

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	APPROVED BY
0	07/17/06	ISSUED FOR APPROVAL	CM	JPW	
1	10/10/06	SYMBOLS CHANGED PER ENGINEER'S COMMENTS	JMP		
2	01/08/07	CHANGES & ADDITIONS PER ENGINEER'S COMMENTS	JMP		

CITY OF WINNIPEG Water Treatment Plant

(x3) CT-1500 (680KG/Day) SKID
ON-SITE SODIUM HYPOCHLORITE GENERATION SYSTEM
PIPING AND INSTRUMENTATION DIAGRAM

CH2M HILL Canada Limited
 321352
 11242
 WINNIPEG
 49-11242-02-R2
 Winnipeg WTP

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent. Responsibility for detailed design in the shop drawings rests with the Contractor.

Responsibility for verification and correlation of field dimensions, fabrication process, techniques of construction, installation and coordination of all parts of the work rests with the Contractor.

REVIEWED _____
 REVIEWED AS MODIFIED _____
 REVISE AND RE-SUBMIT _____
 NOT REVIEWED _____

Project No. _____
 Date _____ By: _____

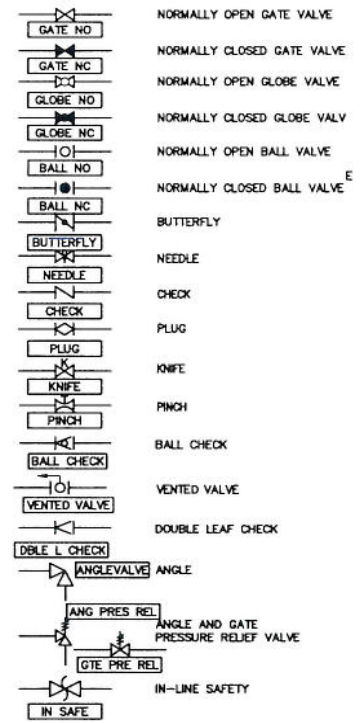
SEVERN TRENT SERVICES		CITY OF WINNIPEG WATER TREATMENT PLANT Winnipeg, Canada																									
<small>2880 DILLINGER ST. WILLOW PARK, CALGARY, ALBERTA T2C 1P2 TELEPHONE NO. (403) 636-9100 FAX NO. (403) 636-1084 WEB SITE: www.severntrentservices.com</small>		<small>PROJECT:</small> (X3) CT-1500(680 KGS/DAY) RACK MOUNTED ON-SITE SODIUM HYPOCHLORITE GENERATION SYSTEM PIPING & INSTRUMENTATION DIAGRAM																									
<small>UNLESS OTHERWISE NOTED</small> <table border="1"> <thead> <tr> <th>DIMENSIONS</th> <th>TYP.</th> <th>TOLERANCE</th> <th>UNIT</th> </tr> </thead> <tbody> <tr> <td>FRACCTIONS</td> <td>± 1/8"</td> <td></td> <td>[mm]</td> </tr> <tr> <td>"</td> <td>± .1"</td> <td>± 2.0</td> <td></td> </tr> <tr> <td>mm</td> <td>± .1"</td> <td>± 2.5</td> <td></td> </tr> <tr> <td>mm</td> <td>± .005"</td> <td>± .127</td> <td></td> </tr> <tr> <td>mm/pts</td> <td>± .1</td> <td></td> <td></td> </tr> </tbody> </table>		DIMENSIONS	TYP.	TOLERANCE	UNIT	FRACCTIONS	± 1/8"		[mm]	"	± .1"	± 2.0		mm	± .1"	± 2.5		mm	± .005"	± .127		mm/pts	± .1			<small>NOTICE OF CONFIDENTIALITY</small> THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION. IT IS THE PROPERTY OF SEVERN TRENT SERVICES AND IS TO BE RETURNED TO SEVERN TRENT SERVICES IMMEDIATELY UPON REQUEST. IT IS HEREBY AGREED THAT THE INFORMATION CONTAINED HEREIN IS TO BE KEPT CONFIDENTIAL AND NOT TO BE DISCLOSED TO ANY OTHER PARTY WITHOUT THE WRITTEN PERMISSION OF SEVERN TRENT SERVICES.	
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<small>SCALE:</small> NTS		<small>CLIENT JOB NO.:</small> CPG0465																									
<small>DATE NO.:</small> CPG0465-I-01		<small>ISSUE NO.:</small> 2																									
<small>SHEET NO.:</small> 1		<small>TOTAL SHEETS:</small> 7																									

