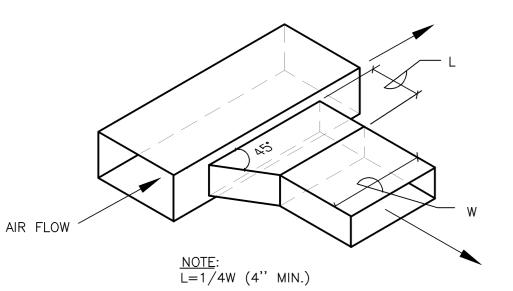
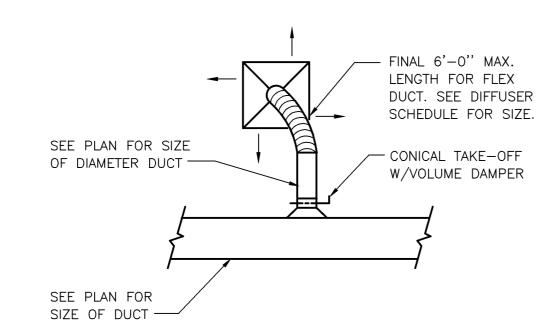
	EXHAUST FAN SCHEDULE																
UNIT. NO	SERVICE	LOCATION	MANUFACTURER	MODEL NO.				MOTOR SPEED						ELECTRICAL		UNIT WEIGHT	REMARKS
EF					(CFM)	(IN. OF W.C.)	(HP)	(RPM)	(FRPM)			VOLTAGE	PHASE	STARTER BY:	DISCONNECT BY:	(LBS.)	
2	EXISTING TOILETS	ROOF	GREENHECK	G-095-D	575	0.50	1/8	1550	1506	CENT.	DIRECT	115	1	EXISTING	МС	23	1, 2
10	ELECTRICAL ROOM	ROOF	GREENHECK	G-095-D	800	0.25	1/8	1550	1478	CENT.	DIRECT	115	1	МС	MC	23	1
11	CHEMICAL ROOM	ROOF	GREENHECK	G-085-D	350	0.25	1/20	1550	1318	CENT.	DIRECT	115	1	МС	EXISTING	23	

NOTES: 1. PROVIDE WITH 120V MOTOR OPERATED DAMPER. 2. INSTALL NEW FAN ON EXISTING CURB LEFT FROM SALVAGED EF-2. INTERLOCK WITH EXISTING CONTROLS. 3. EF-2 SALVAGED DURING DEMOLITION, RE-TAG FAN AS EF-11. BALANCE TO AIRFLOW INDICATED.

	ELECTRIC UNIT HEATER SCHEDULE																
UNIT NO.	LOCATION	MANUFACTURER	MODEL NO.		ELEMENT		WATTS	BTUH	THERM	OSTAT	M	OUNTING RE	QUIREMENT:	S	DISCONNECT	UNIT WEIGHT	REMARKS
EUH				VOLTAGE	PHASE	AMPS			INTEGRAL	REMOTE	RECESSED	SEMI-REC	SURFACE	BRACKET	BY:	(LBS.)	
12	ELECTRICAL ROOM	QMARK	MUH03-71	277	1	11.0	3000	10,200	Χ					Χ	EC	27	
13	CHEMICAL ROOM	QMARK	MUH03-71	277	1	11.0	3000	10,200	Χ					X	EC	27	

	GAS FIRED UNIT HEATER SCHEDULE													
UNIT	SERVICE	LOCATION	MANUFACTURER	MODEL NO.	FAN SEC	TION	HEATIN	IG SECTIO	N		ELEC	TRICAL D	ATA	REMARKS
NO.					SUPPLY AIR	FAN	TEMP. RISE	M	ВН	VOLTAGE	PHASE	FLA	DISCONNECT BY:	
GUH					(CFM)	(HP)	(°F)	INPUT	OUTPUT					
1	UTILITY AREA	SEE PLAN	REZNOR	UDAS-75	961	0.06	60	75.0	62.3	115	1	3.3	МС	





