE (VFCI). BOOM PLATE TO BE MOUNTED 3-INCHES ±.25-INCH ABOVE FINISHED CEILING. SEE STRUCTURAL DRAWINGS. PROVIDE STRUCTURAL SUPPORT FOR AND INSTALL STRYKER BOOM D4 S.3 MOUNT PLATE (VFCI). BOOM PLATE TO BE MOUNTED 3-INCHES ±.25-INCH ABOVE FINISHED CEILING. SEE STRUCTURAL DRAWINGS. PROVIDE STRUCTURAL SUPPORT FOR AND INSTALL UNISTRUT SYSTEM S.4 (CFCI). SEE STRUCTURAL DRAWINGS. # HYBRID MULTICARE GOOI 100% CONSTRUCTION DOCUMENTS AREA OF WORK 04/07/2023 REVISIONS 1 ASI 001 02.27.2023 2 ASI 002 04.07.2023 6 ASI 005 03.15.2024 23004 ····· LEVEL 02 - ENLARGED REFLECTED CEILING PLAN A3.1

- C.7

![](_page_4_Figure_31.jpeg)

**KEY PLAN - LEVEL 2** 

![](_page_4_Figure_33.jpeg)

![](_page_4_Figure_34.jpeg)

![](_page_5_Figure_0.jpeg)

A =	PROVIDE CONTINUOUS ACOUS
3 =	PROVIDE ABUSE RESISTANT G
C =	PROVIDE 5/8" RESILIENT FURRI
	ON ONE SIDE
_ =	PROVIDE LEAD LINED GYPSUM
	SEE PHYSICIST REPORT
Γ=	PROVIDE CEMENTITIOUS BACK
S=	SHEAR WALL FRAME PER STRU

One layer 5/8" type X gypsum wallboard or gypsum veneer applied parallel or at right angles to each side of 3-5/8" steel studs 24" O.C.. with 1" type S drywall screws 8" O.C.. at vertical joints and 12" O.C.. at floor and ceiling runners and Joints staggered 24" on each side and on opposite sides. Sound tested with 3

One layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 3-5/8" steel studs 24" O.C.. with 1" type S drywall screws 8" O.C.. at vertical joints and 12" O.C.. at wall perimeter and intermediate studs. Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to ONE SIDE with 1 5/8" Type S Joints staggered 24" each layer and side. Sound tested with 3 1/2" glass fiber

parallel or at right angles to each side of 3-5/8" steel studs 24" O.C.. with 1" type S drywall screws. Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with 1 5/8" Type S

Joints staggered 24" each layer and side. Sound tested with 3 1/2" glass fiber GA WP 7051 / UL DESIGN U428 (Proprietary) One layer 1" x 24" proprietary type X gypsum panels inserted between 2 1/2"

OPPOSITE SIDE: Base layer 1/2" proprietary type X gypsum wallboard applied at right angles to studs with 1" type S drywall screws 24" O.C.. Face layer 1/2"

type proprietary type X gypsum wallboard applied parallel to studs with 1 5/8" Sound tested with 1 7/8" glass fiber friction fit in stud space.

![](_page_5_Picture_21.jpeg)

![](_page_6_Figure_0.jpeg)

	EQUIPMENT LEGEND
CC1	CART, INNERSPACE ROAM 2, CATH1 (OFOI)
CC2	CART, INNERSPACE ROAM 2, CATH2 (OFOI)
CC3	CART, INNERSPACE ROAM 2, CATH3 (OFOI)
MED	DISPENSER, MEDICATION (VFOI)
MRG	MERGE CABINET (OFCI).
NCCB	NURSE CALL W/ STAFF ASSIST AND CODE BLUE (CFCI)
OR1	CART, INNERSPACE ROAM 2, 0R1 (OFOI)
P-2ME	PHILIPS CERTERAY IX GENERATOR CABINET (VFVI).
P-ATY	PHILIPS ATY BOX (VFCI). AUXILIARY BOX - 6"W x 6"H x 4"D WALL BOX, FLUSH MOUNTED WITH REMOVABLE SCREW-TYPE COVER PLATE. VERIFY HEIGHT AND LOCATION WITH LOCAL PHILIPS SERVICE.
P-CY	PHILIPS CONTROL ROOM CONNECTION BOX (VFCI).
P-ERB	EQUI-POTENTIAL REFERENCE BAR (CFCI) MOUNTED IN A 12"W x 12"H x 4"D PULL BOX WITH HINGED COVER, SURFACE MOUNTED TO WR2.
P-MA	PHILIPS MAINS 40E CABINET (VFVI).
P-MB	PHILIPS IMAGE 40E CABINET (VFVI).
P-ME	PHILIPS CERTERAY IX GENERATOR CABINET (VFVI).
P-MR	PHILIPS PERIPHERAL 40E CABINET WITH CRC + EXTENSIONS (VFVI).
P-RAP	PHILIPS REMOTE ACCESS PANEL FOR UPS. VERIFY HEIGHT AND LOCATION WITH OWNER AND PHILIPS SERVICE.
P-UPS	PHILIPS UPS CABINET (VFCI).
P-VB2	PHILIPS VIDEO CONNECTION BOX (VFVI).
P-VB3	PHILIPS VIDEO CONNECTION BOX (VFVI).
P-VB4	PHILIPS VIDEO CONNECTION BOX (VFVI).
P-VB5	PHILIPS VIDEO CONNECTION BOX (VFVI).
P-VB6	PHILIPS VIDEO CONNECTION BOX (VFVI).
RCK	RACK, APRON, MOBILE (OFOI)
S-SK	STRYKER SK ENCLOSURE (VFCI).
S-SPI3	STRYKER SWITCHPOINT INFINITY 3 (VFVI).
WAV	TOUCHLESS WAVE SENSOR FOR AUTOMATIC DOOR (CFCI)
WBRD	WHITE BOARD (OFCI)

![](_page_7_Figure_0.jpeg)

![](_page_7_Figure_1.jpeg)

 GALV BRG PL PER STRUCTURAL PER STRUCTURAL ANCHOR BOLTS PER STRUCTURAL - GALV. CHANNEL W/ PL AT TOP PER STRUCTURAL

UPS SEISMIC BASE

and the second of the second second

1 1/2" = 1'-0"

MAX. WEIGHT - 50 POUNDS

3. USE #12 SELF TAPPING SHEET METAL SCREWS WHEN ATTACHING ITEMS TO BACKING PLATE.

4. WALL STUD FLANGES ARE CONTINUOUS.

![](_page_7_Figure_8.jpeg)

## NOTES:

HANDRAILS, ETC. MAX. WEIGHT - 100 LBS/FT

3. USE #12 SELF TAPPING SHEET METAL SCREWS WHEN ATTACHING ITEMS TO BACKING PLATE.

4. WALL STUD FLANGES ARE CONTINUOUS.

## NOTES:

1. TYPE 'C' BACKING PLATE FOR SCRUB SINKS AND WALL HUNG LAVS MAXIMUM WEIGHT - 200 POUNDS/FOOT

5. WALL STUD FLANGES ARE CONTINUOUS.

![](_page_7_Figure_23.jpeg)

![](_page_7_Figure_25.jpeg)

8 MOUNTING BRACKET 1 1/2" = 1'-0"

	Α	В
1		
		AREA OF WO
2		
		CC1
3		
4		
)4-PAV-HybridOR_dennisbeyer@ckarch.com.rvt <b>5</b>		
C:\Users\dennisbeyer\Documents\2300  3/19/2024 2:42:33 PM		1 EQUIPMEN 3/8" = 1'-0"

С

![](_page_8_Figure_2.jpeg)

D

## ENT PLAN - LEVEL 2

REFERENCE PHILIPS ORIGINAL EQUIPMENT DRAWING INFORMATION AND DETAILS

## **KEYNOTES**

E.4	J-BOX FOR CLOCK TIMER
E.32	PROVIDE JUNCTION BOX FOR SWITCHPOINT INFINITY X 4"D, FLUSH MOUNT, SET BOTTOM OF BOX 9" ABOVE
E.33	PROVIDE JUNCTION BOX FOR SPI3 TOUCH PANEL (CFC SINGLE-GANG MUD RING. MOUNT BOX WITHIN 18" OF
E.35	PROVIDE JUNCTION BOX (CFCI) FOR STRYKER CHRON CONTROL PANEL (VFVI). STANDARD 4X4 JUNCTION BO FINISH FLOOR.

Ε

## EQUIPMENT LEGEND

ANC	CART ANESTHESIA (OFOI)	
ANE	ANESTHESIA MACHINE (VFOI)	
CC1	CART, INNERSPACE ROAM 2, CAT	H1 (OFO
CC2	CART, INNERSPACE ROAM 2, CAT	H2 (OFO
CC3	CART, INNERSPACE ROAM 2, CAT	H3 (OFOI
DIS	DISPOSAL SHARPS (OFOI)	
HAM	HAMPER, LINEN (OFOI)	
INJ	INJECTOR, MOBILE (OFOI)	
IVS	STAND, IV (OFOI)	
LAR	LARYNGOSCOPE SET (OFOI)	
MAY	STAND, MAYO (OFOI)	
MED	DISPENSER, MEDICATION (VFOI)	
	MERGE CABINET (OFCI).	
OR1	CART INNERSPACE ROAM 2 0R1	
P-2ME	PHILIPS CERTERAY IX GENERATO	R CABIN
P-ATY	PHILIPS ATY BOX (VFCI). AUXILIA	RY BOX -
	4"D WALL BOX, FLUSH MOUNTED	
	LOCATION WITH LOCAL PHILIPS S	ERVICE.
P-MA	PHILIPS MAINS 40E CABINET (VFV	′I).
P-MB	PHILIPS IMAGE 40E CABINET (VFV	/I).
P-ME	PHILIPS CERTERAY IX GENERATO	R CABIN
P-MR	PHILIPS PERIPHERAL 40E CABINE	T WITH C
		∧/ו\/⊏ו די
	(VFVI).	viv⊏∟, II
P-RAP	PHILIPS REMOTE ACCESS PANEL	FOR UPS
	HEIGHT AND LOCATION WITH OW	NER AND
D_CD		
P-UPS	PHILIPS UPS CABINET (VEC.I)	
P-VB1	PHILIPS VIDEO CONNECTION BOX	(VFVI).
P-VB2	PHILIPS VIDEO CONNECTION BOX	(VFVI).
P-VB3	PHILIPS VIDEO CONNECTION BOX	(VFVI).
P-VB4	PHILIPS VIDEO CONNECTION BOX	(VFVI).
P-VB5		K (VEVI).
г-vdo PMP		(VEVI).
PRC1	CART, PROCEDURE (OFOI)	
PRC2	CART, PROCEDURE (OFOI)	
RCK	RACK, APRON, MOBILE (OFOI)	
S-J2	STRYKER SPI3 TOUCH PANEL (VF	VI).
5-5213 080	STAND BASIN (OFON)	ა (v⊦vI).
SHD		
SPC	CART, SUPPLY, 60IN (OFOI)	
STL	STOOL (OFOI)	
TBU	TABLE, UTILITY (OFOI)	
TIN1	TABLE, INSTRUMENT 33IN (OFOI)	
TIN2	Image: Fable, INSTRUMENT 60IN (OFOI)         Image: Fable, INSTRUMENT 60IN (OFOI)	
	UAKI, UTILITY (UFUI) WHITE ROARD (OECI)	
WDS		SI)
WMR	WARMER, FLUID (OFOI)	<i></i>
WMRB	WARMER, BAIR HUGGER (OFOI)	
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<u>=LECIF</u> 18" 49"		-
ρο 48 <sup></sup> Φ Φ ΡΟΙ	VER OUTLET, DUPLEX (CRITICAL AND NORMAL)	
48" ••• •••		
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∩∩	OR ACTUATOR, CARD READER	
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ש D00 ש D00	DR ACTUATOR, TOUCHLESS (HAND WAVE)	
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KEY PL	AN - LEVEL 2	
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![](_page_8_Picture_10.jpeg)

THESE GENERAL NOTES ARE TO BE USED AS A SUPPLEMENT TO THE SPECIFICATIONS. ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, THE SPECIFICATIONS, THESE GENERAL NOTES AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ARCHITECT, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE GENERAL CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE GENERAL CONTRACTOR'S RISK. THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE DIMENSIONS AMONG ALL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORK OR FABRICATION. THE STRUCTURE HAS BEEN DESIGNED TO RESIST CODE SPECIFIED VERTICAL AND LATERAL FORCES AFTER THE CONSTRUCTION OF ALL STRUCTURAL ELEMENTS HAS BEEN COMPLETED. STABILITY OF THE STRUCTURE PRIOR TO COMPLETION IS THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THIS RESPONSIBILITY INCLUDES BUT IS NOT LIMITED TO JOB SITE SAFETY: ERECTION MEANS, METHODS, AND SEQUENCES: TEMPORARY SHORING, FORMWORK, BRACING: USE OF EQUIPMENT AND CONSTRUCTION PROCEDURES. PROVIDE ADEQUATE RESISTANCE TO LOADS ON THE STRUCTURES DURING CONSTRUCTION PER SEI/ASCE STANDARD NO. 37-14 "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION."

CONSTRUCTION OBSERVATION BY THE STRUCTURAL ENGINEER IS FOR GENERAL CONFORMANCE WITH DESIGN ASPECTS ONLY AND IS NOT INTENDED IN ANY WAY TO REVIEW THE CONTRACTOR'S CONSTRUCTION PROCEDURES

ALL METHODS, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED AND ADOPTED BY THE LOCAL BUILDING OFFICIAL OR APPLICABLE JURISDICTION. **CONTRACT DRAWINGS / DIMENSIONS** 

ARCHITECTURAL DRAWINGS ARE THE PRIME CONTRACT DRAWINGS. CONSULTANT DRAWINGS BY OTHER DISCIPLINES ARE SUPPLEMENTARY TO ARCHITECTURAL DRAWINGS. REPORT DIMENSIONAL OMISSIONS OR DISCREPANCIES BETWEEN ARCHITECTURAL DRAWINGS AND STRUCTURAL, MECHANICAL, ELECTRICAL OR CIVIL DRAWINGS TO ARCHITECT PRIOR TO PROCEEDING WITH WORK.

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS. PRIMARY STRUCTURAL ELEMENTS ARE DIMENSIONED ON STRUCTURAL PLANS AND DETAILS AND OVERALL LAYOUT OF STRUCTURAL PORTION OF WORK. SOME SECONDARY ELEMENTS ARE NOT DIMENSIONED, SUCH AS WALL CONFIGURATIONS, INCLUDING EXACT DOOR AND WINDOW LOCATIONS, ALCOVES, SLAB SLOPES AND DEPRESSIONS CURBS, ETC. VERTICAL DIMENSIONAL CONTROL IS DEFINED BY ARCHITECTURAL WALL SECTIONS AND BUILDING SECTIONS. STRUCTURAL DETAILS SHOW DIMENSIONAL RELATIONSHIPS TO CONTROL DIMENSIONS DEFINED BY ARCHITECTURAL DRAWINGS. DETAILING AND SHOP DRAWING PRODUCTION FOR STRUCTURAL ELEMENTS WILL REQUIRE DIMENSIONAL INFORMATION CONTAINED IN **BOTH** ARCHITECTURAL AND STRUCTURAL DRAWINGS.

## **DESIGN CRITERIA**

VERTICAL	LOADS

AREA	DESIGN DEAD LOAD	LIVE LOAD (1)	PARTITION LOAD	CONCENTRATED LOADS
OPERATING ROOM		60 PSF	+EQUIPMENT	1,000#
CORRIDORS ABOVE FIRST FLOOR		80 PSF		1,000#
ROOF	15 PSF	25 PSF		300#

(1) LIVE LOADS EXCEPT SNOW LOADS ARE REDUCED PER IBC SECTION 1607.11.

