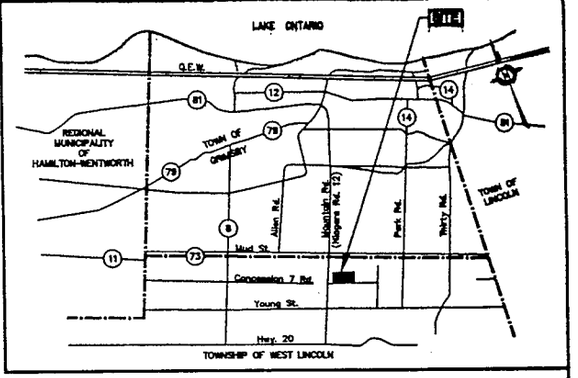
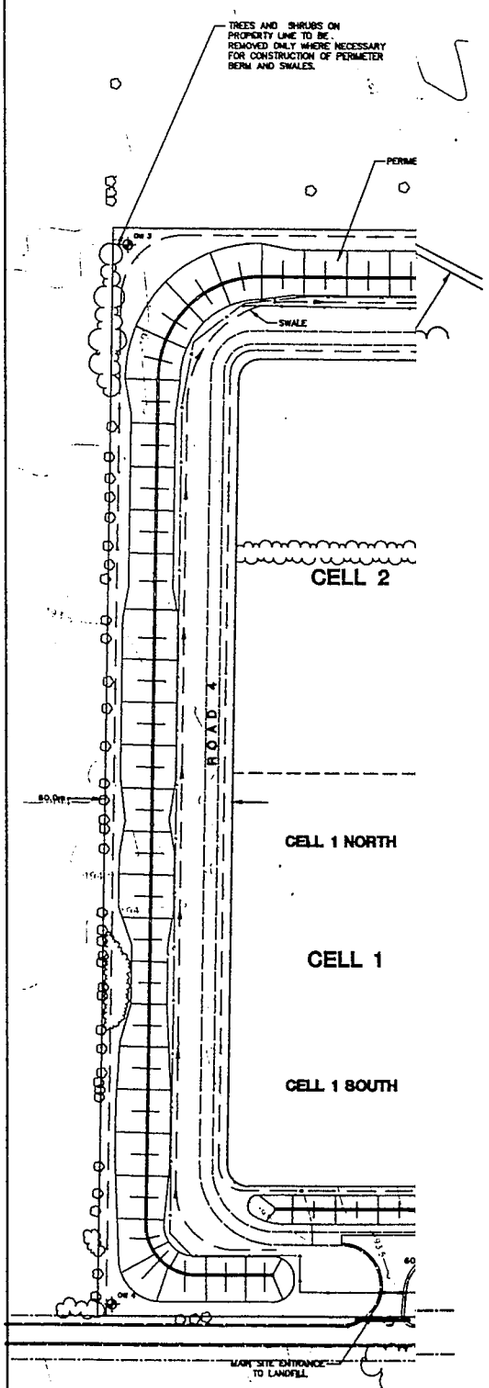
# SCHEDULE "B"




LEGEND

- WASTE DISPOSAL FILL AREA (18.7 ha)
- TOTAL SITE AREA (41.7 ha)
- TREE/BUSH AREA (TO BE PRESERVED WHERE POSSIBLE)
- EARTH BERM
- PERIMETER DRAINAGE DITCH
- 192 EXISTING CONTOURS
- CHAIN LINK FENCE
- TEMPORARY SILT FENCING
- LITTER CONTROL FENCE
- PERIMETER ACCESS ROAD
- CELL 3 CELL AREA
- BUILDINGS TO BE CONSTRUCTED OR MAINTAINED
- MONITORING WELLS
- P.W. PUMPING WELL

50 75 100 metres

NOTES : 1. Bench Mark- TEMPORARY BENCHMARK ESTABLISHED OCTOB X-CROSS ON TOP OF NORTH-WEST CORNER OF SOUTH CO # 3 LOCATED ALONG CONCESSION ROAD 7 AS SHOWN ON

2. CONTRACTOR TO MAINTAIN SNOW FENCE AROUND ALL MONITO OF THIS CONTRACT. ANY WELLS DAMAGED BY CONTRACTOR W CONTRACTOR'S EXPENSE.

