

PIPE MATERIAL SCHEDULE				
PIPE DESIGNATION		CONDENSED PIPE MATERIAL DESIGNATION (SEE SPECS. FOR DETAILS)		SPECIFICATION REFERENCE
SERVICE (SYMBOL)	INSTALLED			PIPING
CHILLED WATER SUPPLY (CHWS)	ABOVE GRADE	DEPENDING ON SIZE: CARBON STEEL, SCHEDULE 40 or STANDARD WEIGHT (.375") UNDER 4" DIA. COPPER MAY BE SUBSTITUTED FOR 2" AND SMALLER, "ACTUAL" WC-PRESS 304 STAINLESS STEEL WITH 0.049" WALL THICKNESS.		15106
	BELOW GRADE or EXTERIOR	DEPENDING ON SIZE: CARBON STEEL, SCHEDULE 40 OR STANDARD WEIGHT, PRE-FABRICATED WITH FACTORY APPLIED INSULATION, PROTECTIVE FILAMENT WOUND POLYESTER RESIN/FIBERGLASS (FRP) OR HDPE JACKET.		15106
CHILLED WATER RETURN (CHWR)	ABOVE GRADE	DEPENDING ON SIZE: CARBON STEEL, SCHEDULE 40 OR STANDARD WEIGHT (.375") UNDER 4" DIA. COPPER MAY BE SUBSTITUTED FOR 2" AND SMALLER, "ACTUAL" WC-PRESS 304 STAINLESS STEEL WITH 0.049" WALL THICKNESS.		15106
	BELOW GRADE	DEPENDING ON SIZE: CARBON STEEL, SCHEDULE 40 OR STANDARD WEIGHT WHICH IS EXTERNALLY COATED WITH POLYESTER (FRP) OR HDPE CLADDING.		15106
HEATING HOT WATER (HWS / HWR)	ABOVE GRADE	DEPENDING ON SIZE: CARBON STEEL, SCHEDULE 40 or STANDARD WEIGHT (.375") UNDER 4" DIA. COPPER MAY BE SUBSTITUTED FOR 2" AND SMALLER, "ACTUAL" WC-PRESS 304 STAINLESS STEEL WITH 0.049" WALL THICKNESS.		15106
	BELOW GRADE	DEPENDING ON SIZE: CARBON STEEL, SCHEDULE 40 OR STANDARD WEIGHT, PRE-FABRICATED WITH FACTORY APPLIED INSULATION, PROTECTIVE FILAMENT WOUND POLYESTER RESIN/FIBERGLASS (FRP) OR HDPE JACKET.		15106
PROCESS WATER (PW)	ABOVE GRADE	DEPENDING ON SIZE: CARBON STEEL, SCHEDULE 40 OR STANDARD WEIGHT (.375") UNDER 4" DIA. COPPER MAY BE SUBSTITUTED.		15106
	BELOW GRADE	FOR ALL SIZES: CARBON STEEL, SCHEDULE 40, PRE-FABRICATED WITH FACTORY APPLIED INSULATION, COMPLETE WITH PROTECTIVE FRP JACKET.		
POTABLE, DOMESTIC SANITARY WATER (HOT or COLD) (SHW / SWC)	ABOVE GRADE	4" and SMALLER: TYPE L or M, COPPER TUBING 6" and LARGER: CARBON STEEL, SCHEDULE 40 or STD. WEIGHT (.375") DEPENDING ON SIZE.		15103
	BELOW GRADE	4" and SMALLER: TYPE K, COPPER TUBING 6" and LARGER: CARBON STEEL, SCHEDULE 40 or STD. WEIGHT (.375") DEPENDING ON SIZE.		15103 & 02667
DEIONIZED WATER (DIS / DIR)	ABOVE GRADE	SCHEDULE 80 PVC PIPE		15545
	BELOW GRADE			15250
COMPRESSED (PLANT) AIR (CA)	ABOVE GRADE	NON-OILED COPPER TUBE OR STAINLESS STEEL. (OPTIONAL SCH. 40 NON-OILED BLACK STEEL MAY BE SUBSTITUTED AS PER 2.1A, Par.3)		15112
	BELOW GRADE	PRE-FABRICATED BLACK STEEL WITH FACTORY APPLIED EXTERNAL FRP CLADDING.		
PROCESS DRAIN (PD)	ABOVE & BELOW GRADE, GENERAL	POLYPROPYLENE (PP)		15111
	IN LINAC AND RING TUNNELS	ALL WELDED CARBON STEEL SCH 40 OR 304L STAINLESS STEEL SCH 5.		15106
SANITARY SEWER, WASTE & VENT (SS, W, V)	ABOVE GRADE	<-1-1/2" SIZES: COPPER DWV TUBE, ASTM B308, SWEAT JOINTS >1-1/2" SIZES: CL SW, ASTM A888, NO-HUB & COUPLING		15109
	BELOW GRADE	ALL SIZES: CL SW, ASTM A74, HUB & SPIGOT.		
STORM DRAIN (SD, OFL, RWL)	ABOVE GRADE	<-1-1/2" SIZES: COPPER DWV TUBE, ASTM B106, SWEAT JOINTS >1-1/2" SIZES: CL SW, ASTM B106, NO-HUB & COUPLING		15109
	BELOW GRADE	ALL SIZES: CL SW, ASTM A888, HUB & SPIGOT.		
FIRE PROTECTION WATER (FP, or SWC)	ABOVE GRADE	BY OTHERS		15300
	BELOW GRADE (5'-0" to 6'-0")	4" and SMALLER: TYPE K, COPPER TUBING 6" and LARGER: CARBON STEEL, SCHEDULE 40 or STD. WEIGHT (.375") DEPENDING ON SIZE.		15103 & 02667
PROCESS VACUUM	ABOVE GRADE	SCH. 80 PVC		15456
	BELOW GRADE			
NITROGEN (GAS)	ABOVE GRADE	COPPER TUBE, ASTM B88		15455