<u>SNOW:</u> (MINIMUM ROOF SNOW LOAD = 25 PSF)

Pg = 18 PSF = GROUND SNOW LOAD

Pf = 0.7CeCtIsPg = FLAT ROOF SNOW LOAD

Ps = CsPf = SLOPED ROOF SNOW LOAD Is = 1.2 Ce = 1.0, Ct = 1.0, Cs = VARIES

LATERAL FORCES

BRACING AND ANCHORAGE OF EQUIPMENT DESIGNED PER ASCE 7-16 CHAPTER 13

SEISMIC:

$$Fp = \frac{0.4 a_P S_{DS} W_P}{\left(\frac{R_P}{I_P}\right)} (1+2\frac{z}{h})$$

WHERE an = VARIES BY COMPONENT z = VARIES BY COMPONENT  $R_p$  = VARIES BY COMPONENT h = 73' I\_= 1.5

SPECTRAL RESPONSE ACCELERATIONS  $S_s = 1.267$   $S_1 = 0.436$ 

SITE CLASS = D-DEFAULT DESIGN SPECTRAL RESPONSE ACCELERATIONS S<sub>DS</sub> = 1.013 & S<sub>D1</sub> = N/A

PIPES, DUCTS AND MECHANICAL EQUIPMENT SUPPORTED OR BRACED FROM STRUCTURE. CONFORM TO SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC. PUBLICATION "SEISMIC RESTRAINT MANUAL: GUIDELINES FOR MECHANICAL SYSTEMS". SPRINKLER LINE ATTACHMENTS SHALL CONFORM TO NFPA PAMPHLET 13.

COMPOSITE STRENGTHENING SYSTEM: SHALL BE "TYFO" COMPOSITE STRENGTHENING SYSTEM BY FYFE CO., OR PRE-APPROVED EQUAL. SYSTEM SHALL CONFORM TO THE REQUIREMENTS OF ASTM D3039, ASTM D2563, AND ASTM E1142, AND SHALL HAVE A CURRENT ICC-ES EVALUATION REPORT. SYSTEM SHALL BE DESIGNED TO CARRY THE LOADS INDICATED ON THE DRAWINGS. SHOP DRAWINGS AND CALCULATIONS BEARING THE STAMP OF A STRUCTURAL ENGINEER LICENSED AS SUCH IN THE STATE OF WASHINGTON SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW.

## **POST-INSTALLED ANCHORS**

<u>POST-INSTALLED ANCHORS</u>: SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE STRUCTURAL ENGINEER PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH REBAR. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS. INSTALLER SHALL BE QUALIFIED AND TRAINED BY THE MANUFACTURER. HOLES SHALL BE HAMMER DRILLED ONLY (ROTARY DRILLED ONLY AT UNREINFORCED MASONRY - NO HAMMER TOOLS).

SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW, SHALL BE SUBMITTED FOR APPROVAL A MINIMUM OF 2 WEEKS PRIOR TO BID, ALONG WITH CALCULATIONS THAT SHALL BE STAMPED BY A PROFESSIONAL ENGINEER (LICENSED IN THE STATE OF THE PROJECT) DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE.

CONCRETE ANCHORS: - ADHESIVE ANCHORS: HILTI HIT-HY 200 V3 (ICC-ESR-4868), HILTI HIT-RE 500 V3 (ICC-ESR-3814), DEWALT PURE 110+ (ICC-ESR-3298) OR SIMPSON SET-3G (ICC-ESR-4057) OR PRE-APPROVED EQUAL.

- \*CONCRETE SHALL BE A MINIMUM OF 21 DAYS OLD AT TIME OF INSTALLATION. \*CONCRETE SHALL BE IN THE TEMPERATURE RANGE AS REQUIRED BY THE CONCRETE
- MANUFACTURER.
- \*HOLE SHALL BY HAMMER-DRILLED ONLY.
- \*DO NOT INSTALL IN WATER-FILLED HOLES.
- \*INSTALLER OF HORIZONTAL OR UPWARDLY INCLINED (ANY POSITION EXCEPT DIRECTLY DOWNWARD) ANCHORS SHALL ALSO BE CERTIFIED BY THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM.

- EXPANSION ANCHORS: KWIKBOLT TZ2 (ICC ESR-4266) BY HILTI, INC., OR PRE-APPROVED EQUAL. - SCREW ANCHORS: KWIK HUS-EZ (ICC ESR-3027) BY HILTI, INC., OR PRE-APPROVED EQUAL.

## STRUCTURAL STEEL

DETAILING, FABRICATION AND ERECTION

ALL WORKMANSHIP SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION, 15TH EDITION, THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS JULY 7, 2016, THE AISC CODE OF STANDARD PRACTICE, JUNE 15, 2016 AND THE AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, JULY 12, 2016.

STEEL MEMBERS ARE EQUALLY SPACED BETWEEN COLUMNS AND/OR DIMENSION POINTS UNLESS NOTED OTHERWISE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDES AND JOINT PREPARATIONS THAT INCLUDE BUT ARE NOT LIMITED TO, ERECTION ANGLES, LIFT HOLES, AND OTHER AIDES, WELDING PROCEDURES, REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, WELD EXTENSION TABS. COPES. SURFACE ROUGHNESS VALUES AND TAPERS OF UNEQUAL PARTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLIANCE WITH ALL CURRENT OSHA REQUIREMENTS.

HOLES. COPES OR OTHER CUTS OR MODIFICATIONS OF THE STRUCTURAL STEEL MEMBERS SHALL NOT BE MADE IN THE FIELD WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.

## STEEL FABRICATORS

NON-AISC CERTIFIED STEEL FABRICATORS SHALL HAVE FIVE YEARS MINIMUM EXPERIENCE ON SIMILAR PROJECTS OF EQUAL OR LARGER COMPLEXITY AND SCOPE. QUALIFICATIONS SHALL BE SUBMITTED TWO WEEKS PRIOR TO SHOP DRAWING PRODUCTION.

STEEL DETAILERS

MATERIAL PROPERTIES

# <u>WELDING</u>

WELD TABS (ALSO KNOWN AS WELD "EXTENSION" TABS OR "RUN OFF" TABS) SHALL BE USED. AFTER THE WELD HAS BEEN COMPLETED THE WELD TABS SHALL BE REMOVED AND THE WELD END GROUND TO A SMOOTH CONTOUR. WELD "DAMS" OR "END DAMS" SHALL NOT BE USED.

SUBSEQUENT PASSES DEPOSITED IN A JOINT SHALL BE COMPATIBLE.

RATINGS AS FOLLOWS:

**GRAVITY FRAME** 

WI	

PARTIAL PENETRATION COMPLETE PENETRATION

FILLET

RCSC SPECIFICATION.

BOLTED CONNECTIONS INSPECTION: CONNECTIONS MADE WITH BEARING TYPE BOLTS SHALL BE INSPECTED PER SECTION 9.1 AND CONNECTIONS MADE WITH SLIP-CRITICAL TYPE BOLTS (A325SC OR A490SC) SHALL BE INSPECTED PER SECTION 9.3 OF RCSC SPECIFICATION.

FINISH: STRUCTURAL STEEL SHALL BE UNPAINTED, UNLESS NOTED OTHERWISE, AND SHALL BE CLEAN OF LOOSE RUST, LOOSE MILL SCALE, OIL, GREASE AND OTHER FOREIGN SUBSTANCES AND SHALL MEET THE REQUIREMENTS OF SSPC-SP1. WHERE STRUCTURAL STEEL IS NOTED TO BE PAINTED, ALL AREAS COMPRISING THE FAYING SURFACES OF BOLTED CONNECTIONS MADE WITH SLIP-CRITICAL TYPE BOLTS (A325SC OR A490SC) SHALL COMPLY WITH THE REQUIREMENTS OF THE RCSC SPECIFICATION. WHERE STRUCTURAL STEEL IS NOTED TO BE GALVANIZED, IT SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123, A384, AND A385. ALL SURFACES WITHIN TWO INCHES OF ANY FIELD WELD LOCATION SHALL BE FREE OF MATERIALS THAT WOULD PREVENT PROPER WELDING OR PRODUCE OBJECTIONABLE FUMES. FIELD TOUCH-UP OF PRIMED, PAINTED, AND GALVANIZED SURFACES SHALL BE PERFORMED TO REPAIR COATING ABRASIONS, AS WELL AS TO PROTECT ALL AREAS AT CONNECTIONS.

## MISCELLANEOUS:

STRUCTL MISCELLAN CONTRACT

DEFERRED SUBMITTALS NOTED.

1.	FIBER	REII

## NON-AISC CERTIFIED STEEL ERECTORS SHALL HAVE FIVE YEARS MINIMUM EXPERIENCE ON SIMILAR PROJECTS OF EQUAL OR LARGER COMPLEXITY AND SCOPE. QUALIFICATIONS SHALL BE SUBMITTED TWO WEEKS PRIOR TO SHOP DRAWING PRODUCTION.

ALL STEEL DETAILING SHALL BE PERFORMED BY A DETAILER WITH FIVE YEARS MINIMUM EXPERIENCE ON SIMILAR PROJECTS OF EQUAL OR LARGER COMPLEXITY AND SCOPE. QUALIFICATIONS SHALL BE SUBMITTED TWO WEEKS PRIOR TO SHOP DRAWING PRODUCTION.

WIDE FLANGE SECTIONS: ASTM A992 (Fy = 50 KSI)

OTHER SHAPES AND PLATES: ASTM A36 (Fy = 36 KSI) TYP. U.N.O.; ASTM A572 (Fy = 50 KSI) WHERE INDICATED

HOLLOW STRUCTURAL SECTIONS: RECTANGULAR & SQUARE - ASTM A500, GRADE C (Fy = 50 KSI) ROUND - ASTM A500, GRADE C (Fy = 46 KSI)

STRUCTURAL STEEL PIPES: ASTM A53, GRADE B, TYPE E OR S (Fy = 35 KSI)

MACHINE BOLTS (M.B.): ASTM A307, GRADE A

HIGH-STRENGTH BOLTS: A325-ASTM F1852, A490-ASTM F2280

ANCHOR BOLTS (A.B.): ASTM F1554, GRADE 36, UNLESS OTHERWISE NOTED, ASTM F1554, GRADE 105 WHERE INDICATED.

STRUCTURAL STEEL: WELD IN ACCORDANCE WITH "STRUCTURAL WELDING CODE" AWS D1.1.

<u>CERTIFICATION</u>: ALL WELDING SHALL BE PERFORMED BY WABO CERTIFIED WELDERS. WELDERS SHALL BE PREQUALIFIED FOR EACH POSITION AND WELD TYPE WHICH THE WELDER WILL BE PERFORMING.

THE PROCESS CONSUMABLES FOR ALL WELD FILLER METAL INCLUDING TACK WELDS, ROOT PASS AND

ALL WELD FILLER METAL AND WELD PROCESS SHALL PROVIDE THE TENSILE STRENGTH AND CHARPY V-NOTCH

ELD TYPE FILLER METAL TENSILE STRENGTH CHARPY V-NOTCH (CVN) RATING 70 KSI ----70 KSI ----70 KSI 20 FT-LBS @ 40 DEG F

## WELDED CONNECTIONS INSPECTION:

 ALL WELDING SHALL BE CHECKED BY VISUAL MEANS AND BY OTHER METHODS DEEMED NECESSARY BY THE WELDING INSPECTOR.

THE STANDARDS OF ACCEPTANCE FOR WELDS TESTED BY ULTRASONIC METHODS SHALL CONFORM TO AWS D1.1.

ALL WELDS FOUND TO BE DEFECTIVE SHALL BE REPAIRED AND REINSPECTED BY THE SAME METHODS ORIGINALLY USED, AND THIS REPAIR AND REINSPECTION SHALL BE PAID FOR BY THE CONTRACTOR

## GENERAL REQUIREMENTS

HIGH-STRENGTH BOLTS: ALL A325 HIGH-STRENGTH BOLTS (HSB) SHALL BE ASTM F3125, GRADE F1852, UNLESS OTHERWISE DESIGNATED AS A490. ALL HSB DESIGNATED AS A490 SHALL BE ASTM F3125, GRADE F2280. ALL HSB SHALL BE BY "LEJEUNE BOLT COMPANY" OR PRE-APPROVED EQUAL AND SHALL BE INSTALLED PER SECTION 8.2 OF THE "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS", AUGUST 2014 BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC SPECIFICATION). ALL BOLT HOLES SHALL BE STANDARD ROUND HOLES UNLESS NOTED OTHERWISE. THE FAYING SURFACES OF ALL PLIES WITHIN THE GRIP OF SLIP-CRITICAL BOLTS (A325SC OR A490SC) SHALL MEET THE REQUIREMENTS FOR A CLASS A SURFACE PER SECTION 3.2 OF THE

ADHESIVE ANCHOR RODS: FULLY THREADED ASTM F1554, GRADE 36 UNLESS NOTED OTHERWISE.

PRE-APPROVED SUBSTITUTIONS: SUBSTITUTIONS MAY BE ALLOWED ONLY IF THEY MEET THE REQUIREMENTS OF THESE GENERAL NOTES AND THE SPECIFICATIONS, AND IF COMPLETE WRITTEN ENGINEERING DATA FOR EACH CONDITION REQUIRED FOR THIS PROJECT IS PROVIDED TO THE STRUCTURAL ENGINEER TWO WEEKS PRIOR TO BID DATE AND APPROVED IN WRITTEN ADDENDA BY THE ARCHITECT. DATA IS TO INDICATE CODE BASIS BY YEAR, AUTHORITY FOR STRESSES AND STRESS INCREASES, IF ANY, AND AMOUNT OF EXPECTED DEFLECTION FOR FLEXURAL MEMBERS UNDER (1) TOTAL LOAD AND (2) LIVE LOAD ONLY. ALL INCREASED COSTS IN MECHANICAL. SPRINKLER. ELECTRICAL OR GENERAL INSTALLATION AND ANY ARCHITECTURAL OR STRUCTURAL REDESIGN RESULTING FROM SUBSTITUTION SHALL BE BORNE BY THE GENERAL CONTRACTOR.

## SHOP DRAWINGS/SUBMITTALS

THE FOLLOWING SHOP DRAWINGS/SUBMITTALS SHALL BE PROVIDED FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION OR DELIVERY.

	STRUCTURAL ENGR.	BLDG. DEPT.
AL STEEL	Х	Х
IEOUS STEEL	Х	Х
OR'S STATEMENT OF RESPONSIBILITY	Х	Х

THE FOLLOWING ARE NOT INCLUDED WITH THE BUILDING PERMIT DRAWINGS AND SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL AS A DEFERRED SUBMITTAL. SUBMITTALS SHALL BE STAMPED BY A ENGINEER LICENSED IN THE STATE OF THE PROJECT AS

	ENGINEER STAMP REQUIRED
INFORCING POLYMERS	SE

SPECIAL INSPECTION: SPECIAL INSPECTION SHALL BE PROVIDED BY AN INDEPENDENT TESTING LABORATORY PER THE REQUIREMENTS OF IBC CHAPTER 17 AND THE LOCAL BUILDING OFFICIAL OR APPLICABLE JURISDICTION AND THE CONTRACT DOCUMENTS. THE SPECIAL INSPECTOR SHALL SUBMIT INSPECTION REPORTS AND A FINAL SIGNED REPORT TO THE BUILDING OFFICIAL FOR THE ITEMS LISTED IN THE QUALITY ASSURANCE/SPECIAL INSPECTION SECTION:

## PRCTI20221788 REVISED SHEET

STRUCTURAL DRAWING INDEX						
SHEET NUMBER	SHEET DESCRIPTION					
50.1	GENERAL NOTES					
50.2	GENERAL NOTES					
51.0	FRAMING PLANS					
52.0	DETAILS					
52.1	DETAILS					
52.2	DETAILS}					
Grand total: 6	3					

![](_page_9_Picture_112.jpeg)

![](_page_10_Figure_0.jpeg)

