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STAFF REPORT: RECREATION DEPARTMENT

REPORT TO:	**INFRASTRUCTURE & RECREATION COMMITTEE**
MEETING DATE:	**February 12, 2013**
REPORT NO.:	**DOR.13.05**
SUBJECT:	**Northwinds Beach Washroom**
PREPARED BY:	**Terry Green Manager of Parks & Trails**

A. Recommendations

THAT Council receive Staff Report DOR.13.05 “Northwinds Beach Washrooms” for information purposes.

B. Background

C.C Tatham and Associates were retained to complete the design for an upgraded septic holding tank and pump chamber for the Northwinds Beach Washroom facility. Town staff has received the design that is recommending the town install a 10,000 litre holding tank with a separate pump chamber. This design and recommendation has been reviewed by the Manager of Water and Waste Water Services, John Caswell and through that review it was endorsed that this design is appropriate for this location.

Northwinds Beach is the Town’s most popular waterfront property and has high traffic flow throughout the summer season. The last 2 years staff had portable toilets placed at the property for the months of July and August due to mechanical problems with the existing system. The existing system does not have the capacity to pump the increased levels of waste water to the higher Town sanitary system. This issue has increased with the influx of visitors, and it has been identified that a number of other materials such as bathing suits, sunglasses, diapers, etc have been flushed resulting in clogging of the pump causing an overflow of the existing holding tank. Last year the washrooms were open for the first two weeks of June, during those two weeks staff spent 16 hours in repair time due to failure and clogging at a cost of $400 in staff time. Total pump repairs for the two week period amounted to $785. Each time the pump fails or clogs the chamber is pumped out for access with an additional cost of $100 per pump out and in this case required four pump outs for an additional $400 totaling $1,585 for the two week period.

In 2012, the supply of portable toilets at Northwinds beach for July and August were a $4,233 expense. The portable toilets used in the past do not allow for accessible washrooms for the public or visitors with young children to be able to attend to their needs while at the Town’s beach. Accessible units are available however at an increased cost. It has been identified and comments received that the appearance of the portable toilets are undesirable at this waterfront property.

C. The Blue Mountains' Strategic Plan

Addressing the Town's municipal infrastructure needs

Supporting the development of social and recreational programs to meet the broad range of needs in the community

D. Environmental Impacts

The upgrade of the sanitary system at Northwinds Beach will allow for the adequate levels of capacity. Providing this capacity will ensure that protection to the environment and the shoreline is achieved.

E. Financial Impact

Staff suggests that upgrades to the Northwinds Beach sanitary system will provide adequate capacity. The cost of project is budgeted at $30,000 in the 2013 proposed budget and it is expected that the water and sewer for July and August based on the consumption rate data from C.C Tatham to be roughly $1,200 with the new system. However, in 2012 without the washrooms being open, the billing based on the Flat Rate was $168.24 making the expected difference of approximately $1,033 between use of washrooms during July and August and washrooms being closed during July and August dependant on use.

The installation of a upgraded sanitary system based on the conservative costs of $4370 that includes portable toilet rentals and water & Waste Water fees has a pay back of approximately 7 years based on the $30,000 project cost. This does not include any repair costs and only factors in the use of portable toilets during the months of July and August. To eliminate most repair and maintenance costs and use portable toilet's from June through to September at 13 weeks times $730 per week rental is $9,490 for use of portable toilet only. The pay back is approximately 3 to 3 ½ years.

The 2013 Budget anticipates that the $30,000 be funded by 100% taxation.

