# **INTERMOUNTAIN LDSH ED CODE ROOM REMODEL**





24 NOV 2021



### OWNER

INTERMOUNTAIN HEALTHCARE WALT SHUMWAY, PROJECT MANAGER 8TH AVE & C STREET EAST SALT LAKE CITY, UTAH 84143



Michael Vielsen

MITT.

# ARCHITECT

INCLINE ARCHITECTS 1952 E BRYAN AVENUE SALT LAKE CITY, UTAH 84108

### **MECHANICAL ENGINEER**

SPECTRUM ENGINEERS 324 SOUTH STATE STREET, #400 SALT LAKE CITY, UTAH 84111

PLOT DATE: 11/22/2021 6:15:47 PM			
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TOTAL OCCUPANTS:

LIFE SAFETY PLAN 1/16" = 1'-0"

INDEX OF DRAWINGS	<b>PROJECT SUMMARY</b>
NUMBERING SYSTEM: DISCIPLINE: C - CIVIL L - LANDSCAPE A - ARCHITECTURE M - MECHANICAL E - ELECTRICAL P - PLUMBING S - STRUCTURAL SERIES NUMBER SHEET NUMBER WITHIN SERIES NUMBER OF PLAN, DETAIL, ETC. ON SHEET	PROJECT INFORMATION         PROJECT NAME: INTERMOUNTAIN LDSH ED CODE ROOM REMODEL         ADDRESS: 8TH AVE & C STREET EAST, SALT LAKE CITY, UTAH 84143         OWNER CONTACT: WALT SHUMWAY, PROJECT MANAGER         PHONE: (801) 314-2260 <b>ADPPLICABLE CODES</b> - BUILDING CODE: 2018 IBC / IEBC         - BUILDING CODE: 2018 IBC / IEBC         - MECHANICAL: 2018 IMC         - PLUMBING: 2018 IPC         - PLUMBING: 2018 IPC         - ELECTRICAL: 2017 NEC         - FIRE CODE: 2018 IFC         - FIRE CODE: 2018 IFC         - FIRE CODE: 2018 IFGC         BUILDING PLANNING         OCCUPANCY         MIXED OCCUPANCY
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PROJECT INFO



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Class III Class III Class IV \*Infection Control Approval is needed for all projects 4. Follow all the appropriate Infection Control Protocols below: (Hand hygine stations must be During Construction Upon Completion - Perform work using methods to minimize - Clean work area. raising dust or tracking dust into other areas. - Immediately replace ceiling tile upon completion of inspection. - All measures for Class I work. - All measures for Class I work. - Use active dust control measures. - Wipe all horizontal surfaces with - Use water mist to control dust while disinfectant. - Remove debris only in tightly cover - Seal doors, ducts, vents, and HVAC units. containers. - Place dust control mats at entries to work - Vacuum using HEPA filtered vacuum with disinfectant as appropriate. area; keep them clean and effective. - Remove debris only in tightly covered Remove all seals from doors, ducts, and HVAC units. All measures for Class II work. - All measures for Class II work. Remove construction barriers only a - Construct barriers to prevent dust and other contaminant migration prior to needed inspections are complete and passed. - Maintain negative air pressure in - Remove construction barriers in a m workspace using HEPA filtration units. that minimizes the spread of dust and - Use HEPA Filter vacuum on clothes. - All measures for Class III work. - All measures for Class III work. - Seal all pipes, conduits, and penetrations. Non-construction visitors wear shoe covers when VISITING construction area Construction workers wear shoe covers when Leaving the construction area Provide Neg Pressure Air Monitoring Log During Construction **Construct anteroom outside area of construction** Workers to wear clean paper overalls and shoe covers when entering/exiting site

Туре А

Class I

Class II

Class II

Type C

Class I

Class III

Class IV

Туре В

Class I

Class II

Class III

Page 3 of 7

P	PeopleSoft Project # (	or Job Name:	10013781, LDSH, ED Code Room				
Class I & II projects reviewed by Facility Maintenance. Class III & IV by Infection Prevention.							
Data							
Date	Initials		comments				
See a	additional rounding s	sheet					

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Class IV	1 4	nitia
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PeopleSoft Project # or Job Name:	10013781, LDSH, ED Code Room
Additional Requirements for This Area:	
Initials: Date:	
Land Considerations for Work Impact	
1. Identify the risk levels of areas that are adjace	cent to the project:
Above Below Lateral	Lateral Front Other
west High High dium dium High High High High	west dium High West Bhest Bhest High Bhest
Hij Hiji Hiji Hiji Hiji Hiji Hiji Hiji	Hij
2. Identify likely outages and their effects: plumb	ping, medical gas, ventilation, electrical, etc.:
none expected	
3. Describe specific containment measures to be	used: Existing Doors and Walls are Acceptable for barrier if
Containment of room with anteroom Ar	nteroom with HEPA filtration vented into room
Larger HEPA filtration within room vente	ed out return vent.
4 Describe specific risks associated with water d	amage.
none expected	unidge.
5. Describe noise and vibrations that will impact Noise from tools during demolition and l	patient care areas and now you will mitigate that:
using loud tools, charge nurse will be no	otified, so staff and patients can be prepared.
6. Identify the project work hours - avoiding patie	ent care impact when possible:

7. Do plans allow for sufficient isolation/negative airflow rooms? 8. Do plans allow for sufficient hand washing sinks per AIA guidelines?

9. Do plans allow for sufficient access to clean and soiled utility rooms?

Yes	No
✔ Yes	No

Page 4 of 7

✔ N/A N/A N/A 🖌 Yes 🛛 No

Prevention. vention \_\_\_\_\_ 



ICRA ANTE ROOM -

REMOVE CEILING GRID AS NEEDED TO COMPLETE CONSTRUCTION. SALVAGE COMPONENTS TO BE REINSTALLED.

REMOVE AND SALVAGE (E) CURTAIN TRACK

**DEMORCP** 1/4" = 1'-0"

ICRA ANTE ROOM

REMOVE AND SALVAGE COUNTERTOP FOR REINSTALL REMOVE COUNTER, END PANEL, -AND BACK PANEL

REMOVE GYP BD AT END OF WALL -AND PREP FOR NEW CONSTRUCTION REMOVE WALL BASE, TERMINATE AT -INSIDE CORNER OF WALL

OWNER TO RELOCATE -EQUIPMENT REMOVE PANEL AT BACK SIDE OF COUNTER REMOVE AND SALVAGE (E) CABLE CASE **REMOVE END PANEL** REMOVE WALL BASE, TERMINATE AT INSIDE CORNER OF WALL

**O3 DEMOLITION - WORKSTATION** NTS



REMOVE GYPSUM BD AT END WALL REMOVE PANEL AT BACK SIDE OF COUNTER **REMOVE END PANEL** 

REMOVE WALL BASE, TERMINATE AT INSIDE CORNER OF WALL REMOVE GYP BD AT END OF WALL AND PREP FOR NEW CONSTRUCTION

**DEMO PLAN** 1/4" = 1'-0"



CONSTRUCTION AS NEEDED









# CORNER GUARDS SCHEDULE SCALE: NTS





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CG-01 — ALIGN NEW WALL W/ END OF (E) WALL





CONTRACTOR SHALL PROVIDE AND INSTALL ALL STIFFENERS, BRACING, CONTINUOUS 18" WIDE 2 GAUGE SHEET METAL PLATES, AND SUPPORTING BRACKETS REQUIRED FOR THE INSTALLATION OF ALL CASEWORK, STAIR RAILINGS, TOILET ACCESSORIES, PARTITIONS, AND OF ALL WALL MOUNTED OR SUSPENDED MECHANICAL, ELECTRICAL, OR MISC. EQUIPMENT.



