ACT	UATOR SYMBOLS
SYMBOL	DESCRIPTION
X	CONTROL VALVE
KP	PRESSURE REDUCING VALVE EXTERNAL TAP
<u>M</u>	BACK PRESSURE REDUCING VALVE EXTERNAL TAP
A	PRESSURE REDUCING VALVE SELF CONTAINED
X	BACK PRESSURE REDUCING VALVE SELF CONTAINED
X	BACK PRESSURE REDUCING VALVE SELF CONTAINED WITH HAND ADJUSTMENT
X	MOTOR OPERATED
	HAND OPERATED
XEII	CYLINDER OPERATED
	SOLENOID VALVE
<b>★</b>	PRESSURE RELIEF OR SAFETY
#	VACUUM RELIEF
*	TEMPERATURE SAFETY VALVE
X	FLOAT LEVEL VALVE

MIS	C. ABBREVIATIONS
NO NO	NORMALLY OPEN
NC	NORMALLY CLOSED
TYP	TYPICAL
AFF	ABOVE FINISHED FLOOR
EL 1	ELEVATION

	FLUID	COMMODITY CODES
	DENTIFIER	DEFINITION
	D	DRAIN
	DFR	DIESEL FUEL RETURN
	DFR/VENT	DIESEL FUEL RETURN/VENT
	DFS	DIESEL FUEL SUPPLY
	G	GASOLINE
	SAN	SANITARY DRAINAGE
	SWD	STORMWATER DRAINAGE
	VTA	VENT TO ATMOSPHERE
7	The state of the s	

VALVES /	AND PIPING SYMBOLS
SYMBOL	DESCRIPTION
$\bowtie$	GATE VALVE (NORMALLY OPEN)
×	GATE VALVE (NORMALLY CLOSED)
IOI	BALL VALVE (NORMALLY OPEN)
	BALL VALVE (NORMALLY CLOSED)
И	BUTTERFLY VALVE
	GLOBE VALVE
Ķ	DOUBLE LEAF CHECK VALVE
	CHECK VALVE
<u>K</u> ol	BALL CHECK VALVE
¥.	FUSIBLE VALVE
ij	OVERFILL PROTECTION DEVICE
⊢ OR OR 🖑	STRAINER
	ANGLE VALVE
$\triangle$	OS&Y GATE VALVE
-	FLOAT OPERATED OVERFILL LIMITER VALVE
-[0-	QUICK DISCONNECT COUPLER
• •	FLEXIBLE PIPE CONNECTOR
$\longrightarrow \!$	BREAKAWAY FITTING
	3-WAY MIXING VALVE
AAV.▼ X	AUTOMATIC AIR VENT
MAV 🛪	MANUAL AIR VENT
Ū.	THERMOMETER W/ WELL
M	FLEXIBLE CONNECTION
<b></b>	UNION
	FLANGE
□ OR □	CONCENTRIC REDUCER
2	ECCENTRIC REDUCER
]	CAP
	FOOT VALVE
	ANTI-SIPHON VALVE
(2)	FLOW INDICATOR
- U	FUEL FILTER

FIRE P	ROTECTION EQUIPMENT
SYMBOL	DESCRIPTION
X	FIRE EXTINGUISHER (10 kg)

PUMP

CO	NTROL SYMBOLS
SYMBOL	DESCRIPTION
M	MOTOR
M	ACTUATOR
S	SOLENOID

				NOMINAL	Р	IPE SIZES				
mm	Inches		mm	Inches		mm	Inches		mm	Inches
3	1/8		75	3	1	275	11	7	750	30
6	1/4		90	3-1/2	1	300	12	$\exists \vdash$	800	32
10	3/8		100	4	1	350	14	7 [	850	34
12	1/2		112	4-1/2	1	400	16	7 /	900	36
20	3/4	$ \cdot $	125	5	7	450	18		950	38
25	1		150	6	1	500	20	7 [	1000	40
32	1-1/4	$  \  $	175	7	7	550	22	$\sqcap \Gamma$	1100	44
38	1-1/2	1 1	200	8		600	24	7 [	1200	48
50	2	1	225	9	7	650	26	7 [	1300	52
65	2-1/2	<b>1</b>	250	10	1	700	28	7	1400	56
	•					•			-	-

	EQUIPMENT	FUNCTIONAL DESIGNATIONS
	MECHANICAI	L AND PROCESS EQUIPMENT
IDENTIFIER	DEFINITION	NOTES
FEX	FIRE EXTINGUISHER	
HR	HOSE REEL	
HV	HAND/MANUAL VALVE	
P	PUMP	
S	SKID PACKAGE	
STR	STRAINER	
TK	TANK	