F. In Consultation With

John Caswell Water & Waste Water Services
Shawn Everitt Director of Recreation
Darcy Chapman Financial Services
Sherri Adams Financial Services

G. Attached

1. Letter from C.C. Tatham& Associates Ltd. (Kevin Sansom, B.A.Sc., P.Eng.)
2. Site Servicing Plan drawing SS-1
3. Holding Tank Design Sheet (2 pages)
4. Sewage Pumping Station Design Sheet

Respectfully submitted,

Terry Green Manager of Parks & Trails	Shawn Everitt, Director of Recreation

For more information, please contact:

Terry Green
Email Address tgreen@thebluemountains.ca
Business Telephone 519-599-1231

DOR.13.05
Attachment #1

January 22, 2013

via email and courier
CCTA File 109115-13

Terry Green
Manager of Parks and Trails
Town of the Blue Mountains
32 Mill Street, P.O. Box 310
Thornbury, ON N0H 2P0

Re: Town of The Blue Mountains
Northwinds Beach Washrooms
Sewage Pumping Station Replacement

Dear Terry:

We have enclosed a draft submission package for the replacement of the existing sewage pumping station at the Northwinds Beach Washrooms. The package includes the following:

- Site Servicing Plan drawing SS-1;
- Holding Tank Size Design Sheet; and
- Sewage Pumping Station Design Sheet.

The work includes the removal of the existing 1.2 m diameter sewage pumping station and the installation of a 9,000 L holding tank and a separate 1.5m concrete pump chamber. The new holding tank, pump chamber and electrical works will be connected to the existing plumbing and electrical panel from the existing washrooms building.

The volume of the holding tank was determined based on three design criteria as shown on the Holding Tank Size Design Sheet which includes fixture counts, design populations and historical water consumption. The historical water consumption (as recorded between July and August 2009) produced the largest required volume of 9,700 L, keeping in mind that the OBC requires a minimum volume of 9000 L for a holding tank.

The design of the pump chamber was determined based on Ministry Guidelines and is also based on historical water consumption readings. The chamber is sized so that the pump will operate an average of every 10 minutes during peak flows (summer day time). The detail calculations are shown on the Pump Chamber Design Sheet.

Based on our previous discussions, we understand the Town wishes to utilize the existing Myers MG200 Grinder Pumps as part of the new system. Therefore, as part of our design we confirmed the existing pump has more than sufficient capacity to service the existing washroom facility.

Please note, MTO and MOE approval is not required for the improvements described above or shown on the design drawings. An MTO Approval Permit is only required if the work is more than 2 m inside the Highway 26 right-of-way and an MOE Permit is only required if the design flows exceed 10,000 L/day. Therefore, this work is considered plumbing and only the appropriate plumbing permit will be require from the Town Building Department.

Please review the enclosed submission and let me know if you have any comments. In the meantime, if you have any questions, please let me know.

Yours truly,
C.C. Tatham & Associates Ltd.

Kevin Sansom, B.A.Sc., P.Eng.
Project Manager
PM
Encl.

I:\2009 Projects\109115 - 13 Northwind Beach Washroom Topo\Documents\L-Green001.doc

