HVAC DRAWINGS FOR: BROOKFIELD SUFFERN SPEC BLDG. 3 SUFFERN, NEW YORK **ABBREVIATIONS**



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M

10x8

8Ø

10/8

SYMBOLS

	SUPPLY AIR DOWN
	SUPPLY AIR UP
	RETURN AIR DOWN
	RETURN AIR UP
	EXHAUST AIR / OUTS
	EXHAUST AIR / OUTS
	RECTANGULAR VANE
7	RECTANGULAR RADI
	ROUND ELBOW
	SQUARE TO SQUARE
	ROUND TO ROUND 4
	90° CONICAL TAP
	VOLUME DAMPER
	BACKDRAFT DAMPER
	MOTORIZED DAMPER
	RECTANGULAR DUC
	ROUND DUCTWORK
	OVAL DUCTWORK
	RECT. TO ROUND TR

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	WRAPPED [FOR FREE N
R I I I I I I I I I I I I I I I I I I I	DUCT RISE DIRECTION

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 $(CO_2)$ (CO)SECTION NUMBER SHEET SECTION APPEARS ON ● ● ● ● ● ● ● MATCH LINE

FLANGE BREAK FLEX CONNECTOR FLOW DIRECTION FLOW SWITCH GATE VALVE GLOBE VALVE HOSE END VALVE MOTORIZED VALVE PIPE ANCHOR PIPE DOWN PIPE UP PIPE "T" UP PIPE "T" DOWN PIPE GUIDE PETE'S PLUG PNEUMATIC VALVE PRESSURE GAUGE PRESSURE REDUCING VALVE PRESSURE REDUCING VALVE w/ SENSING PORT PRESSURE SAFETY VALVE REDUCER (CONCENTRIC) REDUCER (ECCENTRIC) SLOPED PIPE SOLENOID VALVE STRAINER SUCTION DIFFUSER THERMOMETER THREE WAY VALVE TRIPLE DUTY VALVE UNION DEMO PIPE OR EQUIPMENT CARBON DIOXIDE DETECTOR CARBON MONOXIDE SENSOR CONNECT NEW TO EXISTING DEMOLITION EXTENTS HUMIDISTAT SMOKE DETECTOR

AUTOMATIC AIR VENT

BUTTERFLY VALVE

CHECK VALVE **CIRCUIT SETTER** 

BALL VALVE

THERMOSTAT THERMOSTATIC SENSOR

SECTION CUT

PROJECT DESIGN CONDITIONS SEISMIC WIND LOCATION ZONE SUMMER 1% (F DB / F WB) WINTER 99% (F DB) OUTDOOR DESIGN DESIGN CAT SITE CLASS (MPH) CONDITIONS SUFFERN, NY 5A 89.5 / 73.4 12.8 OTHER WALLS ROOF GLASS PARTITION DOCK WALL GLASS SC AREA R-VALUE R-VALUE R-VALUE U-VALUE U-VALUE ENVELOPE CONDITIONS WAREHOUSE 1.5 / 15.8 15.8 05 N/A N/A UTILITY ROOMS 1.5 / 15.8 15.8 N/A N/A N/A 2020 BUILDING CODE OF NEW YORK STATE 2020 MECHANICAL CODE OF NEW YORK STATE APPLICABLE CODES 2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE 2020 FUEL GAS CODE OF NEW YORK STATE LOAD ASSUMPTIONS PEOPLE COOLING HEATING LIGHTING OUTDOOR AIR MISC SPACE TYPE SENS. GAIN / LATENT GAIN / SUMMER F / MIN RH SQFT / PERSON F / MAX RH W/SQFT CFM/PERSON CFM/SQFT W / SQFT ROOM DESIGN PERSON (BTUH) PERSON (BTUH) VENTILATION RATE PARAMETERS WAREHOUSE N/A N/A N/A N/A N/A N/A N/A 0.06 0.5 ACH JTILITY ROOMS N/A N/A N/A N/A N/A N/A N/A N/A N/A NOTES 1) INCLUDES ALL LOCAL CODES AND AMMENDMENTS. 2) DOCK WALL IS INSULATED WITH R-15.8 FROM 13' AFF TO BMD. ALL OTHER WALLS WILL HAVE FULL HEIGHT INSTALLATION.