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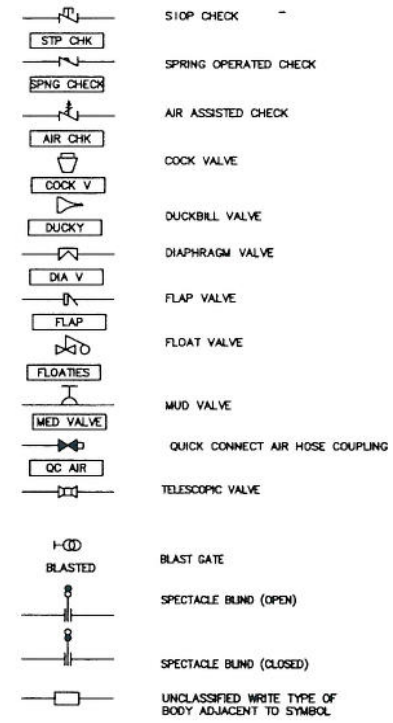
MISCELLANEOUS EQUIPMENT SYMBOLS



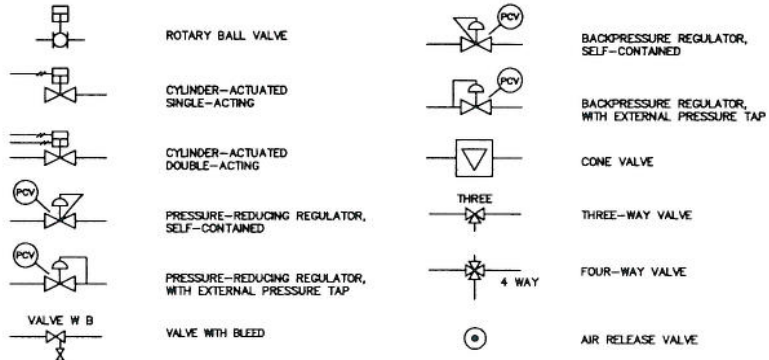
VALVE BODIES



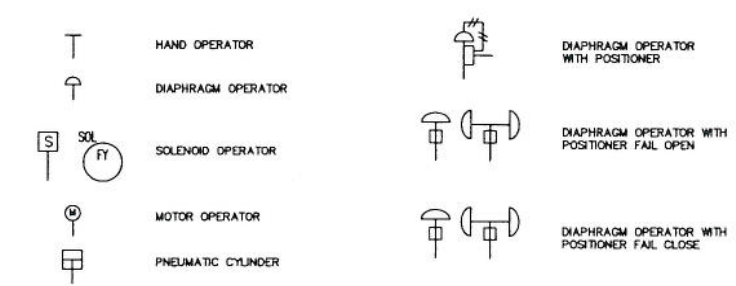
VALVES



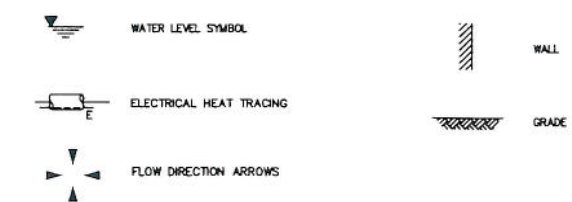
CONTROL VALVES



VALVE ACTUATORS/OPERATORS

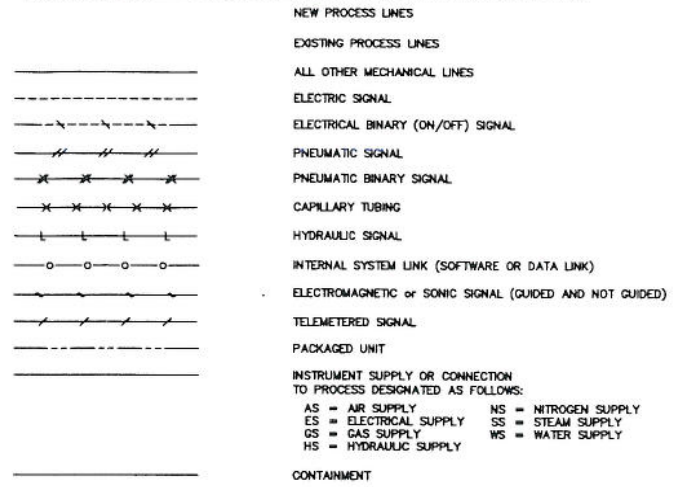


MISCELLANEOUS SYMBOLS



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0	07.17.06	ISSUED FOR APPROVAL	CM	JPM	
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LINE SYMBOLS - PROCESS & INSTRUMENTATION DIAGRAMS