1952 E BRYAN AVENUE SALT LAKE CITY, UTAH 84108 STAMP



**MECHANICAL ENGINEER** 

324 SOUTH STATE STREET, #400

SALT LAKE CITY, UTAH 84111

SPECTRUM ENGINEERS

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REVISIONS

NO. DESCRIPTION

INCLINE: 21-026

24 NOV 2021

PERMIT SET

WALL TYPES

**& DETAILS** 

OWNER: 10013781

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DATE

**INCLINE** ARCHITECTS

	SYMBOL LEG
SYMBOL	DESCRIPTION
VALVE	S, METERS, AND GAUGE
$\bowtie$	SHUT OFF VALVE
X	GATE VALVE
$\mathbf{r}$	CHECK VALVE
図	AUTO 2-WAY VALVE
$\mathbf{k}$	AUTO 3-WAY VALVE
$\bowtie$	GLOBE VALVE
Φ	BALL VALVE
表	RELIEF VALVE
- 込	CHAIN OPERATED GATE VALVE
X	PRESSURE REDUCING VALVE
Ī	BUTTERFLY VALVE
	SOLENOID VALVE
$\overline{\mathbb{A}}$	ANGLE VALVE
Σ	VENTURI
$\boxtimes$	BALANCING OR PLUG COCK
$\bigotimes$	FLOW SETTER
$\otimes$	EXPANSION VALVE (REFRIG.)
$\overline{\nabla}$	GAS COCK
Хмал	MANUAL AIR VENT
<b>~</b>	STRAINER
Сı	GAUGE COCK
	FLEXIBLE CONNECTION
Ŷ	PRESSURE GAUGE
Ģ	THERMOMETER
	VICTUALIC COUPLING
->	REDUCER CONCENTRIC
$\overline{\nabla}$	REDUCER ECCENTRIC
$\overline{\otimes}$	REFRIGERANT SITE GLASS
	REFRIGERANT STRAINER
I F	REFRIGERANT FILTER DRIER
—————————————————	90 DEG ELBOW UP
—	90 DEG ELBOW DOWN
———	90 DEG TEE UP
	90 DEG TEE DOWN
1 1	UNION
	CAPPED PIPE
— <u>×</u> —	ANCHOR
-5-	FLOAT AND THERMOSTATIC TRAP
HVAC S	SYMBOLS
Ţ	THERMOSTAT
 §	TEMPERATURE SENSOR
— Н	HUMIDISTAT
<u> </u>	

EGEND	SYN	/BOL LEGE	IND	
		DN		HPS –
	SINGLE LINE	DOUBLE LINE	DESCRIPTION	
	<u> </u>		RECTANGULAR SUPPLY DUCT UP	
	\$		RECTANGULAR SUPPLY DUCT DOWN	
	\$Z		RECTANGULAR RETURN DUCT UP	RL
.VE	\$		RECTANGULAR RETURN DUCT DOWN	D
E	<u> </u>		RECTANGULAR EXHAUST DUCT UP	FOS — FOV —
	\$ <u> </u>		RECTANGULAR EXHAUST DUCT DOWN	-
	5		ROUND DUCT UP	INDICATED: REPRESENT, PARAGRAPH REQUIREMEI AS "SHOWN"
)	Ş		ROUND DUCT DOWN	TO HELP THE LOCATION IS DIRECTED: 1 "SELECTED",
			ACCOUSTICALLY LINED RECTANGULAR DUCT	"DIRECTED B SIMILAR PHR APPROVED: WITH THE EN
	5		90° RECTANGULAR ELBOW WITH TURNING VANES	APPLICATION AND RESPON CONDITIONS FURNISH: TH
	5		90° RADIUS ELBOW R=1.5	TO THE PRO INSTALLATIO INSTALL: TH PROJECT SIT
	S ► - ?		DUCT SIZE OR SHAPE TRANSITION	ASSEMBLY, E DIMENSION, OPERATIONS PROVIDE: TH
	<u> </u>		OPPOSED BLADE BALANCING DAMPER (O.B.D.) IN RECT DUCT	COMPLETE A INSTALLER: ENGAGED B SUBCONTRA
	<u> </u>		BUTTERFLY BALANCING DAMPER IN ROUND DUCTS	PARTICULAR ERECTION, A REQUIRED T ENGAGED TO
2	<u> </u>		COMBINATION TEE	
	<u> </u>		SPLITTER DAMPER	SYMBOL I
			SQUARE OR RECTANGULAR CEILING DIFFUSER	# SHEET
	5		ROUND CEILING DIFFUSER	# SHEET
TRAP			SIDEWALL REGISTER SUPPLY OR RETURN	#
	5		ROUND FLEXIBLE DUCT	SHEET 100
	<b>S</b>		RETURN GRILLE	
	<b>S</b>		EXHAUST GRILLE	
			FIRE SMOKE DAMPER	TYPE CFM SIZE
			FIRE DAMPER	TYPE SIZE
			SMOKE DAMPER	SEE XX/X-XXX
		FC FC	FLEXIBLE CONNECTION	
	<u> </u>		FLEXIBLE CONNECTION	

