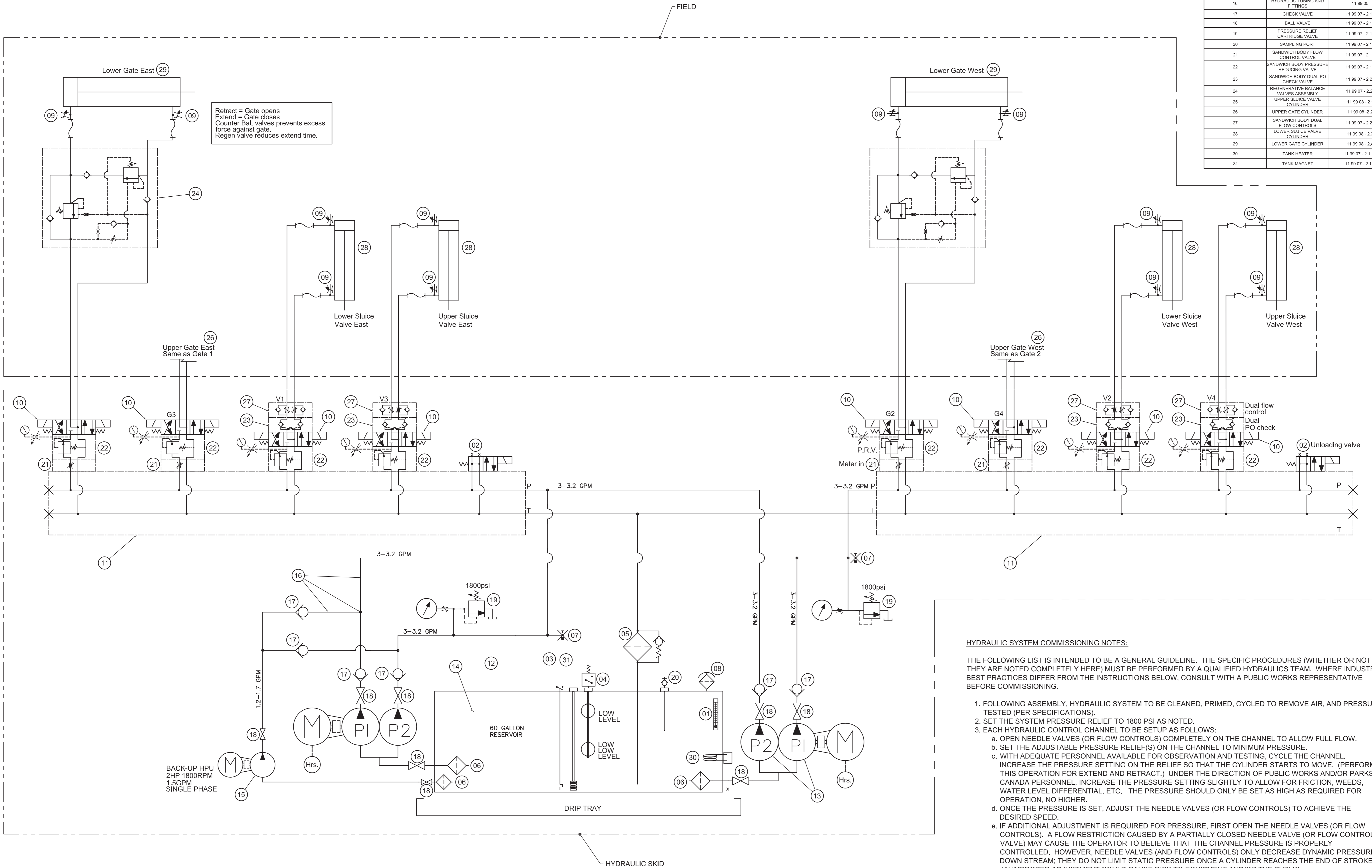


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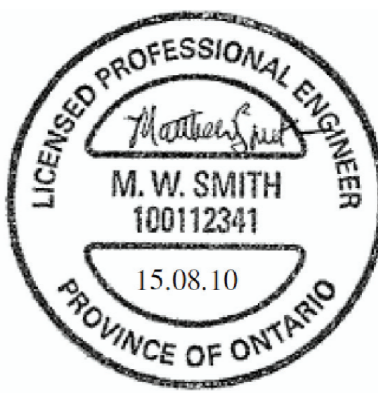