DOR.13.05
Attachment # 2

GENERAL NOTES

A. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH TOWN OF THE BLUE MOUNTAINS STANDARDS, AND OPS STANDARDS AND OBC. WHERE CONFLICT OCCURS, OBC STANDARDS TO GOVERN UNLESS OTHERWISE NOTED.
B. THE CONTRACTOR MUST OBTAIN A ROAD OCCUPANCY PERMIT FROM PUBLIC WORKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
C. THE OWNER'S ENGINEER SHALL PROVIDE BENCHMARK ELEVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DETAILED LAYOUT OF THE WORK.
D. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE SUPPLY OF TEMPORARY WATER AND POWER.
E. DEWATERING TO BE CARRIED OUT IN ACCORDANCE WITH OPSS 517 AND OPSS 518. MAINTAIN ALL TRENCHES IN A DRY CONDITION. AN MOE PERMIT TO TAKE WATER (PTTW) HAS NOT BEEN OBTAINED FOR THIS PROJECT. IF THE CONTRACTOR CANNOT MAINTAIN DRY TRENCH CONDITIONS WITH CONVENTIONAL PUMP TECHNIQUES WHILE TAKING LESS THAN 50,000 L/DAY, THEN A PTTW MUST BE OBTAINED FROM THE MINISTRY.
F. ALL ENGINE DRIVEN PUMPS TO BE ADEQUATELY SILENCED, SUITABLE FOR OPERATION IN A RESIDENTIAL DISTRICT.
G. PIPE SUPPORT AT ALL STRUCTURES TO OPSD 708.020.
H. TRENCH BACKFILL TO BE SELECT NATIVE MATERIAL OR IMPORTED SELECT SUBGRADE MATERIAL TO OPSS 1010. BACKFILL TO BE PLACED IN MINIMUM 200 mm THICK LIFTS AND COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
I. PIPE EMBEDMENT TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S SPMDD. BACKFILL AND EMBEDMENT TO OPSD 802.010 (FLEXIBLE PIPE), GRANULAR 'A' EMBEDMENT OR OPSD 802.031 (RIGID PIPE) CLASS "B", GRANULAR 'A' BEDDING, GRANULAR 'B' COVER (MAX. AGGREGATE SIZE 25 mm). MINIMUM BEDDING DEPTH 150 mm, MINIMUM COVER DEPTH 300 mm ON ALL PIPES. WHERE EXCESSIVELY WET OR POOR SUBGRADE IS ENCOUNTERED AT THE INVERT LEVEL, IT MAY BE NECESSARY TO INCREASE THE BEDDING THICKNESS.
J. CLEAR STONE COMPLETELY WRAPPED IN FILTER FABRIC CAN BE SUBSTITUTED FOR EMBEDMENT MATERIAL IF APPROVED BY THE ENGINEER.
K. DISTURBED AREAS TO BE REINSTATED TO PREVIOUS CONDITION OR BETTER.
L. REINSTATEMENT OF ALL DISTURBED BOULEVARDS AND DITCHES TO INCLUDE REGRADING, PLACEMENT OF 150 mm TOPSOIL AND SOD IN ACCORDANCE WITH OPSS 802 AND OPSS 803. SOD TO BE STAKED WHERE NECESSARY TO AVOID MOVEMENT.
M. THE CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL EXISTING INFRASTRUCTURE/FACILITIES AS WELL AS NOTIFYING ALL UTILITY COMPANIES PRIOR TO COMMENCING WORK AND CO-ORDINATE CONSTRUCTION ACCORDINGLY.
N. ALL ON-SITE MATERIAL SHALL BE PROPERLY STORED, SECURED, MONITORED AND COVERED AS REQUIRED. SPECIFICALLY, ALL PVC PIPE SHALL BE COVERED WHILE STORED ON-SITE.
O. ALL PIPES TO BE PROTECTED DURING CONSTRUCTION IN ACCORDANCE WITH OPSD 808.010.

SANITARY SEWER AND PUMPING STATION

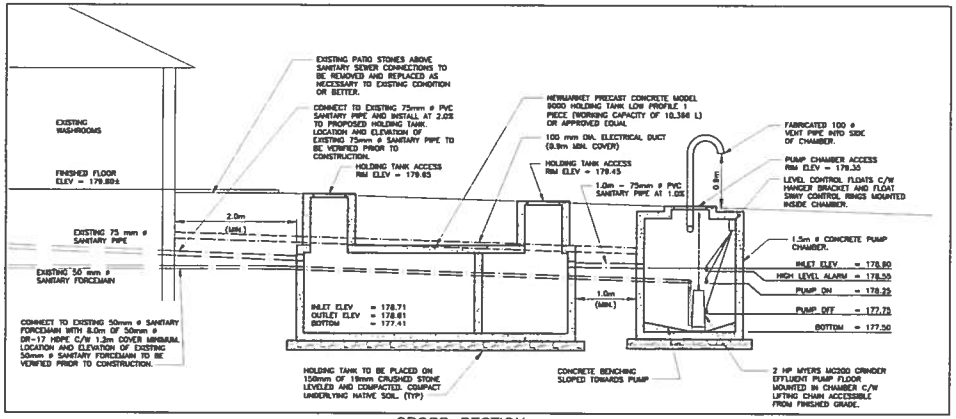
A. MAINTENANCE HOLES TO OPSD 701.010.
B. MAINTENANCE HOLE FRAME AND COVER TO OPSD 401.010 TYPE 'A' CLOSED COVER. WHERE SPECIFIED, WATER TIGHT FRAME AND GRATE TO OPSD 401.050 SHALL BE USED.
C. ALL MATERIAL TO COMPLY WITH CSA, OPSS AND TOWN STANDARDS.
D. SANITARY SEWER – PVC DR 35.
E. SANITARY FORCEMAIN – DR 17 HDPE.
F. PUMP – 2 H.P. MYERS MC200 GRINDER PUMP. CONTROL PANEL TO BE PROVIDED BY PUMP SUPPLIER AND BE EQUIPPED WITH AN AUTOMATIC RESTART THE PUMP IN THE EVENT OF IT IS SHUT DOWN DURING POWER OUTAGES.