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SPECIAL INSPECTIO	N: SPECIAL INSPECTION SHALL BE PROVIDED PER THE R	EQUIREMENTS OF	FIBC SECTION	1704 AND 1705 AND AS NOTED HEREIN.	
STRUCTURAL SYSTEM	VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	COMMENTS	REFERENCES
STEEL CONSTRUCTION	MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS		Х		AISC 360 CHAPTER N5
	HIGH-STRENGTH BOLTING A. SNUG-TIGHT JOINTS		Х		AISC 360 CHAPTER N5
	MATERIAL VERIFICATION OF STRUCTURAL STEEL A. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360 B. MANUFACTURER'S CERTIFIED MILL TEST REPORTS		x x	MANUFACTURER TO PROVIDE CERTIFIED MILL TEST REPORTS	AISC 360 CHAPTER N5 AISC 341 CHAPTER J6
	MATERIAL VERIFICATION OF WELD FILLER MATERIALS A. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATIONS LISTED IN GENERAL NOTES B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE		X X	MANUFACTURER TO PROVIDE CERTIFICATE OF COMPLIANCE	AISC 360 CHAPTER N5
	INSPECTION OF WELDING A. COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS B. MULTI-PASS FILLET WELDS C. SINGLE-PASS FILLET WELDS > 5/16" D. FIELD-INSTALLED WELDED STUDS	X X X	Х	SPECIAL INSPECTIONS IN THIS SECTION MAY BE WAIVED WHERE FABRICATION IS PERFORMED ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED IN ACCORDANCE WITH IBC SECTION 1704.2.5 AND WITH APPROVAL OF THE BUILDING OFFICIAL.	AISC 360 CHAPTER N5 AISC 341 CHAPTER J6 AWS D1.1
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	INSPECTION OF LATERAL FORCE-RESISTING SYSTEM CONNECTIONS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS		X		
CONCRETE	ANCHORS POST-INSTALLED IN HARDENED CONCRETE (MECHANICAL ANCHORS INSTALLED IN ANY DIRECTION AND ADHESIVE ANCHORS INSTALLED DOWNWARD)		x	PERIODIC INSPECTION TO INCLUDE A QUANTITY OF 10% WITH A MINIMUM OF (5) ANCHORS INSPECTED PER INSTALLER ON A DAILY BASIS.	ACI 318: 17.8.2 MFR EVAL REPORT MFR PUBLISHED INSTALLATION INSTRUCTIONS
	ANCHORS POST-INSTALLED IN HARDENED CONCRETE (ADHESIVE ANCHORS INSTALLED HORIZONTAL OR UPWARDLY INCLINED)	X			ACI 318: 17.8.2 MFR EVAL REPORT MFR PUBLISHED INSTALLATION INSTRUCTIONS
FIRE-	SPRAYED FIRE-RESISTANT MATERIALS		X		IBC 1705.14
MATERIALS	MASTIC AND INTUMESCENT COATINGS		Х		IBC 1705.15
SUSPENDED CEILINGS	ANCHORAGE AND SEISMIC BRACING		Х		
CLADDING, AND NON-BEARING WALLS	ERECTION AND FASTENING		Х	NOT REQUIRED FOR STRUCTURES ≤ 30 FT OR CLADDING OR VENEER ≤ 5 PSF OR INTERIOR NON-BEARING WALLS ≤ 15 PSF	IBC 1705.12.5
EMERGENCY OR STANDBY POWER SYSTEMS	ANCHORAGE OF EQUIPMENT TO STRUCTURE		х		IBC 1705.12.6
PIPING SYSTEMS AND MECHANICAL UNITS CONTAINING HAZARDOUS MATERIALS	ANCHORAGE AND BRACING OF EQUIPMENT TO STRUCTURE		Х		IBC 1705.12.6
HVAC DUCTWORK CONTAINING HAZARDOUS MATERIALS	ANCHORAGE AND BRACING OF DUCTWORK TO STRUCTURE		Х		IBC 1705.12.6
VIBRATION ISOLATION SYSTEMS	INSTALLATION OF SYSTEMS REQUIRING ≤ 1/4 INCH CLEARANCE BETWEEN EQUIPMENT SUPPORT FRAME AND RESTRAINT		Х		IBC 1705.12.6, 1705.12.8
MECHANICAL AND ELECTRICAL SYSTEMS	MINIMUM CLEARANCE TO SPRINKLER PIPING OF 3"		Х		IBC 1705.12.6

TESTING AND SPECIAL INSPECTION REPORTS SHALL BE PREPARED FOR EACH INSPECTION ITEM ON A DAILY BASIS WHENEVER WORK IS PERFORMED ON THAT ITEM. REPORTS SHALL BE DISTRIBUTED TO OWNER, CONTRACTOR, BUILDING OFFICIAL, ARCHITECT AND STRUCTURAL ENGINEER OF RECORD.

STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY THE STRUCTURAL ENGINEER OF RECORD OR DESIGNATED REPRESENTATIVE IN ACCORDANCE WITH IBC 1704.6. STRUCTURAL OBSERVATION SHALL BE PERFORMED AS FOLLOWS:

- » PERIODIC VISUAL OBSERVATION OF STRUCTURAL SYSTEMS FOR GENERAL CONFORMANCE TO CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES.
- » REVIEW OF TESTING AND INSPECTION REPORTS.
- » REPORTS SHALL BE PREPARED FOR EACH SITE VISIT AND SHALL BE DISTRIBUTED TO ARCHITECT.

GENERAL CONTRACTOR SHALL SUBMIT A WRITTEN CONTRACTOR'S STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL INCLUDE ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTION.

	ABBREVIATI	ON LIST	
0	AT	HDR	HEADER
A.B.	ANCHOR BOLT	HGR	HANGER
ADD'L	ADDITIONAL	HORIZ.	HORIZONTAL
A.F.F.	ABOVE FINISH FLOOR	HSS	HOLLOW STRUCTURAL SECTION
ALT.	ALTERNATE	HT	HEIGHT
ARCH.	ARCHITECTURAL	INT.	INTERIOR
BLD'G	BUILDING	JST	JOIST
BLK'G	BLOCKING		
	BOTTOM OF FOOTING		ANGLE
BOT	BOTTOM	L.I .K.J.	
BRB	BUCKLING RESTRAINED BRACE		LONG LEG HORIZONTAL
BRG	BEARING	LLV	LONG LEG VERTICAL
BTWN	BETWEEN	LOC.	LOCATION
B.V.	BUILT UP	LSL	LAMINATED STRAND LUMBER
(C= )	CAMBER	LVL	LAMINATED VENEER LUMBER
CANT.	CANTILEVER	MAX.	MAXIMUM
CFS	COLD-FORMED STEEL	M.B.	MACHINE BOLT
C.J.	CONTROL/CONSTRUCTION JOINT	MECH.	MECHANICAL
Ý	CENTERLINE	MEZZ.	MEZZANINE
CLR.	CLEARANCE	MFR	MANUFACTURER
CMU	CONCRETE MASONRY UNIT	MIN.	MINIMUM
COL.	COLUMN	MISC.	MISCELLANEOUS
CONC.	CONCRETE	MTL	METAL
CONN.	CONNECTION	N.F.	NEAR FACE
CONST.	CONSTRUCTION	N.S.	NEAR SIDE
CONT.	CONTINUOUS	NTS	NOT TO SCALE
ONTR.	CONTRACTOR	0.C.	ON CENTER
OORD.		OPN'G	OPENING
C.P.	COMPLETE PENETRATION	OPP.	
		P.A.F.	POWDER ACTUATED FASTENER
C.Y.		PERP.	
	DEMAND CRITICAL WELD	P.P.	PARTIAL PENETRATION
	DUUGLAS FIR	P.P.I.	PRESERVATIVE PRESSURE TREATED
		P.5.F.	PUUNDS PER SQUARE FUUT
	DIMENSION	PJL PT	POST TENSION
		Р.I. РМ	
DWG	DRAWING	PEINE	REINEORCEMENT
		READ	REQUIRED
	EXISTING	SCHED	SCHEDUL F
FA	FACH	SCI	STRUCTURAL COMPOSITE LUMBER
FF	EACH FACE	SHT'G	SHEATHING
EL.	ELEVATION	SIM	SIMILAR
ELEV.	ELEVATOR	5.06	SLAB ON GRADE
ENGR	ENGINEER	SQ.	SQUARE
EQ.	EQUAL	STD	STANDARD
E.W.	ЕАСН МАҮ	STIFF.	STIFFENER
EXP.	EXPANSION	STL	STEEL
EXT.	EXTERIOR	STRUCT.	STRUCTURAL
FDN	FOUNDATION	T₿B	TOP & BOTTOM
F.F.	FAR FACE	T₿G	TONGUE AND GROOVE
FLR	FLOOR	THR'D	THREADED
=.0.M.	FACE OF MASONRY	T. <i>O</i> .F.	TOP OF FOOTING
F.O.S.	FACE OF STUD	T.0.5.	TOP OF STEEL
RM'G	FRAMING	TRT'D	TREATED
F.R.T.	FIRE RETARDANT TREATED	TYP.	TYPICAL
F.S.	FAR SIDE	U.N.O.	UNLESS NOTED OTHERWISE
FTG	FOOTING	U.T.	ULTRASONIC TESTED
G٨	GAGE/GAUGE	VERT.	VERTICAL
UA.	GALVANIZED	Μ/	WITH
GALV.			WORK POINT
GALV. GL.	GLULAM	W.P.	
GALV. GL. GR.	GLULAM GRADE	W.P. MT	WEIGHT

![](_page_10_Figure_17.jpeg)

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![](_page_11_Picture_2.jpeg)

![](_page_12_Figure_0.jpeg)

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![](_page_14_Figure_3.jpeg)

В

	SYMBOL		
— - — <b>(</b>	MATCH LINE		SOLENOID VALVE
$\left\langle \frac{\text{EF}}{1} \right\rangle$	EQUIPMENT TAG		RADIUS ELBOW, R/D=1.5 UNLESS NOTED O
,	POINT OF CONNECTION, NEW WORK TO EXISTING WORK		DUCT MOUNTED COIL
	POINT OF DISCONNECTION		
<u>SD-1</u> 550	AIR OUTLET/ INLET DEVICE DESIGNATION SCHEDULE) AIRFLOW (CEM)		SHOWN IN ORDER (LEFT TO RIGHT): FIRE DAMPER (FD) / SMOKE DAMPER (SD) / COMBINATION FIRE SMOKE DAMPER (FSD)
۶ــــــــــــــــــــــــــــــــــــ	NEW WORK EXISTING WORK TO REMAIN	© TU-01	ROOM SENSOR OR THERMOSTAT (WITH ZO EQUIPMENT DESIGNATION WERE APPLICAT ROOM SENSOR OR THERMOSTAT (WITH LE
← — — → UP	EXISTING WORK TO BE REMOVED		RELATED EQUIPMENT HUMIDITY SENSOR (WITH ZONE OR EQUIPM
	SLOPE PIPE UP OR DOWN (DN) AS NOTED		DESIGNATION WERE APPLICABLE) HUMIDITY SENSOR (WITH LEADER TO RELA EQUIPMENT
	BOTTOM / UP PIPE CONNECTION		DUCT SMOKE DETECTOR (SHOWN HERE TO FURNISHED BY ELECTRICAL)
	GLOBE VALVE		CEILING SUPPLY DIFFUSER
	CHECK VALVE		CEILING RETURN REGISTER OR GRILLE
	STOP CHECK VALVE		CEILING EXHAUST REGISTER OR GRILLE DIFFUSER, REGISTER OR GRILLE THROW I
	CALIBRATED FLOW BALANCE VALVE		RETURN OR EXHUAST)
<u>Б</u>	HOSE END BALL VALVE WITH CAP AND CHAIN	$\rightarrow$	SUPPLY REGISTER OR GRILLE
	BUTTERFLY VALVE	 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
ç∫	PITOT LOCATION	<u>۴</u> -	RETURN OR EXHAUST REGISTER OR GRILL
,, <b>€</b>	2-WAY MODULATING CONTROL VALVE	∫ fl so	
,, <b>↓</b> ,	2-WAY 2-POSITION CONTROL VALVE		SCREENED RETURN OR EXHAUST AIR OPE
	3-WAY MODULATING CONTROL VALVE		
,,	3-WAY 2-POSITION CONTROL VALVE		SLOPING RISE OR DROP IN RECTANGULAR
			SLOPING RISE OR DROP IN ROUND DUCTW
Птаv			RECTANGULAR DUCT, SIZE BASED ON CLE
$\sim$		- 18x12	INSIDE DIMENSIONS, FIRST FIGURE INDICA PLAN SIZE
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, _,, _	PRESSURE GAUGE, STEAM SYSTEMS		
, <u> </u>	PRESSURE GAUGE, HYDRONIC SYSTEMS	- <u>180</u>	ROUND DUCT. DIAMETER SIZE BASED ON
	VACUUM BREAKER	2 18Ø	CLEAR INSIDE DIMENSIONS
	FLOW METER (INSTANTANEOUS FLOW)		
5	TOTALIZING FLOW METER	24x10Ø	FLAT OVAL DUCT, SIZE BASED ON CLEAR II DIMENSIONS. FIRST FIGURE INDICATES PL
, EMB , , , , , , , , , , , , , , , , , , ,	BTU METER	24x10∅ ≤	
	PIPE SLIDE	<u>∠ 18x12 AL</u>	
	CHANGE IN PIPE SIZE, CONCENTRIC REDUCER UNLESS SPECIFIED DIFFERENTLY		ACOUSTIC LINING IN DUCT (SIZE NOTED IN INSIDE CLEAR DIMENSIONS)
		BDD• SGD=	BACK DRAFT DAMPER/
			SLIDE GATE DAMPER
	WYE TYPE STRAINER		
	REDUCED PRESSURE BACKFLOW PREVENTER SIGHT GLASS		SUPPLY DUCT TURNING UP. (IN ORDER SH RECTANGULAR, FLAT OVAL & ROUND)
,, <u> </u>	HIGH PRESSURE STEAM TRAP ASSEMBLY		
۶ <u>۶</u>	LOW PRESSURE STEAM TRAP ASSEMBLY		SUPPLY DUCT TURNING DOWN (IN ORDER
<u>}</u>	BLIND FLANGE	নি ন	RECTANGULAR, FLAT OVAL & ROUND)
⊱HWS	HEATING WATER SUPPLY		
⊱HWR≶	HEATING WATER RETURN		
SCHSS	CHILLED WATER SUPPLY		RECTANGULAR & ROUND)
	PROCESS CHILLED WATER SUPPLY PROCESS CHILLED WATER RETURN		
	CONDENSER WATER SUPPLY		SHOWN. RECTANGULAR & ROUND)
∽CWR	CONDENSER WATER RETURN		
←CSS ─	CENTRIFUGAL SEPARATOR SUPPLY		EXHAUST DUCT TURNING UP. (IN ORDER S
	CENTRIFUGAL SEPARATOR RETURN		REGIANGULAR & ROUND)
	LOW PRESSURE STEAM (0-15 PSI)	<u>.</u> ۲7,	
	HIGH PRESSURE STEAM (ABOVE 15 PSI, MAX STEAM		EXHAUST DUCT TURNING DOWN. (IN ORDE SHOWN. RECTANGULAR & ROUND)
	HIGH PRESSURE CONDENSATE RETURN (ABOVE 15 PSI		······,
→ HPR(70) →	MAX STEAM PRESSURE INDICATED)		
>BBD	BOILER BLOWDOWN		DUCT ACCESS DOOR
	CONDENSATE DRAIN		DUCT PITOT.
← PCR ───────────────────────────────────	PUMPED CONDENSATE		EP FOR PITOT OF EXHUAST DUCT.
,D,			SP IS FOR SUPPLY DUCT.
	2-WAY MODULATING CONTROL VALVE, XX = SPECIAL DESIGNATION (EG: PI=PRESSURE INDEPENDENT) 2-WAY 2-POSITION CONTROL VALVE, XX = SPECIAL	(M)	DISPLAY MONITOR AND ALARM
	DESIGNATION (EG: BF=BUTTERFLY VALVE) 3-WAY MODULATING CONTROL VALVE, XX = SPECIAL	- AV	AUDIO VISUAL ALARM
$\downarrow - \neg Z \downarrow \longrightarrow$	DESIGNATION (EG: PI=PRESSURE INDEPENDENT) 3-WAY 2-POSITION CONTROL VALVE XX = SPECIAL	саv	CAV BOX
<u>- Ф ср</u>	DESIGNATION (EG: BF=BUTTERFLY VALVE)		VAV BOX
,O <u> </u>	Z-WAY MODULATING CHARACTERIZED PORT BALL VALVE		····