PID STANDARDS

- DRAWINGS UTILIZE CITY OF WINNIPEG STANDARDS FOR BORDER AND TITLE BLOCK. ALL DRAWINGS ARE PRODUCED ON AUTOCAD (LATEST REV., R2000 OR LATER).
- ALL UNITS ARE IN METRIC, EXCEPT AS NOTED OTHERWISE. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS (mm).
- DRAWING CONTENT GENERALLY CONFORMS TO ANSI/ISA STANDARDS S5.1 & S5.3.
- PID'S INDICATE MAJOR PROCESS PIPING AND EQUIPMENT AND ASSOCIATED LOCAL INSTRUMENTATION, DCS AND OTHER PROCESS I/O.
- EQUIPMENT INCLUDING VESSELS, DRUMS, EXCHANGERS, HEATERS, PUMPS, COMPRESSORS, ETC. ARE ARRANGED IN SEQUENCE WITH PRINCIPLE FUNCTIONS AND FLOWS.
- ALL MAJOR EQUIPMENT INCLUDING PUMPS, COMPRESSORS, TANKS, ETC. ARE LABELLED AS TO FUNCTION WITH DESIGN SIZES AND RATINGS.
- ALL PROCESS LINES ARE LABELLED ACCORDING TO FUNCTION AND SIZE UTILIZING SYSTEM CODES DEFINED HEREIN.
- EACH SYSTEM INTERCONNECTION POINT BETWEEN DRAWINGS IS LABELLED WITH A SOURCE DRAWING NUMBER OR DESTINATION DRAWING NUMBER. ARROWS ON PROCESS PIPING INDICATE DIRECTION OF FLOW BETWEEN DRAWINGS.