SILTATION AND EROSION CONTROL

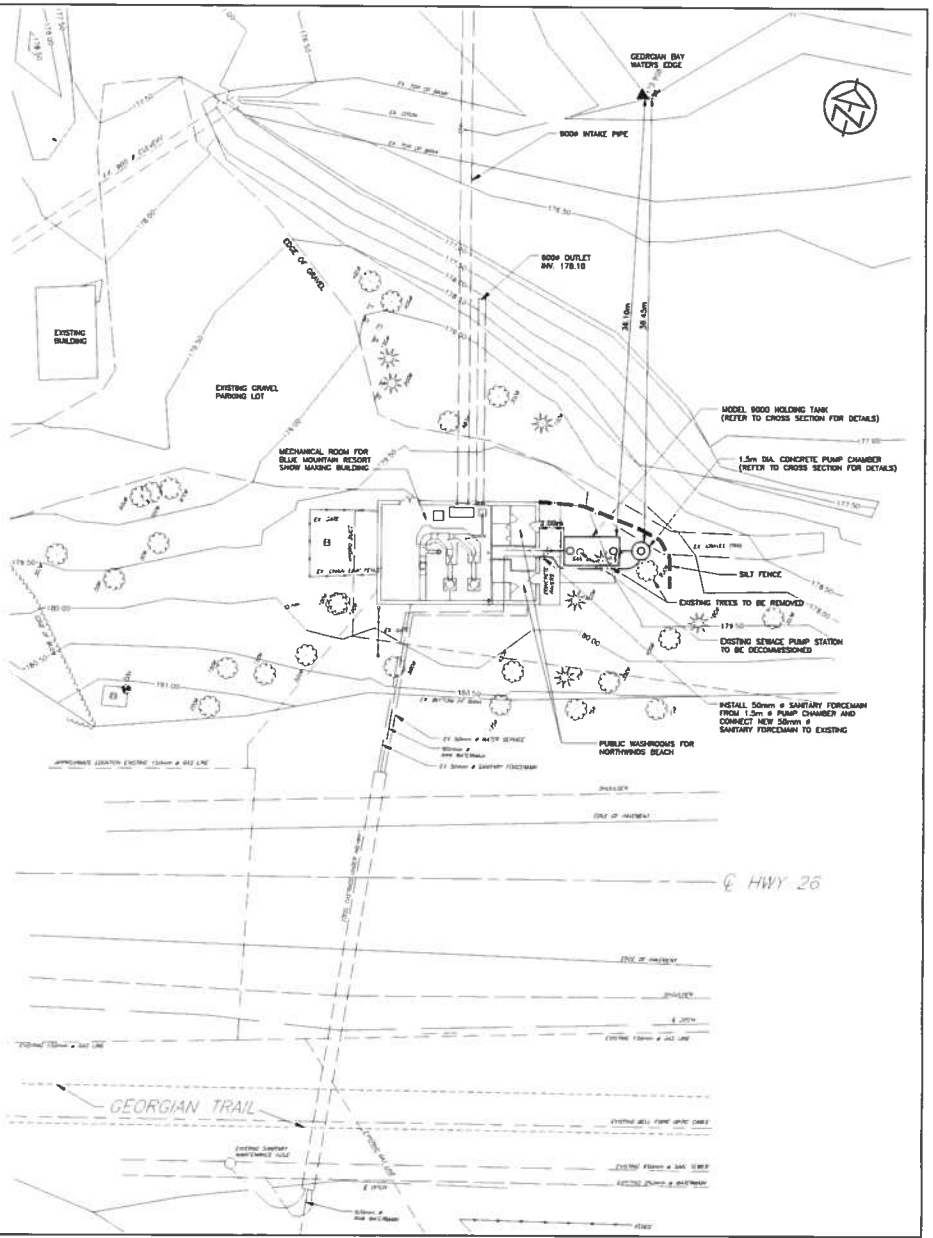
A. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED. SEDIMENT AND EROSION CONTROL MEASURES THAT ARE DESIGNED TO CONTROL RUNOFF FROM SPECIFIC AREAS MUST BE INSTALLED PRIOR TO ANY DISTURBANCE OF THAT PART OF THE SITE. THE LOCATION OF ALL SILTATION AND EROSION CONTROL WORKS TO BE REVIEWED ON SITE AND MAY BE REVISED AS DIRECTED BY THE ENGINEER.