	PIPING LEGEND		ABBREVIATIONS	MECHANICAL GENERAL NO
	NOTE: ALL ABBREVIATIONS MAY NOT BE USED.		NOTE: ALL ABBREVIATIONS MAY NOT BE USED.	1 THE MECHANICAL DRAWINGS SHOW THE GENERAL DESIGN, ARRANG
	HIGH PRESSURE STEAM	(E)	EXISTING	DRAWINGS, THESE DRAWINGS DO NOT SHOW ALL OFFSETS, BENDON
—— MPS - —— LPS -	MEDIUM PRESSURE STEAM     LOW PRESSURE STEAM	(F) AD	FUTURE ACCESS DOOR	CONTRACTOR SHALL MAKE SUCH SLIGHT ALTERATIONS AS MAY BE
	HIGH PRESSURE CONDENSATE RETURN		AIR CONDITION(-ING,-ED)	DESIGN INTENT.
—— MPC - —— LPC -	EOW PRESSURE CONDENSATE RETURN	BD	BALANCING DAMPER	MA IOD DEVIATIONS SLICH AS CHANCES IN COMPONENT SIZES WEIG
	PUMP DISCHARGE	BHP	BRAKE HORSE POWER	QUANTITIES OR MATERIAL REQUIRE PRIOR APPROVAL BY THE DESIG
— 1WS- — CHWS	CHILLED WATER SUPPLY	BTUH	BTU/HOUR	2 THE DRAWINGS & SPECIFICATIONS HAVE BEEN PREPARED TO SUPP
		CFH	CUBIC FEET PER HOUR	OTHER & SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH THE I
— HHWS — HHWR	HEATING HOT WATER SUPPLY     HEATING HOT WATER RETURN	COND	CONDENS(-ER, -ING, -ATION)	CALLED OUT IN BOTH.
	REFRIGERANT LIQUID	CV		3 THE ENTIRE MECHANICAL INSTALLATION SHALL CONFORM TO THE
	CONDENSER WATER SUPPLY	DCW	DOMESTIC COLD WATER	REQUIREMENTS OF THE MOST RECENTLY ADOPTED BUILDING CODE
	CONDENSER WATER RETURN		DOMESTIC HOT WATER RECIRC	APPLICABLE CITY, COUNTY, STATE, & FEDERAL CODES & REGULATIO
— D — — нс –	DRAIN LINE HOT GAS BYPASS	DP	DEPTH OR DEEP	
GS		EA		4 THE ENTIRE MECHANICAL INSTALLATION SHALL CONFORM TO ANY C
GR		EFF	EFFICIENCY	REGULATIONS & REQUIREMENTS OF THE BUILDING OWNER.
		ELEC		5 PRIOR TO FABRICATION & INSTALLATION OF ANY MECHANICAL COMP CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECH
		ENT	ENTERING	WITH ALL OTHER BUILDING TRADES, INCLUDING BUILDING TRADES H
			EVAPORAT(-E, -ING, -ED, -OR)	RESOLVED PRIOR TO INSTALLATION.
	DEFINITIONS	EXT	EXTERNAL	
	NOTE: ALL DEFINITIONS MAY NOT BE USED.	FC	FLEXIBLE CONNECT(-OR, -ION)	REQUIRED WITH ALL TRADES BEFORE ANY PIPE, DUCT, OR EQUIPME
IDICATED:	THE TERM "INDICATED" REFERS TO GRAPHIC	FD FLA	FIRE DAMPER FULL LOAD AMPS	ORDERED & OR INSTALLED. ANY CONFLICTS &/OR CHANGES FOUND INSTALLATION THAT RESULTS FROM THE LACK OF COORDINATION B
EPRESENT ARAGRAPH	ATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER IS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR	FPI	FINS PER INCH	CONTRACTORS DURING THE SHOP DRAWING PROCESS ARE THE RE OF THE CONTRACTOR.
EQUIREME S "SHOWN	NTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH	FPM FPS	FEET PER MINUTE FEET PER SECOND	
O HELP TH	E READER LOCATE THE REFERENCE, NO LIMITATION ON	FSD	FIRE SMOKE DAMPER	7 ALL MECHANICAL INFORMATION IS NOT SHOWN ON THE MECHANICA THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL
JCATION IS	SINTENDED.	GE GPH	GREASE EXHAUST	INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENT.
IRECTED: SELECTED"	TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", , "APPROVED", "REQUIRED", AND "PERMITTED" MEAN	GPM	GALLONS PER MINUTE	8 THE CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW & USE WHE
	BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND	HD	HEAD	APPROPRIATE, ALL THE MECHANICAL DETAILS SHOWN ON THE DRAWINGS WITH
INILAR PHI	(ASES.	HP	HORSEPOWER	KEYED NOTES. ANY CHANGES RESULTING FROM FAILURE TO INSTAL
PPROVED: /ITH THE EI	THE TERM "APPROVED", WHERE USED IN CONJUNCTION NGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS,	HR	HOUR	MECHANICAL SYSTEM WITHOUT USING THE INCLUDED DETAILS SHA RESPONSIBILITY OF THE CONTRACTOR.
PPLICATIO	NS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES	HI HTG	HEIGHT HEATING	
ONDITIONS		HZ	HERTZ (FREQUENCY)	9 THE STRUCTURE SHOWN ON ALL DETAILS MAY OR MAY NOT PERTAI PORTION OR ANY PORTION OF THE BUILDING. COORDINATE ALL MOU
URNISH: T	HE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER		INSIDE DIAMETER INCH	REQUIREMENTS WITH ARCHITECTURAL & STRUCTURAL DRAWINGS.
O THE PRC ISTALLATIO	JECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, DN, AND SIMILAR OPERATIONS."	KW	KILOWATT	10 ANY PART OF THE MECHANICAL INSTALLATION THAT FAILS, IS UNFIT
ISTALL TH	E TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT	LAT LBS	LEAVING AIR TEMPERATURE POUNDS	BECOMES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED ( BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
ROJECT SI	TE INCLUDING THE ACTUAL "UNLOADING, UNPACKING,	LG	LENGTH	
SSEMBLY, IMENSION,	FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR		LATENT HEAT	11 SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATI CEILING DIFFUSERS & GRILLES.
PERATION	S."	LVG	LEAVING	
ROVIDE: T	HE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, AND READY FOR THE INTENDED USE "	LWT MBH	LEAVING WATER TEMPERATURE	12 CONTRACTOR SHALL OPERATE THE SYSTEM & DEMONSTRATE ALL A THE SYSTEM TO THE ENGINEER &/OR OWNER TO PROVE ALL SYSTEM
		MCA	MINIMUM CIRCUIT AMPS	OPERATIONAL.
NGAGED B	Y THE CONTRACTOR OR AN ENTITY Y THE CONTRACTOR, EITHER AS AN EMPLOYEE,	MFR	MANUFACTUR(-ER, -ED)	13 DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN A SET
UBCONTRA ARTICULAF	ACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A		NOISE CRITERIA	REDLINED RECORD DRAINING AT THE PROJECT SITE. ALL CHANGES ROUTING, EQUIPMENT, COMPONENTS, & ACCESSORIES SHALL BE RE
RECTION, /	APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE	NIC		THESE REDLINED DRAWINGS SHALL BE GIVEN TO THE ARCHITECT/E AFTER THE FINAL INSPECTION IN ACCORDANCE WITH SPECIFICATIO
NGAGED T	O PERFORM.	NPSH	NORMALLY OPEN NET POSITIVE SUCTION HEAD	
		NTS	NOT TO SCALE	
			OUTSIDE AIR OUTSIDE DIAMETER	
	SYMBOL LEGEND	OZ		GENERAL EQUIPMENT NO
		PD PG	PRESSURE DROP OR DIFFERENCE PROPOLENE GLYCOL	1 ALL CAPACITIES ARE AT JOB SITE CONDITIONS & ARE MINIMUM CAPA
		PH	PHASE	
REFERI	ENCE LINES AND SYMBOLS	PPM PRESS	PARTS PER MILLION PRESSURE	SEISMIC REQUIREMENTS & THE REQUIREMENTS OF THESE CONSTRU
#	DETAIL INDICATOR: # INDICATES DETAIL	PSF	POUNDS PER SQUARE FOOT	DOCOMENTS.
SHEET	NUMBER, SHEET INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.	PSI PSIA	POUNDS PER SQUARE INCH PSI ABSOLUTE	3 VERIFY ALL REQUIRED SERVICE CONNECTIONS, INCLUDING ELECTRI CHARACTERISTICS FOR ALL FOURMENT PRIOR TO ORDERING FOUR
		PSIG	PSI GAUGE	
	ELEVATION OR SECTION INDICATOR. EXTERIOR:	R R	THERMAL RESISTANCE RETURN AIR	4 ALL EQUIPMENT SHALL BE INDEPENDENTLY SUPPORTED FROM STRU MEMBERS
#	# INDICATES ELEVATION OR SECTION NUMBER,	RECIRC	RECIRCULATE	
SHEET	ELEVATION OR SECTION IS SHOWN.	REFR	REFRIGERATION	5 ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUF WRITTEN INSTALLATION INSTRUCTIONS.
		RLA	RATED LOAD AMPS	
#	ELEVATION OR SECTION INDICATOR, INTERIOR:	RPM	REVOLUTIONS PER MINUTE	6 ALL SIMILAR EQUIPMENT SHALL BE OF THE SAME MANUFACTURER.
	# INDICATES ELEVATION OR SECTION NUMBER, SHEET INDICATES DRAWING SHEET WHERE	SC SC	SHADING COEFFICIENT	7 AIR INLETS & OUTLETS SHALL BE OF THE SAME MANUFACTURER.
	ELEVATION OR SECTION IS SHOWN.	SCFM	STANDARD CUBIC FEET PER MINUTE	
100	SPACE NUMBER	SF	SAFETY FACTOR	SAFEKEEPING, & DAMAGE.
		- SH	SENSIBLE HEAT	
	REYNOTE INDICATOR	SP	SEA LEVEL STATIC PRESSURE	
	REVISION INDICATOR	SPEC(S)	SPECIFICATION(S)	MECHANICAL SHEET IND
		SQ STD	SQUARE STANDARD	M0.01 MECHANICAL COVER SHEET
		SW TACES		M0.02 MECHANICAL SPECS
	PLUMBING FIXTURE INDICATOR	TA(R)	I RANSFER AIR (RETURN) TRANSFER AIR (SUPPLY)	M5.01 MECHANICAL DETAILS
			TEMP. DROP OR DIFF.	
	DIFFUSER/GRILLE INDICATOR	TEMP     THFRM	TEMPERATURE THERMAL	
SIZE		Тот	TOTAL	
	DIFFUSER/GRILLE INDICATOR	TSTAT	THERMOSTAT VOLT	
		v	VENT	
- V	BREAK, STRAIGHT			
5	BREAK, ROUND	VAV		
CH LINE				
XX/X-XXX			VENT, VENTILATION VERTICAL	
———	HIDDEN FEATURES LINE: HIDDEN, THIN LINE	VFD		
	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE	VOL WB	VOLUME WET BULB TEMP	
		wc	WATER COLUMN	
	NEW CONNECTION TO EXISTING		WATER GAUGE WATER PRESSURF DROP	
	POINT OF DEMOLITION	WT	WEIGHT	