	+++++++++++++++++++++++++++++++++++++++
J	# SHEET EQUIP #
TSIDE AIR UP	CFM
TSIDE AIR DN	— U –
NED ELBOW	

AR RADIUS ELBOW

SQUARE 45° TAP

UND TRANSITION STICAL DUCT DUCT DIMENSIONS

NET AREA (R) OR DROP (D) IN OF AIRFLOW

SPIN-IN FITTING WITH DAMPER _____/ (SIDE OF DUCT) ROUND FLEXIBLE DUCT DETAIL REFERENCE TAG

EQUIPMENT TAG DIFFUSER TAG UNDERCUT DOOR

UNIT HEATER

CABINET UNIT HEATER

EXHAUST FAN

FIRE DAMPER

SMOKE DAMPER

FIRE / SMOKE DAMPER

#### **PIPING LINE TYPES**

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_____

_____CWS_____

----CWR--

_____CA___

_____CD-

_____CS__

----CR··

------HG-

-----LPS

----LPC-

----HPC

______BI

----RS--

_____FO_

—HWS-

--HWR-

-MPS-

-MPC

-HPS-

CHILLED WATER SUPPLY CHILLED WATER RETURN COMPRESSED AIR CONDENSATE DRAIN PIPING CONDENSER WATER SUPPLY CONDENSER WATER RETURN FUEL OIL GAS PIPING HEATING WATER SUPPLY HEATING WATER RETURN REFRIGERANT HOT GAS LIQUID PETROLEM GAS LOW PRESSURE STEAM LOW PRESSURE CONDENSATE MEDIUM PRESSURE STEAM MEDIUM PRESSURE CONDENSATE HIGH PRESSURE STEAM HIGH PRESSURE CONDENSATE REFRIGERANT LIQUID REFRIGERANT SUCTION

