

Service	Short Name	Material	DN	ST Piping Spec Ref
Water	WM	Galv or 304L St/St	50	016 HW 01
Nitrogen	N2	1.4306 (304 L) SCH10	80	010 HW 01
Nat Gas	GN	1.4306 (304 L) SCH10	100	010 HW 01
Propane	LPG	1.4306 (304 L) SCH10	100	010 HW 01
Compressed Air	AP	S195T (1.0026); hot-dip galvanized	50	016 BC 03
Exhaust Duct	POG	1.4306 (304 L) SCH10	200	001 HB 02

Notes

1. Separation of 150mm required between each service

Pipe Dims (mm)		Pipe ~kgs per/m		Support Centres (m)		Allowable Deflection Guidance (Between pipe supports)
Outer Dia	Wall Thk	Pipe	Fluid	Horiz	Vert	
60.3	2.90	4.7	1.795	3	3.6	Max 5% of external O/D
88.9	3.20	11.29	-	3.7	4.6	Max 12.5mm
114.3	3.60	16.07	-	3.7	4.6	Max 12.5mm
114.3	3.60	16.07	-	3.7	4.6	Max 12.5mm
60.3	3.65	5.03	-	3	3.6	Max 5% of external O/D
219.1	4.00	42.55	-	4.5	5.4	Max 12.5mm

Insulation Thickness (mm)	ST Insulation Spec Ref
25 (rocklap)	CP 01
-	
-	
-	
25 (rocklap)	CP 01
130 (50mm Ceramic Superwool 607 HAT + 80mmm RW4)	HP 02

Comments

Steady pressure no thrust loads present

150 l/min propane, this equates to 0.119T of propane per hour.@21mbar continuous flow during operation. Conti
TBC

	Size (mm)	~kgs per/m	Comments
Electrical Cables	240	13	x4 separate cables
Cable Tray	300	5.568	Incl Uni strut supports

Service	Dia (")	DN	OD (mm)	ID (mm)	WT (mm)	Material	Kgs per M
Exhaust Duct	8	200	219.1	211.58	3.76	304L	19.96
Water	-	40	42	39.6	1.2	Copper	0.42
Nitrogen	3	80	88.9	82.8	3.05	304L	6.4
Compressed Air	2	50	54	51	1.5	Ali	?
Nat Gas	-	100	108	103.78	2.11	St/St	1
Propane	-	-	?			St/St	
Electrical Cables			240				13
Ladder rack							5.568

150mm separation between each service

Bridge at 6m height/clearance

Steady pressure from all, no thrust loads (as seen in deluge systems)

Cable and tray should be placed on the outside/top of the bridge with the pipe/ducting placed in the middle

Tray and pipe/ducting will be supported with 40x40mm Unistrut which will run across the width of the structure

Questions

General	1	Do we have P&ID's of intended services
	2	Do we have fab/install/routing drawings
	3	Do we have quotes
	4	Do we have a general layout of proposed pipebridge
	5	Do we have connection points into existing ST1 services
	6	Can radiant heat from Exhaust be used to stop water from freezing
Exhaust Duct	1	What wall thickness
	2	What is the temperature within the duct
	3	Are there any expansion joints or allowances for thermal expansion
	4	Will it be insulated, if so thickness & finish
	5	Do we have chemical species for fume, has potential "drop out" for conc
	6	x2 off 6" connection (E1&E2) on D53464 service requirements drg
Water	1	Why copper over bridge, why not St/St as corrodes slower (especially at
	2	Why only 35mm O/D if D52631 states 3" & 6" connections
Nitrogen	1	
	2	

Compressed Air	1
	2

Propane	1
	2

Electrical Cables	1
	2

Kgs Filled per M

Pressure
750/800 mbar

Full Material Spec

SF IT 304L 1.4307

2.125

3 bar

32mm copper with 25mm PIB Lagging

7 bar

TP304/304L 3" X SCH 10S

?