DESIGNATED SERVICE IN CHMS BLDG.	System Design Pressure, and Test Pressures							Remarks
	Pump Head ft	Pump Head psi	Fill Pressure psi	Operating Pressure psi	Design Pressure for Testing psi	Test Factor	Test Pressure psi	
HE Purify DI Water Systems:	150	65.0	10	75.0	100.0	150%	150.0	Class B
Hot Water Systems:	180	77.9	25	102.9	110.0	150%	165.0	Class B
Chilled Water Systems:	245	106.1	10	116.1	125.0	150%	187.5	Class B
Compressed air, N2 and VAC.	NA	150	NA	150	110%	150%	165.0	Class A
Sanitary Water: Potable	NA	NA	NA	80	150%	150%	120.0	Class B
Process Water: Non-potable	NA	NA	NA	80	150%	150%	120.0	Class B

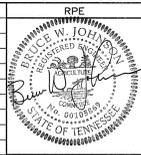
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NUMBER OF SECTION OR DETAIL

 DRAWING ON WHICH SECTION OR DETAIL IS SHOWN OR TAKEN
SECTION AND DETAIL KEY

THIS DOCUMENT CONTROLLED BY
 CHANGE CONTROL SYSTEM
 ENGINEERING PROCEDURE

0	CERTIFIED FOR CONSTRUCTION - 12/9/02	JG	BMJ		12/9/02	BMJ	105869	12/9/02	BZ	AW	BMJ	AK	IM	DM	-	BMJ	-	TW				
REV	DATE	BY	CHK	DEPT	DATE	REQ	DATE	UTB	DATE	RPE	RPE NO	DATE	ST	CV	EC	EE	EM	IE	M	PD	SE	AR



DSN
 DRW
 CHK
 DEPT
 PE
 PJ
 REQ

UT-BATTELLE
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 managed for the DEPARTMENT OF ENERGY under
 U.S. GOVERNMENT contract DE-AC05-84OR21400

PROJECT NAME:
CENTER FOR NANOPHASE MATERIALS SCIENCES
PIPE MATERIAL SCHEDULE

1	48	49	50	PLANT	BLDG	FL	SH.	OF	TYPE	CLASS
3	H	X	X	8	8610		1	1	g	U
51	52	53								
NC	NA									H0.00.03
										0