* NOTE: NOT ALL PIPING LINE TYPES, SYMBOLS, OR ABBREVIATIONS ARE UTILIZED ON EVERY PROJECT

AH	IJ	AUTHORITY HAVING JURISDICTION	HX	HEAT EXCHANGER
AH		AIR HANDLING UNIT	HZ	HERTZ
AL		ALUMINUM	ID	
AM AP		AMPERE ACCESS PANEL		INTAKE HOOD INCHES OF WATER COLUMN
AP		AIR PRESSURE DROP	IN W.C.	INSTALLATION AND OPERATION MANUAL
AR		AIR ROTATION UNIT	KW	KILOWATT
AS		AIR SEPERATOR		LOUVER
AT		ALL THREAD ROD		LEAVING AIR TEMPERATURE, (°F)
AV		MANUAL AIR VENT	LBS	POUNDS
В		BOILER		LIQUID LINE SOLENOID VALVE
BA		BUILDING AUTOMATION SYSTEM	LP	LIQUID PETROLEUM GAS
BB		BASEBOARD HEATER		
BD		BYPASS DAMPER		
BD BF		BACK DRAFT DAMPER BELOW FINISHED FLOOR	MA MAU	MIXED AIR (OA + RA) MAKE-UP AIR UNIT
		BRAKE HORSEPOWER	MAX	MAXIMUM
BM		BUILDING MANAGEMENT SYSTEM		1,000 BTU PER HOUR
BO		BOTTOM OF DUCT	MC	MECHANICAL WORK CONTRACTOR
BO		BOTTOM OF EQUIPMENT	MCA	MINIMUM CIRCUIT AMPERES
BO		BOTTOM OF LOUVER	MCC	MOTOR CONTROL CENTER
		BOTTOM OF PIPE	MD	MOTORIZED DAMPER
BO		BOTTOM OF STEEL	MIN	
BP		BYPASS		MAXIMUM OVER CURRENT PROTECTION MAKE-UP WATER
		BTU PER HOUR BAKED WHITE ENAMEL		MARE-OF WATER MANUAL VOLUME DAMPER
		CAPACITY	NC	NORMALLY CLOSED
		CEILING EXHAUST FAN		NATIONAL ELECTRICAL MANUFACTURERS ASSOC
		CUBIC FEET PER HOUR	NIC	NOT IN CONTRACT
		CUBIC FEET PER MINUTE	NO	NORMALLY OPEN
		CHILLER	NO.	NUMBER
		CHILLED WATER PUMP		NON POTABLE PROCESS WATER
CL		CEILING	NTS	NOT TO SCALE
			OA OD	
		COMPUTER ROOM AIR CONDITIONING UNIT CONDENSATE RETURN UNIT	P	OUTSIDE DIAMETER PUMP
CT		COOLING TOWER	PC	
CU		CONDENSING UNIT	PCF	POUNDS/CUBIC FOOT (DENSITY)
		CABINET UNIT HEATER	PH	PHASE (ELECTRICAL)
CW		CONDENSER WATER PUMP	POS.	POSITIÔN
DB		DRY BULB, (°F)	PPH	POUNDS PER HOUR
		DIRECT DIGITAL CONTROL	PRV	PRESSURE REDUCING VALVE
		DESICANT DEHUMIDIFICATION UNIT	PSF	POUNDS/SQUARE FOOT (PRESSURE)
		DISCONNECT	PSI	POUNDS/SQUARE INCH (ABSOLUTE PRESSURE)
DN	1	DOWN DEDICATED OUTSIDE AIR SUPPLY UNIT	PSIG	POUNDS/SQUARE INCH (GAUGE PRESSURE) PACKAGE TERMINAL AIR CONDITIONER
DC		DEW POINT	QTY	QUANTITY
DX		DIRECT EXPANSION	RA	RETURN AIR
		EXHAUST AIR	RC	REFRIGERATION CONTRACTOR
	T	ENTERING AIR TEMPERATURE, (°F) (DB/WB) ELECTRIC BASEBOARD HEATER	RF	RETURN FAN
	BH	ELECTRIC BASEBOARD HEATER	RH	RELATIVE HUMIDITY
EC	;	ELECTRICAL WORK CONTRACTOR	RLF	
EF			RLH	
EC		EXHAUST FAIN ELECTRONICALLY COMPUTATED MOTOR ENERGY MANAGEMENT SYSTEM ENTERING EQUIPMENT ENERGY RECOVERY UNIT EXTERNAL STATIC PRESSURE	RPM RTU	
	IT		SA	ROOF TOP UNIT (PACKAGED) SUPPLY AIR
FO	) PT	FOUIPMENT	SC	SHADING COEFFICIENT
ER	ι. 1	ENERGY RECOVERY UNIT	SD	SMOKE DAMPER
ES	P	EXTERNAL STATIC PRESSURE	SEF	SMOKE EXHAUST FAN
ET	•	EXPANSION TANK	SEN	SENSIBLE COOLING CAPACITY, (BTU/ HR)
EU	ΙΗ	ELECTRIC UNIT HEATER	SF	SUPPLY FAN
EV	AP	ELECTRIC UNIT HEATER EVAPORATOR (REFRIGERATION) ELECTRIC WALL HEATER	SFT	SOFT WATER
	VH		SS ST	STAINLESS STEEL
	VT (F	ENTERING WATER TEMPERATURE (°F) EXFILTRATION AIR	STD	STORAGE TANK STANDARD
EX	Ή Π	EXHAUST	STL	STEEL
FA		FIRE ALARM	TA	TRANSFER AIR
FC		FAN COIL UNIT	TAB	TEST AND BALANCE CONTRACTOR
FD		FIRE DAMPER	TCC	TEMPERATURE CONTROL CONTRACTOR
FF		FINISHED FLOOR	TDV	TRIPLE DUTY VALVE
FIN		FINISH		TEMPORARY
FL/		FULL LOAD AMPS		TOTAL NET CAPACITY, (BTU/HR)
FP FP		FIRE PROTECTION CONTRACTOR FEET PER MINUTE		TOTAL STATIC PRESSURE THERMAL EXPANSION VALVE
FP		FIRE / SMOKE DAMPER		TYPICAL
FJ	HD	FEET OF HEAD (PRESSURE DROP)	UH	UNIT HEATER
FT	U	FEET OF HEAD (PRESSURE DROP) FAN TERMINAL UNIT	UON	UNLESS OTHERWISE NOTED
FV	,	FIELD VERIFY	UTR	UP THOUGH ROOF
GA	۱L	GALLONS	V	VOLT
GC		GENERAL WORK CONTRACTOR	VAV	VARIABLE AIR VOLUME TERMINAL UNIT
		WATER FLOW, (GALLONS PER MINUTE)		
GP		GAS PRESSURE REGULATOR	VFD VSD	VARIABLE FREQUENCY DRIVE
GU GV	JН VH	GAS UNIT HEATER GAS WATER HEATER	VSD VTA	VARIABLE SPEED DRIVE VENT TO ATMOSPHERE
GV	• • •		VTA	VENT TO ROOM