## MECHANICAL SYMBOL SCHEDULE, ABBREVIATIONS, GENERAL NOTES AND CONDITIONS, AND BASIS OF DESIGN

J

	GENERAL NOTES		ABBRE	<b>IOITAIV</b>	NS
		ABV	ABOVE	IN	INCHES
	1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.	ACU	AIR CONDITIONING UNIT	INV	INVERT ELEVATION
	2. IN THE EVENT OF A DISCREPANCY BETWEEN CONTRACT DRAWINGS AND SPECIFICATIONS, THE MOST STRINGENT SHALL GOVERN.	ACC	AIR COOLED CHILLER	KW	KILOWATT
OTHERWISE	3. PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF GOVERNING STATE AND LOCAL CODES.				
	4. INSTALL ALL PIPING AND DUCTWORK TO AVOID ARCHITECTURAL FRAMING, STRUCTURAL MEMBERS, AND OTHER	AFMS	AIR FLOW MEASURING STATION	LAT	POUNDS
	PRIOR TO PLACING SLEEVES IN FLOORS OR WALLS.	AHU	AIR HANDLING UNIT	LD	LINEAR DIFFUSER
	5. INSTALL ALL PIPING AND DUCTWORK TO BEST SUIT FIELD CONDITIONS AND COORDINATE WITH THE INSTALLATION	AL	ACOUSTICAL LINING	LPR	LOW PRESSURE STEAM R
	WORK OF OTHER TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED TO DETERMINE EXACT LOCATIONS OF PIPING OR DUCTWORK.	ALT			LOW PRESSURE STEAM S
	6. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT DIFFUSER LOCATIONS AND FINISHED CEILING.	ALD			LOUVER
_	7. COORDINATE DUCTWORK, PIPING WITH STRUCTURAL DRAWINGS, LIGHTING AND SPRINKLER SYSTEM. PROVIDE	ARCH	ARCHITECTURAL	M	MAIN AIR
-	TRANSITIONS AS REQUIRED.	AS	AIR SEPARATOR	M	MAGNETIC GAUGE
U)	<ol> <li>COORDINATE LOCATIONS OF ACCESS DOORS WITH F.D.'S, V.D.'S, SD, ETC. THE OPENING SHALL BE LARGE ENOUGH TO PERMIT MAINTENANCE AND RESETTING OF THE DEVICE.</li> </ol>	AVG	AVERAGE	MA	MAKE UP AIR
	9. CONTRACTOR TO COORDINATE WITH ARCHITECTS CEILING ACCESS PANELS FOR ALL FIRE, SMOKE AND VOLUME	B	BOILER		
ZONE OR	DAMPERS IN INACCESSIBLE CEILING AS REQUIRED.	BDD	BACK DRAFT DAMPER	MBD	MANUAL BALANCING DAM
	<ol> <li>WHETHER OR NOT THEY ARE SHOWN ON DRAWINGS PROVIDE ALL CONCRETE PADS, SPECIAL SUPPORTS AND ANCHORING FOR ALL MECHANICAL EQUIPMENT REQUIRING SUCH. SEE ARCH OR STRUCTURAL DRAWINGS FOR</li> </ol>	BF	BELOW FLOOR	MBH	THOUSAND BTU/HOUR
	ADDITIONAL INFO.	BFW	BOILER FEEDWATER	MCC	MOTOR CONTROL CENTE
PMENT	11. ALL DUCT DIMENSIONS ARE AIRSTREAM DIMENSIONS.	BG	BELOW GRADE	MFG	MANUFACTURER
LATED	<ol> <li>ALL MECHANICAL RELATED PENETRATIONS THROUGH ROOF SHALL HAVE CURBS INSTALLED BY ROOFING CONTRACTOR TO ENSURE A PROPER WATERPROOF SEAL.</li> </ol>	BHP		MIN	
	13. SEAL ALL FIRE RATED PENETRATIONS WITH UL LISTED THROUGH PENETRATION ASSEMBLY AS SPECIFIED. REFER TO	BOD	BOTTOM OF DUCT	(N)	NEW
TO BE	ARCHITECTURAL.	BOP	BOTTOM OF PIPE	N/A	NOT APPLICABLE
	14. THERMOSTAT AND HUMIDISTAT APPEARANCE AND LOCATION SHALL BE COORDINATED WITH ARCHITECTS/OWNER.	BOR	BOTTOM OF RACK	NC	NORMALLY CLOSED
	15. PROVIDE REMOTE OPERATORS FOR ALL VOLUME DAMPERS LOCATED ABOVE INACCESSIBLE CEILING.	BTU	BRITISH THERMAL UNIT	NIC	NOT IN CONTRACT
	16. PROVIDE OPERATING HANDLES FOR ALL VALVE AND COCKS WITHOUT INTEGRAL OPERATORS.	BTUH	BTU PER HOUR	NK	
	17. IN MECHANICAL OR EQUIPMENT ROOMS, INSTALL ALL VALVES ACCESSIBLE FROM FLOOR LEVEL WHERE POSSIBLE.	CA	COMPRESSED AIR		NOT TO SCALE
	ROOMS INSTALLED OVER 7' ABOVE FLOOR.	CAV	CONSTANT VOLUME	OA	OUTSIDE AIR
VINDICATOR (SUPPLY,	18. PROVIDE VALVES AND OTHER PIPING SPECIALTIES SAME SIZE AS LINE SIZE SHOWN UNLESS OTHERWISE NOTED.	СС	COOLING COIL	OBD	OPPOSED BLADE DAMPER
	19. INSTALL SWING CHECK VALVES IN THE HORIZONTAL POSITION.	CD	CEILING DIFFUSER	OD	OUTSIDE DIMENSION
	20. PROVIDE 3/8" BLOW-OFF VALVE AND 1/2" IPS TO HOSE THREAD ADAPTER ON ALL STRAINERS.	CE	CEILING EXHAUST	ORD	OVERFLOW ROOF DRAIN
	21. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, ALL HOT WATER SUPPLY/RETURN TAKE-OFFS TO REHEAT COIL IN	CFF			PRESSURE DROP OR DIF
	VAV BOXES SHALL BE 3/4" DIAMETER.	CFH		PC	PUMP PUMPED CONDENSATE
	22. ALL DUCT HEATING COILS SHALL HAVE DUCT ACCESS PANEL.	CG	CEILING GRILLE	PG	PIPE GUIDE
	23. PROVIDE UNIONS OR FLANGES ON EACH SIDE OF CONTROL VALVES AND PUMPS. EVERY PIPING ASSEMBLY SHALL BE	CHS	CHILLED WATER	PH	PHASE (ELECTRICAL)
PENING	VALVES ARE EXCEPTED FROM THIS REQUIREMENT.	CHR	CHILLED WATER RETURN	PHC	PREHEAT COIL
	24. PROVIDE LOCAL INDICATOR LIGHTS FOR ALL SMOKE/FIRE DAMPERS. LIGHT IS ACTIVATED WHEN DAMPER IS IN	<u>૧</u>	CENTERLINE	POC	POINT OF CONNECTION
	CLOSED POSITION.	CMPR	COMPRESSOR	PRESS	PRESSURE
	<ol> <li>ALL DRAIN CONNECTIONS FROM MECHANICAL EQUIPMENT SHALL BE PIPED TO SPILL DIRECTLY INTO NEAREST FLOOR DRAIN.</li> </ol>	COFFE		PSI PSIC	
AR DUCTWORK	26. PROVIDE 1" AIR GAP AT ALL DRAIN CONNECTIONS.		CONDENSATE	R	RISE
IWORK	27. ALL PIPING AND DUCTWORK PASSING THROUGH SEPARATION JOINTS USED AS BUILDING SEISMIC SEPARATIONS	CONN	CONNECTION, CONNECT	RA	RETURN AIR
	SHALL HAVE FLEXIBLE CONNECTIONS TO COMPENSATE FOR SEISMIC MOVEMENT AS REQUIRED. PROVIDE HANGERS	CONT	CONTINUATION	RAD	RETURN AIR DUCT
	28 SEPARATE ALL CEILING HANGING AND BRACING WIRES AT LEAST 6" FROM ALL LINBRACED DUCTS, PIRES, CONDUITS	COP	COEFF. OF PERFORMANCE	RCVR	RECEIVER
LEAR	25. SEPARATE ALL CELEMONTANIS AND BRACE WINCES AT LEAST OF TROM ALL ONDITACED BUCKS, FIF LOS, CONDUTS, ETC. IN A MANNER CONFORMING TO RECOMPENSE ESTABLICUED BY THE MAY BRACE UNBRACED DUCTS, PIPES, CONDUTS, ETC. IN A MANNER	COTG	CLEAN OUT TO GRADE	RF	RETURN FAN
CATES	THE CONTRACTOR MAY INSTALL TRAPEZE SUPPORTS TO RECEIVE THE CEILING HANGING AND BRACING WIRES. THE	CP		RH	RELATIVE HUMIDITY
	GENERAL CONTRACTOR SHALL COORDINATE THE WORK AND RESPONSIBILITY FOR ACCOMMODATING SUCH WORK.	CV			
	29. PROVIDE BALANCING DAMPERS AT EACH SUPPLY, RETURN, AND EXHAUST BRANCH TAKE-OFF.	CWS	COND. WATER SUPPLY	SA	SUPPLY AIR
N	30. DUCTS STORED ON THE CONSTRUCTION SITE SHALL BE PROTECTED AND ISOLATED FROM DUST CONTAMINATION.	CWR	COND. WATER RETURN	SAD	SUPPLY AIR DUCT
	31. ALL DUCT ELBOWS BEFORE VAV BOXES AND REHEAT COILS SHALL BE OF FULL RADIUS HARD CONNECTION ELBOWS.	СТ	COOLING TOWER	SEC	SECOND
	32. ALL PIPING AND DUCTWORK TO BE FLEXIBLE CONNECTED TO PUMPS, COILS ETC.	D	DROP OR INDIRECT DRAIN	SF	SUPPLY FAN
	33. SEE ARCHITECTURAL AND STRUCTURAL DOCUMENTS FOR EQUIPMENT SUPPORTS AND ROOF OPENINGS.	DB		SP SPEC	STATIC PRESSURE
R INSIDE PLAN SIZE	34. ALL PIPING IN MECHANICAL ROOMS TO BE HUNG WITH SPRING ISOLATORS WITH 1/2" STATIC DEFLECTION AT			SPEC	SOLIARE
		DENS	DENSITY	SS	STAINLESS STEEL
	33. FROVIDE ELBOW SUFFORTS AT ALL FIFE CONNECTIONS TO EQUIPMENT.	DIA	DIAMETER	STD	STANDARD
	30. FOR EXACT CONCRETE PAD/CORB SIZES COORDINATE WITH APPROVED EQUIPMENT AND WITH STRUCTURAL DOCUMENTS.	DN	DOWN	STM	STEAM
	37. SEE ARCHITECTURAL DOCUMENTS FOR PAINTING OF ALL EXPOSED DUCTWORK, PIPING, AIR OUTLET AND FIXTURE	DRN	DRAIN	SYM	SYMBOL
	TRIM. ALL DUCTWORK AND PIPING ON MECHANICAL EQUIPMENT LEVEL (ROOF) IS TO BE PAINTED IN COMPLIANCE WITH DIVISION 15 AND DIVISION 9.	DWG (F)		SYS	
	38. INSTALL SHUT-OFF VALVES AT EACH BRANCH PIPE LINE.	EA	EXHAUST AIR		TEMPERATURE DIFF.
	39. ALL DUCT SMOKE DETECTORS TO BE PROVIDED AND WIRED BY DIVISION 26, INSTALLED BY DIVISION 23. DETECTOR	EAD	EXHAUST AIR DUCT OR DAMPER	ТОР	TOP OF PIPE
	SAMPLING TUBES TO HAVE AN ACCESS DOOR MAKING SAMPLING TUBES READILY ACCESSIBLE.	EAT	ENTERING AIR TEMP.	TOR	TOP OF RACK
	<ol> <li>UNLESS SPECIFICALLY SPECIFIED OR SHOWN OTHERWISE ALL CONSTRUCTION IS TO CONFORM TO SMACNA HVAC CONSTRUCTION STANDARDS AS A MINIMUM REQUIREMENT.</li> </ol>	EDB	ENTERING DRY BULB TEMP.	тот	TOTAL
	41. FIRE DAMPERS AND FIRE SMOKE DAMPERS ARE TO BE INSTALLED IN RATED PORTION OF THE ASSEMBLIES IN WHICH	EF	EXHAUST FAN		TEMP. TRANSMITTER
SHOWN.	THEY OCCUR.	EFF			
	42. REFER TO ARCHITECTURAL SPECIFICATION FOR APPROVED FIRESTOPPING SYSTEM.	EWB	ENTERING WET BULB	UON	UNI ESS OTHERWISE NOT
	43. ALL PIPING NOTED TO BE CAPPED FOR FUTURE EXTENSION SHALL BE PROVIDED WITH VALVE NEAR CAP TO PERMIT	EWT	ENTERING WATER TEMP.	V	VOLT
		EXH	EXHAUST	VA	VALVE
LN SHUVVIN.		EXP	EXPANSION	VAV	VARIABLE AIR VOLUME
	TESTED FOR AIRTIGHT CONSTRUCTION BEFORE INSTALLATION.		UEGREES FAHRENHEIT		
	46. SUBMIT 1/4" SCALE SHOP DWGS, COORDINATED WITH OTHER TRADES FOR REVIEW PRIOR TO COMMENCEMENT OF	(F)	FUTURE	VOL	
		FC	FLEXIBLE CONNECTION	W	WATTS
SHOWN.	47. COORDINATE SYSTEM SHUTDOWN WITH FACILITY ENGINEER. PROVIDE A MINIMUM OF 72 HOUR NOTICE.	FCU	FAN COIL UNIT	WB	WET BULB
	48. ALL PIPING TO BE LOCATED INSIDE WALL CAVITIES OR INACCESSIBLE SPACES SHALL BE LEAK TESTED AND INSULATED WITH VAPOR BARRIER SEAL BEFORE INSTALLATION.	FD	FIRE DAMPER OR FLOOR DRAIN	W/O	WITHOUT
		FLA	FULL LOAD AMPS	WT	WEIGHT
	GENERAL CONDITIONS			WTR	
ER	1. ALL WORK TO BE IN ACCORDANCE WITH REQUIREMENTS OF GOVERNING LOCAL FIRE CODES AND BUILDING	FPM	FEET PER MINUTE	WRR	WALL SUPPLY REGISTER
		FPS	FEET PER SECOND		
	VERIFY DIMENSIONS OF ALL OWNER-FURNISHED OPERATING EQUIPMENT TO ENSURE PROPER COORDINATION	FS	FLOOR SINK		
R SHOWN.		FT	FEET	_	
	3. SUMEDULE ALL WORK AUGESS AND STURAGE WITH THE FACILITY ADMINISTRATOR.	FV		_	
	<ol> <li>CONTRACTOR SHALL PROVIDE DUST COVERS AS REQUIRED TO CONTAIN DUST AND DEBRIS WITHIN CONSTRUCTION AREA AND KEEP DIRT AND DUST TO A MINIMUM.</li> </ol>	GPM	GAGE OR GAUGE	_	
	5. ALL REMOVED ITEMS DEEMED TO HAVE VALUE BY THE OWNER SHALL BE DELIVERED TO A PLACE OF STORAGE	GPH	GALLONS PER HOUR	-	
DER	AT THE SITE AS DIRECTED. ALL OTHER ITEMS MUST BE DISPOSED OF OFF SITE IN A LEGAL MANNER.	GSM	GALVANIZED SHEET METAL		
	<ol> <li>WHERE EXISTING CONSTRUCTION IS CUT, DAMAGED, OR REMODELED, PATCH WITH MATERIALS TO MATCH IN KIND, QUALITY AND PERFORMANCE.</li> </ol>	HC	HEATING COIL		
	7. CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR SAFETY OF ALL PERSONS ON OR ABOUT THE	HD	HEAD	_	
	CONSTRUCTION SITE IN ACCORDANCE WITH APPLICABLE LAWS AND CODES. GUARD ALL HAZARDS IN ACCORDANCE WITH THE SAFETY PROVISIONS OF THE LATEST MANUAL OF ACCIDENT PREVENTION PUBLISHED	HGT		_	
	BY THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA.	HP	HORSE POWFR	_	
	8. CLEAN ALL EXPOSED SURFACES AND NEW EQUIPMENT AFTER COMPLETION.	HR	HOUR(S)	-	
	9. WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-PRESTRESSED REINEORCED CONCRETE LISE CARE AND CAUTION TO AVOID OUT THE OR DAMAGING THE EXISTING	HT	HUMIDITY TRANSMITTER		
	REINFORCING BARS. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE	HTP	HEAT PUMP		
	URILLED-IN ANGRUK AND/UK MN.	HVAC			
			AND AIK CUNDITIUNING		
		HWR	HEATING WATER RETURN	_	
		HWS HY		_	
		IAC	INSTRUMENT AIR COMPRESSOR	-	
		IAS	INSTRUMENT AIR SUPPLY	1	
		ID	INSIDE DIMENSION	1	