ROUND DUCT TAKE-OFF

SEE PLAN FOR GRILLE TYPES-

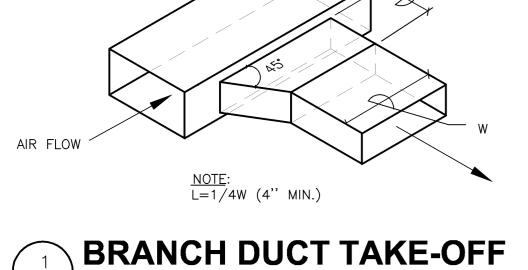
LINE TRANSFER DUCT W/ 1" DUCT

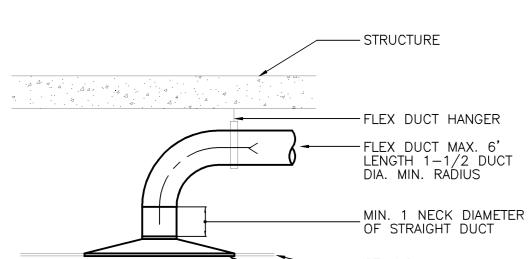
DUCT SIZED ON

	LOUVER SCHEDULE										
UNIT	SERVICE	MANUFACTURER	MODEL NO.	AIRFLOW	WIDTH	HEIGHT	BLADE DEPTH	MAX. APD	MAX. FACE	FREE AREA	REMARKS
NO.									VELOCITY		
L				(CFM)	(IN.)	(IN.)	(IN.)	(IN. OF W.G.)	(FPM)	(SQ. FT.)	
1	UTILITY AREA	GREENHECK	EDJ-601	350	12	16	6	0.10	795	0.44	1, 2
OTES:	TES: 1. PROVIDE WITH 120V MOTOR OPERATED DAMPER 2. INDEPENDENT 120V POWER TERMINATED AT MOTOR OPERATED DAMPER BY EC REQUIRED.										

	INTAKE HOOD SCHEDULE									
UNIT	LOCATION	MANUFACTURER	MODEL NO.	THROAT	AIR FLOW	MAX. THROAT	MAX. APD	DAMPER	REMARKS	
NO.						VELOCITY				
IH				(IN. X IN.)	(CFM)	(FPM)	(IN. OF W.G.)			
1	1 ELECTRICAL ROOM GREENHECK FHI 12 X 12 800 800 0.151 YES 1, 2									
NOTES:	NOTES: 1. PROVIDE WITH 120V MOTOR OPERATED DAMPER									
	2. INDEPENDENT 120V POWER TERMINATED AT MOTOR OPERATED DAMPER BY EC REQUIRED.									

	AIR INLETS AND OUTLETS SCHEDULE											
UNIT TYPE	MANUFACTURER	MODEL NO.	FINISH	TYPE	MATERIAL	SIZE	DAMPER	MOUNTING	REMARKS			
CD1	TITUS	TMSA-AA	WHITE	CEILING DIFFUSER	ALUMINUM	24 X 24	YES	LAY-IN				
EG1	TITUS	50F	WHITE	EXHAUST GRILLE	ALUMINUM	6 X 6	YES	FLANGED				
EG2	TITUS	50F	WHITE	EXHAUST GRILLE	ALUMINUM	12 X 12	YES	FLANGED				
RG1	TITUS	50F	WHITE	RETURN GRILLE	ALUMINUM	12 X 12	YES	FLANGED				
TG1	TITUS	50F	WHITE	TRANSFER GRILLE	ALUMINUM	12 X 12	NO	FLANGED				
TG2	TITUS	350RL-SS	MILL	TRANSFER GRILLE	STAINLESS STEEL	16 X 16	NO	SURFACE				



