



**RETURN BIDS TO:**

**RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des soumissions  
- TPSGC**

**11 Laurier St./11 rue Laurier**

**Place du Portage, Phase III**

**Core 0B2 / Noyau 0B2**

**Gatineau, Québec K1A 0S5**

**SOLICITATION AMENDMENT  
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

**Vendor/Firm Name and Address**

**Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**

Construction Services Division/Division des services de  
construction

11 Laurier St./11 Rue Laurier

3C2, Place du Portage

Phase III

Gatineau, Québec K1A 0S5

<b>Title - Sujet</b> TUNNEY'S CHILLERS 1 & 2	
<b>Solicitation No. - N° de l'invitation</b> EJ192-170660/A	<b>Amendment No. - N° modif.</b> 005
<b>Client Reference No. - N° de référence du client</b> 20170660	<b>Date</b> 2016-09-22
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$\$FG-359-71333	
<b>File No. - N° de dossier</b> fg356.EJ192-170660	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-09-29</b>	<b>Time Zone</b> Fuseau horaire Eastern Daylight Saving Time EDT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Benoit, Marie-Eve	<b>Buyer Id - Id de l'acheteur</b> fg356
<b>Telephone No. - N° de téléphone</b> (819) 420-0720 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

Solicitation No. - N° de l'invitation  
EJ192-170660/A

Amd. No. - N° de la modif.  
005

Buyer ID - Id de l'acheteur  
FG356

Client Ref. No. - N° de réf. du client

File No. - N° du dossier  
FG359 EJ192-170660

CCC No./N° CCC - FMS No./N° VME

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**THIS AMENDMENT 005 IS ISSUED FOR THE FOLLOWING REASON:**

- ISSUE ADDENDUM NUMBER 3.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED

**TUNNEY'S PASTURE CHCP  
CHILLER #1 & #2 REPLACEMENT**

PROJECT NO. R.045645.001

PAGE 1 of 3  
DATE: September 22, 2016

The following changes in the tender documents are effective immediately. This addendum will form part of the contract documents.

**SPECIFICATIONS**

**1. SECTION 23 57 00 – HEAT EXCHANGERS FOR HVAC**

- .1 Delete item 2.1.6 in its entirety and add item 2.1.6 as follows:

“.6 Capacity: as indicated in drawing schedule. Design operation pressure of 1034 kPa (150 psi) for chilled water side.”

**2. SECTION 23 64 16 – PACKAGED CENTRIFUGAL WATER CHILLERS**

- .1 Delete item 2.2.1 in its entirety and add item 2.2.1 as follows:

“.1 Certified ratings based on ARI 550

.1 Capacity Schedule:

Min. Tons	Quanti- tity	ECWT °C	LCWT °C	CHWS °C	CHWR °C	Max. kW/ Ton*	NPLV kW/ Ton*	Condenser Flow L/s	Evaporator Flow L/s
3500	2	25	30	5.6	13.3	0.496	0.347	662.5	377.3

\*At design conditions”

- .2 Delete item 2.2.2 in its entirety and add item 2.2.2 as follows:

“.2 Chiller shall also operate at following schedule:

Min. Tons	Quanti- tity	ECWT °C	LCWT °C	CHWS °C	CHWR °C	Max. kW/ Ton*	NPLV kW/ Ton*	Condenser Flow L/s	Evaporator Flow L/s
3500	2	25	30	3.3	11.1	0.5441	0.394	662.5	377.3

\*At design conditions”

- .3 Delete item 2.14.3 in its entirety and add item 2.14.3 as follows:

“.3 The Departmental Representative will accept the equipment if the test procedures and results are in conformance with ARI 550. If the equipment fails to perform within allowable tolerances, the manufacturer will be allowed to make necessary revisions to his equipment and a retest as required until conformance with ARI 550 is achieved. Three factory tests points are to be provided for a minimum duration of 2 hours each (100% @ 77°F CWS, 100% @ 55°F CWS, 30% @ 77°F CWS). Provide vibration test and impeller over speed test at the factory. Factory test shall meet the following efficiencies:

**TUNNEY'S PASTURE CHCP  
CHILLER #1 & #2 REPLACEMENT**

PROJECT NO. R.045645.001

PAGE 2 of 3  
DATE: September 22, 2016

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% Load	Net Capacity (Tons)	% Power	Input Power (kw)	EEFT (°C)	ELFT (°C)	CEFT (°C)	CLFT (°C)	kW/Ton
100	3500	100	1744.0	13.3	5.5	25	30	0.4946
100	3500	56	976.0	13.3	5.5	12.8	17.5	0.376
30	1050	26	458.0	7.7	5.5	25	26.2	0.452

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.4 Add item 2.15 as follows:

"2.15 Low Pressure  
Chiller

- .1 Low pressure chillers utilizing refrigerant R1233zd will be accepted provided they are furnished with a high efficiency purge unit designed to ensure that any potential non-condensable leakage into the vessel is immediately eliminated. The purge run time shall be monitored by the main unit controller to act as a leak detector if required, and must have the following specifications:
  - .1 The manufacturers of low pressure machines must provide a purge system.
  - .2 The purge efficiency must meet ASHRAE Standard 147-2002.
  - .3 The purge shall be capable of operating when the chiller is idle in accordance with ASHRAE Standard 147-2002.
- .2 The chiller shall also have a vacuum prevention system to maintain 0.345 kPa (0.05 PSIG) inside the vessel during non-operational periods, a resettable rupture disc relief system and R1233zd refrigerant detection devices capable of monitoring at a level of 10 PPM at all locations identified on mechanical drawings M2.1 and M2.15. Connect refrigerant sensor to new refrigerant monitoring system. Chiller shall be installed to manufacturer's instructions for service clearances for maintenance and tube pulling clearances."

**TUNNEY'S PASTURE CHCP  
CHILLER #1 & #2 REPLACEMENT**

PROJECT NO. R.045645.001

PAGE 3 of 3  
DATE: September 22, 2016

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**DRAWINGS**

**1. MECHANICAL DRAWING M0.1**

- .1 Delete Drawing M0.1 in its entirety and replace with the attached Drawing M0.1/R1 dated September 21, 2016 issued for addendum 3.

















Enclosure: Drawing M0.1/R1 dated September 21, 2016

OTTAWA, ONTARIO

[illegible]

DRAWING LIST	
#	DESCRIPTION
1	STRUCTURAL DRAWING
2	FOUNDATION
3	GROUND FLOOR
4	FIRST FLOOR
5	SECOND FLOOR
6	ROOF
7	SECTION
8	ELEVATION
9	DETAIL
10	GENERAL NOTE
11	STRUCTURAL DRAWING
12	FOUNDATION
13	GROUND FLOOR
14	FIRST FLOOR
15	SECOND FLOOR
16	ROOF
17	SECTION
18	ELEVATION
19	DETAIL
20	GENERAL NOTE
21	STRUCTURAL DRAWING
22	FOUNDATION
23	GROUND FLOOR
24	FIRST FLOOR
25	SECOND FLOOR
26	ROOF
27	SECTION
28	ELEVATION
29	DETAIL
30	GENERAL NOTE
31	STRUCTURAL DRAWING
32	FOUNDATION
33	GROUND FLOOR
34	FIRST FLOOR
35	SECOND FLOOR
36	ROOF
37	SECTION
38	ELEVATION
39	DETAIL
40	GENERAL NOTE
41	STRUCTURAL DRAWING
42	FOUNDATION
43	GROUND FLOOR
44	FIRST FLOOR
45	SECOND FLOOR
46	ROOF
47	SECTION
48	ELEVATION
49	DETAIL
50	GENERAL NOTE
51	STRUCTURAL DRAWING
52	FOUNDATION
53	GROUND FLOOR
54	FIRST FLOOR
55	SECOND FLOOR
56	ROOF
57	SECTION
58	ELEVATION
59	DETAIL
60	GENERAL NOTE
61	STRUCTURAL DRAWING
62	FOUNDATION
63	GROUND FLOOR
64	FIRST FLOOR
65	SECOND FLOOR
66	ROOF
67	SECTION
68	ELEVATION
69	DETAIL
70	GENERAL NOTE
71	STRUCTURAL DRAWING
72	FOUNDATION
73	GROUND FLOOR
74	FIRST FLOOR
75	SECOND FLOOR
76	ROOF
77	SECTION
78	ELEVATION
79	DETAIL
80	GENERAL NOTE
81	STRUCTURAL DRAWING
82	FOUNDATION
83	GROUND FLOOR
84	FIRST FLOOR
85	SECOND FLOOR
86	ROOF
87	SECTION
88	ELEVATION
89	DETAIL
90	GENERAL NOTE
91	STRUCTURAL DRAWING
92	FOUNDATION
93	GROUND FLOOR
94	FIRST FLOOR
95	SECOND FLOOR
96	ROOF
97	SECTION
98	ELEVATION
99	DETAIL
100	GENERAL NOTE