## ONS

UNS	
	INCHES
	KILOWATT HOUR
	LEAVING AIR TEMP.
	POUNDS
	LOW PRESSURE STEAM RETURN
	LOUVER
	LEAVING WATER TEMP.
	MAGNETIC GAUGE
	MIXED AIR TEMPERATURE
	MAXIMUM
	MANUAL BALANCING DAMPER
	MOTOR CONTROL CENTER
	MANUFACTURER
	MINIMUM
	MANUAL MOTOR START
	NOT APPLICABLE
	NORMALLY CLOSED
	NOT IN CONTRACT
	NOT TO SCALE
	OUTSIDE AIR
	OPPOSED BLADE DAMPER
	PRESSURE DROP OR DIFFERENTIAL
	PUMP
	PUMPED CONDENSATE
	PIPE GOIDE PHASE (ELECTRICAL)
	PREHEAT COIL
	POINT OF CONNECTION
S	
	POUNDS PER SQUARE INCH GAUGE
	RISE
	RETURN AIR DUCT
	RETURN FAN
	RELATIVE HUMIDITY
	REHEAT COIL
	SUPPLY AIR
	SUPPLY AIR DUCT
	SECOND
	SUPPLY FAN STATIC PRESSURE
	SPECIFICATION
	SQUARE
	STAINLESS STEEL
	STEAM
	SYMBOL
	SYSTEM
	TEMPERATURE DIFF.
	TOP OF PIPE
	TOP OF RACK
	TOTAL
	TYPICAL
	UNDERCUT
	UNLESS OTHERWISE NOTED
	VOLI
	VARIABLE AIR VOLUME
	VERTICAL
	VARIABLE FREQ. DRIVE
	WATTS
	WET BULB
	WITHOUT
	WATER
	WALL SUPPLY REGISTER

## WALL RETURN REGISTER

## MECHANICAL BASIS OF DESIGN

A. BRIEF PROJECT DESCRIPTION

THIS PROJECT WILL REMODEL APPROXIMATELY 1,750 SF OF PROCEDURE ROOM AND ANCILLARY SPACE ON LEVEL 2 OF THE MHS GOOD SAMARITAN HOSPITAL TO SUPPORT THE INSTALLATION OF A NEW BI-PLANE HYBRID OPERATING ROOM. THE WORK INCLUDES UPGRADING THE OR PROCEDURE ROOM, CONTROL ROOM, RELOCATION OF MISCELLANEOUS AND STERILIZATION EQUIPMENT, STORAGE ROOM ADDITION, AND AIR SUPPLY SYSTEM REBALANCING. THE WORK INCLUDES REPLACING THE EXISTING OR AIR HANDLING UNIT , HUMIDIFICATION SOURCE, AND SUPPLEMENTAL CHILLER. AND ADDITIONAL MINOR MECHANICAL AND ELECTRICAL REVISIONS TO THE EXISTING SPACE TO ACCOMMODATE THE REVISED ROOM FLOOR PLANS, CHANGE OF ROOM FUNCTIONALITY, AND HVAC SYSTEMS.

- B. CODES AND STANDARDS 1. 2018 INTERNATIONAL BUILDING CODE 2. 2018 INTERNATIONAL MECHANICAL CODE
- 3. 2018 INTERNATIONAL PLUMBING CODE 4. 2018 INTERNATIONAL FIRE CODE
- 5. 2018 WASHINGTON STATE ENERGY CODE 6. 2020 NATIONAL ELECTRICAL CODE
- 7. 2019 NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE 8. 2018 NFPA 99 – STANDARD FOR HEALTH CARE FACILITIES
- 9. 2018 FGI GUIDELINES FOR DESIGN AND CONSTRUCTION OF HOSPITALS AND OUTPATIENT FACILITIES 10. LOCAL AMENDMENTS TO THE 2018 INTERNATIONAL CODES
- 11. AAMI STANDARDS 12. ASHRAE 2017 HANDBOOK: FUNDAMENTALS
- 13. ASHRAE 2018 HANDBOOK: REFRIGERATION 14. ASHRAE 2019 HANDBOOK: HVAC APPLICATIONS
- 15. ASHREA 2020 HANDBOOK: HVAC SYSTEMS AND EQUIPMENT 16. PHILIPS AZURION 7 B20/12, 20/15 - PIVOT STANDARD REFERENCE DRAWINGS 12/16/2017
- C. OUTDOOR DESIGN CONDITIONS 1. LOCATION: PUYALLUP, WA
- 2. SUMMER: 84 DEG F DB, 65 DEG F WB 3. WINTER: 19 DEG F
- 4. ELEVATION: 120 FT ABOVE SEA LEVEL 5. CLIMATE ZONE: 4C (PIERCE COUNTY)

D. INDOOR DESIGN TEMPERATURES, AIR CHANGE RATES, AND VENTILATION CRITERIA **BASIS OF DESIGN** 

INDOOR DESIGN TEMPERATURES, AIR CHANGE RATES, AND VENTILATION CRITERIA

	PRESSURE			ALL ROOM AIR		DESIGN		
	RELATIONSHIP	MINIMUM		EXHAUSTED	AIR RECIRCULATED	RELATIVE	DESIGN	
	TO ADJACENT	OUTDOOR	MINIMUM	DIRECTLY TO THE	BY MEANS OF	HUMIDITY	TEMPERATURE	
FUNCTION OF SPACE	AREAS	ACH	TOTAL ACH	OUTDOORS	ROOM UNITS	(%)	(°F)	NOTES
OPERATING ROOM	POSITIVE	4	20	NR	NO	20-60	65-74	[1]
CONTROL ROOM	NR	NR	NR	NR	NR	20-80	72 +/- 5	[1,2]
EQUIPMENT ROOM	NR	NR	NR	NR	NR	20-80	72 +/- 5	[1,2]
SUB STERILE	NR	2	6	NR	NO	NR	75 CLG/ 72 HTG	[1,4]
STORAGE ROOM	NR	0.12 CFM/SF	NR	NR	NR	NR	75 CLG/ 72 HTG	[3,4]

NOTES:

1. PARAMETERS PER 2018 FGI TABLE 7.1, "DESIGN PARAMETERS", CH. 6 "GUIDELINES FOR DESIGN AND CONSTRUCTION OF HOSPITALS AND OUTPATIENT FACILITIES" U.O.N. 2. RELATIVE HUMIDITY AND DESIGN TEMPERATURE PER MANUFACTURERS DRAWING "AZURION 7 B2012, B2015 PIVOT AN", 12.16.2017 3. ROOM PARAMETERS PER TABLE 403.3.1.1 "REQUIRED OUTDOOR VENTILATION AIR" 2018 WSMC

4. DESIGN TEMPERATURES PER 2018 WSEC

E. BUILDING ENVELOPE (EXISTING BUILDING, ENVELOPE NOT WITHIN SCOPE) 1. GLAZING GLASS FRAME COMBINATION

- A. CURTAIN WALL AND PUNCHED WINDOWS
- 1. U=0.85 2. SHADING COEFFICIENT=0.46
- 2. WALL CONSTRUCTION A. 90.1 2007 MINIMUM WALL NON-RES ZONE 4-8
- 1. U=0.0476 3. ROOF CONSTRUCTION
- A. 4" LW CONCRETE 1. U=0.21
- 4. ENVELOPE INFILTRATION/ AIR LEAKAGE 5. PRESSURIZED, AVERAGE CONSTRUCTION A. 0.3 CFM/SQ FT OF WALL
- F. INTERNAL HEAT GAINS
- 1. LIGHTING (ALL SPACES) A. LED LIGHTING, 100% HEAT GAIN TO SPACE
- 1. 0.85 W/SF 2. OCCUPANCY CRITERIA A. OPERATING / EXAM ROOM: 8 PERSONS
- B. CONTROL ROOM: 2 PERSONS C. SUB-STERILE: 1 PERSON
- D. EQUIPMENT ROOM; UNOCCUPIED ~~E.~ BTORAGE. WHOGOURIED~~~~~
- 3. EQUIPMENT HEAT GAINS A. OPERATING / EXAM ROOM
- 1. 6,479 BTUH (PHILIPS AVERAGE) 2. 1,447 BTUH - MEDICAL EQUIP. B. CONTROL ROOM
- 1. 1,945 BTUH (PHILIPS AVERAGE) C. EQUIPMENT ROOM
- 1. 13,640 BTUH (PHILIPS AVERAGE) 2. 2,655 BTUH UPS - MAX BATTERY
- 2,500 BTUH STRYKER SPI3 D. SUB STERILE
- 1. 2,185 BTUH

H. SESMIC

M0.04

M0.05 M0.06 M0.10

M3.00 M4.00

M4.01 M5.00 M0.01

M0.07

M2.01

- G. ACOUSTICAL 1. THE FOLLOWING NOISE NC/DBA CRITERIA LEVELS WILL BE ACHIEVED AS DEFINED IN THE 2018 FGI GUIDELINES FOR DESIGN AND CONSTRUCTION OF HOSPITALS. THESE LEVELS ADDRESS THE MECHANICAL SYSTEMS ONLY. ACTUAL SOUND PERFORMANCE REQUIREMENTS FOR EACH SPACE MUST BE VERIFIED WITH ACOUSTICAL CONSULTANT. A. OPERATING / EXAM ROOM: 50/55 B. CONTROL ROOM: 45/50
- C. SUB STERILE: 45/50

1. ANCHORAGE AND RESTRAINTS MUST BE COORDINATED WITH STRUCTURAL ENGINEER AND AUTHORITY HAVING JURISDICTION.

## MECHANICAL DRAWING INDEX

WSEC COMPLIANCE FORMS         WSEC COMPLIANCE FORMS         WSEC COMPLIANCE FORMS         MECHANICAL SCHEDULES         MECHANICAL OVERALL SECOND FLOOR         MECHANICAL ROOF PLAN         MECHANICAL ZONE PLAN         MECHANICAL CONTROL DIAGRAMS         CONTROLS - SEQUENCE OF OPERATIONS         MECHANICAL SYMBOLS AND ABBREVIATIONS         MECHANICAL LOAD CALCULATIONS         MECHANICAL ENLARGED PLANS	ENERGY CODE
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MECHANICAL ZONE PLAN         MECHANICAL CONTROL DIAGRAMS         CONTROLS - SEQUENCE OF OPERATIONS         MECHANICAL DETAILS         MECHANICAL SYMBOLS AND ABBREVIATIONS         MECHANICAL LOAD CALCULATIONS         MECHANICAL ENLARGED PLANS	MECHANICAL ROOF PLAN
MECHANICAL CONTROL DIAGRAMS         CONTROLS - SEQUENCE OF OPERATIONS         MECHANICAL DETAILS         MECHANICAL SYMBOLS AND ABBREVIATIONS         MECHANICAL LOAD CALCULATIONS         MECHANICAL ENLARGED PLANS	MECHANICAL ZONE PLAN
CONTROLS - SEQUENCE OF OPERATIONS         MECHANICAL DETAILS         MECHANICAL SYMBOLS AND ABBREVIATIONS         MECHANICAL LOAD CALCULATIONS         MECHANICAL ENLARGED PLANS	MECHANICAL CONTROL DIAGRAMS
MECHANICAL DETAILS         MECHANICAL SYMBOLS AND ABBREVIATIONS         MECHANICAL LOAD CALCULATIONS         MECHANICAL ENLARGED PLANS	CONTROLS - SEQUENCE OF OPERATIONS
MECHANICAL SYMBOLS AND ABBREVIATIONS MECHANICAL LOAD CALCULATIONS MECHANICAL ENLARGED PLANS	MECHANICAL DETAILS
MECHANICAL LOAD CALCULATIONS MECHANICAL ENLARGED PLANS	MECHANICAL SYMBOLS AND ABBREVIATIONS
MECHANICAL ENLARGED PLANS	MECHANICAL LOAD CALCULATIONS
	MECHANICAL ENLARGED PLANS

PRCTI20221788 REVISED SHEET

![](_page_15_Picture_56.jpeg)

![](_page_16_Figure_0.jpeg)

	COOLING C		CLG SPACE	PEAK			HEATING C	COIL P	EAK		TEN	PERATURE	ES		
Pea	aked at Time: Outside Air:	M OADB/WB	o/Hr: 7 / 9 //HR: 71 / 54 / 3	7	Mo/Hr: OADB:	7/9 71			Mo/Hr: OADB:	Heating 20	Design		SADB Ba Blanum	Cooling 55.0 73.3	Heatin 95. 70
	Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total	Space Sensible	Percent Of Total			Space Peak Space Sens	c	oil Peak Tot Sens	Percent Of Total	Return Ret/OA	73.3 73.3	70. 70.
	Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)			Btu/h		Btu/h	(%)	Fn MtrTD	0.0	0.
nvelope Loads							Envelope L	oads					Fn BldTD	0.0	0.
Skylite Solar	0	0	0	0	0	0	Skylite S	olar	0		0	0.00	Fn Frict	0.0	0.
Skylite Cond	0	0	0	1	0	0	Skylite C	ona	0		070	0.00			
Glass Solar	4 132	00	4 132	54	4 132	57	Glass So	lar	0		-270	0.00		IPELOWS	
Glass/Door Con	4,132 d _124	0	4,132	-2	4,132	-2	Glass 30	nal or Cond	-1 954		-1 954	37 72	_ ~	IKFLOW5	
Wall Cond	0 -124	29	29	0	-124	0	Wall Con	d	-1,354		-1,504	0.73		Cooling	Heati
Partition/Door	Ő	20	20	0	0	ő	Partition/	Door	0		0	0.00	Diffuser	389	
Floor	0		0	0	0.00	0	Floor	2001	0		0	0.00	Terminal	389	1
Adjacent Floor	0.00	0.00	0.00	0.00	0.00	0.00	Adjacent	Floor	0.00		0.00	0.00	Main Fan	389	1
Infiltration	-142	0.00	-142	-2	-18	0	Infiltratio	n	-991		-991	19.13	Sec Fan	C	
Sub Total ==>	3 866	115	3 981	52	3 990	55	Sub Tota	/==>	-2.945		-3.260	62.93	Nom Vent	с С	
500 Total	5,000	115	0,001	52	0,000	55	000 /010		2,010		0,200	02.00	AULI Vent	0	
ntornal Loade							Internal Loa	ads					And vent	17	
	004	0	004		004		11-64-		0		0	0.00	MinSten/Dh	117	
Lights	334	0	334	4	334	5	Lights		0		0	0.00	NinStop/Rn	406	
People	1,000	0	1,000	13	500	22	7 People		0		0	0.00	Return	406	
MISC	2,400	0	2,400	31	2,400	33	33 Misc		0 0.0		0.00	Exnaust	17		
Sub Total ==>	3,734	0	3,734	49	3,234	44	44 Sub Total ==		0		0	0.00	Auxiliary	C	
Ceiling Load	46	-46	0	0	46	1	Ceiling Loa	d	-55		0	0.00	Leakage Dwn	C	1
entilation Load	0	0	0	0	0	0	Ventilation	Load	0		0	0.00	Leakage Ups	C	1
Adj Air Trans Hea	nt O		0	0	0	0	Adj Air Tran	ns Heat	0		0	0			
ehumid. Ov Siz	ng		0	0			Ov/Undr Si	zing	0		0	0.00			
Dv/Undr Sizing	0		0	0	0	0	Exhaust He	at			29	-0.55	ENGI	NEERING C	KS
Exhaust Heat		-24	-24	0			OA Preheat	Diff.			0	0.00			
Sup. Fan Heat			0	0			RA Preheat	Diff.			0	0.00		Cooling	Heat
Ret. Fan Heat		0	0	0			Additional	Reheat			-1,988	38.38	% OA	0.0	
Duct Heat Pkup		0	0	0			System Ple	num Heat			39	-0.75	cfm/ft <sup>2</sup>	3.38	1
Jnderflr Sup Ht F	kup		0	0			Underflr Su	ip Ht Pkup			0	0.00	cfm/ton	606.46	
Supply Air Leaka	ge	0	0	0			Supply Air	Leakage			0	0.00	ft²/ton	179.45	
	(200) (A.S.		0.000		0.4254	20000000			121223		0.00	0.00	Btu/hr·ft <sup>2</sup>	66.87	-45
Grand Total ==>	7,646	44	7,690	100.00	7,270	100.00	Grand Tota	/==>	-2,999		-5,181	100.00	No. People	2.0 1	7.4/1000
		COOLING	G COIL SELE	CTION					AREAS			н	EATING COI	SELECTI	ON
	<b>Total Capacity</b>	Sens Cap.	<b>Coil Airflow</b>	Ente	r DB/WB/HR	Leave	DB/WB/HR		Gross Total	Glass	8		Capacity	<b>Coil Airflow</b>	Ent
	ton MBh	MBh	cfm	°F	°F gr/lb	°F	°F gr/lb			ft²	(%)		MBh	cfm	°F
lain Clg	0.6 7.7	73	380	73 3 57	7 47 4	55.0 5	0.3 47.4	Floor	115		× *	Main Htg	-5.2	117	55.0
ux Cla	0.0 0.0	0.0	009	0.0 0	0 00	0.0	0.3 47.4 Floo		0			Aux Hta	0.0	0	0.0
han org	0.0 0.0	0.0	0	0.0 0	0.0	0.0	0.0 0.0	Int Day	- 4			Deckent	0.0	5	0.0
pt vent	0.0 0.0	0.0	0	0.0 (	0.0	0.0	0.0 0.0	Event			1	Preneat	0.0	117	55.0
Total	06 77							Boof	115	0	0	Reneat	-2.2	117	0.0
otar	0.0 7.7							Wall	58	46	80	Opt Vent	0.0	0	0.0
								wan	50	40	00		0.0	0	0.0
								Ext Doc	or 0	0	0	Total	-5.2		
oiect Name											TR	ACE® 700 \	6.3.5 calculated	at 03:43 PM o	n 03/04/2
GIGGL I HEALTER.															