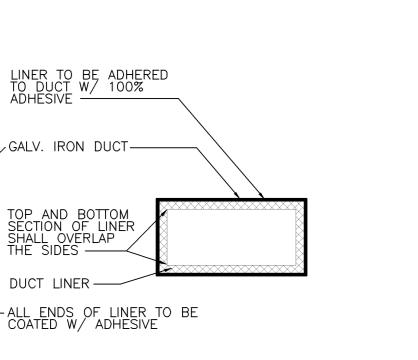


GALV. IRON DUCT-

TOP AND BOTTOM SECTION OF LINER SHALL OVERLAP

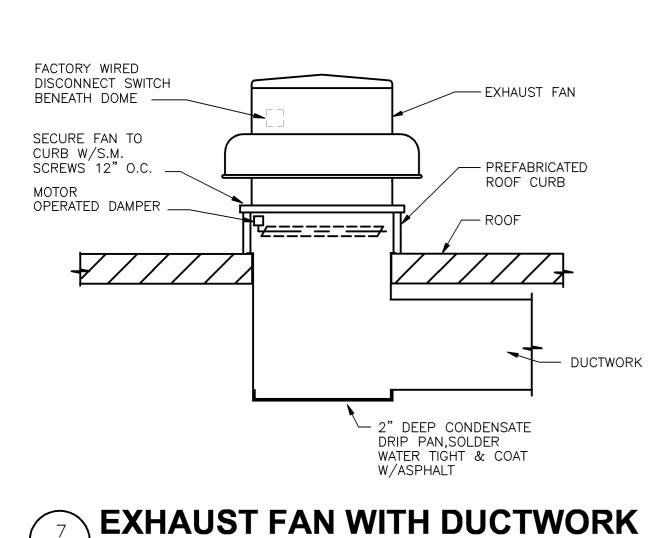
ENDS OF LINER SHALL BE BUTTED FIRMLY TOGETHER

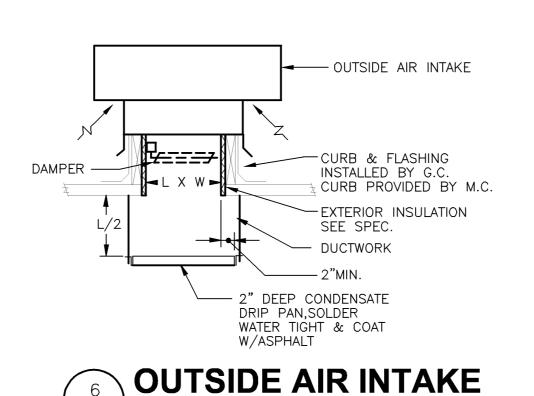


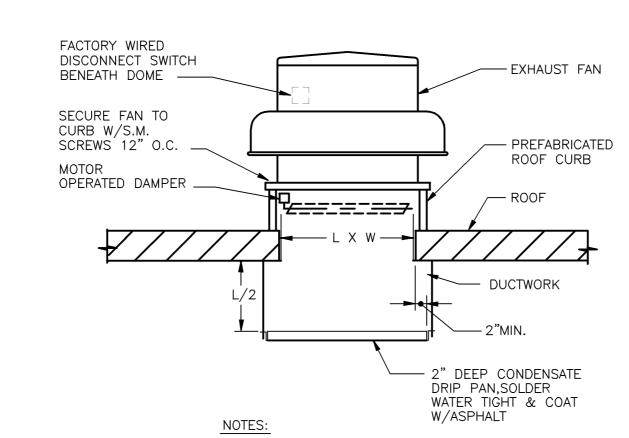




DUCT LINER-









1. L = LONGEST THROAT DIMENSION

2. FOR CURB INSTALLATION AND FLASHING

INSTRUCTIONS REFER TO ARCHITECTURAL DETAILS.



GENERAL REQUIREMENTS

PROCEED WITH THE COMPLETION OF THE WORK IN MUCH A MANNER AS TO CAUSE THE LEAST POSSIBLE INTERFERENCE WITH THE OWNER'S OPERATION. ALL WORK SHALL BE DONE IN A MANNER AND TIME ACCEPTABLE TO THE OWNER.

THE MECHANICAL CONTRACTOR SHALL DO THE NECESSARY DEMOLITION WORK IN THE AFFECTED AREAS INCLUDING THE REMOVAL OF HVAC PIPING, VALVES, DUCTWORK, AND HVAC EQUIPMENT. ALSO, WHERE NECESSARY TO MAINTAIN SERVICE IN OTHER AREAS, COORDINATE NECESSARY AND REQUIRED SOURCES OF POWER AND TEMPORARY WIRING.

ANY EXISTING EQUIPMENT NOT SHOWN ON THE DRAWINGS, AND WHICH ARE LOGICALLY EXPECTED TO CONTINUE IN SERVICE AND WHICH MAY BE INTERRUPTED OR DISTURBED DURING CONSTRUCTION, SHALL BE RECONNECTED IN AN APPROVED MANNER. IN ADDITION, ANY EXISTING EQUIPMENT REQUIRING RELOCATION OR REROUTING AS RESULT OF CONSTRUCTION, SHALL BE CONSIDERED AS PART OF THE WORK OF THIS BRANCH AND SHALL BE DONE BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.

DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE. FOR AREAS BEING REMODELED, WORK SHOWN REFLECTS INFORMATION SHOWN ON ORIGINAL CONSTRUCTION DRAWINGS, OR BY SITE EVALUATION; IT IS NOT GUARANTEED 100 PERCENT ACCURATE. THIS CONTRACTOR MUST FIELD VERIFY CONDITIONS AND MAKE NECESSARY ADJUSTMENTS WITHOUT EXTRA COSTS TO THE PROJECT TO SUIT ACTUAL NEEDS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE WORK NORMALLY DONE BY OTHER TRADES, AS MAY BE NECESSARY, TO FACILITATE THE INSTALLATION OF WORK IN THE EXISTING BUILDING. SUCH WORK THAT IS NORMALLY DONE BY OTHER TRADES, AND IS NOT COVERED AS A PART OF OTHER DIVISIONS, SHALL BE DONE UNDER THE DIRECTION AND AT THE EXPENSE OF THIS CONTRACTOR.

FLASHING-

4''ø FLUE—

UNIT HEATER — SUSPEND FROM STRUCT. W/STEEL RODS, ANGLES, & VIB. ISOLATORS

- 1. PROVIDE THERMOSTATIC CONTROLS TO MEET THE FOLLOWING SETPOINT ADJUSTMENTS: A. HEATING DOWN TO 55 DEG F
- 2. COORDINATE WITH OTHER TRADES TO ELIMINATE ANY CONFLICTS BETWEEN ALL OTHER DISCIPLINES.
- WHERE SUSPENDED CEILINGS ARE TO BE PROVIDED AND AS SHOWN ON ARCHITECTURAL REFLECTED CEILING PLANS.
- 5. ALL THERMOSTATS NOT NECESSARILY SHOWN. THERMOSTATS SHALL BE MOUNTED MIN. 18 INCHES FROM LIGHT SWITCH AND IN ACCORDANCE WITH ADA REQUIREMENTS UNLESS OTHERWISE INDICATED. THERMOSTATS LOCATED ON OUTSIDE WALLS SHALL BE MOUNTED ON INSULATED BACKING TO MINIMIZE WALL EFFECT.
- 6. ALL LOW VOLTAGE CONTROL WIRING, INCLUDING 120V, TO BE PERFORMED BY HVAC CONTRACTOR. IF LINE VOLTAGE CONTROL WIRING REQUIRED (120V), MC SHALL BE RESPONSIBLE FOR INSTALLATION OF WIRING. COORDINATE POWER REQUIREMENTS WITH
- 7. DUCTWORK AND PIPE ROUTINGS ARE SHOWN IN APPROXIMATE LOCATIONS. MAINTAIN VALVES AND DAMPERS NEAR REMOVABLE CEILING TILES OR ACCESS DOORS FOR ACCESSIBILITY. FURNISH ACCESS PANELS WHERE SHOWN OR REQUIRED FOR ACCESS TO ALL CONCEALEDVALVES OR OTHER EQUIPMENT FURNISHED UNDER THIS CONTRACT WHERE NO OTHER MEANS IS PROVIDED.
- 8. WHERE DUCTWORK PASSES THROUGH FIRE RATED WALLS AND/OR FLOORS, PROVIDE FUSIBLE LINK FIRE DAMPERS FURNISHED AND INSTALLED BY HVAC CONTRACTOR. 9. VERIFY EQUIPMENT CONNECTION REQUIREMENTS.
- 10. ALL HVAC EQUIPMENT TO MEET IRI, AGA, AND UL REQUIREMENTS.

-EXHAUST TERMINAL

- COMB. AIR INLET SUPPLIED W/HEATER

- CONCENTRIC ADAPTER SUPPLIED W/HEATER

~4''ø COMB. AIR

- GAS LINE SIZED

ON PLANS

GAS UNIT HEATER

SUPPLIED W/HEATER

- 11. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL REQUIRED DUCTWORK OFFSETS FOR COMPLETE MECHANICAL SYSTEM INSTALLATION.
- 12. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ALTERNATE INSTALLATION
- DESIGNED). REFER TO SPECIFICATIONS AND SCHEDULES FOR DESIGNED EQUIPMENT.