	EQUIPMENT SCHEDULE											
•	DESCRIPTION	ON			CAPACITY		-	MOTOR				
TAG	DESCRIPTION	MANUFACTURER	MODEL	FLOW (LPM)	HEAD (M. OF DIESEL OR GASOLINE)	TEMPERATURE RANGE	HAZARDOUS AREA RATING	HP	ĸw	VOLTS	PHASE	COMMENTS/ACCESSORIES
P-P501	UNLOADING PUMP - DIESEL 25KL	BLACKMER	XL1.5A	139	12	-40°C TO 40°C	UNCLASSIFIED	2	1.50	208	3	CONTROLLED BY MAIN PLC THROUGH MAIN PANEL MOTOR STARTERS
P-P502	UNLOADING PUMP - DIESEL 25KL	BLACKMER	XL1.5A	139	12	-40°C TO 40°C	UNCLASSIFIED	2	1.50	208	3	CONTROLLED BY MAIN PLC THROUGH MAIN PANEL MOTOR STARTERS
P-P503	TRANSFER PUMP - DIESEL 25KL	BLACKMER	XRL1.25A	39	26	-40°C TO 40°C	UNCLASSIFIED	1	0.75	208	3	CONTROLLED BY MAIN PLC THROUGH MAIN PANEL MOTOR STARTERS
P-P504	TRANSFER PUMP - DIESEL 25KL	BLACKMER	XRL1.25A	39	26	-40°C TO 40°C	UNCLASSIFIED	1	0.75	208	3	CONTROLLED BY MAIN PLC THROUGH MAIN PANEL MOTOR STARTERS
P-A501	UNLOADING PUMP - DIESEL 5890L	BLACKMER	XL1.5A	139	12	-40°C TO 40°C	CLASS 1 ZONE 2	2	1.50	208	3	CLASSIFIED DUE PROXIMITY TO GASOLINE UNLOADING PUMP.CONTROLLED BY MAIN PLC THROUGH MAIN PANEL MOTOR STARTERS
P-A502	UNLOADING PUMP - GASOLINE 2510L	BLACKMER	XL1.5A	92	6	-40°C TO 40°C	CLASS 1 ZONE 2	1.5	1.12	208	3	CONTROLLED BY MAIN PLC THROUGH MAIN PANEL MOTOR STARTERS
P-A503	DISPENSING PUMP - DIESEL	GPI	M3120-RDP	80	3	-40°C TO 40°C	UNCLASSIFIED	0.33	0.25	120	1	BUNG MOUNTED, FOR USE WITH REMOTE METER AND DISPENSING HEAD
P-A504	DISPENSING PUMP - GASOLINE	GPI	M3120-RDP	80	3	-40°C TO 40°C	CLASS 1 ZONE 2	0.33	0.25	120	1	BUNG MOUNTED, FOR USE WITH REMOTE METER AND DISPENSING HEAD

## DESIGN NOTES

1. FUEL UNLOADING RATES BASED ON CURRENT PREFERRED OPERATIONS OF APPROXIMATELY:

a)#2 DIESEL: 100 LITRES/MINUTE (LPM)

b) GASOLINE: 75 LPM

2. VISCOSITY:

a)#2 DIESEL: 85 TO 5 CENTISTOKES b) GASOLINE: 0.6 CENTISTOKES AVERAGE

3. VAPOUR PRESSURE:

a)#2 DIESEL: LESS THAN 1.4 kPa (2 PSI)

b) GASOLINE - HIGHEST VAPOUR PRESSURE: WINTER GASOLINE WITH REID VP OF 95 kPa (13.8 PSIA)

AT 26°C: VP=60 kPa (10 PSIA)

4. ALL SYSTEMS RATED FOR -40C TO +40C OPERATION

5. MECHANICAL DESIGN IN CONFORMANCE WITH:

a)NATIONAL FIRE CODE OF CANADA 2010 & MB FC REG. 155/2011

b) CCME ENVIRONMENTAL CODE OF PRACTICE FOR ABOVEGROUND AND UNDERGROUND STORAGE TANK SYSTEMS CONTAINING PETROLEUM AND ALLIED PETROLEUM PRODUCTS

c)MANITOBA REGULATION 188/2001- THE DANGEROUS GOODS HANDLING AND TRANSPORTATION ACT.

d)CSA B139-09 - INSTALLATION CODE FOR OIL-BURNING APPLIANCES

e)NFPA 20 - INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION

f) NFPA 30A: CODE FOR MOTOR FUEL DISPENSING FACILITIES AND REPAIR GARAGES

## CONTROL - SEQUENCE OF OPERATIONS

REFER TO SPECIFICATIONS

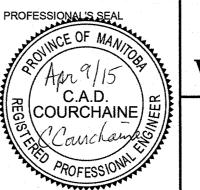
DRAWING NUMBER REFERENCE DRAWINGS

Certificate of Authorization AECOM Canada Ltd. No. 4671 Date: Apr 9/15

LOCATION APPROVED UNDERGROUND STRUCTURES		
SUPR. U/G STRUCTURES DATE COMMITTEE		
NOTE: LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING		
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SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.	O NO.	ISSUED FOR T
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	RUCTION.	NO.	REVISIONS	YY/MM/DD	BY	

AECOM DESIGNED CHECKED APPROVED RELEASED FOR CONSTRUCTION HOR. SCALE CONSULTANT DRAWING NO. VERT. SCALE



Winnipeg

## BID OPPORTUNITY NO. 231-2015 THE CITY OF WINNIPEG

SHOAL LAKE **INTAKE FUEL STORAGE AND DELIVERY SYSTEM REHABILITATION** 

MECHANICAL LEGENDS, ABBREVIATIONS DESIGN NOTES & SCHEDULES CITY DRAWING NUMBER

1-0600A-M0001-001 0

WATER AND WASTE DEPARTMENT