NDFILL SITE

PROCTOR & REDFERN LIMITED
Consulting Engineers & Planners

Town of Grimsby
Engineering
Department of Public Works

| DESIGNED | C.J.C. | DATE NOV 1994 | SCALE HORIZ. VERT. | DRAWING No. |
|---|---|---|---|---|
| CHECKED | | | 1:1500 | 3 OF 64 |
| DRAWN | N.E.R. | FEB.'95 | | |

0400 File No. 942131

# SCHEDULE "C"

PROCTOR & REDFERN LIMITED
Consulting Engineers & Planners

NOTES:

1. SEE DRAWINGS L3 TO L5 FOR AREA LOCATIONS AI

2. CONTRACTOR TO INTERMIX SPECIES TYPE IN THE F

NDFILL SITE

SHEET

**Town of Grimsby**
Engineering
**Department of Public Works**

| | | DATE | SCALE HORIZ. | SCALE VERT. | DRAWING No. |
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| DESIGNED | | | | | A1-94219-L1 |
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| DRAWN | | March 1995 | | | |

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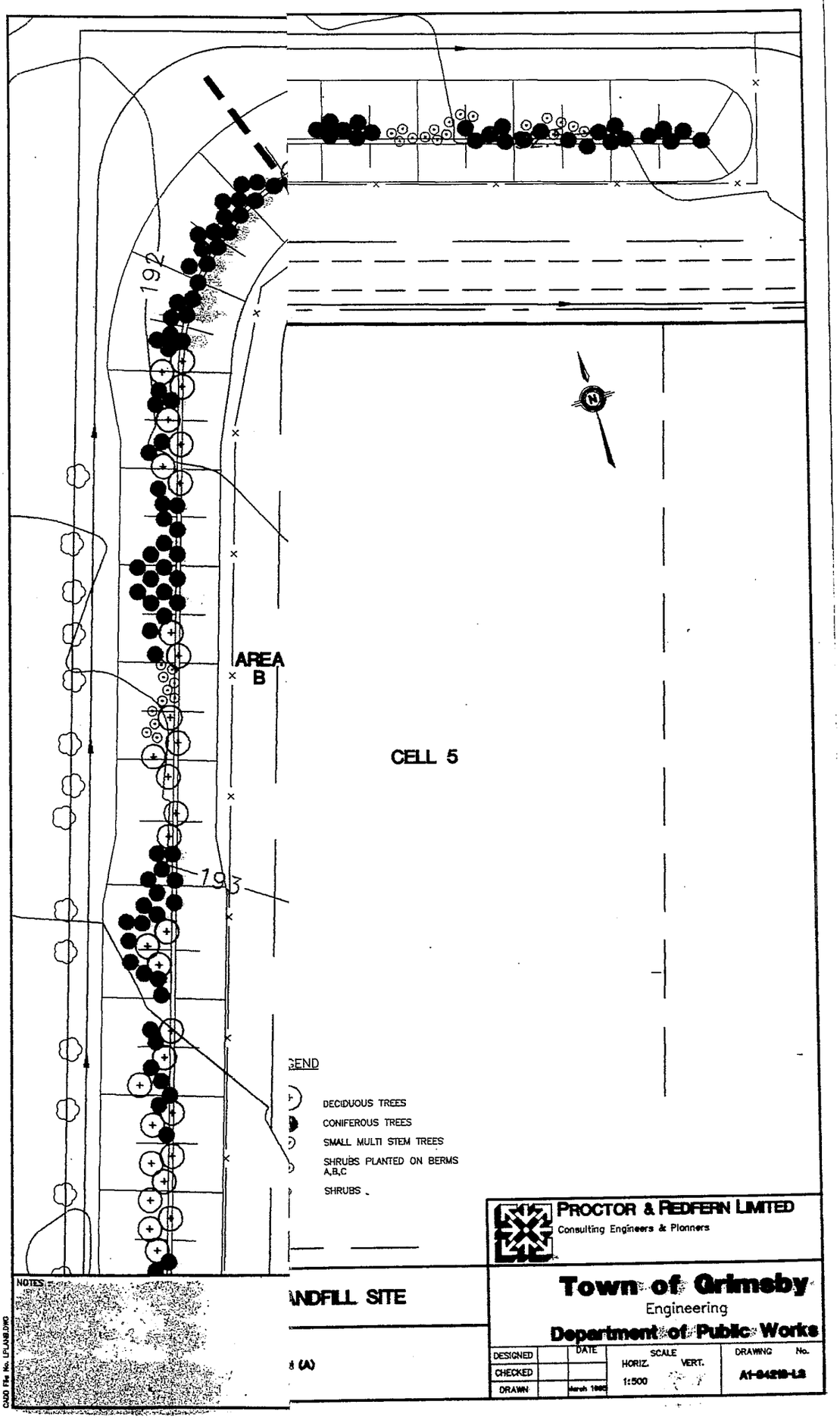