200 mbar

x4 off SWA Cables

le.

ture to support the tray and also the pipe/ducting

densate been looked into

t higher flows)

Length (m)	Cost per m	Comments
------------	------------	----------

		Not mentioned on KT List
--	--	--------------------------

ID	Service
B1	WATER
B2	WATER
B3	WATER
B4	WATER
B5	WATER
TP3	WATER
B6	WATER
C1	GAS
C2	GAS
C3	GAS
C4	GAS
D1	COMPRESSED AIR
E1	EXHAUSTS
E2	EXHAUSTS
A1	TRANSFORMER
A2	MCC
A3	WATER PUMP PANEL

Consarc Requirement

Description

INDUCTOTHERM VIP, 330LPM @ 4.0-5.5 BAR, MAX INLET 38°C

CONNECTIONS 2"BSP AT 2100MM ABOVE PIT FLOOR

INDUCTOTHERM HEATING COIL MANIFOLDS, 583LPM @ 4.0-5.5 BAR, MAX INLET 45°C

CONNECTIONS 3"PN16 @1500MM ABOVE PIT FLOOR

GAS COOLING MANIFOLDS, 390LPM @ 5.9 BAR, 35°C

CONNECTIONS 3"PN16 @1760MM ABOVE PIT FLOOR

VACUUM SYSTEM MANIFOLDS, 260LPM @ 5.9 BAR, 35°C

CONNECTIONS 3"PN16 @1760MM ABOVE PIT FLOOR

CHAMBER CIRCUITS MANIFOLDS, 242LPM @ 5.9 BAR, 35°C

CONNECTIONS 3"PN16 @1760MM ABOVE PIT FLOOR

Connection also required to cooling circuits as make-up/fill line - BSP

EMERGENCY WATER FROM MAINS, 633 LPM @ 2-6 BAR

TO BE DISTRIBUTED TO VIP AND CONSARC MANIFOLDS

AS SHOWN IN EXTERNAL WATER SCHEMATIC CD52631

NITROGEN 10 BAR MAX, CONNECTION 2"ANSI 150#, 1740MM ABOVE PIT FLOOR

ARGON 14 BAR MAX, CONNECTION 2"ANSI 150#, 1270MM ABOVE PIT FLOOR

NATURAL GAS 1.2 BAR MAX, CONNECTION 3/4"BSP FEMALE, 720MM ABOVE PIT FLOOR

PROPANE GAS 0.6 BAR MAX, CONNECTION 3/4"BSP FEMALE, 300MM ABOVE PIT FLOOR

6 BARG FILTERED & LUBRICATED,

CONNECTION 12MM DIA PUSH IN FITTING AT AIR TANK @ 1000MM ABOVE PIT FLOOR

VACUUM EXHAUST, CONNECTION 6"NB ANSI 150#, 3300MM ABOVE PIT FLOOR

AFTER BURNER, CONNECTION 6"NB ANSI 150#, 3300MM ABOVE PIT FLOOR

11kV 3PH+PE 50Hz, 1715kVA SUPPLY

LOCATION T.B.C. (EXTERNAL TO WORKSHOP)

415V 3PH+N+PE, 275kVA 380A SUPPLY

CONNECTIONS ON TOP OF PANEL 2000MM ABOVE PIT FLOOR

415V 3PH+N+PE, 180kVA 250A SUPPLY

LOCATION ON FURNACE ROOM WALL ADJACENT TO

WHERE PUMPSKID IS SITED

P&ID	P&ID DN	Pressure	KT Allowance	
			DN	Pressure
D52596_2	-	-		
D52596_1	-	-		
D52596_1	-	-		
D52596_1	-	-		
D52631 & CWS 90156-02-01	1/2"	Max 3 barg		
D52596_2	50	2-6 barg	40	3 barg
D52610C	2"	Max 10 barg	80	7 barg
D52610C	-	-		
D52610C	3/4"	Max 1.2 barg	100	200 mbar
D52610C	3/4"	Max 0.6 barg	?	?
D52673A	12	6 barg	50	??
?	6"	-	200	750/800 mbar
?	6"	-		
D52610C				
CWS 90156-02-01				

BG Comments	BC Comments
Local Connection by Consarc	
Local Connection by Consarc	
Local Connection by Consarc	
Local Connection by Consarc	
Local Connection by Consarc	
ST Connection but no concern due to proposed use in CWS which is closed circuit	
I would increase size to DN50	
Why so big, due to pressure? Why so big	
Filter/Air dryer rqd? pressure regulator/reduction rqd on Plot 5 side?	6.8-7.2 barg
Do both need "extracted"	Revisit with Ajay Revisit with Ajay