AAV AUTOMATIC AIR VENT

ACC AIR COOLED CONDENSER

ACH AIR CHANGES PER HOUR

ABOVE FINISHED FLOOR

**AIR CURTAIN** 

AC

AFF

#### HVAC SHEET LIST

VTR VENT TO ROOM

WET BULB, (°F)

WATER GAUGE

WPD WATER PRESSURE DROP

CURRENT REVISION

DESCRIPTION

WP WEATHERPROOF

WATT

WITH

W/ WB

WG

SHEET NUMBER	SHEET NAME	CURRENT REVISION	CURRE
-			
M000	COVER SHEET	02/09/2024	PERMIT SET
M100	OVERALL FLOOR PLAN	02/09/2024	PERMIT SET
M200	OVERALL ROOF PLAN	02/09/2024	PERMIT SET
M300	SCHEDULES	02/09/2024	PERMIT SET
M400	DETAILS	02/09/2024	PERMIT SET

	C	
J		

HUMIDITY SENSOR

HVLS HIGH VOLUME LOW SPEED

HEV HOSE END VALVE

HWP HOT WATER PUMP

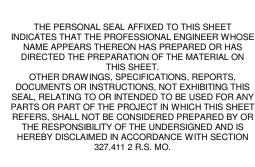
HP HORSEPOWER

### SPECIFICATIONS:

	IFICATIO	
<u>SECTI</u> 1.0	<u>ON 1 – F</u> GENE	IVAC CRITERIA RAL
	Α.	THESE DOCUMENTS ARE INTENDED TO PROVIDE ALL DRAWINGS, NOTATIONS, DETAILS, AND SCHEDULES NECESSARY FOR THE INSTALLATION A COMPLETE HVAC SYSTEM. THESE DOCUMENTS ARE PREPARED TO EXCLUDE ALL WORK NOT SPECIFICALLY INCLUDED IN THE SET.
	В.	THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY LABOR AND MATERIALS FOR A COMPLETE SYSTEM TO MEET THE INTENT OF THE DESIGN AND AS INDICATED IN THE DESIGN DOCUMENTS. ANY ACCESSORIES OR MATERIALS OBVIOUSLY A PART OF THE SYSTEM AND INTEGRAL IN ITS OPERATION, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL.
	C.	THIS CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING COMPLETE AND OPERATING SYSTEMS. THIS CONTRACTOR ACKNOWLEDGES AND UNDERSTANDS THAT THE CONTRACT DOCUMENTS ARE A TWO-DIMENSIONAL REPRESENTATION OF A THREE-DIMENSIONAL OBJECT, SUBJECT HUMAN INTERPRETATION. THIS REPRESENTATION MAY INCLUDE IMPERFECT DATA, INTERPRETED CODES, UTILITY GUIDELINES, THREE-DIMENSIONAL CONFLICTS, AND REQUIRED FIELD COORDINATION ITEMS. SUCH DEFICIENCIES CAN BE CORRECTED WHEN IDENTIFIED PRIOR TO ORDERING MATERIAL AND STARTING INSTALLATION. THIS CONTRACTOR AGREES TO CAREFULLY STUDY AND COMPARE THE INDIVIDUAL CONTRACT DOCUMENTS AND REPORT AT ONCE IN WRITING TO THE DESIGN TEAM ANY DEFICIENCIES THIS CONTRACTOR MAY DISCOVER. THIS CONTRACTOR FURTHER AGREES TO REQUIRE EACH SUBCONTRACTOR TO LIKEWISE STUDY THE DOCUMENTS AND REPORT AT ONCE ANY DEFICIENCIES DISCOVERED.
	D.	ALL MATERIAL AND EQUIPMENT USED SHALL BE NEW AND FREE FROM DEFECTS.