EQUIPMENT LIST LEGEND	
SYMBOL	DESCRIPTION
P	PUMP
CH	CHILLER
HE	HEAT EXCHANGER
CO	CONDENSER
SH	SUPERHEATER
ET	EXPANSION TANK
COMP	STEAM TRAPING COMPRESSOR
ST	STEAM TRAPING STORAGE TANK
EP	EXHAUST PIPE
F	FLARE AND FILTER

CONTROLS LEGEND	
SYMBOL	DESCRIPTION
	LOW VOLT SENSOR (RINGS)
	LOW VOLT SENSOR (SLOTTES)
	LOW VOLT SENSOR (REAR)
	TEMPERATURE SENSOR
	WHEEL SPEED SENSOR
	WHEEL SPEED SENSOR
	WHEEL SPEED SENSOR
	WHEEL SPEED SENSOR
	WHEEL SPEED SENSOR
	WHEEL SPEED SENSOR
	WHEEL SPEED SENSOR
	WHEEL SPEED SENSOR
	WHEEL SPEED SENSOR
	DIFFERENTIAL PRESSURE SENSOR
	PARAMETERS (GPS)
	DE-CONTAMINANT

An aerial photograph of a city street intersection. A large, multi-story building with a flat roof and several windows is the central focus. To its left is a large parking lot with several cars parked. The street is paved and has a crosswalk. In the background, other buildings and trees are visible. The image is in black and white.