**Room Checksums** 

By Mazzetti & Associates

						By Maz	zett	ti & Asso	ociates							
STORAGE						DEAK					0		-	те		050
	COOLING	UIL PEAK			CLG SPACE	PEAN				HEATING	COIL	PEAN			WPERAIUP	(ES
Peake	ed at Time: Outside Air:	Mo/ OADB/WB/ł	/Hr:7/14 HR:85/65/5	9	Mo/Hr: OADB:	7 / 14 85				Mo/Hr: OADB:	Heatin 20	g Design		SADB Ba Plenum	Cooling 55.0 73.7	i Ho
	Space	Plenum	Net	Percent	Space	Percent				Space Peak		Coil Peak	Percent	Return	73.7	
	Sens. + Lat.	Sens. + Lat	Total	Of Total	Sensible	Of Total				Space Sens		Tot Sens	Of Total	Ret/OA	73.7	
	Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)				Btu/h		Btu/h	(%)	Fn MtrTD	0.0	)
Envelope Loads							En	nvelope Lo	bads				2005-000	Fn BldTD	0.0	)
Skylite Solar	0	0	0	0	0	0		Skylite So	blar	0		0	0.00	Fn Frict	0.0	)
Skylite Cond	0	0	0	0	0	0		Skylite Co	ond	0		0	0.00			
Roof Cond	0	408	408	47	0	0		Root Con	d	0		-381	218.76			
Glass Solar Class/Deer Cond	0	0	0	0	0	0		Glass 50	ar or Cond	0		0	0.00	3	AIRFLOWS	
Wall Cond	0	0	0	0	0	0		Wall Con		0		0	0.00		Coolin	ng H
Partition/Door	0	0	0	0	0	0		Partition/	Joor	0		0	0.00	Diffuser	1	8
Floor	0		0	0	0.00	0		Floor	0001	0		0	0.00	Terminal	1	18
Adjacent Floor	0.00	0.00	0.00	0.00	0.00	0.00		Adjacent	Floor	0.00		0.00	0.00	Main Fan	1	18
Infiltration	0.00	0.00	0.00	0.00	0.00	0.00		Infiltration	1 1001	0.00		0.00	0.00	Sec Fan		0
Sub Total ==>	0	408	408	47	0	0		Sub Total	==>	0		-381	218 76	Nom Vont		0 0
Sub Total>	U	400	400	41	U	U		ous rola					210.10	AHII Vent		0
Internal Loads							Int	ternal Loa	ds					And vent		0
	450	0	450	50	450	447		1 Julia		0			0.00	Min Sten /Dh		5
Lights	453	0	453	53	453	117		Lights		0		0	0.00	Return		0
People	0	0	0	0	0	0		Mino		0		0	0.00	Exhaust		0
NIISC	0	0	0	0	0	0		IVIISC		0		0	0.00	Exhaust Dm Exh		0
Sub Iotal ==>	453	0	453	53	453	117		Sub Total	==>	0		0	0.00	Auxilian		0
Ceiling Load	65	65	0	0	65	17	Co		-	-75		0	0.00	Loakago Dwr		0
Ventilation Load	-05	05	0	0	-05	-17	Ve	ntilation	oad	-/3		0	0.00	Leakage Uno		0
Adi Air Trans Heat	0	0	0	0	0	0	Ad	di Air Tran	e Hoat	0		0	0.00	Leakage Ops		0
Debumid Ov Sizing	. 0		0	0	0	U	Au	J All Hall	ing	0		0	0.00	L		
Ov/Undr Sizing			0	0	0	0	Ev	where the	ang	0		0	0.00	ENO.		01/0
Exhaust Heat	U	0	0	0	0	0	04	A Prohoat	Diff			0	0.00	ENG	INEERING	CKS
Sun Fan Heat		Ŭ,	0	0			RA	A Proheat	Diff			0	0.00		Cooling	1
Ret Fan Heat		0	0	õ			Ad	ditional F	Reheat			-90	51 79	% OA	0.0	
Duct Heat Pkup		õ	õ	õ			Sy	stem Plei	num Heat			297	-170.55	cfm/ft <sup>2</sup>	0.11	
Underfir Sup Ht Pku	a	•	0	0			Ur	nderflr Su	p Ht Pkup			0	0.00	cfm/ton	246.02	
Supply Air Leakage		0	0	0			Su	upply Air I	eakage			0	0.00	ft²/ton	2.202.50	
			1050	1000			1					1.5	5 STORE	Btu/hr-ft <sup>2</sup>	5.45	
Grand Total ==>	388	472	861	100.00	388	100.00	Gr	rand Tota	==>	-75		-174	100.00	No. People	0.0	0.0/
		COOLING	COIL SELE	ECTION						AREAS	;		н	EATING CO	IL SELECT	ION
	Total Capacity	Sens Cap.	Coil Airflow	Enter	DB/WB/HR	Leave	DB	3/WB/HR		Gross Total	Glas	s		Capacity	Coil Airflow	Er
t	on MBh	MBh	cfm	۴	°F gr/lb	°F	°F	gr/lb			ft <sup>2</sup>	(%)		MBh	cfm	٥
Main Cla	01 00	0.0	19	73 7 57	9 47 4	55.0.2	78	6.8	Floor	158		10 C	Main Hta	-0.2	5	55.0
Aux Cla	0 0.9	0.0	10	00 0	0 00	0.0 5	0.0	0.0	Part	0			Aux Hta	-0.2	0	0.0
		0.0	0			0.0	0.0	0.0	Lat D				Duchant	0.0	0	0.0
Opt vent (	0.0	0.0	0	0.0 0	0.0	0.0	0.0	0.0	Int Doo	ar 1			Preheat	0.0	0	0.0
Total	1 00								EXFI	159	0		Reneat	-0.1	5	0.00
i otar (	0.9								Wall	108	0	0	Opt Vont	0.0	0	0.0
									waii	0	0		True	0.0	0	0.0
									Ext Doc	or U	0	0	Iotal	-0.2		

Room Checksums

Project Name: Dataset Name: 240304GSHHYBOR.TRC TRACE® 700 v6.3.5 calculated at 03:43 PM on 03/04/2024 Alternative - 1 System Checksums Report Page 4 of 5

![](_page_16_Figure_8.jpeg)

![](_page_16_Figure_9.jpeg)

JOB STERI												17
	COOLING	GOIL PEAK	(		CLG SPACE	<b>PEAK</b>			HEATING	COIL PEAK		TEMP
	Peaked at Time: Outside Air:	OADB/W	Mo/Hr: 7 / 9 /B/HR: 71 / 54 / 3	37	Mo/Hr: OADB:	7/9 71			Mo/Hr: OADB:	Heating Design 20		SADB
	Spac Sens. + La	e Plenur it. Sens. + La	m Net t Total	Percent Of Total	Space Sensible	Percent Of Total			Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total	Ra Plenum Return Ret/OA
	Btu	/h Btu/i	h Btu/h	(%)	Btu/h	(%)			Btu/h	Btu/h	(%)	Fn MtrTD
Envelope Loa	ids						Envelope Lo	oads				Fn BldTD
Skylite Solar		0 0	0 0	0	0	0	Skylite Sc	olar	0	0	0.00	Fn Frict
Skylite Cond	1	0 0	0 0	0	0	0	Skylite Co	ond	0	0	0.00	
Roof Cond	4.40	0 6	9 69	1	4 100	0	Root Con	lar	0	-220	4.34	A10
Glass Solar	Cond 12		0 4,190	00	4,190	02	Glass Sol	ar or Cond	1 091	1 091	20.12	AIR
Wall Cond	-12	0 20	-120	-2	-120	-2	Wall Con	d	-1,901	-1,901	0.75	
Partition/Doc	or.	0 23	5 25	0	0	0	Partition/	Door	0	-30	0.75	Diffuser
Floor		0	0	0	0.00	0	Floor	DOOI	0	0	0.00	Terminal
Adjacent Flo	or 0.0	0 00	n 0.00	0.00	0.00	0.00	Adjacent	Floor	0.00	0.00	0.00	Main Fan
Infiltration	-14	4	-144	-2	-18	0.00	Infiltration	1 1001	-1 005	-1 005	19.84	Sec Fan
Sub Total ==	> 302	1 0	8 4.018	58	4 046	60	Sub Total	/==>	-2.986	-3 243	64.06	Nom Vont
500 10tal	5,52	.1 50	4,010	50	4,040	00	ous rolu		2,000	0,210	01.00	AHU Vent
Internal Loads	s						Internal Loa	ads				Infil
Lights	26	4 (	264	4	264	4	Lights		0	C	0.00	MinStop/Rh
People	50	0 0	500	7	250	4	People		0	C	0.00	Return
Misc	2,18	5 (	2,185	31	2,185	32	Misc		0	C	0.00	Exhaust
Sub Total ==	-> 2,94	9 (	0 2,949	42	2,699	40	Sub Total	/ ==>	0	C	0.00	Rm Exh
Ceiling Load	9	-37	7 0	0	37	1	Ceiling Loa	d	-43	C	0.00	Leakage Dwn
Ventilation Lo	bad	0 0	0 0	õ	0	Ó	Ventilation I	Load	0	C	0.00	Leakage Ups
Adi Air Trans	Heat	0	0	0	0	0	Adi Air Tran	s Heat	0	C	0	go opo
Dehumid Ov	Sizing		0	0			Ov/Undr Siz	rina	0	C	0.00	
Ov/Undr Sizin	a	0	0	0	0	0	Exhaust He	at		29	-0.57	ENGINE
Exhaust Heat	5	-25	5 -25	õ			<b>OA</b> Preheat	Diff.		C	0.00	LINGINE
Sup. Fan Heat	t		0	0			<b>RA</b> Preheat	Diff.		C	0.00	C
Ret. Fan Heat		(	0 0	0			Additional F	Reheat		-1,855	36.63	% OA
Duct Heat Pku	up	(	0 0	0			System Plei	num Heat		6	-0.11	cfm/ft <sup>2</sup>
Underflr Sup	Ht Pkup		0	0			Underflr Su	ip Ht Pkup		C	0.00	cfm/ton 6
Supply Air Le	akage	(	0 0	0			Supply Air I	Leakage		C	0.00	ft²/ton
Grand Total =	=> 6,90	6 3	6,943	100.00	6,782	100.00	Grand Total	/ ==>	-3,029	-5,064	100.00	Btu/hr·ft <sup>2</sup> No. People
		COOLIN	NG COIL SEL	ECTION			1		AREAS		F	EATING COIL S
	Total Capacit ton MB	ty Sens Cap h MBh	. Coil Airflow	Ente	r <b>DB/WB/HR</b> °F gr/lb	Leave °F	°F gr/lb		Gross Total	Glass ft <sup>2</sup> (%)		Capacity Co MBh
Main Clg	0.6 6	.9 6.8	3 365	3 73.3 5	7.7 47.4	55.0 5	0.3 47.4	Floor	91		Main Htg	-5.1
Aux Cig	0.0 0.	.0 0.0		0.0	0.0 0.0	0.0	0.0 0.0	Part	U		Aux Htg	0.0
Opt Vent	0.0 0.	.0 0.0	) (	0.0	0.0 0.0	0.0	0.0 0.0	Int Door	1		Preheat	0.0
T- 4-1	0.6	0						ExFir	0	0 0	Reheat	-2.0
Iotal	0.6 6	.9						Root	91	47 00	Humidif	0.0
								wall	56	47 80	Opt vent	0.0
								Ext Door	0	0 0	Iotal	-5.1

![](_page_17_Figure_0.jpeg)

![](_page_18_Figure_0.jpeg)

~		ULL						
S	WATTS	ССТ	CRI	FINISH	DRIVER TYPE	DIMMING INTERFACE	VOLTS	NOTES
	32 W	3500K	90	WHITE	INTEGRAL DRIVER	0-10V	277 V	
	25 W	3500K	90	WHITE	INTEGRAL DRIVER	0-10V	277 V	
	36 W	3500K	90	WHITE	INTEGRAL DRIVER	0-10V	277 V	

SUBMIT ALL ELECTRICAL REVISIONS TO L & I FOR REVIEW Separate electrical permit is required with Washington State Department of Labor & Industries. https://lni.wa.gov/licensing-permits/electrical/electrical-permits-fees-and-inspection s or Licensing information: Call 1-800-647-0982

M

 $(\mathsf{P})$ 

![](_page_18_Figure_5.jpeg)

OR SCOPE OF WORK AREAS.
OR EXACT MOUNTING HEIGHT AND LOCATION UIPMENT PRIOR TO INSTALLATION.
THERWISE NOTED.
ON OF ALL MECHANICAL AND PLUMBING BING DRAWINGS PRIOR TO INSTALLATION. IDATIONS. REFER TO EQUIPMENT IORE INFORMATION.
FOREIGN TO THE ELECTRICAL EQUIPMENT PACES FOR SWITHBOARDS AND
IN WALLS AND CEILING OR BELOW FLOORS,
NTRACTOR SHALL IDENTIFY ROUTING IN AL OF ROUTING PRIOR TO ROUGH-IN. GHT TO STRUCTURE.
E OF HOW WIRING WILL BE ROUTED IN THE ALL BE RESPONSIBLE FOR COORDINATING NDITIONS RESULTING IN EXTENDED E REQUIRED TO BE ADJUSTED PER ARTICLE ASED FOR VOLTAGE DROP.
OF CIRCUITS FEEDING DEVICES INDICATED
CH CIRCUIT.
EXACT MOUNTING HEIGHT AND LOCATION UIPMENT PRIOR TO INSTALLATION.