	E.	PROVIDE MECHANICAL SYSTEMS IDENTIFICATION TO INDICATE THE TAG, TYPE, FLOW, TEMPERATURE RANGE, CAPACITY, ETC. OF EACH ITEM OF EQUIPMENT AND ALL CONVEYANCES (DUCTWORK AND PIPING SYSTEMS). ALL MAJOR EQUIPMENT SHALL BE PROVIDED WITH LAMINATED PLASS NAME PLATES IDENTIFYING THE EQUIPMENT WITH NOMENCLATURE CORRESPONDING TO THE MARKINGS ON THE DRAWINGS. LETTERING SHA BE 1/2" HIGH. PROVIDE ADHESIVE BACKED PLASTICIZED MARKERS FOR DUCTWORK. PIPING IDENTIFICATION TO FOLLOW ASME 13 STANDARDS LOCATE LABELING TO BE ABLE TO EASILY IDENTIFY PIPING SERVICE. PROVIDED ENGRAVED BRASS OR LAMINATED PLASTIC VALVE TAGS WITH STAINLESS STEEL BALL CHAIN FASTENER. PROVIDE VALVE TAG SCHEDULE WITH CLOSEOUT DOCUMENTS.
	F.	THIS CONTRACTOR SHALL PERFORM WORK IN A SAFE MANNER. COMPLY WITH ALL APPLICABLE OSHA SAFETY GUIDELINES IN ACCORDANCE WITH 29 CFR 1926 OSHA CONSTRUCTION INDUSTRY REGULATIONS DURING THE COURSE OF COMPLETING THE WORK DESCRIBED IN THESE DOCUMENTS.
	G.	THIS CONTRACTOR SHALL KEEP AND MAINTAIN ON SITE A COPY OF ALL SAFETY DATA SHEETS FOR ALL PRODUCTS AND MATERIALS ON SITE WHICH COMPLY WITH THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELING OF CHEMICALS. THIS INCLUDES:
		1. MAINTAINING A HAZARD COMMUNICATION PROGRAM DETAILING THE PLANS IN PLACE FOR THE SAFE HANDLING OF CHEMICALS
		<ol> <li>MAINTAINING A WRITTEN CHEMICAL INVENTORY OF EVERY HAZARD CHEMICAL IN THE FACILITY TO WHICH EMPLOYEES ARE EXPOSED</li> <li>MAINTAINING PROPER LABELS AND WARNING SIGNS ASSOCIATED WITH SAID CHEMICALS</li> </ol>
		4. TRAINING EMPLOYEES ON CHEMICAL HAZARDS AND NECESSARY PRECAUTIONS
	Н.	NO CHEMICALS MAY BE STORED IN ANY CONTAINERS OTHER THAN THE ORIGINAL MANUFACTURER'S CONTAINERS.
		1. INSTALL ALL ITEMS PER THE MANUFACTURER'S INSTRUCTIONS AND PROVIDE PROPER ELECTRICAL AND MAINTENANCE CLEARANCES.
1.1		
	A.	COORDINATE THE ROUTING OF ALL MECHANICAL SYSTEMS WITH THE OTHER TRADES TO AVOID CONFLICTS WITH DUCTS, PIPES, ETC. ITEMS REQUIRING PITCH MUST BE CONSIDERED FOR THEIR RIGHT-OF-WAY.
	В.	GENERAL CONTRACTOR (G.C.) SHALL PROVIDE AND INSTALL ALL PRIMARY STRUCTURAL SUPPORT, UNIFORM LEVEL, FOR ALL FLOOR, CEILING OR ROOF MOUNTED EQUIPMENT OR COMPONENTS AS DESIGNED BY ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY THE JURISDICTION OF AUTHORITY.
	C.	THIS CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES. ANY DISCREPANCIES SHALL BE RELAYED TO NDBS FOR COMMENT AND CORRECTIVE ACTION AS NEEDED.
