PIPE MATERIAL SCHEDULE

PIPE DESIGNATION: SERVICE (SYMBOL)	PIPE DESIGNATION: INSTALLED	CONDENSED PIPE MATERIAL DESIGNATION (SEE SPECS. FOR DETAILS)	SPECIFICATION REFERENCE: PIPING	SPECIFICATION REFERENCE: INSULATION
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"ø AND SMALLER, "VICTAULIC", VIC-PRESS 304 STAINLESS STEEL WITH 0.049" WALL THICKNESS	15106	15250
	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	15106
CHILLED WATER RETURN (CHWR)	ABOVE GRADE	DEPENDING ON SIZE: CARBON STEEL, SCHEDULE 40 OR STANDARD WEIGHT (.375"). UNDER 4" DIA, COPPER MAY BE SUBSTITUED. FOR 2"ø AND SMALLER, "VICTAULIC", VIC-PRESS 304 STAINLESS STEEL WITH 0.049" WALL THICKNESS	15106	15250
	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"ø AND SMALLER, "VICTAULIC", VIC-PRESS 304 STAINLESS STEEL WITH 0.049" WALL THICKNESS	15106	15250
	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	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) (SWH / 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 PP PIPE (1) DCN-CNMS-001	15545	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 B306, SWEAT JOINTS >1-1/2" SIZES: CI, SW, ASTM A888, NO-HUB & COUPLING	15109	
	BELOW GRADE	ALL SIZES: CI, SW, ASTM A74, HUB & SPIGGOT.		
STORM DRAIN (SD, OFL, RWL)	ABOVE GRADE	<=1-1/2" SIZES: COPPER DWV TUBE, ASTM B106, SWEAT JOINTS >1-1/2" SIZES: CI, SW, ASTM B106, NO-HUB & COUPLING	15109	
	BELOW GRADE	ALL SIZES: CI, SW, ASTM A888, HUB & SPIGGOT.		
FIRE PROTECTION WATER (FP, or SWC)	ABOVE GRADE	BY OTHERS	15300	
	BELOW GRADE (5'-0",1'-6"AFF)	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	–
NITROGEN (GAS)	ABOVE GRADE	UTILITY NITROGEN: COPPER TUBE, ASTM B88. HIGH PURITY NITROGEN: 1/8" TO 3/8" ASTM A632, SEAMLESS. 1/2" TO 1 1/2" ASTM A269, SEAMLESS. (1) DCN-CNMS-001	15455	–

System Design Pressure, and Test Pressures

DESIGNATED SERVICE IN CNMS BLDG.	Pump Head ft	Pump Head psi	Fill Pressure psi	Operating Pressure psi	Design Pressure for Testing psi	Test Factor	Test Pressure psi	Test Type (Per 15073)	Remarks
Hi purity DI Water Systems:	150	65.0	10	75.0	100.0	150%	150.0	Class B	
Hot Water System:	180	77.9	25	102.9	110.0	150%	165.0	Class B	
Chilled Water System:	245	106.1	10	116.1	125.0	150%	187.5	Class B	
Compressed air, N2 and VAC.			NA	150	150	110%	165.0	Class A	
Sanitary Water: Potable	NA		NA		80	150%	120.0	Class B	Typical for Hot and Cold
Process Water: Non-potable	NA		NA		80	150%	120.0	Class B	

NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, IS MADE AS TO THE ACCURACY, COMPLETENESS OR USEFULNESS OF THE INFORMATION OR STATEMENTS CONTAINED IN THESE DRAWINGS, OR THAT THE USE OR DISCLOSURE OF ANY INFORMATION, APPARATUS, METHOD, OR PROCESS DISCLOSED IN THESE DRAWINGS MAY NOT INFRINGE PRIVATE RIGHTS OF OTHERS. NO LIABILITY IS ASSUMED WITH RESPECT TO THE USE OF, OR FOR DAMAGES RESULTING FROM THE USE OF ANY INFORMATION, APPARATUS, METHOD, OR PROCESS DISCLOSED IN THESE DRAWINGS. DRAWINGS MADE AVAILABLE FOR INFORMATION TO BIDDER ARE NOT TO BE USED FOR OTHER PURPOSES AND ARE TO BE RETURNED UPON REQUEST OF THE FORWARDING CONTRACTOR.

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

REV	CHANGE TYPE	CHANGE CONTROL SYSTEM	CHANGE REQUEST NUMBER	DESCRIPTION	DSN	CHK	DEPT
0				CERTIFIED FOR CONSTRUCTION – 12/9/02	JG	BWJ	

REVISION OR ISSUE PURPOSE

DATE	PE	DATE	PJ	DATE	REQ	DATE	UTB	DATE	RPE	RPE NO	DATE
									BWJ	105869	12/9/02

REVISION APPROVALS

ST	CV	EC	EE	EM	IE	M	PD	SE	AR
BZ	AW	BWJ	AK	IM	DM	–	BWJ	–	TW

SQUAD CHECK

RPE
REV. DATE
DRAWING APPROVALS

DSN
DRW
CHK
DEPT
PE CLG
PJ JS
REQ
UTB JRL

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UT-BATTELLE, LLC. ◆ Oak Ridge, Tennessee

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						REV
NC		NA			H0.00.03					0

AutoCAD