PIPING LEGEND		ABBREVIATIONS		MECHANICAL GENERAL NO
	NOTE: ALL ABBREVIATIONS MAY NOT BE USED.		NOTE: ALL ABBREVIATIONS MAY NOT BE USED.	1 THE MECHANICAL DRAWINGS SHOW THE GENERAL DESIGN, ARRAN EXTENT OF THE MECHANICAL SYSTEM BECAUSE OF THE SMALL S
	HIGH PRESSURE STEAM	(E)	EXISTING	DRAWINGS, THESE DRAWINGS DO NOT SHOW ALL OFFSETS, BENDS
LPS -	LOW PRESSURE STEAM	AD	ACCESS DOOR	CONTRACTOR SHALL MAKE SUCH SLIGHT ALTERATIONS AS MAY BE TO MAKE THE SYSTEM COMPLETE & OPERATIONAL IN ACCORDANCE
HPC - MPC -	HIGH PRESSURE CONDENSATE RETURN     MEDIUM PRESSURE CONDENSATE RETURN	AIR COND APD	AIR CONDITION(-ING,-ED) AIR PRESSURE DROP	DESIGN INTENT.
	LOW PRESSURE CONDENSATE RETURN	BD BHD	BALANCING DAMPER	MAJOR DEVIATIONS SUCH AS CHANGES IN COMPONENT SIZES, WE
TWS-	TEMPERED WATER SUPPLY	BTU	BRAKE HORSE POWER BRITISH THERMAL UNIT	QUANTITIES OR MATERIAL REQUIRE PRIOR APPROVAL BY THE DES
CHWS	CHILLED WATER SUPPLY     CHILLED WATER RETURN	BTUH CFH	BTU/HOUR CUBIC FEET PER HOUR	2 THE DRAWINGS & SPECIFICATIONS HAVE BEEN PREPARED TO SUP OTHER & SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH THE
	HEATING HOT WATER SUPPLY		CUBIC FEET PER MINUTE	ON ONE & NOT THE OTHER BEING FURNISHED & INSTALLED AS THO CALLED OUT IN BOTH.
HHWR RL -	REFRIGERANT LIQUID	CV	CONTROL VALVE	
	REFRIGERANT SUPPLY     CONDENSER WATER SUPPLY	DB DCW	DRY BULB TEMPERATURE DOMESTIC COLD WATER	3 THE ENTIRE MECHANICAL INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENTLY ADOPTED BUILDING COD
CWR-	CONDENSER WATER RETURN	DHW	DOMESTIC HOT WATER DOMESTIC HOT WATER RECIRC	APPLICABLE CITY, COUNTY, STATE, & FEDERAL CODES & REGULAT
——— D — ——— HG –	DRAIN LINE HOT GAS BYPASS	DP	DEPTH OR DEEP	
GS		EA EER	EXHAUST AIR ENERGY EFFICIENCY RATIO	4 THE ENTIRE MECHANICAL INSTALLATION SHALL CONFORM TO ANY REGULATIONS & REQUIREMENTS OF THE BUILDING OWNER.
FOS -		EFF FLFC	EFFICIENCY FLECTRIC	5 PRIOR TO FARRICATION & INSTALLATION OF ANY MECHANICAL CON
FOV -		ELEV	ELEVATION	CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MEC WITH ALL OTHER BUILDING TRADES INCLUDING BUILDING TRADES
		EVAP	EVAPORAT(-E, -ING, -ED, -OR)	DIRECTLY BY THE OWNER. WHERE CONFLICTS MAY OCCUR, THEY S RESOLVED PRIOR TO INSTALLATION.
	DEFINITIONS	EWT EXT	ENTERING WATER TEMPERATURE EXTERNAL	
	NOTE: ALL DEFINITIONS MAY NOT BE USED.	FC	FLEXIBLE CONNECT(-OR, -ION)	6 THE SPACE ABOVE ALL CEILINGS IS LIMITED. CAREFUL COORDINAT REQUIRED WITH ALL TRADES BEFORE ANY PIPE, DUCT, OR EQUIPM
INDICATED:	THE TERM "INDICATED" REFERS TO GRAPHIC	FLA	FULL LOAD AMPS	INSTALLATION THAT RESULTS FROM THE LACK OF COORDINATION
PARAGRAPH	IS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR	FPI FPM	FINS PER INCH FEET PER MINUTE	OF THE CONTRACTOR.
AS "SHOWN	", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS	FPS	FEET PER SECOND	7 ALL MECHANICAL INFORMATION IS NOT SHOWN ON THE MECHANIC
LOCATION	S INTENDED.	GE	GREASE EXHAUST	THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING A INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENT.
DIRECTED:	TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "APPROVED" "REQUIRED" AND "PERMITTED" MEAN	GPH GPM	GALLONS PER HOUR GALLONS PER MINUTE	8 THE CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW & USE WH
"DIRECTED	BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND	HD	HEAD	APPROPRIATE, ALL THE MECHANICAL DETAILS SHOWN ON THE DRAWINGS WIT
		HP	HORSEPOWER	KEYED NOTES. ANY CHANGES RESULTING FROM FAILURE TO INSTA
WITH THE E	NGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS,	HR HT	HOUR HEIGHT	RESPONSIBILITY OF THE CONTRACTOR.
AND RESPO	NSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY	HTG HZ	HEATING HERTZ (EREQUENCY)	9 THE STRUCTURE SHOWN ON ALL DETAILS MAY OR MAY NOT PERTA
FURNISH T	/- HE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER	ID	INSIDE DIAMETER	PORTION OR ANY PORTION OF THE BUILDING. COORDINATE ALL MO REQUIREMENTS WITH ARCHITECTURAL & STRUCTURAL DRAWINGS
TO THE PRO	DIECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY,	IN KW	INCH KILOWATT	10 ANY PART OF THE MECHANICAL INSTALLATION THAT FAILS. IS UNFI