<u>G</u>	ΞN	<u>ER</u>	AL	NO	TE	S	
				•			

- B. COOLING UP TO 85 DEG F
- 3. DIFFUSER, GRILLES, AND SPRINKLER HEAD LOCATIONS SHALL BE COORDINATED WITH LIGHT FIXTURE LOCATIONS AND SHALL BE IN ACCORDANCE WITH CEILING PATTERNS
- 4. ALL SQUARE DIFFUSERS SHALL HAVE THE AIR VOLUME DISTRIBUTED EQUALLY IN FOUR DIRECTIONS UNLESS INDICATED OTHERWISE.

- REQUIREMENTS DUE TO INSTALLATION OF SUBSTITUTE EQUIPMENT (OTHER THAN
- 13. DRAWING INTENT IS TO INDICATE GENERAL ARRANGEMENT, DESIGN AND INTENT OF WORK, AND IS PARTIALLY DIAGRAMMATIC. DRAWING SHALL NOT BE SCALED.

AHU	AIR HANDLING UNIT	EL	ELEVATION	INSUL	INSULATION IRON PIPE SIZE JANITOR LAVATORY MOP BASIN THOUSAND BTUS PER HOUR MECHANICAL CONTRACTOR MECHANICAL MEDIUM MAN HOLF	SAN	SANITARY
ALI	ALTERNATE ACCESS PANEL APPROXIMATELY ARCHITECTURAL/ARCHITECT	EQUIP	EQUIPMENT	IPS	IKUN PIPE SIZE	SCH	SCHEDULE
APPROX	ACCESS PANEL	EWC	ELECTRIC WATER COOLER	1441	IANIITOD	SECT	SECTION
APPKUX.	APPROXIMATELY	EXH	EXHAUST	JAN	JANITUR	SH	SHOWER
ARCH	ARCHITECTURAL/ARCHITECT	EXIST	EXISTING			SP	STATIC PRESSURE
		EXP	EXPANSION	LAV	LAVATORY	SPEC	SPECIFICATION
BDD	BACK DRAFT DAMPER	EXT	EXTERIOR			SS	STAINLESS STEEL
B0	BLOW OFF			MB	MOP BASIN	STD	STANDARD
BTU	BRITISH THERMAL UNIT	F&T	FLOAT & THERMOSTATIC	MBH	THOUSAND BTUS PER HOUR	STM	STEAM
BTUH	B.I.U. PER HOUR	FCO	FLOAT & THERMOSTATIC FLOOR CLEANOUT FLOOR DRAIN	MC	MECHANICAL CONTRACTOR	SIRUC	STRUCTURAL
_		FD	FLOOR DRAIN	MECH	MECHANICAL	SUSP	SUSPEND
Œ.	CENTER LINE	FE	FIRE EXTINGUISHER	MED	MEDIUM	SW	SWITCH
CAB	CABINET	FH	FIRE HYDRANT	MH	MAN HOLE		
CAP	CAPACITY	FL	FIRE EXTINGUISHER FIRE HYDRANT FLOOR	MOD	MOTOR OPERATED DAMPER	I-SIAI	THERMOSTAT
CFM	CUBIC FEET PER MINUTE	FLEX	FLEXIBLE	MID	MOUNTED	TEMP	
CI	CAST IRON	FOF	FUEL OIL FILL			IHERM	THERMOSTATIC
CIRC	CIRCULATOR	FOG	FUEL OIL FILL FUEL OIL GAUGE FUEL OIL RETURN	NAT	MOTOR OPERATED DAMPER MOUNTED NATURAL	THRU	THROUGH
CLG	COOLING	FOR	FUEL OIL RETURN	0.0	ON OFFITED	TLT	TOILET