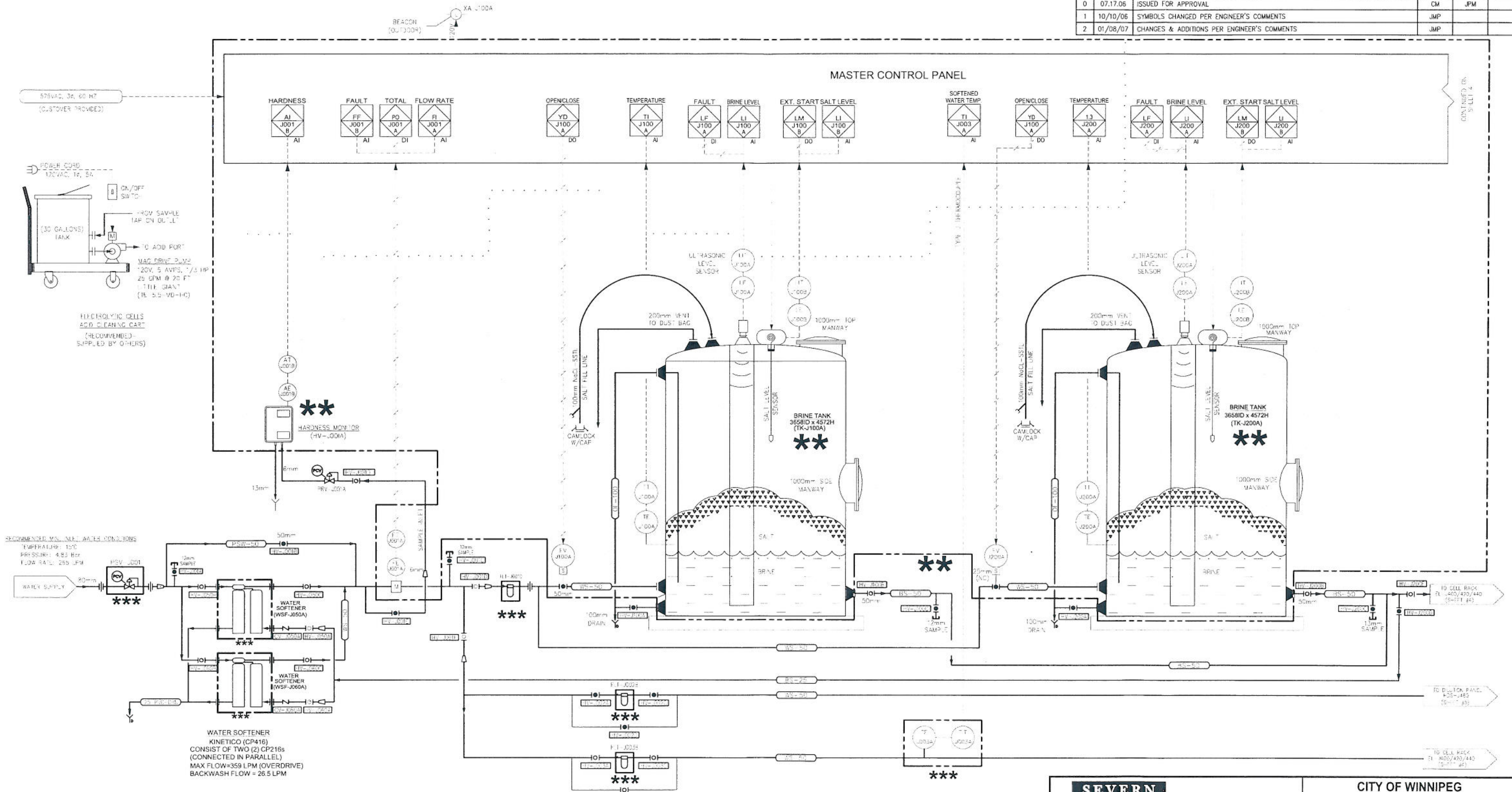
GENERAL NOTES

- THIS DRAWING IS FOR EQUIPMENT PROCESS FLOW INFORMATION PURPOSES ONLY. ALL EQUIPMENT, COMPONENTS, INSTRUMENTS, DEVICES, PIPING, FITTINGS, VALVES & CONDUIT SHOWN ON THIS DRAWING ARE NOT NECESSARILY SUPPLIED & INSTALLED BY CLORTEC REFER TO CONTRACT DOCUMENTS, CLORTEC SCOPE OF SUPPLIES FOR CLORTEC RESPONSIBILITY IN THIS PROJECT.
- ALL CLORTEC SUPPLIED PIPING, FITTINGS & VALVES ARE PVC SCH. 80. ALL TUBING ARE BLACK POLYETHYLENE.
- ELECTRICAL POWER, WATER SUPPLY, POINT OF INJECTION AND SCADA ARE PROVIDED BY OTHERS.
- ALL UNDER GROUND WORK, CONCRETE WORK, WALL AND ROOF PENETRATIONS ARE DONE BY OTHERS.
- ALL ELECTRICAL CONDUITS, WIRING, JUNCTION AND PULL BOXES WILL BE PROVIDED BY OTHERS.
- THE EQUIPMENT SUPPLIED BY CLORTEC/METCON IS PAINTED AND COATED
- ALL BACKBOARDS AND SUPPORTS TO BE PROVIDED BY OTHERS.
- CUSTOMER TO PROVIDE WATER SUPPLY PRESSURE & TEMPERATURE.
- CUSTOMER TO PROVIDE DETAILED DOSING ROUTINE.
- CUSTOMER TO PROVIDE HYPOCHLORITE FEEDING SYSTEM PRESSURE.
- ALL ELECTRICAL DISCONNECT SWITCHES ARE PROVIDED BY OTHERS.
- ALL INSTALLATION IS DONE BY OTHERS.

<p>SEVERN TRENT SERVICES</p> <p>6660 COLUMBIA STREET TORRANCE, CA 90503 TEL: (510) 618-9700 FAX: (510) 618-1344 WEB SITE: www.severntrentservices.com</p>	<p>CITY OF WINNIPEG WATER TREATMENT PLANT Winnipeg, Canada</p>	
	<p>PROJECT TITLE (X3)CT-1500(680 KGS/DAY) RACK MOUNTED ON-SITE SODIUM HYPOCHLORITE GENERATION SYSTEM PIPING & INSTRUMENTATION DIAGRAM</p>	
<p>UNLESS OTHERWISE NOTED DIMENSIONS ARE IN MILLIMETERS (mm) TOLERANCES: ± 1/8"</p>	<p>NOTICE OF CONFIDENTIALITY THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION AND IS NOT TO BE REPRODUCED OR DISCLOSED TO ANY OTHER PARTY WITHOUT THE WRITTEN CONSENT OF CLORTEC</p>	<p>DATE: NTS DRAWING No: CPG0465 SHEET: 2 of 7</p>

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ONLY EQUIPMENT MARKED WITH THREE (3) STARS AND WITHIN DASHED BOXES ARE PROVIDED BY CLORTEC.