INSTALL: TH	IE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT	LAT LBS	LEAVING AIR TEMPERATURE POUNDS	BECOMES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
PROJECT SI	TE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ERECTION PLACING ANCHORING APPLYING WORKING TO	LG		
DIMENSION,	FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR		LOCKED ROTOR AMPS	CEILING DIFFUSERS & GRILLES.
PROVIDE: T	HE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL.	LVG LWT	LEAVING LEAVING WATER TEMPERATURE	12 CONTRACTOR SHALL OPERATE THE SYSTEM & DEMONSTRATE ALL
COMPLETE	AND READY FOR THE INTENDED USE."	MBH	THOUSAND BTU PER HOUR	THE SYSTEM TO THE ENGINEER &/OR OWNER TO PROVE ALL SYST OPERATIONAL.
INSTALLER: ENGAGED B	AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY Y THE CONTRACTOR. EITHER AS AN EMPLOYEE.	MFR	MANUFACTUR(-ER, -ED)	13 DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN A SE
SUBCONTR/ PARTICULA	ACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A	NC NC	NORMALLY CLOSED NOISE CRITERIA	REDLINED RECORD DRAINING AT THE PROJECT SITE. ALL CHANGE ROUTING. EQUIPMENT. COMPONENTS. & ACCESSORIES SHALL BE
ERECTION, A	APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE O BE EXPERIENCED IN THE OPERATIONS THEY ARE	NIC NO	NOT IN CONTRACT	THESE REDLINED DRAWINGS SHALL BE GIVEN TO THE ARCHITECT/ AFTER THE FINAL INSPECTION IN ACCORDANCE WITH SPECIFICATION
ENGAGED T	O PERFORM.	NPSH	NET POSITIVE SUCTION HEAD	
		OA	OUTSIDE AIR	
		OD OZ	OUTSIDE DIAMETER OUNCE	GENERAL EQUIPMENT NO
	STIVIDUL LEGEIND	PD	PRESSURE DROP OR DIFFERENCE	1 ALL CAPACITIES ARE AT JOB SITE CONDITIONS & ARE MINIMUM CAP
SYMBOL	DESCRIPTION	PH	PHASE	2 ALL MECHANICAL FOUIPMENT SHALL BE INSTALLED TO CONFORM V
REFER	ENCE LINES AND SYMBOLS	PPM PRESS	PARTS PER MILLION PRESSURE	SEISMIC REQUIREMENTS & THE REQUIREMENTS OF THESE CONSTR DOCUMENTS
#		PSF PSI	POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH	
SHEET	WHERE DETAIL IS SHOWN.	PSIA	PSI ABSOLUTE	3 VERIFY ALL REQUIRED SERVICE CONNECTIONS, INCLUDING ELECT CHARACTERISTICS FOR ALL EQUIPMENT PRIOR TO ORDERING EQU
		R	THERMAL RESISTANCE	4 ALL EQUIPMENT SHALL BE INDEPENDENTLY SUPPORTED FROM STR
#	ELEVATION OR SECTION INDICATOR, EXTERIOR: # INDICATES ELEVATION OR SECTION NUMBER,	RA RECIRC	RETURN AIR RECIRCULATE	MEMBERS.
SHEET	SHEET INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.	REFR	REFRIGERATION	5 ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANU WRITTEN INSTALLATION INSTRUCTIONS
$\mathbf{\mathbf{v}}$		RLA	REQUIRED RATED LOAD AMPS	WITTEN INGTALLATION INGTRUCTIONS.
#	ELEVATION OR SECTION INDICATOR, INTERIOR:	RPM SA	REVOLUTIONS PER MINUTE SUPPLY AIR	6 ALL SIMILAR EQUIPMENT SHALL BE OF THE SAME MANUFACTURER.
SHEET	# INDICATES ELEVATION OR SECTION NUMBER, SHEET INDICATES DRAWING SHEET WHERE	SC SCEM	SHADING COEFFICIENT STANDARD CUBIC FEET PER MINIUTE	7 AIR INLETS & OUTLETS SHALL BE OF THE SAME MANUFACTURER.
		SCW	SOFT COLD WATER	8 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE HVAC EQUIPM
	SPACE NUMBER	SF SH	SAFETY FACTOR SENSIBLE HEAT	SAFEREEFING, & DAMAGE.
$\langle 1 \rangle$	KEYNOTE INDICATOR	SL SP	SEA LEVEL STATIC PRESSURE	
$\land$	REVISION INDICATOR	SPEC(S)	SPECIFICATION(S)	MECHANICAL SHEET IND
	EQUIPMENT INDICATOR	SQ STD	SQUARE STANDARD	M0.01 MECHANICAL COVER SHEET
		SW TA(R)	SOIL, WASTE TRANSFER AIR (RETURN)	M0.02 MECHANICAL SPECS M1.01 LEVEL 1 MECHANICAL PLAN
		TA(S)	TRANSFER AIR (SUPPLY)	M5.01 MECHANICAL DETAILS
TYPE	DIFFUSER/GRILLE INDICATOR	TEMP	TEMPERATURE	
SIZE		THERM TOT	THERMAL TOTAL	
TYPE	DIFFUSER/GRILLE INDICATOR	TSTAT	THERMOSTAT	
SIZE		V V	VENT	
	BREAK, STRAIGHT	VAC VAV	VACUUM VARIABLE AIR VOLUME	
S	BREAK, ROUND	VEL		
MATCH LINE SEE XX/X-XXX	MATCHLINE INDICATOR		VELOCITY VENT, VENTILATION	
	HIDDEN FEATURES LINE: HIDDEN, THIN LINE	VERT VFD	VERTICAL VARIABLE FREQUENCY DRIVE	
		VOL		
	CONTRACT LIMIT LINE: DASHDUT, WIDE LINE	WC	WATER COLUMN	
$\bullet$	NEW CONNECTION TO EXISTING	WG WPD	WATER GAUGE WATER PRESSURE DROP	
	POINT OF DEMOLITION		WEIGHT	
I				