![](_page_18_Figure_31.jpeg)

![](_page_19_Figure_0.jpeg)

С

 $\Lambda$ 

![](_page_19_Figure_2.jpeg)

# 1 E2.03 SECOND FLOOR PLAN - BOX & CONDUIT PLAN - PHILLIPS EQUIPMENT

			CONDUIT	CONDUIT
NO.	FROM	ТО	QTY	SIZE
1	ERB	GE	1	3/4"
2	ERB	ROOM OUTLETS	1	3/4"
3	MA	WL	1	3/4"
4	ATY	DS	1	3/4"
5	ATY	MA	1	2-1/2"
6	ATY	TV	1	3/4"
7	SP	ME	2	1-1/2"
8	SP	ME	1	1-1/2"
9	SP	ME	1	1"
10	SP	ME	1	2-1/2"
11	SP	MR	1	2"
12	SP	MR	1	2-1/2"
13	MSA	MA	1	2"
14	MSA	MA	1	3"
15	MSA	MA	1	1-1/2"
16	MSA	MR	1	2"
17	MSA	MR	1	2"
18	TV	MA	1	1-1/2"
19	TV	MA	1	2-1/2"/5
20	TV	MR	1	{ 1-1/2" }
21	TV	MB	1	1-1/2"
22	TV	MB	1	1-1/2"
23	TV	WM	1	3/4"
24	CY	MR	1	2"
25	CY	MA	1	1-1/2"
26	CY	MA	1	2-1/2"
27	MR	WM	1	1-1/2"
28	PB1	2ME	1	2-1/2"
29	PB1	2ME	1	1"
30	PB1	2ME	1	1"

![](_page_19_Figure_6.jpeg)

![](_page_19_Figure_7.jpeg)

			CONDUIT		
NO.	ERQM	IQ	QIY	CONDUIT SIZE	<u></u>
61	WR2	ERB	1	3/4"	$\mathbf{x}$
62 }	MA	ERB	1	3/4"	$\boldsymbol{\zeta}$
63	RAP	UPS	1	3/4"	$\langle \rangle$
64 {	UPS	MA	1	SEE ONE LINE	5
65	СВ	ST	1	3/4"	3
66	INT	MSA	1	3"	<u>۲</u>
67	MSA	PHY	1	3"	$\langle \rangle$
68 \	PHY	PHY MON	1	2"	5
69 <b>(</b>	INT	MSA	1	1-1/2"	3
70	INT	MSA	1	1-1/2"	<u>۲</u>
$\overline{\zeta}$	inne	unn.	n n n n	mmm	کر

## SHEET NOTES

- A. REFER TO ARCHITECTURAL DRAWINGS FOR SCOPE OF WORK AREAS.
- B. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHT AND LOCATION OF ALL DEVICES AND MISCELLANEOUS EQUIPMENT PRIOR TO INSTALLATION.
- C. ALL DEVICES SHOWN ARE NEW, UNLESS OTHERWISE NOTED. D. COORDINATE EXACT EQUIPMENT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT WITH MECHANICAL AND PLUMBING DRAWINGS PRIOR TO INSTALLATION. INSTALL PER MANUFACTURER RECOMMENDATIONS. REFER TO EQUIPMENT SCHEDULE AND PANEL SCHEDULES FOR MORE INFORMATION.
- E. NO PIPING, DUCTS OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN THE DEDICATED SPACES FOR SWITHBOARDS AND PANELBOARDS.
- F. ALL NEW CONDUIT SHALL BE CONCEALED IN WALLS AND CEILING OR BELOW FLOORS, UNLESS OTHERWISE NOTED.
- G. WHERE EXPOSED CONDUIT IS NOTED, CONTRACTOR SHALL IDENTIFY ROUTING IN FIELD AND OBTAIN ARCHITECT'S APPROVAL OF ROUTING PRIOR TO ROUGH-IN. EXPOSED CONDUIT SHALL BE ROUTED TIGHT TO STRUCTURE.
- H. WIRE SIZES ARE BASED ON BEST ESTIMATE OF HOW WIRING WILL BE ROUTED IN THE FIELD. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING INCREASED WIRE SIZES DUE TO FIELD CONDITIONS RESULTING IN EXTENDED CONDUIT PATHS. GROUND WIRE SIZES ARE REQUIRED TO BE ADJUSTED PER ARTICLE 250 OF THE NEC WHEN WIRES ARE INCREASED FOR VOLTAGE DROP.
- I. CONTRACTOR TO MAINTAIN CONTINUITY OF CIRCUITS FEEDING DEVICES INDICATED TO REMAIN AND ANY CIRCUITS SERVICING DEVICES OUTSIDE THE PROJECT BOUNDARY.
- J. PROVIDE A DEDICATED NUETRAL FOR EACH CIRCUIT.
- K. REFER TO VENDOR SHOP DRAWINGS FOR EXACT MOUNTING HEIGHT AND LOCATION OF ALL DEVICES AND MISCELLANEOUS EQUIPMENT PRIOR TO INSTALLATION.

## SYMBOL LEGEND

X PHILLIPS EQUIPMENT ID X STRYKER EQUIPMENT ID

![](_page_19_Picture_23.jpeg)

(E)	PANELBOARD: 2 Volts (L-L): 2 PHASE: 3 WIRES: 4 OPTIONS: F	2 <b>WYC</b> 08 V 'EED THRO	<b>)1-2</b>	IGS, EX	PANEI MOL ENCLO ISTING P	L TYPE: Inting: Osure: Panel - I	CR SURFA NEMA NEW WO	CE 1 DRK SHO	OWN IN F	30LD S	BUS F AIC F SUPPLY	MCB: MLO RATING: 225A RATING: 10,000 AIC Y FROM:	
СКТ	DESCRIPTION	AMPS	POLES		A		В		С	POLES	AMPS	DESCRIPTION	ск
43	REC - 2D09 WASHER/STERILIZER	20 A	1	0	0					1	20 A	REC - 2D07	44
45	REC - 2D09 STERILIZER	20 A	1			0	0			1	20 A	REC - 2D04	46
47	REC - 2D09 WARMING CAB	20 A	1					0	0	1	20 A	REC - 2D04	48
49	REC - 2D11 ALCOVE	20 A	1	0	0					1	20 A	REC - 2D04	50
51	REC - 2D11 WASHER/STERILIZER	20 A	1			0	0			1	20 A	COMM EQUIP - 2D12	52
53	REC - 2D11 WARMING CAB	20 A	1					0	0	1	20 A	COMM EQUIP - 2D12	54
55	REC - 2G05/2G15 CLOCK	20 A	1	0	0					1	20 A	REC - 2D06	56
57	REC - 2G05 CLOCK	20 A	1			0	0			1	20 A	REC - 2D08/15	58
59	REC - 2G02 BONE FREZER	20 A	1					0	1.5	1	20 A	OR#1 2D03 - ELAPSE TIMER	60
61	REC - 2G03	20 A	1	0	0				•	1	20 A	TELECOM	62
63	REC - 2D09 SUB STERILE	20 A	1			0.18	0		5	1	20 A	TELECOM 5	64
65	REC - 2D02 MONITORS	20 A	1					1.8	¢ 0.9	1	20 A	REC - CONTROL RM 2002/ PANEL RAP	66
67				0	0.72				h	1	20 A	REC - CONTROL RM 2D02	68
69	HOTWATER	20 A	2			0	0.9			1	20 A	REC - OR#1 2D03	70
71	REC - 2D03 OR#1	20 A	1					0.54	0.36	1	20 A	REC - OR#1 2D03 PYXIS	72
73	CIRCULATION PUMP	20 A	1	0	1.08					1	20 A	REC - OR#1 2D03	74
75		00.4	0			0.03	0.72			1	20 A	REC - ELECTRONICS 2D09A	76
77	OR#1 2D03 - BOOM L6-30	30 A	2					0.03	0.36	1	20 A	REC - ELECTRONICS 2D09A	78
79	AUTO DOOR OPENER	20 A	1	0	0.36					1	20 A	REC - ELECTRONICS 2D09A	80
81	AUTO DOOR OPENER	20 A	1			0	0.36			1	20 A	REC - ELECTRONICS 2D09A	82
83	AUTO DOOR OPENER	20 A	1					0	0.36	1	20 A	REC - ELECTRONICS 2D09A	84
		TOTA TOTAI	L LOAD: L AMPS:	2.16 1	8 A	2.19 18	kVA B A	5.85 49	5 kVA 9 A	-			
L	OAD CLASSIFICATION CONNEC		<b>D</b>	DEMA	ND FACT	OR	ESTI	MATED	DEMAN	D		PANEL TOTALS	<u>م</u>
RECE	PTACLE 144	0 VA		1	00.00%			1440	VA				5
EQUI	PMENT 1550	).2 VA		1	00.00%			1550.2	VA		TOT	TAL CONNECTED LOAD	)
EQ	720	0 VA		1	00.00%			7200	VA				)
												ST DEMAND CURRENT 28 A	
EXIS								0 V4	4				
NOT	:S:							-		I			

	PANELBOAR VOLTS (L PHA WIR OPTIO	D: 4WYL L): 480 ∨ .SE: 3 .ES: 4 .NS: EXISTING I	) PANEL -	NEW W	/ORK SH	PANE MOL ENCL IOWN IN	<b>l type:</b> J <b>nting:</b> Osure: Bold	CR SURFA NEMA <sup>2</sup>	CE 1			BL A SUP	M JS RATII IC RATII PLY FR(	CB: 400 A NG: 225A NG: 14,000 AIC DM:		
скт	DESCRIPTION	NOTES	AMPS	POLES	6	A		в		с	POLES	AMPS	NOTES	DESCF	RIPTION	СКТ
1	OR#1 ULTRASUITE LTG		20 A	1	1.55	0					1	20 A		SPARE		2
3	OR#1 ULTRASUITE LTG		20 A	1			1.55	0			1	20 A		SPARE		4
5	SPARE		20 A	1					0	0	1	20 A		SPARE		6
7	SPARE		20 A	1	0	0					1	20 A		SPARE		8
9	SPARE		20 A	1			0	0			1	20 A		LTG: EAST		10
11	OR#1 LTG-INVERTER		20 A	1					0.42	0	1	20 A		LTG: EAST		12
13	SPARE		20 A	1	0	0					1	20 A		LTG: EAST		14
15	SPARE		20 A	1			0	0			1	20 A		SPARE		16
17	SPARE		20 A	1					0	0	1	20 A		SPARE		18
19	SPARE		20 A	1	0 0						20 A		SPARE		20	
21	SPARE		20 A	1	C		0	0			1	20 A		SPARE		22
23	SPARE		20 A	1				0 0		1	20 A		SPARE		24	
25			00.4	0	0	0					1	20 A		SPARE		26
27	OR-1 ISOLATION PANEL		30 A	2			0	0			1	20 A		SPARE		28
29				0					0	0	1	20 A		SPARE		30
31	OR-2 ISOLATION PANEL		20 A	2	0	0					1	20 A		SPARE		32
33			00.4	0			0	0			1	20 A		SPARE		34
35	OR-3 ISOLATION PANEL		20 A	2					0	0	1	20 A		SPARE		36
37			20.4	2	0	2.16										38
39	OR-4 ISOLATION PANEL		20 A	2			0	2.19			3	100 A		(E) XFMR 2WYD	/1	40
41	SPACE			1						5.85						42
			TOTA TOTA	L LOAD L AMPS	: 3.71 : 1:	I kVA 3 A	3.74 13	kVA 3 A	6.27 23	7 kVA 3 A						i
LOAD	CLASSIFICATION	CONNECTE		<b>D</b>	DEMA		OR	ESTI	MATED	DEMAND	)			PANEL TOTAL	.S	
LIGH	TING	422 \	/A		1:	25.00%			527.5	VA						
RECE	PTACLE	1440 '	VA		1	00.00%			1440	VA		то	TAL CON	NECTED LOAD:	13.71 kVA	
EQUI	PMENT	4650.2	VA		1	00.00%			4650.2	VA		TC	DTAL ES	TIMATED LOAD:	13.82 kVA	
EQ		7200	VA		1	00.00%			7200	VA			CONNEC	LED CURRENT:	16 A	
													SI. DEN	IAND CURRENT:		
L																

NOTES:

CC = CONTROLLED CIRCUIT, H = HACR, G = GFCI, A = AFCI, G/A = COMBO GFCI/AFCI, L = BREAKER LOCK

F	PANELBOAR	D: IP (	OR #	1									
	VOLTS (L	<b>L):</b> 208 ∨				PANEL TYPE:					MCB: MLO		
	PHA	<b>ASE:</b> 1				MOUNTING:	SURFACE			BUS RA	<b>TING:</b> 30A		
	WIF	<b>RES:</b> 3				ENCLOSURE:	NEMA 1			AIC RA	TING: 10,000 AIC		
	OPTIC	<b>)ns:</b> existi	ING PANI	EL - NEW	WORK SH	IOWN IN BOLD, I	SOLATED POWE	R PANEL		SUPPLY F	ROM:		
СКТ	DESCRIPTION		NOTES	AMPS	POLES	Α	В	POLES	AMPS	NOTES	DESCRIF	PTION	СКТ
1	OR#1 2D03 - BOOM 'D3'	REC		20 A	1	0.36 / 0.18		1	20 A		OR#1 2D03 - BOOM	1 'D2' REC	2
3	OR#1 2D03 - BOOM 'D3'	REC		20 A	1		0.36 / 0.36	1	20 A		OR#1 2D03 - BOOM	1 'D2' REC	4
5	OR#1 2D03 - BOOM 'D3'	REC		20 A	1	0.36 / 0.36		1	20 A		OR#1 2D03 - BOOM	1 'D2' REC	6
7	OR#1 2D03 - BOOM 'D4'	REC		20 A	1		0.36 / 0.18	1	20 A		OR#1 2D03 - BOOM	1 'D2' REC	8
9	OR#1 2D03 - BOOM 'D4'	REC		20 A	1	0.36 / 0.18		1	20 A		OR#1 2D03 - BOOM	1 'D2' REC	10
11	OR#1 2D03 - BOOM 'D4'	REC		20 A	1		0.18 / 0.18	1	20 A		OR#1 2D03 - BOOM	1 'D2' REC	12
13	OR#1 2D03 - BOOM 'D4'	REC		20 A	1	0.18 / 0.18		1	20 A		OR#1 2D03 - BOOM	1 'D4' REC	14
15	OR#1 2D03 - BOOM MOT	OR		20 A	1		0.54 / 0.18	1	20 A		OR#1 2D03 - BOOM	1 'D4' REC	16
	1	L. L		TOTA	AL LOAD:	2.16 kVA	2.34 kVA			- I			
				TOTA	AL AMPS:	21 A	22 A						
LOAD	CLASSIFICATION	CONNE	ECTED LO	DAD	DEMA	ND FACTOR	ESTIMATED	DEMAND			PANEL TOTAL	S	
EQUIP	MENT	4	500 VA		1	00.00%	4500 V	/A					
										TOTAL C	ONNECTED LOAD:	4.5 kVA	
										TOTAL	ESTIMATED LOAD:	4.5 kVA	
											IECTED CURRENT:	22 A	
									101/	AL EST. D	EMAND CURRENT:	22 A	
NOTES	6:		-										