CO	CLEAN OUT	FOS	FUEL OIL SUPPLY	00	ON CENTER	TYP	TYPICAL
COMB	COMBINATION	FOV	FUEL OIL VENT		OUTSIDE DIAMETER		
COMP	COMPRESSOR	FPM	FEET PER MINUTE	OPG	OPENING	UL	UNDERWRITERS L
CONC	CONCRETE	FPS	FEET PER SECOND	D: 55	St. H. I. B. H. G.	UR	URINAL
COND	BLOW OFF BRITISH THERMAL UNIT B.T.U. PER HOUR CENTER LINE CABINET CAPACITY CUBIC FEET PER MINUTE CAST IRON CIRCULATOR COOLING CLEAN OUT COMBINATION COMPRESSOR CONCRETE CONDENSATE, CONDENSOR CONNECTION	FT	FEET	PLBG	PLUMBING		\ (E) E
CONN	CONNECTION		GAUGE	PSIA	POUNDS PER SQ. INCH ABSOLUTE	V	VENT
CONT	CONTINUOUS CONTRACTOR CONVECTOR	GA	GAUGE	PSIG	POUNDS PER SQ. INCH GAUGE PREFABRICATED PRESSURE REDUCING VALVE	VAC	VACUUM
CONTR	CONTRACTOR	GALV	GALVANIZE GENERAL CONTRACTOR	PREFAB	PREFABRICATED	VCP	VITRIFIED CLAY F
CONV	CONVECTOR	GC	GENERAL CONTRACTOR	PRV	PRESSURE REDUCING VALVE	VERT	VERTICAL
CUH	CABINET UNIT HEATER	GEN	GENERAL	D.A.	DETUDAL AID	VOL	VOLUME
חח	DDV DIII D TEMP	GPH	GALLONS PER HOUR GALLONS PER MINUTE	RA	RETURN AIR	VTR	VENT THRU ROOF
DB	DRY BULB TEMP.	GPM	GALLUNS PER MINUTE	RAD	RADIATOR	14/	WACTE
DF	DRINKING FOUNTAIN	LID	HACE DID	RD	ROOF DRAIN	W	WASTE
DIA	DIAMETER	HB	HOZE BIR	REC	RECESSED	W/	WITH
DIFF	DIFFUSER	HD	HEAU HODIZONITAL	REF	REFRIGERANT	W/0	WITHOUT
DIM	DIMENSION	HOR	HORIZUNIAL	REL	RELIEF	WB	WET BULB TEMP
	DISCHARGE	HP	HUKZEKUMEK	REQ	REQUIRED	WC	WATER CLOSET
DN	DOWN	HTG HTR	HEATING HEATED	RET	RETURN	WCO	WALL CLEANOUT
DPR	DAMPER	HIK	HOSE BIB HEAD HORIZONTAL HORSEPOWER HEATING HEATER	REV	REVISION	WH	WATER HEATER
DS DX	DOWN SPOUT			RPM	REVOLUTIONS PER MINUTE		
ΠY	DIRECT EXPANSION						
	NOTE: S	SCHEDULE IS	STANDARD. ALL ABBREVIATION	IS LISTED DO	NOT NECESSARILY APPEAR ON THESE	PLANS.	
		- A	ITOLIANIOAL	<u> </u>	EVALUATIONIO		
		<u> </u>	IECHANICAL	<u>ARRK</u>	EVIATIONS		
					AY APPEAR ON THIS PROJEC	T	
2. DU	CT, REGISTER, GRILLE,	DIFFUSER	, AND PIPE SIZES ARE	IN INCHES	S		
							7 7