ONLY EQUIPMENT MARKED WITH TWO (2) STARS AND WITHIN DASHED BOXES ARE PROVIDED BY METCON

SEVERN TRENT CLORTEC SERVICES

CITY OF WINNIPEG
WATER TREATMENT PLANT
Winnipeg, Canada

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WEB Site: www.severntrentservices.com

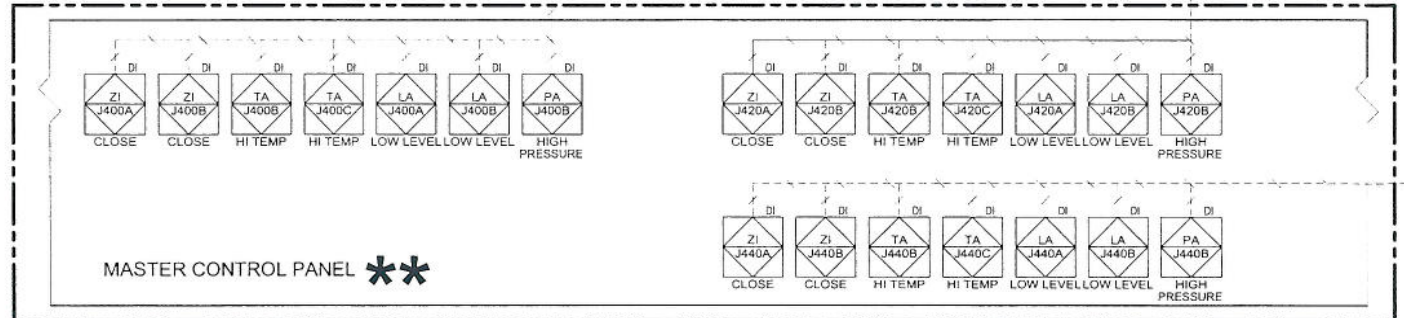
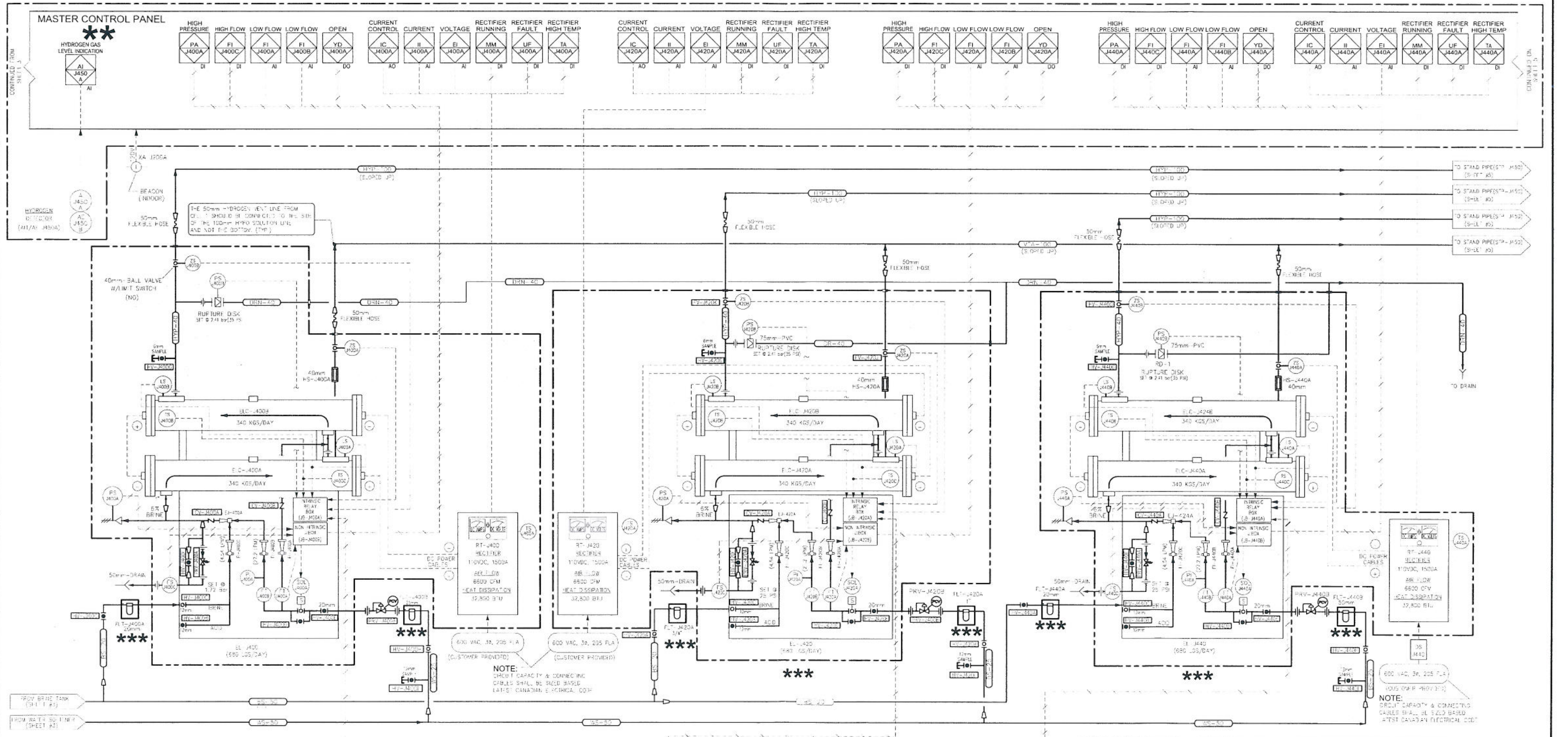
PROJECT TITLE
(X3) CT-1500(680KGS./DAY) RACK MOUNTED ON-SITE SODIUM HYPOCHLORITE GENERATION SYSTEM PIPING & INSTRUMENTATION DIAGRAM