HYDRAULIC SYSTEM COMMISSIONING NOTES:

THE FOLLOWING LIST IS INTENDED TO BE A GENERAL GUIDELINE. THE SPECIFIC PROCEDURES (WHETHER OR NOT THEY ARE NOTED COMPLETELY HERE) MUST BE PERFORMED BY A QUALIFIED HYDRAULICS TEAM. WHERE INDUSTRY BEST PRACTICES DIFFER FROM THE INSTRUCTIONS BELOW, CONSULT WITH A PUBLIC WORKS REPRESENTATIVE BEFORE COMMISSIONING.

- FOLLOWING ASSEMBLY, HYDRAULIC SYSTEM TO BE CLEANED, PRIMED, CYCLED TO REMOVE AIR, AND PRESSURE TESTED (PER SPECIFICATIONS).
- SET THE SYSTEM PRESSURE RELIEF TO 1800 PSI AS NOTED.
- EACH HYDRAULIC CONTROL CHANNEL TO BE SETUP AS FOLLOWS:
 - OPEN NEEDLE VALVES (OR FLOW CONTROLS) COMPLETELY ON THE CHANNEL TO ALLOW FULL FLOW.
 - SET THE ADJUSTABLE PRESSURE RELIEF(S) ON THE CHANNEL TO MINIMUM PRESSURE.
 - WITH ADEQUATE PERSONNEL AVAILABLE FOR OBSERVATION AND TESTING, CYCLE THE CHANNEL. INCREASE THE PRESSURE SETTING ON THE RELIEF SO THAT THE CYLINDER STARTS TO MOVE. (PERFORM THIS OPERATION FOR EXTEND AND RETRACT.) UNDER THE DIRECTION OF PUBLIC WORKS AND/OR PARKS CANADA PERSONNEL, INCREASE THE PRESSURE SETTING SLIGHTLY TO ALLOW FOR FRICTION, WEEDS, WATER LEVEL DIFFERENTIAL, ETC. THE PRESSURE SHOULD ONLY BE SET AS HIGH AS REQUIRED FOR OPERATION, NO HIGHER.
 - ONCE THE PRESSURE IS SET, ADJUST THE NEEDLE VALVES (OR FLOW CONTROLS) TO ACHIEVE THE DESIRED SPEED.
 - IF ADDITIONAL ADJUSTMENT IS REQUIRED FOR PRESSURE, FIRST OPEN THE NEEDLE VALVES (OR FLOW CONTROLS). A FLOW RESTRICTION CAUSED BY A PARTIALLY CLOSED NEEDLE VALVE (OR FLOW CONTROL VALVE) MAY CAUSE THE OPERATOR TO BELIEVE THAT THE CHANNEL PRESSURE IS PROPERLY CONTROLLED. HOWEVER, NEEDLE VALVES (AND FLOW CONTROLS) ONLY DECREASE DYNAMIC PRESSURE DOWN STREAM; THEY DO NOT LIMIT STATIC PRESSURE ONCE A CYLINDER REACHES THE END OF STROKE. AN IMPROPER ADJUSTMENT COULD CAUSE RISK TO EQUIPMENT AND/OR THE PUBLIC.
- ONCE ALL CHANNELS ARE PROPERLY ADJUSTED, DOCUMENT THE SETTINGS FOR ALL PRESSURE RELIEFS, NEEDLE VALVES, FLOW CONTROLS AND OTHER ADJUSTMENT POINTS. EXPRESS THE POSITION AS A FUNCTION OF NUMBER OF TURNS (OR FRACTIONS OF TURNS) FROM COMPLETELY CLOSED, OR COMPLETELY OPEN. BE SURE TO SPECIFY DIRECTION OF ROTATION (CLOCKWISE OR COUNTER-CLOCKWISE). PROVIDE THE DOCUMENTATION TO PUBLIC WORKS / PARKS CANADA FOR POSTING AND FILING.
- IF APPLICABLE, LOCK THE ADJUSTERS IN PLACE USING SUPPLIED LOCK NUTS, CAPS, ETC.