BAS	IC MECHANICAL REQUIREMENTS	METAL DUCTWO
1.	COORDINATE THE LOCATION OF ALL NEW ROOF OPENINGS AND THE LOCATION OF ALL NEW AND RELOCATED ROOF MOUNTED EQUIPMENT WITH THE EXISTING STRUCTURE AND ARCHITECTURAL PLANS PRIOR TO ANY INSTALLATION.	1. ALL DUCTWOF ACCORDANCE AND PROCEDI FUNDAMENTA
2.	V-BELT DRIVES SHALL BE OF FABRIC AND RUBBER CONSTRUCTION. BELT GUARDS SHALL BE PROVIDED FOR ALL EXPOSED BELTS AND DRIVES.	2. TRANSITION A
3.	PROVIDE 6" CONCRETE HOUSEKEEPING PADS UNDER ALL FLOOR MOUNTED EQUIPMENT.	REQUIRED. 3. DUCTWORK S
4.	PROPERLY LUBRICATE ALL PIECES OF EQUIPMENT BEFORE TURNING THE SYSTEM OVER TO THE OWNER.	FABRICATED RESULTS. IT MILLED STEEL
5.	INSTALL DUCT MOUNTED SUPPLY AND RETURN AIR SMOKE DETECTORS IN ALL ROOFTOP, FAN-COIL, AIR-HANDLING, AND OTHER SUPPLY AIR SYSTEMS, WITH A CAPACITY GREATER THAN 2000 CFM. SMOKE DETECTORS ARE PURCHASED AND WIRED BY THE DIVISION 16 CONTRACTOR.	BLISTERS, SE CONSTRUCTIO BRACING LAY SLEEVES FOR EXTENSION O
MEC	CHANICAL INSULATION	4. SEAL DUCTWO SEALING CLAS
1.	PIPE INSULATION TO BE SNAP-ON GLASS FIBER TYPE WITH VAPOR JACKET. SEAL ALL ENDS AND JOINTS TO PROVIDE A COMPLETELY SEALED SYSTEM. CHILLED AND HOT WATER PIPING (40 DEG. F TO 200 DEG F) USE MINERAL FIBER TYPE I PREFORMED INSULATION. FOR REFRIGERANT PIPING, USE FLEXIBLE UNICELLULAR ASTM 534 TYPE 1 INSULATION. USE 1" THICKNESS FOR PIPE UP TO 2" , AND 1 1/2" FOR PIPE OVER 2"	DUCT LO OUTI UNCONDITIO CONDITION (CONCEALED CONDITION (EXPOSED
STE TO PIP UNI	EAM PIPING INSULATION: USE 1-1/2" THICKNESS FOR PIPE UP 2" , AND 2" FOR PIPE OVER 2" E FITTINGS: ALL FITTING, VALVES, STRAINERS, FLANGES, AND ONS SHALL BE COVERED WITH JOHNS MANVILLE ZESTON 2000	5. HANGERS FO PLACED ON N IN WIDTH OR FOOT CENTER
INS 2.	ULATION & COVER SYSTEMS. WRAP ALL INTERIOR SUPPLY AND RETURN DUCTWORK WITH 2" THICK FOIL FACED FIBERGLASS INSULATION. WRAP INSULATION TIGHTLY ON THE DUCT WITH ALL CIRCUMFERENTIAL JOINTS BUTTED AND LONGITUDINAL JOINTS OVERLAPPED A MIN. OF 2". COVER ALL JOINTS WITH FOIL-REINFORCED 'KRAFT' TAPE, 3" WIDE.	GALVANIZED DIAMETER. H 1" UNDER REG ROUND DUCT 6. ALL DUCTWO
MEC		7. RECTANGULA SHALL BE LIN BUTTONED O
1.		8. OUTDOOR DU
1 27	LESS THAN 3 MILS THICK. PROVIDE AT MINIMUM 50' INTERVALS, AT EACH RISER, ATE EACH JUNCTION, AT EACH ACCESS DOOR. INCREASE INTERVALS IN MECHANICAL AND SERVICE ROOMS.	WITH MINIMU BUTTONED O 0.016 EMBOSS WEATHERPRO
2. Mai Ro Bai	DUCT MARKERS: RKERS SIMILAR TO PIPE MARKERS. FOR DUCT IN MECHANICAL OMS, CHASE AND OTHER EXPOSED AREAS, PROVIDE LETTERING NDS WITH A MINIMUM 2'0" BAND.	9. DUCT DIMENS AND SHALL B LINER TO BE INTERNATION
3. PRO	COLOR: DVIDE UNIVERSITY OF UTAH COLOR-CODED (COORDINATE WITH UNIVERSITY STANDARDS OR MATCH EXISTING). COMPLY WITH ANSI	DUCTWORK AC
4. LET	LETTERING: TERING TO BE 2" ON PIPES WITH OUTSIDE DIAMETERS LARGER THAN 3" (INCLUDING INSULATION, IF ANY); 1" FOR 1-1/4" TO 2-1/2" PIPING	1. FLEXIBLE DUC THE FINAL 5 FOOT ( CEILINGS, OR FLEXIBLE DUC SEALED.
5. PRI	ARROWS: NT EACH MARKER WITH ARROWS INDICATING DIRECTION OF FLOW.	2. SQUARE/REC VANES.
6. PRO PRO	VALVE TAGS: DVIDE BRASS VALVE TAGS: 0.032 IN THICK, PREDRILLED OR STAMPED HOLES, 1"X3". 1/8" ABBREVIATION. DVIDE VALVE SCHEDULE ON 8.5"X11" BOND PAPER. TABULATE VALVE NUMBER, PIPING SYSTEM, SYSTEM ABREVIATION, LOCATION (ROOM OR SPACE), NORMAL OPERATING POSITION, AND VARIATIONS FOR	3. PROVIDE FLE CONSTRUCTI GLASS FABRI FURNACES, A UNITS. CORM OUNCE VENT
7. PR(	IDENTIFICATION. VALVE TAG FASTENERS: DVIDE MANUFACTURER'S STANDARD SOLID BRASS CHAIN (WIRE LINK OR BEADED TYPE), OR SOLID BRASS S-HOOKS OF THE SIZED REQUIRED FOR PROPER ATTACHMENT OF TAGS TO VALVES, AND MANUFACTURED SPECIFICALLY FOR THAT PURPOSE.	4. DUCT MOUN SUPPLY AIR T SHALL BE PL LOCKING QU EXHAUST AIR THE LOCATIO
		TESTING, ADJL