UNLESS OTHERWISE NOTED
TOLERANCES
FRACTIONS ± 1/8"
X ± 1" ± 25
XX ± 0.1" ± 51
XXX ± 0.05" ± 127
ANGLES ± 1°

SCALE: NTS
CLORTEC IFS No: CPG0465
SHEET: 2
DWG. No: CPG0465-1-01
SHEET: 4 of 7

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 TEL: PHONE No. (310) 618-9700 FAX No. (310) 618-1384
 WEB Site: www.severntrentservices.com

TOLERANCES:
 TYPE: INCHES [MM]
 FRACTIONS: ± 1/8" ± 3.18
 X: ± 1" ± 25.4
 XX: ± 0.1" ± 2.54
 XXX: ± 0.005" ± 0.127
 ANGLES: ± 1°

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 Winnipeg, Canada

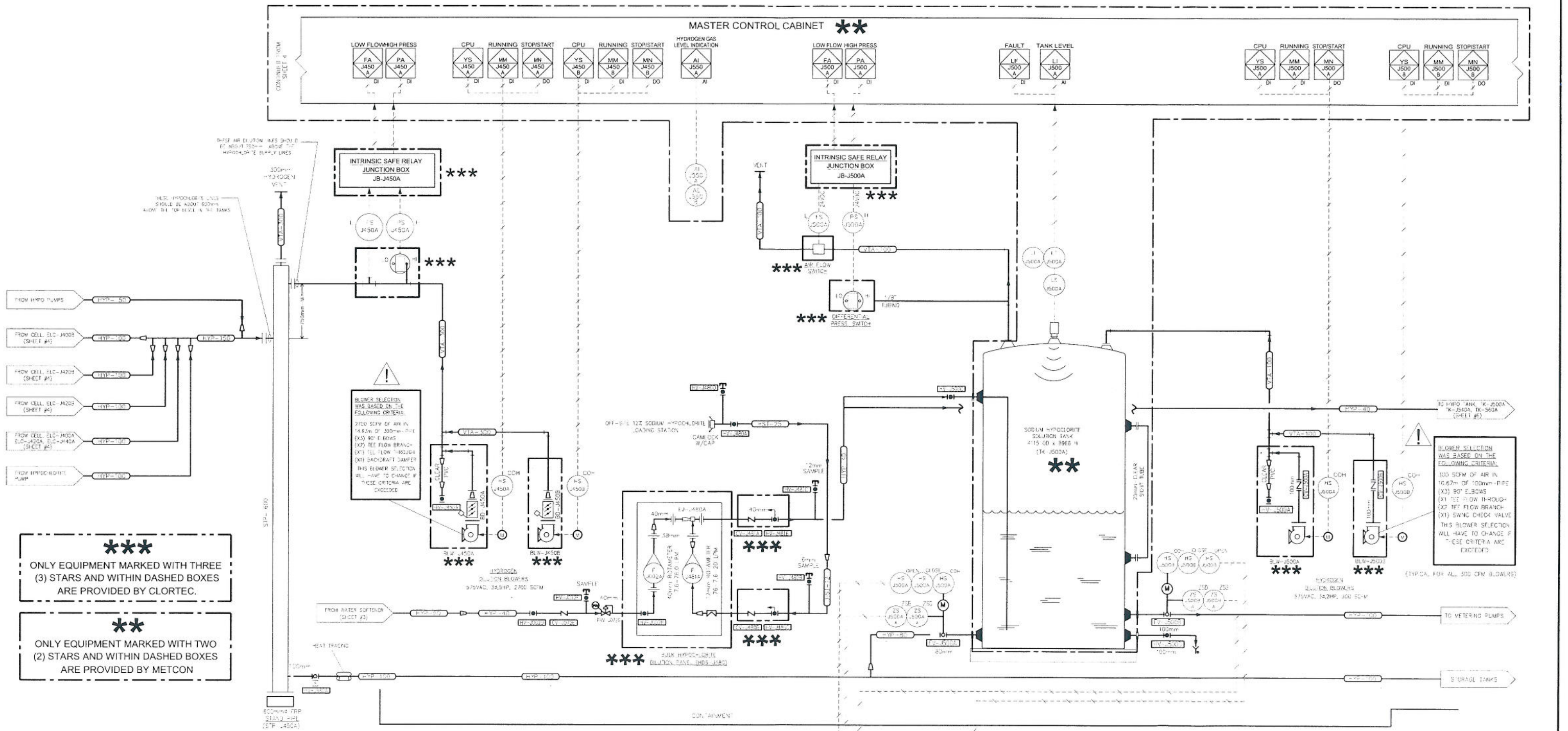
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 CLORTEC JOB NO: CPG0465
 SHEET: 2