	D.	ALL LINTELS, FRAMING, FURRING, PATCHING, AND PAINTING REQUIRED WILL BE PROVIDED BY THE G.C.
	E.	ALL GAS PIPING EXPOSED TO WEATHER SHALL BE PAINTED BY THE G.C.
	F.	THE G.C. SHALL PROVIDE ALL PADS AS REQUIRED FOR THE INSTALLATION OF THE HVAC EQUIPMENT. PADS SHALL BE PROVIDED IN ACCORDAN WITH THE STRUCTURAL ENGINEER'S DESIGN FOR SITE CONDITIONS, WEIGHT, SEISMIC AND WIND CONSIDERATIONS. HEIGHT OF THE PAD SHA (FOR GRAVITY DRAIN EQUIPMENT) SHALL BE FIELD ADJUSTED BY G.C. BASED ON APPROVED EQUIPMENT SUBMITTALS.
	G.	E.C. SHALL MOUNT AND WIRE/CONNECT ALL 460 VOLT AND 120 VOLT COMPONENTS (RELAYS, FAN WIRING, HIGH LIMITS, SOLENOIDS, CONTROLLERS, ETC) AND OTHER ELECTRICAL COMPONENTS FURNISHED BY THIS CONTRACTOR. THIS CONTRACTOR IS RESPONSIBLE FOR 24 VOLT THERMOSTAT WIRING.
	H.	EQUIPMENT IS NOT INTENDED FOR TEMPORARY CONDITIONING UNLESS COORDINATED WITH NDBS AHEAD OF TIME. SHOULD NDBS APPROVE TEMPORARY USE, RETURN AIR OPENINGS SHALL BE PROTECTED WITH FILTER MEDIA (MINIMUM MERV 8) WHILE EQUIPMENT IS OPERATED DURING CONSTRUCTION.
1.2	A.	TRUCTION ALL EQUIPMENT, PIPING SUPPORTS, AND DUCTWORK SUPPORTS SUSPENDED FROM ROOF JOISTS SHALL BE SUSPENDED FROM THE TOP CHO
	B.	OF THE JOIST UNLESS PRIOR APPROVAL FROM G.C. OR STRUCTURAL ENGINEER. PROVIDE DUCT, PIPING AND HANGER PENETRATIONS THROUGH NON-RATED ENCLOSURES WITH DRAFT STOPPING OR SMOKE BARRIER SEAL/ SYSTEMS. INSTALL PENETRATION SEALANT SYSTEMS IN STRICT ACCORDANCE TO MANUFACTURER'S APPLICATION DETAILS AND INSTRUCTIO
	C.	PROVIDE DRAFT STOPPING OR SMOKE BARRIER SEALANTS TO MEET APPROVAL OF AHJ. LOCATE AND PROVIDE SCHEDULE 40 STEEL SLEEVES AT ALL CONCRETE PENETARTIONS THROUGH WALLS AND FLOORS PRIOR TO CONCRETE BEING POURED. THIS SUBCONTRACTOR WILL BE RESPONSIBLE TO CORE DRILL ANY HOLE THAT IS NOT LOCATED PRIOR TO CONCRETE POURI
	D.	IN WHICH CASE A SLEEVE IS NOT REQUIRED. CORE DRILL HOLE OR SLEEVE SHALL PROVIDE MINIMUM 1" CLEARANCE AROUND ENTIRE CIRCUMFERENCE OF PIPE. CAULK ANNULAR SPACE WATERTIGHT. PROVIDE A LINK SEAL THROUGH ALL PENETRATIONS LOCATED BELOW GRA PROTECT ALL EQUIPMENT, PIPING AND DUCTWORK OPENINGS DURING CONSTRUCTION WITH PLASTIC OR OTHER NON-POROUS MATERIAL TO
		LIMIT CONTAMINATION FROM DUST AND OTHER CONSTRUCTION DEBRIS. MATERIAL AND EQUIPMENT SHALL BE ELEVATED OFF FLOOR AND PROTECTED WHEN STORED ON SITE.
1.3		
	A.	PRODUCT DATA:
		<ul> <li>(1) SHOP DRAWINGS INCLUDING AT A MINIMUM: CAPACITIES, DIMENSIONS, WEIGHTS, ELECTRICAL REQUIREMENTS, FAN AND PUMF CURVES</li> <li>2. METAL DUCTS</li> </ul>
		<ul> <li>(1) LINERS AND ADHESIVES</li> <li>(2) SEALANTS AND GASKETS</li> <li>3. PIPING</li> </ul>
		<ul> <li>(1) PIPING SPECIALTIES</li> <li>(2) VALVES</li> <li>(3) PRESSURE REGULATORS</li> <li>(4) PIPING SPECIALTIES ITEMS\</li> </ul>
1.4	INFOR	MATIONAL SUBMITTALS
	A.	BRAZING AND WELDING CERTIFICATES
	В.	FIELD QUALITY-CONTROL REPORTS
<u>SECTI</u> 2.0	<u>ON 2 - F</u> GENE	IELD QUALITY CONTROL RAL
	A.	REFER TO PIPE SCHEDULE FOR PIPE TESTING REQUIREMENTS.
	В.	EQUIPMENT THAT IS NOT INTENDED TO BE SUBJECT TO THE TEST PRESSURE SHALL BE ISOLATED FROM THE PIPING. IF A VALVE IS USED TO ISOLATE THE EQUIPMENT, ITS CLOSURE SHALL BE CAPABLE OF SEALING AGAINST THE TEST PRESSURE WITHOUT DAMAGE TO THE VALVE. FLANGED JOINTS AT WHICH BLINDS ARE INSERTED TO ISOLATE EQUIPMENT NEED NOT BE TESTED.
	C.	PIPE PRESSURE TEST REPORTS ARE REQUIRED AS PART OF THE PROJECT CLOSE OUT DOCUMENTS AND ARE TO INCLUDE WITNESS SIGNATURES. A WRITTEN FIELD PRESSURE TEST DECLARATION SHALL BE PREPARED DOCUMENTING THE FIELD TEST PROCEDURE AS REQUIP BY APPLICABLE CODE AND PROVIDE TO NDBS AND THE BUILDING INSPECTOR PRIOR TO FINAL APPROVAL.
	D.	DURING PRESSURE TESTING, VERIFY THAT STRESS DUE TO PRESSURE AT BOTTOM OF VERTICAL RISERS DOES NOT EXCEED 90% OF SPECIFIE MINIMUM YIELD STRENGTH OR 1.7 TIMES "SE" VALUE AS LISTED IN ASME B31.9.
<u>SECTI</u> 3.0	<u>ION 3 – E</u> GENE	EQUIPMENT TESTING AND START-UP RAL
	A.	PRIOR TO START-UP PROCEDURES, SUBMITTAL DOCUMENTATION SHALL BE VERIFIED FOR COMPLETENESS AND CORRECTNESS AS IT APPLIES TO ALL INSTALLED EQUIPMENT BASED ON THE CURRENT CONTRACT DOCUMENTS.
	В.	TO ALL INSTALLED EQUIPMENT BASED ON THE CURRENT CONTRACT DOCUMENTS. SUBMITTALS SHALL BE COMPARED TO ALL INSTALLED EQUIPMENT AND VERIFICATION MADE THAT EACH DOCUMENT MATCHES THE FINAL INSTALLATION. THE FOLLOWING ITEMS SHALL BE SPECIFICALLY VERIFIED:
		1. TAGGING OF EQUIPMENT AND MODEL NUMBER IS CONSISTENT WITH DOCUMENTS, SUBMITTALS AND NAMEPLATE DATA.
		2. PHYSICAL DIMENSIONS COINCIDE WITH INSTALLATION INCLUDING SERVICE CLEARANCES.

- PHYSICAL DIMENSIONS COINCIDE WITH INSTALLATION INCLUDING SERVICE CLEARANCES.
- SHIPPED LOOSE ACCESSORIES ARE PROPERLY INSTALLED. THIS CONTRACTOR SHALL FILL OUT ALL MANUFACTURER START-UP SHEETS AS A CLOSE OUT DOCUMENT





#### NOT FOR CONSTRUCTION