VERIFY OPERATION OF EXISTING VAV BOXES AND ASSOCIATED HOT WATER HEATING COILS.

# IANICAL SPECIFICATIONS

### CTWORK

CTWORK SHALL BE CONSTRUCTED, ERECTED, AND TESTED IN DANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS ROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF MENTALS, OR THE APPLICABLE STANDARDS ADOPTED BY THE METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL IATION, (SMACNA).

TION ALL NEW DUCTWORK TO CONNECT TO EXISTING, AS RED

ORK SHALL BE GALVANIZED STEEL THROUGHOUT. ATED AND INSTALLED SO THAT NO VIBRATION OR NOISE TS. IT SHALL BE MADE FROM THE BEST GRADE OF GALVANIZED STEEL SHEETS OF U.S. STANDARD GAUGE AND BE FREE FROM RS, SLIVERS, AND PITS. ALL SEAMS SHALL BE AIRTIGHT, THE RUCTION OF ALL DUCTWORK, INCLUDING GAUGES OF METAL, IG LAYOUT, ETC., SHALL BE IN ACCORDANCE WITH SMACNA. ES FOR FIRE DAMPERS AND DUCT SECTIONS FORMING AN SION OF THE FIRE WALL SHALL BE 10 GAUGE STEEL.

UCTWORK ACCORDING TO THE FOLLOWING SMACNA DUCT

DUCT LOCATION	DUCT TYPE				
	SUPPLY		EVUALIST		
	<2in. Wg.	>2in. Wg.	EARAUST	REIURIN	
OUTDOORS	А	А	А	A	
CONDITIONED SPACES	В	А	В	В	
ONDITIONED SPACES	С	В	В	В	
NCEALED DUCTWORK)					
ONDITIONED SPACES	А	A	В	В	
XPOSED DUCTWORK)					

RS FOR DUCTS UP TO 18" IN WIDTH OR DIAMETER SHALL BE D ON NOT MORE THAN 8 FOOT CENTERS. DUCTS 19" AND OVER TH OR DIAMETER SHALL BE SUPPORTED ON NOT MORE THAN 4 ENTERS. DUCT HANGERS SHALL BE CONSTRUCTED OF NIZED BAND IRON 1-1/8" FOR DUCTS UP TO 36" IN WIDTH OR ER. HANGERS SHALL EXTEND DOWN SIDES AND A MINIMUM OF ER RECTANGULAR DUCTS, AND WRAP COMPLETELY AROUND DUCTS. ALL DUCTS SHALL BE RIGIDLY SUPPORTED.

CTWORK SHALL BE CLEANED PRIOR TO THE INSTALLATION OF AND DIFFUSERS. OPERATE FANS TO BLOW OUT DUCTWORK.

NGULAR LOW-PRESSURE SUPPLY AND RETURN AIR DUCTWORK BE LINED WITH 1" FACED FIBERGLASS INSULATION SECURELY NED OR LAPPED AND SEALED. INSULATION SHALL BE 1-1/2 DENSITY.

OR DUCTWORK EXPOSED TO THE WEATHER SHALL BE LINED IINIMUM R-5 FACED FIBERGLASS INSULATION SECURELY NED OR LAPPED AND SEALED, AND SHALL BE FITTED WITH A MBOSSED ALUMINUM JACKET POP RIVETED FOR A ERPROOF FIT.

DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE CLEAR AREA ALL BE INCREASED TO ACCOMMODATE INSULATION. DUCT TO BE BY KNAUF GmbH, JOHN-MANSVILLE OR SCHULLER IATIONAL.

K ACCESSORIES

LE DUCTWORK:

FOOT CONNECTION TO GRILLES AND DIFFUSERS IN LAY-IN SS. OR TO FLOOR MOUNTED GRILLES. MAY BE MADE WITH LE DUCT, FLEXMASTER TYPE 5M ONLY. ENDS SHALL BE

E/RECTANGULAR ELBOWS SHALL BE PROVIDED WITH TURNING

DE FLEXIBLE CONNECTIONS NOT LESS THAN 4" WIDE RUCTED OF HEAVY, WATERPROOF, WOVEN PLASTIC COATED FABRIC AT SUPPLY AND RETURN CONNECTIONS TO CES, AIR HANDLING, ROOFTOP, MAKE-UP AIR OR FAN-COIL CORNERS SHALL BE SEWN TIGHT. CONNECTIONS SHALL BE 20 VENT FABRICS OR EQUAL.

NOUNTED BALANCING DAMPERS SHALL BE USED TO CONTROL Y AIR TO EACH DIFFUSER AND GRILLE. AN OPERATING HEAD BE PLACED ON THE SIDE OF THE DUCT WITH A POSITIVE IG QUADRANT. DAMPERS SHALL BE PROVIDED IN RETURN AND ST AIR DUCTS WHERE SHOWN ON DRAWINGS. COORDINATE CATION OF CEILING ACCESS PANELS.

ADJUSTING, AND BALANCING

SERVICES OF AN INDEPENDENT TESTING AND BALANCING AGENCY TO BALANCE AND ADJUST THE SYSTEM. THIS SHALL BE DONE BY PERSONS FULLY FAMILIAR WITH SYSTEMS OF THIS TYPE. BALANCING SHALL BE DONE IN ACCORDANCE TO AABC OR NEBB STANDARDS. ALL DATA SHALL BE RECORDED AND A REPORT SUBMITTED TO THE ENGINEER PRIOR TO EACH PHASE AND JOB CLOSE OUT.

TEST AND DEMONSTRATE FUNCTION OF THE DUAL MAXIMUM TEMPERATURE CONTROL FOR EACH VAV BOX TO ASSURE FUNCTIONALITY.