B. SILT FENCE TO BE INSTALLED IN ACCORDANCE AS PER OPSD 219.110 (HEAVY DUTY).

C. EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED BY THE CONTRACTOR ONCE GROUND COVER IS ESTABLISHED AND LANDSCAPING IS COMPLETE AND APPROVED BY THE ENGINEER.



CROSS SECTION
SCALE 1:40



LEGEND

CONTRACT DRAWINGS
CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TBM1 – ELEVATION 181.483
CONCRETE CULVERT UNDER HIGHWAY 26, 0.3KM NW OF JUNCTION OF HIGHWAY 26 WITH BLUE MOUNTAIN PARK ROAD, TABLET IN SOUTH FACE OF CULVERT AT SOUTH END, 80CM BELOW TOP AND 43CM EAST OF WEST EDGE OF CULVERT.

TBM2 – ELEVATION 178.965
CUT CROSS ON NORTH WEST CORNER OF CONCRETE BRIDGE CULVERT WEST OF NORTHWINDS BEACH WASHROOM FACILITY.

TBM3 – ELEVATION 181.447
CUT CROSS ON NORTH EAST CORNER OF TRANSFORMER PAD. ON WEST SIDE OF NORTHWINDS WASHROOM FACILITY.

NO.	REVISIONS	DATE	INITIAL
1.	FIRST SUBMISSION	DEC/12	KRS

APPROVED

NORTHWINDS BEACH
WASHROOMS
TOWN OF THE BLUE MOUNTAINS

GENERAL SERVICING PLAN

C.C. Tatham & Associates Ltd.
Consulting Engineers
Collingwood Bracebridge Orillia Barrie

SCALE: 1 : 200
JOB NO. 109115-13
DESIGN: JSB
CHECKED: KRS
DRAWN: JSB
DATE: JULY/2012
DWG. SS-1

DOR.13.05
Attachment # 3

Town of the Blue Mountains
Northwinds Beach Washrooms
Holding Tank Size Design Sheet

Scenario 1 - Fixture Count

	Number	Fixture Load	Total
Urinal	1	1.5	1.5
Water Closet (w/flush tank)	6	4.0	24.0
Sink	2	1.5	3.0
Total Fixtures			28.5

Fixture load based on Table 7.4.9.3. of the OBC

L per fixture 50 L (Table 8.2.1.3.A. of the OBC)

Flow for Fixture Units = Total fixtures x 50
Q = 1,425 L / day

Holding Tank Volume = Q x 2 (8.2.2.3.(1) (a) of the OBC)
= **2,850 L** (use minimum 9,000 L Holding Tank As per 8.2.2.4.(2) (a) of the OBC)