DWG No: CPG0465-1-01
 SHEET: 5 of 7

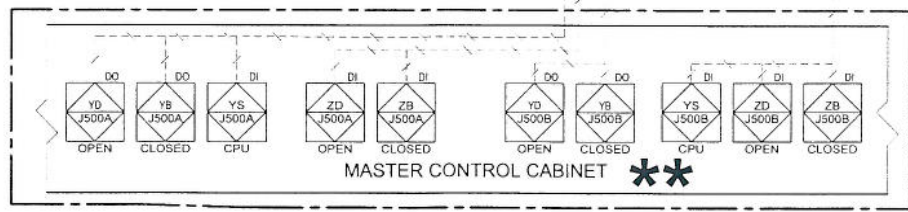
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 Web Site: www.severntrentservices.com

UNLESS OTHERWISE NOTED
 TOLERANCES:
 FRACTIONS ± 1/8"
 X ± 1" ± 2.0
 XX ± 0.1" ± 0.1
 XXX ± 0.05" ± 0.27
 ANGLES ± 1°

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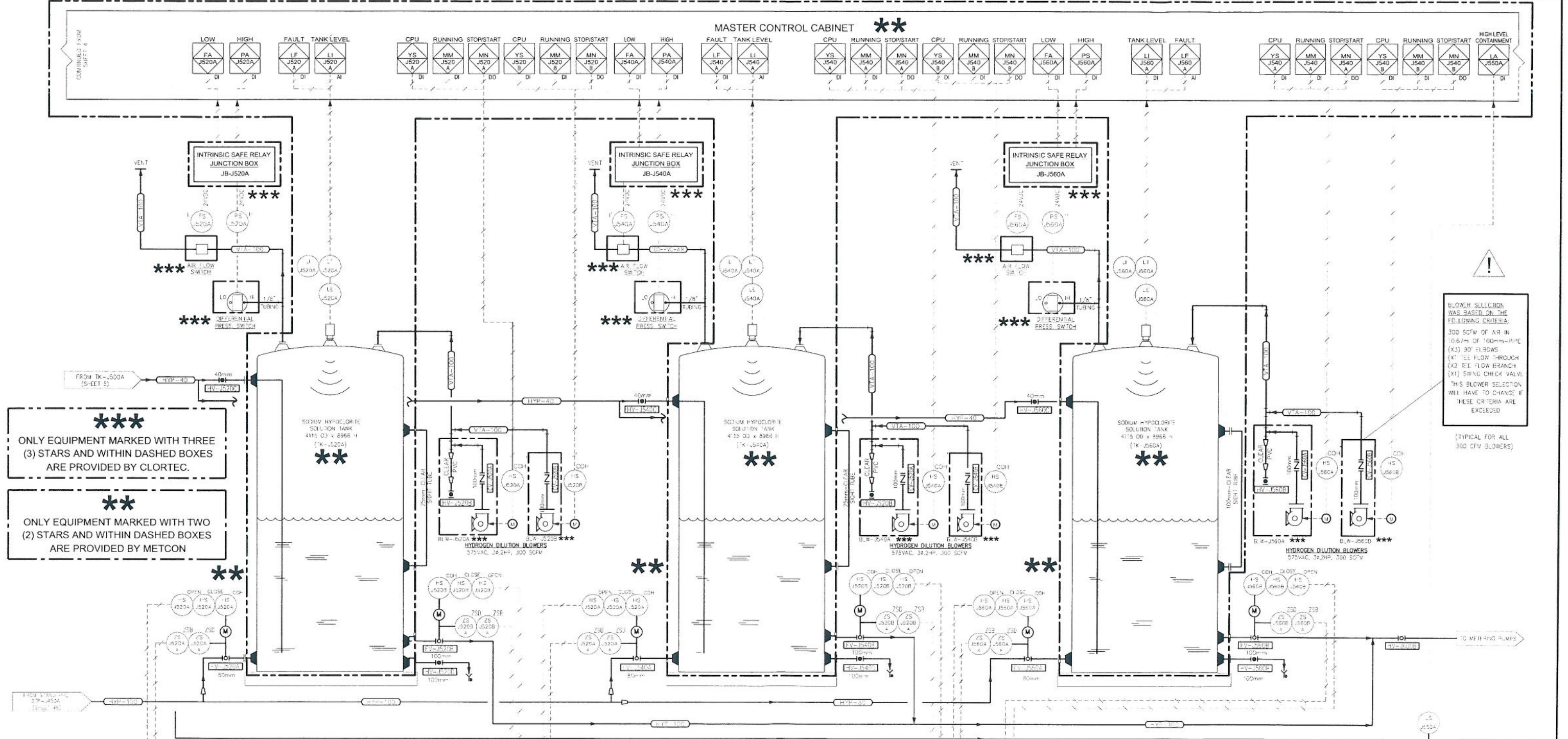
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DWG. No: CPG0465-I-01		SHEET: 6 OF 7

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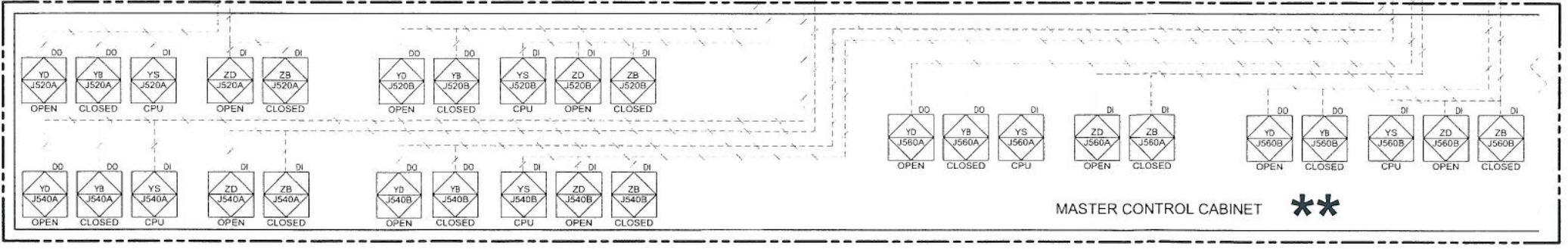
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! BLOWER SELECTION WAS BASED ON THE FOLLOWING CRITERIA:
 300 SCFM OF AIR IN 10.6m OF 100mm-HPE (X1) 90° ELBOWS
 (X2) 90° ELBOWS THROUGH (X1) FLOW BRANCH (X1) SWNG CHECK VALVE
 THIS BLOWER SELECTION WILL HAVE TO CHANGE IF THESE CRITERIA ARE EXCEEDED
 (TYPICAL FOR ALL 360 CFM BLOWERS)



SEVERN TRENT CLORTEC SERVICES

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 WEB SITE: www.severntrentclortec.com

UNLESS OTHERWISE NOTED

TOLERANCES	TYPE	INCHES	MILL
FRACCTIONS		± 1/32"	
X		± 1"	± 25
XX		± 0.1"	± 51
XXX		± 0.05"	± 127
ANGLES			± 1°

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 Winnipeg, Canada

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