# MECHANICAL NOTES

- PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO CONSTRUCT A COMPLETE, OPERATIONAL HVAC SYSTEM FOR THE ENTIRE PROJECT AS SHOWN ON THESE DRAWINGS, INCLUDING ALL NECESSARY FEES AND PERMITS.
- THE ENTIRE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENTLY ADOPTED BUILDING CODE, MECHANICAL CODE, PLUMBING CODE, ELECTRICAL CODE, AND ALL OTHER APPLICABLE CITY, COUNTY, SCHOOL DISTRICT, STATE, AND FEDERAL CODES AND REGULATIONS IN EFFECT AT THE DATE OF THE BID. CONFORM TO ANY CODES, RULES, REGULATIONS AND REQUIREMENTS THAT THE PROJECT OWNER HAS.
- PRIOR TO FABRICATION AND INSTALLATION. COORDINATE THE INSTALLATION OF - 3 ALL HVAC PIPING, DUCTWORK, AND EQUIPMENT WITH PLUMBING PIPING, PLUMBING EQUIPMENT, REFRIGERATION TRENCHES AND PIPING, FIRE PROTECTION PIPING AND ALL OTHER TRADES INCLUDING BUT NOT LIMITED TO: THE MECHANICAL CONTRACTOR, REFRIGERATION CONTRACTOR, ELECTRICAL CONTRACTOR, FIRE PROTECTION CONTRACTOR, GENERAL CONTRACTOR, AND ANY CONTRACTOR HIRED DIRECTLY BY THE OWNER. WHERE CONFLICTS MAY OCCUR, THEY SHALL BE RESOLVED PRIOR TO INSTALLATION.
- 4. THE DRAWINGS SHOW THE GENERAL DESIGN, ARRANGEMENTS AND THE EXTENT OF THE SYSTEM. IT SHALL BE THE WORK OF THE CONTRACTOR TO MAKE SUCH SLIGHT ALTERATIONS AS MAY BE NECESSARY TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL IN ACCORDANCE WITH THE DESIGN INTENT. MAJOR DEVIATIONS SUCH AS CHANGES IN COMPONENT SIZES, WEIGHTS, QUANTITIES, OR MATERIAL REQUIRE PRIOR APPROVAL BY THE CONSULTING ENGINEER.
- ALL HVAC INFORMATION IS NOT SHOWN ON THE HVAC DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND REFRIGERATION DRAWINGS.
- THE WORKING DRAWINGS ARE DIAGRAMMATIC. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR HVAC EQUIPMENT AND PIPING SHALL BE CHECKED AND COORDINATED WITH THE ARCHITECTURAL, MECHANICAL, STRUCTURAL AND ELECTRICAL DRAWINGS.
- SPACE ABOVE ALL CEILINGS IS LIMITED. CAREFUL COORDINATION IS REQUIRED WITH ALL TRADES BEFORE ANY PIPE, DUCT, OR EQUIPMENT IS ORDERED AND/OR INSTALLED. ANY CONFLICTS AND/OR CHANGES FOUND DURING INSTALLATION THAT RESULT FROM LACK OF COORDINATION BY THE CONTRACTORS DURING THE SHOP DRAWING PROCESS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE DRAWINGS AND SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH THE ITEMS SHOWN ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN BOTH.
- 9 DETAILS: THE CONTRACTOR IS RESPONSIBLE TO REVIEW AND USE WHERE APPROPRIATE ALL OF THE MECHANICAL DETAILS SHOWN ON THE DRAWINGS. DETAILS MAY OR MAY NOT BE CALLED OUT ON THE DRAWINGS WITH SYMBOLS OR KEYED NOTES. ANY CHANGES RESULTING FROM FAILURE TO INSTALL THE MECHANICAL SYSTEM WITHOUT USING THE INCLUDED DETAILS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 10. PIPING SCHEMATICS: THE CONTRACTOR IS RESPONSIBLE TO REVIEW THE PIPING SCHEMATICS INCLUDED WITH THE DRAWINGS FOR PIPING CONNECTIONS TO ALL MECHANICAL EQUIPMENT. THE PIPING SCHEMATICS SHOW DETAILED CONNECTIONS INCLUDING NECESSARY VALVES, FITTINGS, PRESSURE AND TEMPERATURE GAUGES, ETC., THAT ARE NOT SHOWN ON THE PIPING PLANS. ANY CHANGES RESULTING FROM FAILURE TO INSTALL THE MECHANICAL SYSTEM WITHOUT USING THE INCLUDED PIPING SCHEMATICS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- THE STRUCTURE SHOWN ON ALL DETAILS MAY OR MAY NOT PERTAIN TO A 11 PORTION OR ANY PORTION OF THE BUILDING. COORDINATE MOUNTING REQUIREMENTS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- 12. ANY PART OF THIS INSTALLATION THAT FAILS, IS UNFIT, OR BECOMES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- 13. COORDINATE THE RETURN OF ALL MECHANICAL EQUIPMENT REMOVED DURING DEMOLITION WITH THE OWNER'S REPRESENTATIVE.
- 14. ALL EQUIPMENT SHALL PROVIDE THE SCHEDULED PERFORMANCE AT THE SITE 15. ALTEODEMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, VALVES, DAMPERS, AND OTHER DEVICES AND ACCESSORIES REQUIRED FOR A COMPLETE, WORKABLE INSTALLATION.
- 16. THE DIVISION 26 CONTRACTOR SHALL FURNISH ALL REQUIRED MOTORS. ALL MOTOR STARTING EQUIPMENT, WHEN NOT A PART OF THE EQUIPMENT, WILL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.
- 17. THE CONTRACTOR IS RESPONSIBLE FOR HVAC EQUIPMENT CHECK-IN, SAFEKEEPING, AND DAMAGE.
- 18. DO NOT ROUTE DUCTS AND PIPES ABOVE ELECTRICAL PANELS. ALL ELECTRICAL PANELS MUST HAVE CLEAR ACCESS SPACE IN FRONT OF PANEL 4'-0" DEEP AND 6'-6" HIGH. DO NOT ROUTE DUCTS AND PIPES IN ELECTRICAL ROOMS, EXCEPT DUCTS AND PIPES SERVING THE ROOM.
- 19. COORDINATE EXACT LOCATIONS OF CEILING DIFFUSERS AND GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLAN.
- 20. ALL FIRE DAMPERS SHOWN ARE 1-1/2 HOUR UNLESS OTHERWISE NOTED.
- 21. PROVIDE CEILING ACCESS PANELS AS REQUIRED WHERE MECHANICAL EQUIPMENT, VALVES, VAV BOXES, FIRE DAMPERS, ETC. ARE LOCATED ABOVE INACCESSIBLE CEILINGS.
- 22. ENCLOSE ALL DUCT AND FLUE PENETRATIONS THROUGH 1 HOUR ROOF ASSEMBLIES WITH 2 SHEET ROCK LAYERS FROM SHEET ROCK CEILING AT BOTTOM OF ROOF TRUSSES TO ROOF DECK.
- 23. DO NOT USE STEEL ROOF DECK TO SUPPORT LOADS FROM PIPING, DUCTWORK OR EQUIPMENT. HANGER LOADS LESS THAN 50 LBS. MAY BE HUNG FROM THE STEEL ROOF DECK IN CASES WHERE HANGING FROM THE STEEL ROOF DECK CANNOT BE AVOIDED. THE ATTACHMENT METHOD MUST DISTRIBUTE THE LOAD ACROSS THE DECK AS APPROVED BY THE STRUCTURAL ENGINEER.
- 24. PROPERLY LUBRICATE ALL PIECES OF EQUIPMENT BEFORE TURNING THE SYSTEM OVER TO THE OWNER.
- 25. UPON COMPLETION OF THE WORK, REMOVE ALL SURPLUS MATERIALS AND RUBBISH. MAKE ALL REQUIRED PATCHING AND REPAIRS OF OTHER TRADES' WORK DAMAGED BY THE DIVISION 23 CONTRACTOR, AND LEAVE THE PREMISES IN A CLEAN, ORDERLY CONDITION.
- 26. THE DIVISION 23 CONTRACTOR SHALL OPERATE THE SYSTEM AND DEMONSTRATE ALL ASPECTS TO THE ENGINEER AND/OR OWNER, TO PROVE ITS OPERATION. ALL FILTERS USED DURING CONSTRUCTION SHALL BE REPLACED PRIOR TO THE TEST RUN PERIOD.
- 27. THE DIVISION 23 CONTRACTOR SHALL GUARANTEE THE HVAC SYSTEM FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
- 28. THE DIVISION 23 CONTRACTOR SHALL, DURING CONSTRUCTION, MAINTAIN A SET OF AS-BUILT REDLINED RECORD DRAWINGS AT THE PROJECT SITE. ALL CHANGES IN LAYOUT, ROUTING, EQUIPMENT, COMPONENTS, AND ACCESSORIES SHALL BE RECORDED. THESE REDLINES SHALL BE GIVEN TO THE ARCHITECT/ENGINEER AFTER THE FINAL INSPECTION









**01** LEVEL 1 MECHANICAL PLAN  $\frac{1}{2"} = 1' \cdot 0"$ 

# ○ SHEET KEYNOTES

- 1 CONTRACT TO CLEAN AND REBALANCE EXISTING DIFFUSER TO INDICATED AIRFLOW. TYPICAL ALL.
- 2 FIELD VERIFY LOCATION OF THERMOSTAT AND RELOCATE AS IS NECESSARY TO FACILITATE NEW DOOR / WALL.









# OFFSET TYPE 3: RADIUSSED R (MIN.) = 3W / 2



### OFFSET TYPE 2: MITERED L (MIN.) = X / 0.5





OFFSET TYPE 1: ANGLED L (MIN.) = X / 0.26

15° MAX W1







D+2"