PACKAGED WATER COOLED CHILLER SCHEDULE																							
UNIT		LOCATION		MACHINE DATA		CONDENSATION		EVAPORATION				CONDENSER				RUE DELTA		EFFICIENCY		REF. RUA DATA		RUE DATA	
REF	TYPE	REF	TYPE	QTY	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	WPG	
1ST	CHILLER	1ST	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
2ND	CHILLER	2ND	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
3RD	CHILLER	3RD	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
4TH	CHILLER	4TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
5TH	CHILLER	5TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
6TH	CHILLER	6TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
7TH	CHILLER	7TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
8TH	CHILLER	8TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
9TH	CHILLER	9TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
10TH	CHILLER	10TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
11TH	CHILLER	11TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
12TH	CHILLER	12TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
13TH	CHILLER	13TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
14TH	CHILLER	14TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
15TH	CHILLER	15TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
16TH	CHILLER	16TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
17TH	CHILLER	17TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
18TH	CHILLER	18TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
19TH	CHILLER	19TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
20TH	CHILLER	20TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
21TH	CHILLER	21TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
22TH	CHILLER	22TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
23TH	CHILLER	23TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
24TH	CHILLER	24TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
25TH	CHILLER	25TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
26TH	CHILLER	26TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
27TH	CHILLER	27TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
28TH	CHILLER	28TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
29TH	CHILLER	29TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
30TH	CHILLER	30TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
31TH	CHILLER	31TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
32TH	CHILLER	32TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
33TH	CHILLER	33TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
34TH	CHILLER	34TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
35TH	CHILLER	35TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
36TH	CHILLER	36TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
37TH	CHILLER	37TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
38TH	CHILLER	38TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
39TH	CHILLER	39TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
40TH	CHILLER	40TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
41TH	CHILLER	41TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
42TH	CHILLER	42TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
43TH	CHILLER	43TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
44TH	CHILLER	44TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
45TH	CHILLER	45TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
46TH	CHILLER	46TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
47TH	CHILLER	47TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
48TH	CHILLER	48TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
49TH	CHILLER	49TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
50TH	CHILLER	50TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
51TH	CHILLER	51TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
52TH	CHILLER	52TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
53TH	CHILLER	53TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
54TH	CHILLER	54TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
55TH	CHILLER	55TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
56TH	CHILLER	56TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
57TH	CHILLER	57TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
58TH	CHILLER	58TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
59TH	CHILLER	59TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
60TH	CHILLER	60TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
61TH	CHILLER	61TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
62TH	CHILLER	62TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
63TH	CHILLER	63TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
64TH	CHILLER	64TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
65TH	CHILLER	65TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
66TH	CHILLER	66TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
67TH	CHILLER	67TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
68TH	CHILLER	68TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
69TH	CHILLER	69TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
70TH	CHILLER	70TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
71TH	CHILLER	71TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
72TH	CHILLER	72TH	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	CHILLER	1	
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HEAT EXCHANGER SCHEDULE																
UNIT NO.		FUNCTION	UNIT TYPE	HEAT EXCH. TYPE	PRIMARY FLOW RATE			SECONDARY FLOW CHARACTERISTICS			THERMAL AND PRESSURE LOSS		REMARKS			
					HEAT EX. CAP. (T/HR)	FLUID TYPE	PREHEAT. IN (T/HR)	FLUID TYPE	PREHEAT. IN (T/HR)	FLUID TYPE	HEAT EX. CAP. (T/HR)					
001	001	PRE-CONDENS.	PRE	001	4.4	2.3	3.5	00101	11.3	1.4	0	00101	0.0	0	243.2-250.0 E103	243.2-250.0 E103
002	002	PRE-CONDENS.	PRE	002	4.4	2.3	3.5	00101	11.3	1.4	0	00101	0.0	0	243.2-250.0 E103	243.2-250.0 E103
003	003	PRE-CONDENS.	PRE	003	4.4	2.3	3.5	00101	11.3	1.4	0	00101	0.0	0	243.2-250.0 E103	243.2-250.0 E103

NOTES: 1. FOR STEAM HEAT EXCHANGER.

PUMP SCHEDULE											
SYSTEM		COMPONENT	TYPE	MAX. FLOW (GPM)	PUMPS		ELECTRIC DATA		WATER		
					1/2" DISCH. PUMP	3/4" DISCH. PUMP	WHP	MIN. EFFICIENCY (%)	WHP	MIN. EFFICIENCY (%)	
CH-1	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-2	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-3	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-4	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-5	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-6	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-7	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-8	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-9	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-10	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-11	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-12	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-13	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-14	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-15	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-16	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-17	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-18	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-19	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-20	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-21	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-22	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-23	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-24	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-25	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-26	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-27	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-28	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-29	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-30	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-31	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-32	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-33	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-34	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-35	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-36	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-37	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-38	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-39	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-40	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-41	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-42	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-43	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-44	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-45	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-46	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-47	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-48	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-49	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-50	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-51	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-52	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-53	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-54	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-55	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-56	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-57	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-58	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-59	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-60	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-61	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-62	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-63	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-64	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-65	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-66	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-67	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-68	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-69	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-70	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-71	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-72	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-73	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-74	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-75	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-76	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-77	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-78	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-79	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-80	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-81	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-82	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-83	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-84	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-85	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-86	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-87	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-88	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-89	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-90	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-91	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-92	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-93	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-94	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-95	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-96	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-97	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-98	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-99	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-100	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-101	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-102	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-103	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-104	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-105	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-106	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-107	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-108	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-109	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-110	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-111	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-112	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-113	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-114	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-115	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-116	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-117	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-118	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24	24	42	37	1.0	8.2	24.5	15.0
CH-119	CHILLER COOL	PRIMARY/CLIP	SP1 (CASE)	24							

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National Centre of Expertise  
 Mechanical and Engineering Services  
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