BILL OF MATERIALS		
ITEM#	DESCRIPTION	SPECIFICATION No.
01	PUMP SKID SIGHT GLASS	11 99 07 -2.2
02	UNLOAD VALVE	11 99 07 -2.3
03	TEMPERATURE SWITCH	11 99 07 -2.4
04	LEVEL SWITCH	11 99 07 -2.5
05	HYDRAULIC OIL FILTER, RETURNLINE	11 99 07 -2.6
06	SUCTION STRAINER	11 99 07 -2.7
07	PUMP SKID TEST PORTS	11 99 07 -2.8
08	OIL RESERVOIR BREATHER	11 99 07 -2.9
09	CYLINDER BLEED VALVES	11 99 08 -2.5
10	DIRECTIONAL CONTROL VALVES	11 99 07 -2.10
11	CONTROL VALVE MANIFOLD	11 99 07 -2.11
12	OIL RESERVOIR	11 99 07 -2.1
13	PRIMARY HYDRAULIC GEAR PUMP	11 99 07 -2.12
14	HYDRAULIC FLUID	11 99 06
15	EMERGENCY GEAR PUMP	11 99 07 -2.13
16	HYDRAULIC TUBING AND FITTINGS	11 99 05
17	CHECK VALVE	11 99 07 -2.14
18	BALL VALVE	11 99 07 -2.15
19	PRESSURE RELIEF CARTRIDGE VALVE	11 99 07 -2.16
20	SAMPLING PORT	11 99 07 -2.17
21	SANDWICH BODY FLOW CONTROL VALVE	11 99 07 -2.18
22	SANDWICH BODY PRESSURE REDUCING VALVE	11 99 07 -2.19
23	SANDWICH BODY DUAL PO CHECK VALVE	11 99 07 -2.20
24	REGENERATIVE BALANCE VALVES ASSEMBLY	11 99 07 -2.21
25	UPPER SLUICE VALVE CYLINDER	11 99 08 -2.1
26	UPPER GATE CYLINDER	11 99 08 -2.2
27	SANDWICH BODY DUAL FLOW CONTROLS	11 99 07 -2.22
28	LOWER SLUICE VALVE CYLINDER	11 99 08 -2.3
29	LOWER GATE CYLINDER	11 99 08 -2.4
30	TANK HEATER	11 99 07 -2.1.10
31	TANK MAGNET	11 99 07 -2.1.7



SEAL AND SIGNATURE MUST BE PRESENT TO USE DRAWING FOR OFFICIAL PURPOSES. TYPED INITIALS IN TITLE BLOCK AND REV BLOCK ARE FOR RECORD KEEPING PURPOSES ONLY.

1 ISSUE FOR TENDER DP JULY 2015

No. Description Dwn.By Date

Revision / Révision

A Detail number
No. du détail
B Location dwg. no.
No. sur dessin

Project title / Titre du projet

RIDEAU CANAL
BLACK RAPIDS LOCK 13
UPGRADES 2015

Drawing No. / Titre du dessin

MECHANICAL
HYDRAULIC SYSTEM
SCHEMATIC

Drawn by / Dessiné par

ALEX BAILEY

Designed by / Conçu par

JONATHAN SMITH

Approved by / Approuvé par

MATTHEW SMITH

Drawing Date / Date du dessin

JUNE 2015

Project No. / Numéro du projet

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Dessiné No.

M101

Sheet

Feuille

1 of 1