C						D						E												F	
		1																							
	יחס · סע	<u>ר</u>											· 2\\/D												
			D					MCB: 100 A																мс	<b>`Β·</b> 225 Δ
PH	IASE: 3		E.	MOUNTING: SURI	FACE		BUS RA	TING: 100A				PHASE	: 3				MOL	JNTING: S	JRFACE				BUS		<b>IG:</b> 225A
W	RES: 4		E	NCLOSURE: NEM	A 1		AIC RA	TING: 10,000 AIC				WIRES	<b>6</b> : 4				ENCL	OSURE: N	EMA 1				AIC	RATIN	<b>G:</b> 10,000
OPTI	ONS: EXISTING	PANEL - NEW	WORK SHOW	N IN BOLD			SUPPLY F	ROM:				OPTIONS	5: EXISTING F	PANEL - NE	EW WC	ORK SHO	OWN IN	BOLD					SUPPL	LY FRO	M:
	NOTES		FS A	В		e PC		-s DESC		СКТ		SCRIPTION	NOTES				Δ	В		С	P			NOTES	· r
1 SPACE		1		0			1 15 A	EF-1 - ROOF		2	1 SPARE			20 A	1	0	0					1	20 A		SPARE
3 SPACE		1		0			1 15 A	EF-2 - ROOF		4	3 SPARE			20 A	1			0	0			1	20 A		SPARE
5 SPACE		1				0	1 15 A	EF-3 - ROOF		6	5 SPARE			20 A	1					0	0	1	20 A		SPARE
7 SPACE		1		0			1 15 A	EF-4 - ROOF		8	7 SPARE			20 A	1	0	0					1	20 A		SPARE
9 SPACE		1		0.30	6	-	1 20 A	REC - ROOF		10	9 SPARE			20 A	1			0	0		-	1	20 A		SPARE
11 SPACE		1	0	06		0	1 20 A		CIDETECTOR	12	11 SPARE			20 A	1	0	0			0	0	1	20 A		SPARE
15 SPACE		1	0	.00			1 20 A	SPACE		14	15 SPARE			20 A	1	0	0	0	0			1	20 A		SPARE
17 SPACE		1					1	SPACE		18	17 SPARE			20 A	1				0	0	0	1	20 A		SPARE
19 SPACE		1					1	SPACE		20	19 SPARE			20 A	1	0	0					1	20 A		SPARE
21 SPACE		1					1	SPACE		22	21 SPARE			20 A	1			0	0			1	20 A		SPARE
23 SPACE		1					1	SPACE		24	23 SPARE			20 A	1					0	0	1	20 A		SPARE
25 SPACE		1					1	SPACE		26	25 SPARE			20 A	1	0	0		-			1	20 A		SPARE
27 SPACE		1					1	SPACE		28	27 SPARE			20 A	1			0	0	0	0	1	20 A		SPARE
29 SPACE		1					1	SPACE		30	29 SPARE			20 A	1	0	0			0	0	1	20 A		SPARE
33 SPACE		1					1	SPACE		34	33 SPARE			20 A	1	0	0	0	0			1	20 A		SPARE
35 SPACE		1					1	SPACE		36	35 SPARE			20 A	1				-	0	0	1	20 A		SPARE
37 SPACE		1					1	SPACE		38	37 SPARE			20 A	1	0	0					1	20 A		SPARE
39 SPACE		1					1	SPACE		40	39 SPARE			20 A	1			0	0			2	20 A		SPARE
41 SPACE		1	_				1	SPACE		42	41 <b>REC - 2D02</b> (	CONTROL RM		20 A	1				0	.36	0		207		
			<b>Δ:</b> 0.06 kV/	A 0.36 kVA	0 k	VA A					43 SPARE			20 A	1	0	0					1	20 A		SPARE
				37							45 SPARE			20 A	1			0	0	0	0	1	20 A		SPARE
LOAD CLASSIFICATION	CONNECT	ED LOAD	DEMAND I	FACTOR ES		DEMAND		PANEL TOTAL	LS		47 SPARE 49 <b>REC - OR#1</b>	2D03		20 A	1	1.08	0			0	0	1	20 A		SPARE
EQUIPMENT	420.3	VA	100.0	0%	420.3 V	/A			• 0.42 k)/A		51 <b>REC - 2D04 S</b>	STORAGE		20 A	1	1.00	Ŭ	1.26	0			1	20 A		SPARE
							TOTAL C	ESTIMATED LOAD:	: 0.42 kVA		53 BLANKET W	ARMER		20 A	1					1	0	1	20 A		SPARE
							TOTAL CONN	ECTED CURRENT:	: 1 A		55 <b>REC - OR#1</b>	2D03		20 A	1	0.36	0					1	20 A		SPARE
							TOTAL EST. DE	EMAND CURRENT:	: 1 A		57 <b>REC - OR#1</b>	2D09		20 A	1			0.18	0			1	20 A		SPARE
											59 SPARE			20 A	1					0	0	1	20 A		SPARE
NOTES:											61 SPARE			20 A	1	0	0	0	0			1	20 A		SPARE
CC = CONTROLLED CIRCUIT, H	H = HACR, G = GI	FCI, A = AFCI,	G/A = COMBO	GFCI/AFCI, L = BR	EAKER LOO	CK					63 SPARE			20 A	1			0	0	0	0	1	20 A		SPARE
											67 SPARE			20 A	1	0	0			0	0	1	20 A		
		<b>`</b>									69 SPARE			20 A	1	0	0	0	0			1	20 A		SPARE
		J									71 SPARE			20 A	1					0	0	1	20 A		SPARE
VOLTS	(L-L): 480 V		P	ANEL TYPE: EQ	FACE			MCB: 225 A			73 SPARE			20 A	1	0	0					1	20 A		SPARE
W	IRES: 4		E	NCLOSURE: NEM	A 1		AIC RA	TING: 14,000 AIC			75			20.4	2			0.25	0			1	20 A		SPARE
ΟΡΤΙ	ONS: EXISTING	PANEL - NEW	WORK SHOW	N IN BOLD			SUPPLY F	ROM:			77			20 7	<u> </u>				0	.25	0	1	20 A		SPARE
											79 SPARE			20 A	1	0	0					1	20 A		SPARE
											81 SPARE			20 A	1			0	0	0	0	1	20 A		SPARE
CKT DESCRIPTION	NOTES	AMPS POL	ES A	B	C	; PC	DLES AMPS NOTE	ES DESC	RIPTION	СКТ	83 SPARE					1 / /	k\/A	1.60 1/2	Δ	U 161 W	U A	1	20 A		SPARE
		15 0 2	0	0			2 00 4			2				TOTAL A	MPS:	1.44	2A	1.09 K	^	14 A	<u> </u>				
				0 0	0	0	5 90 A	(C) FAINEL 2002	ראאארועוג <u>,</u> שווידא איזיטיא ארועוג	/ <del>4</del> 6					,			· · · ·	I		]				
7			3.83	0	0	0	1 20 A	SPARF		8		ATION	CONNECTE			DEMAN		OR	ESTIMA		MAND				PANEL T
9 AHU-OR-1S		25 A 3	0.00	3.83 0			1 20 A	SPARE		10			3340 \ 500 V	/A A		10	0.00%		3	340 VA			ΤΟΤΔ		NECTED
11					3.83	0	1 20 A	SPARE		12	EQ		900 V	Ά		10	0.00%		(	000 VA			TOT	AL EST	IMATED L
13			0	0						14												T	OTAL CO		
15 (E) AHU-OR2		15 A 3		0 0			3 25 A	(E)H-OR2		16												ТС	TAL ES	T. DEM	
17					0	0				18															
			0	0						20	NOTES:	I			I			I							
21 (E)WCH-3		15 A 3		0 0		0	3   25 A	(E)H-OR2		22	CC = CONTROLLEI	D CIRCUIT, H = F	HACR, G = GF	CI, A = AF	CI, G/A	= COM	BO GFC	I/AFCI, L =	BREAKE	R LOCK					
25			5.56	0	U	U				24	L														
27 CH-OR1		45 A 3	5.50	5.56 0			3 25 A	(E)H-OR4		20															
└──┤ <sup>2</sup> <del>.</del>				5.00 0			<u></u> ,			<u> </u>															

PANELBOAR	<b>RD: 2WZI</b> (L-L): 208 ∨	D		PANE	L TYPE:	EQ					M	ICB: 100 A			PANELBOARD	<b>): 2WD</b> L): 208 ∨			
PH WI OPTI	IASE: 3 IRES: 4 ONS: EXISTING	PANEL	- NEW V	MO Encl Vork Shown In	UNTING: OSURE: BOLD	SURFA NEMA	.CE 1			BL A SUP	JS RATI IC RATI PLY FR	NG: 100A ING: 10,000 AIC OM:			PHAS WIRE OPTION	SE: 3 ES: 4 IS: Existing F	PANEL -	NEW W	I ORK SHOV
CKT DESCRIPTION	NOTES	S AMPS		5 A		в		с	POLES		NOTES	S DESCRIPTION	скт	ск		NOTES	AMPS	POLES	3 A
1 SPACE			1	0					1	15 A		EF-1 - ROOF	2	1	SPARE		20 A	1	0
5 SPACE			1			0		0	1	15 A 15 A		EF-2 - ROOF EF-3 - ROOF	4 6	5	SPARE		20 A	1	
7 SPACE			1	0		0.20			1	15 A		EF-4 - ROOF	8	7	SPARE		20 A	1	0
9 SPACE 11 SPACE			1			0.36		0	1	20 A 20 A		AHU OR1 - DUCT DETECTOR	10	9	SPARE		20 A 20 A	1	
13 SPACE			1	0.06					1	20 A		HWP-OR#1	14	13	SPARE		20 A	1	0
15 SPACE 17 SPACE			1						1			SPACE SPACE	16 18	15	SPARE SPARE		20 A 20 A	1	
19 SPACE			1						1			SPACE	20	19	SPARE		20 A	1	0
21 SPACE			1						1			SPACE	22	21	SPARE		20 A	1	
25 SPACE			1						1			SPACE	24	25	SPARE		20 A	1	0
27 SPACE			1						1			SPACE	28	27	SPARE		20 A	1	
29 SPACE 31 SPACE			1						1			SPACE	30 32	29	SPARE		20 A 20 A	1	0
33 SPACE			1						1			SPACE	34	33	SPARE		20 A	1	
35 SPACE			1						1			SPACE	36	35	SPARE		20 A	1	
39 SPACE			1						1			SPACE	40	39	SPARE		20 A	1	
41 SPACE					0.26				1			SPACE	42	41	REC - 2D02 CONTROL RM		20 A	1	
		TOTA	L AMPS	: 0.06 KVA : 1 A	0.36	A	0 6							43	SPARE		20 A 20 A	1	0
LOAD CLASSIFICATION	CONNECT	ED LOA	D	DEMAND FAC	TOR	EST	MATED	DEMAN	D			PANEL TOTALS		47	SPARE		20 A	1	
EQUIPMENT	420.3	S VA		100.00%			420.3	VA						49 51	REC - OR#1 2D03 REC - 2D04 STORAGE		20 A 20 A	1	1.08
										ТС	TAL CO	STIMATED LOAD:     0.42 kVA		53	BLANKET WARMER		20 A	1	
										TOTAL (	CONNE	CTED CURRENT: 1 A		55	REC - OR#1 2D03		20 A	1	0.36
											011 021			57	SPARE		20 A	1	
NOTES:														61	SPARE		20 A	1	0
CC = CONTROLLED CIRCUIT, H	H = HACR, G = G	FCI, A =	AFCI, G	/A = COMBO GFC	CI/AFCI, L	_ = BRE/	AKER LO	OCK						63 65	SPARE SPARE		20 A 20 A	1	
														67	SPARE		20 A	1	0
PANELBOAF	RD: 4WZI	D												69	SPARE		20 A	1	
VOLTS PH	(L-L): 480 ∨ IASE: 3			PANE		EQ SURFA	CE			BI	M IS RATI	ICB: 225 A		71	SPARE		20 A	1	0
W	IRES: 4			ENCL	OSURE:	NEMA	1			A		NG: 14,000 AIC		75	OR#1 2D03 - LASER REC		20 A	2	
OPTI	ONS: EXISTING	PANEL	- NEW V	ORK SHOWN IN	BOLD					SUP	PLY FR	OM:		77	SPARE		20 A	1	0
														81	SPARE		20 A	1	
CKT DESCRIPTION	NOTES	S AMPS	POLES	<b>S A</b>		B		С	POLES	S AMPS	NOTES	S DESCRIPTION	СКТ	83	SPARE		20 A	1 LOAD:	: 1 44 k'
3 (E) CRU-1		15 A	3	0 0	0	0			3	90 A		(E) PANEL 2WZD (45KVA XFMR)	4				TOTAL	AMPS:	: 12 A
5							0	0					6	LOA	D CLASSIFICATION	CONNECTE		)	DEMAND
7 9 AHU-OR-1S		25 A	3	3.83 0	3.83	0			1	20 A		SPARE SPARE	8	REC		3340 V	/A		100.
11						-	3.83	0	1	20 A		SPARE	12	EQ		900 V	Ά Ά		100.
		45.0		0 0	0	0							14						
15 (E) AHU-OR2		15 A	3		0	0	0	0	3	25 A		(E)H-OR2	18						
19				0 0									20	NOT	TES:				
21 (E)WCH-3		15 A	3		0	0	0	0	3	25 A		(E)H-OR2	22	CC	= CONTROLLED CIRCUIT, H =	HACR, G = GF	CI, A = A	AFCI, G/	A = COMBC
25				5.56 0			0						24						
27 CH-OR1		45 A	3		5.56	0			3	25 A		(E)H-OR4	28						
29 31				0 0			5.56	0	1	20 A		SPARE	30 32						
33 (E)P-FCU-1		15 A	3		0	0			1	20 A		SPARE	34						
35				2.07 4.5			0	0	1	20 A		SPARE	36						
39 AHU-OR-1R		20 A	3	2.07 4.5	2.07	4.5			3	25 A		SG-OR1	38 40						
41							2.07	4.5	-				42						
		ΤΟΤΑ ΤΟΤΑ	L LOAD	: 15.96 kVA : 58 A	15.96	6 kVA 3 A	15.96	6 kVA 8 A	_										
						FOT													
EQUIPMENT	47890	) VA	U	100.00%		ESI	47890	VA											
										TOT TC		NNECTED LOAD: 47.89 kVA							
										TOTAL		CTED CURRENT: 58 A							

NOTES: CC = CONTROLLED CIRCUIT, H = HACR, G = GFCI, A = AFCI, G/A = COMBO GFCI/AFCI, L = BREAKER LOCK

					LC	DAD VERIFICATION SCHED	ULE				
				SEASONAL	EXISTING LOAD +	EXISTING LOAD +	30-DAY/12MO LOAD		TOTAL LOAD	TOTAL AMPS	MCB
	E SYSTEM TYPE	VOLTAGE	E EXISTING LOAD	DEMAND	SEASONAL DEMAND	SEASONAL DEMAND + 125%	METERING	TOTAL NEW LOAD	(EXISTING+NEW)	(EXISTING+NEW)	RATING
2WD	NORMAL	208V	7,920	100%	7,920	12,375	10/7/22 - 11/7/22	4,240	16,615	46.15	225A
4WD	NORMAL	480V	32,825	100%	32,825	51,288	10/7/22 - 11/7/22	4,240	55,528	66.82	225A
4WA	NORMAL	480V	8,726	100%	8,726	13,634	10/7/22 - 11/7/22	3,300	16,934	20.38	100A
2WZD	EQUIPMENT	208V	3,888	125%	4,860	6,075	10/7/22 - 11/7/22	660	6,735	18.71	100A
4WZD	EQUIPMENT	480V	9,557	125%	11,946	14,932	10/7/22 - 11/7/22	48,550	63,482	76.39	100A
4WZPH	EQUIPMENT	480V	144,843	125%	181,054	226,318	10/7/22 - 11/7/22	49,210	275,528	331.56	400A
4WZDP	EQUIPMENT	480V	156,477	125%	195,597	244,496	10/7/22 - 11/7/22	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	$\gamma \gamma 393,706$	-35344	A008
2WYD1	CRITICAL	208V	12,996	100%	12,996	20,306	10/7/22 - 11/7/22	<b>(</b> 9,510	29,816	82.82	225A
4WYD	CRITICAL	480V	58,752	100%	58,752	91,800	10/7/22 - 11/7/22	42,770000	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	125.84	400A
SWBD W	NORMAL	480V	413,615	100%	413,615	646,273	JULY 2022	65,560	711,833	856.60	2000A
NOTE: ALL LO	OAD SHOWN IN V	Ά						· · · · · · ·			

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TOTAL CONNECTED LOAD:	47.89 kVA
TOTAL ESTIMATED LOAD:	47.89 kVA
TOTAL CONNECTED CURRENT:	58 A
TOTAL EST. DEMAND CURRENT:	58 A
	·

LO	AD	VER	IFICA	TION	SCH	EDL	JLE

ak Utility Dem	and (kW)	
Peak	Percent	Seasonal
Demand (kW)	of Peak	Demand
2,523.97	61%	164%
2,326.32	56%	178%
2,369.29	57%	175%
2,254.68	55%	183%
2,312.25	56%	179%
2,271.60	55%	182%
2,587.95	63%	160%
3,778.81	91%	109%
4,136.15	100%	100%
3,942.51	95%	105%
3,311.32	80%	125%
	ak Utility Dema           Peak           Demand (kW)           2,523.97           2,326.32           2,369.29           2,254.68           2,312.25           2,271.60           2,587.95           3,778.81           4,136.15           3,942.51           3,311.32	ak Utility Demand (kW)           Peak         Percent           Demand (kW)         of Peak           2,523.97         61%           2,326.32         56%           2,369.29         57%           2,254.68         55%           2,312.25         56%           2,271.60         55%           2,587.95         63%           3,778.81         91%           4,136.15         100%           3,942.51         95%           3,311.32         80%

## PRCTI20221788 REVISED SHEET

AMPS 20 A 20 A 20 A 20 A 20 A 20 A	NOTES   	DESCRIPTION SPARE SPARE	<b>СКТ</b> 2
20 A 20 A 20 A 20 A 20 A 20 A		SPARE SPARE	2
20 A 20 A 20 A 20 A 20 A		SPARE	
20 A 20 A 20 A			4
20 A 20 A		SPARE	6
20 A		SPARE	10
20 A		SPARE	10
20 A		SPARE	14
20 A		SPARE	16
20 A		SPARE	18
20 A		SPARE	20
20 A		SPARE	22
20 A		SPARE	24
20 A		SPARE	26
20 A		SPARE	28
20 A		SPARE	30
20 A		SPARE	32
∠∪ A 20 ^		SPARE	34
20 A 20 A		SPARE	30 28
			40
20 A		SPARE	40
20 A		SPARE	44
20 A		SPARE	46
20 A		SPARE	48
20 A		SPARE	50
20 A		SPARE	52
20 A		SPARE	54
20 A		SPARE	56
20 A		SPARE	58
20 A		SPARE	60
20 A		SPARE	62
20 A		SPARE	64
∠∪ A 20 A		SPARE	60
20 A		SPARE	70
20 A		SPARE	70
20 A		SPARE	74
20 A		SPARE	76
		SPARE	78
20 A			
20 A 20 A		SPARE	80
20 A 20 A 20 A		SPARE SPARE	80 82
	20 A 20 A	20 A          20 A	20 A        SPARE         20 A        SPARE <t< th=""></t<>

![](_page_20_Figure_24.jpeg)