MECHANICAL ABBREVIATIONS

INSIDE DIAMETER INVERT ELEVATION

SA SUPPLY AIR

ELECTRICAL CONTRACTOR

ELEC ELECTRICAL

A/C AIR CONDITIONER
A/E ARCHITECT/ENGINEER

	MECHAN	NICAL ABBREVIA	ATIONS	
		NOT ALL SYMBOLS MAY APPE		
SOIL OR WASTE ABOVE GROUND		N	1 2 3 4 5	6 7 8 9
SOIL OR WASTE UNDERGROUND	DI DEIONIZED WATER	NO NITROUS OXIDE		
VENT PIPE	SW SOFT WATER	—LPS— LOW PRESSURE STEAM (0-20 PSI)	'' '' ''	14 15 16 17
RAIN WATER ABOVE GROUND	F	—LPC— LOW PRESSURE CONDENSATE	18 19 20 21 22	
RAIN WATER UNDERGROUND	—FS— FIRE SPRINKLER	—MPS— MEDIUM PRESSURE STEAM (21-74 PSI)	2. ELBOW DOWN 1	4. EXP. JOINT W/ PIPE GUIDE 5. REDUCER
-> → SUBDRAIN	——CA—— COMPRESSED AIR	—MPC— MEDIUM PRESSURE CONDENSATE	4. SHUT-OFF VALVE 1	6. STRAINER 7. UNION 8. DIRECTION OF FLOW
D	——CS—— CONDENSER WATER SUPPLY	—HPS— HIGH PRESSURE STEAM (75+ PSI)	6. CONTROL VALVE 1	o. DIRECTION OF FLOW 9. STEAM TRAP 10. PITCH PIPE DOWN
	——CR————CONDENSER WATER RETURN	—HPC— HIGH PRESSURE CONDENSATE	9. CHECK VALVE 2	1. VALVE IN VERTICAL PIPE 2. 3—WAY CONTROL VALVE
HW HOT WATER	—CHWS— CHILLED WATER SUPPLY	——G—— GAS	11. PRESSURE GAUGE 2	3. CIRCUIT SETTER 4. BALL VALVE 5. BUTTERFLY VALVE
RHW	—CHWR— CHILLED WATER RETURN	—FOF— FUEL OIL FILL		6. TRIPLE DUTY VALVE
—HW180— 180° WATER (OR TEMP. INDICATED)	——RL—— REFRIGERANT LIQUID	—FOS— FUEL OIL SUPPLY	NUMBER OF SECTION M5 NUMBER OF SHEET	ON WHERE SECTION APPEARS
ARV ACID RESISTANT VENT	RS REFRIGERANT SUCTION	—FOR— FUEL OIL RETURN	NUMBER OF DETAIL	
——ARW—— ACID RESISTANT WASTE	—HWS— HOT WATER HEATING SUPPLY	FOV FUEL OIL VENT		WHERE DETAIL APPEARS
O OXYGEN	—HWR— HOT WATER HEATING RETURN	—FOG— FUEL OIL GAUGE	EQUIPMENT TYPE 3	EQUIPMENT SCHEDULES)
<u> </u>	S SENSOR ->	FIRE DEPT CONNECTION	THERMOSTAT	<u>LINETYPES</u>
ORD ROOF DRAIN	CO CLEAN OUT	PENDANT TYPE SPRINKLER HEAD W/ CEILING PLATE	· CONNECT NEW TO EXISTING	EXISTING DEMO
O <u>DS</u> DOWN SPOUT	$\stackrel{-}{\underset{CO}{\bigcirc}}$ CLEAN OUT \bigcirc	UPRIGHT SPRINKLER HEAD	AIR FLOW ON NEGATIVE SIDE	NEW
→ HB HOSE BIB	S.P. STAND PIPE S	SMOKE DETECTOR	- AIR FLOW ON SUPPLY SIDE	

	MECHANICAL SYMBOLS	
ITEM INDICATED	DOUBLE LINE DRAWING REPRESENTATION	SINGLE LINE DRAWING REPRESENTATION
BUTTED TAKEOFFS FLEXIBLE DUCT & VOLUME DAMPER	6X6	6X6 10 10 8
DIFFUSERS	CD2-200 CD1-100 1	CD2-200 CD1-100 1
BUTTED TAKEOFFS TO REGISTER OR GRILLE	SG2-300 14X8 12X8	SG2-300 14 12 8 8
RETURN OR EXHAUST REGISTER OR GRILLE IN BOTTOM OF DUCT CENTERED O DUCT	ER1-200	24 7 10 ER1-200
ECCENTRIC EXPANSION OR CONTRACTION	PER SMACNA 14X6	2 10 14 6
CONCENTRIC EXPANSION OR CONTRACTION	PER SMACNA — 10X6 — 14X6 —	2 10 14 6
DAMPER — SMOKE, FIRE OR MOTORIZED TYPE AS NOTED	ACCESS PANEL FIRE F SMOKE S M MOTORIZED FOR FIRE DAMPER	A.P. F S M
INTERNALLY LINED DUCTWORK	SOUND INSULATION	SOUND INSULATION
SUPPLY DUCT TURNING UP AND DOWN	TURNING UP TURNING DOWN SIDE SHOWN SIDE NOT SHOWN	∑ 14 10 ⊠
RETURN OR EXHAUST DUCT TURNING UP AND DOWN	TURNING UP TURNING 14X10 DOWN SIDE SHOWN SIDE NOT SHOWN	
TURNING VANES		

DRAWING LIST

M21.0 MECHANICAL SYMBOLS, ABBREVIATIONS, SCHEDULES & DETAILS M22.0 MECHANICAL PLANS

DRAWING NO.

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ATIONS, & DETAIL

CHANICAL SABBREVIATION SHEDULES &