Scenario 2 - Population and OBC

Parking spaces 75 (Provided the by the Town of the Blue Mountains)
Ave. people per car 3 (Estimated)
People per day 225

Public washrooms (L) 20 L (Table 8.2.1.3.B. of OBC)

Flow (L / day) = People per day x 20 L
Q = 4,500 L

Holding Tank Volume = Q x 2 (8.2.2.3.(1) (a) of the OBC)
= **9,000 L**

Scenario 3 - Historical data for Water Consumption

Volume = 291 cu m (Highest record water consumption volume provided by the Town between the July and August 2009)

Consumption Period = 60 days

Cubic meters per day = 4.85 cu m / day

Flow (L / day) Q = 4,850 L

Holding Tank Volume = Q x 2 (8.2.2.3.(1) (a) of the OBC)
= **9,700 L**

Therefore: Holding tank working volume to be equal to or greater than 9,700 L.

C.C. Tatham & Associates Ltd. Consulting Engineers Collingwood Bracebridge Orillia Barrie	Project: North Winds Washrooms	Date Revised: January 12, 2013
	File No.: 109115-13	Designed: PM
	Subject: Pump Design Sheet	Checked: KRS

Design Flow Criteria:

Highest Recorded Water Consumption = 4.85 m^3/d (based on historical water consumption between July and August 20

Pumping Station Design:

On/Off Depth:

MOE Guidelines suggest that the volume between pump on/off is 15% of flow.
This provides a pump cycle time of approximately 10 minutes.

Volume = 0.15 * 4.85
V = 0.728 m^3

Dia. of Pump Station = 1.5 m

Area of 1.5m dia. sump = $\frac{pi*D^2}{4}$
= 1.77 m^2

Depth between pump on/off = volume/area of manhole

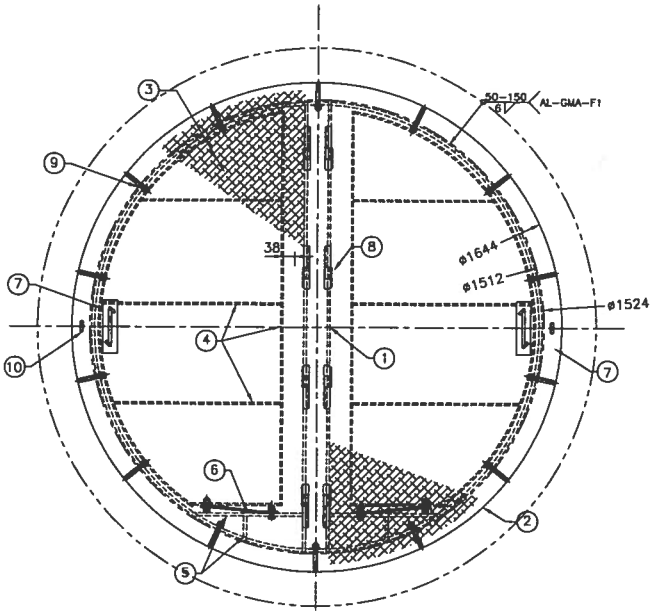
d = 0.41 m say 0.5 m

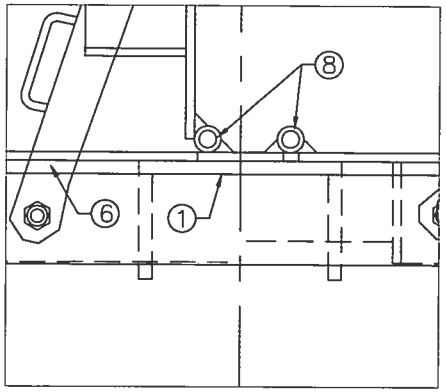
75 mm dia. Inlet	178.60 m
High Level Alarm	178.55 m
Pump On	178.25 m
Average	178.00 m
Pump Off	177.75 m
Bottom of Sump	177.50 m

Pump Selection:

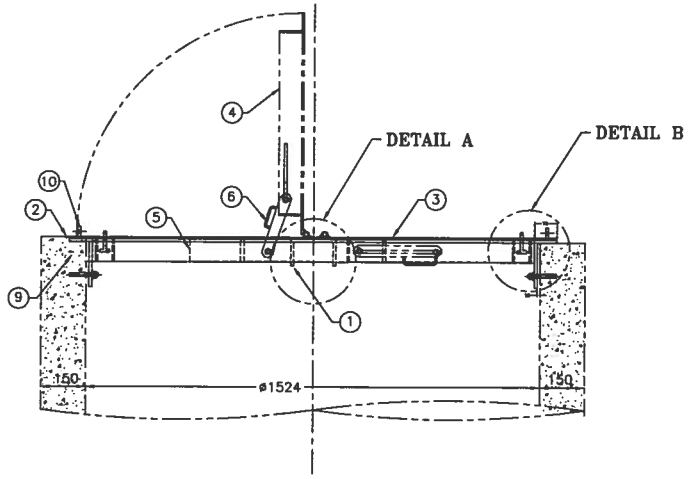
Pump to be Myers 2.0 HP MRGD 200 Grinder. Pump to be provided by the Town.

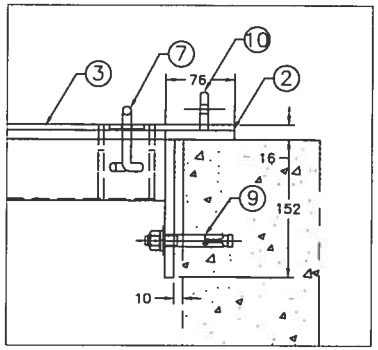
DOR.13.05
Attachment # 4





DETAIL A





DETAIL B

MSU
MISSISSAUGA LTD.
PHONE: (905) 823-4340
FAX: (905) 823-4947
WATTS: (800) 268-5336
WEBSITE: www.msumississauga.com

#	QTY.	MATERIAL	DESCRIPTION
1	1	ALUM. 6061-T6	152X89X10mm CHANNEL SUPPORT WELD TO ITEM #2
2	1	ALUM. 6061-T6	1-76X10&1-152x10mm F.B. FRAME ROLLED AND WELDED CONSTRUCTION
3	3	ALUM. 6061-T6	6.35mm TREAD PLATE
4	12	ALUM. 6061-T6	76 X 6mm REINFORCING FLAT BAR
5	4	ALUM. 6061-T6	76 X 10mm FLAT BAR FRAME 76 X 13mm FLAT BAR
6	2	STAINLESS STEEL 304	90° HOLD OPEN ARM
7	2	ALUM. 6061-T6	RECESSED ROD FORMED HANDLE C/W WELDED UNDERSIDE BOX
8	8	ALUM. 6061-T6	WELD ON HINGES
9	14	STAINLESS STEEL 304	12#X95mm WEDGE ANCHORS C/W NUT, FLAT & LOCK WASHERS
10	2	ALUM. 6061-T6	LOCK TAB

NOTE: 1) ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL RECEIVE 2 COATS OF BITUMINOUS PAINT.
2) WELDING SHALL CONFORM TO CSA W47.2-M1987 CSA W59.2-M1991
3) HATCH HAS BEEN DESIGNED TO WITHSTAND 300 LBS.\SQ. FT. LIVE LOAD

PROJECT	LOCATION PROJECT
CONTRACTOR	HAZCO ENVIRONMENTAL SERVICES
ARCHT'/ENG'R	ENGINEER
QTY.	1
PROJECT NO.	#

TITLE: MSU ALUM. 2 DOOR CIRCLE HATCH FOR 1524mm (60") DIA. MANHOLE

REVISION NO.	DATE	BY
1		
2		

DATE: 12/21/10
DWG. BY: SCJ
P.O. NO.: 9446
SCALE: NTS
DESIGNED BY:
DWG. NO.: TOPC260