PROCTOR & REDFERN LIMITED
Consulting Engineers & Planners

**Town of Grimsby**
Engineering
**Department of Public Works**

| | | DATE | SCALE HORIZ. | VERT. | DRAWING No. |
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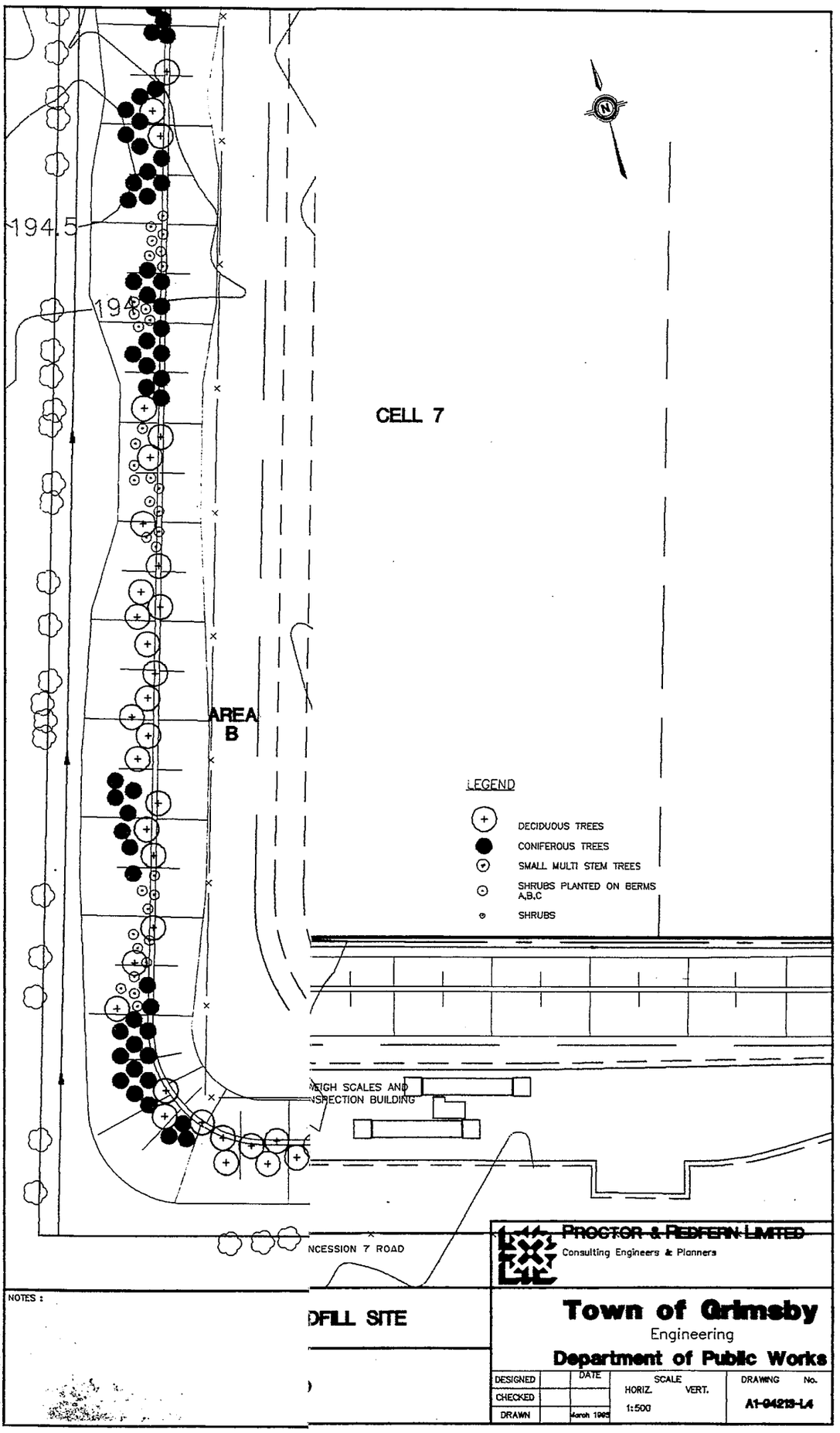
| DRAWN | | March 1995 | | | |




NOTES :

DFILL SITE

PROCTOR & REDFERN LIMITED
Consulting Engineers & Planners

**Town of Grimsby**
Engineering
**Department of Public Works**

| | | DATE | SCALE | | DRAWING No. |
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| DRAWN | | March 1995 | | | |

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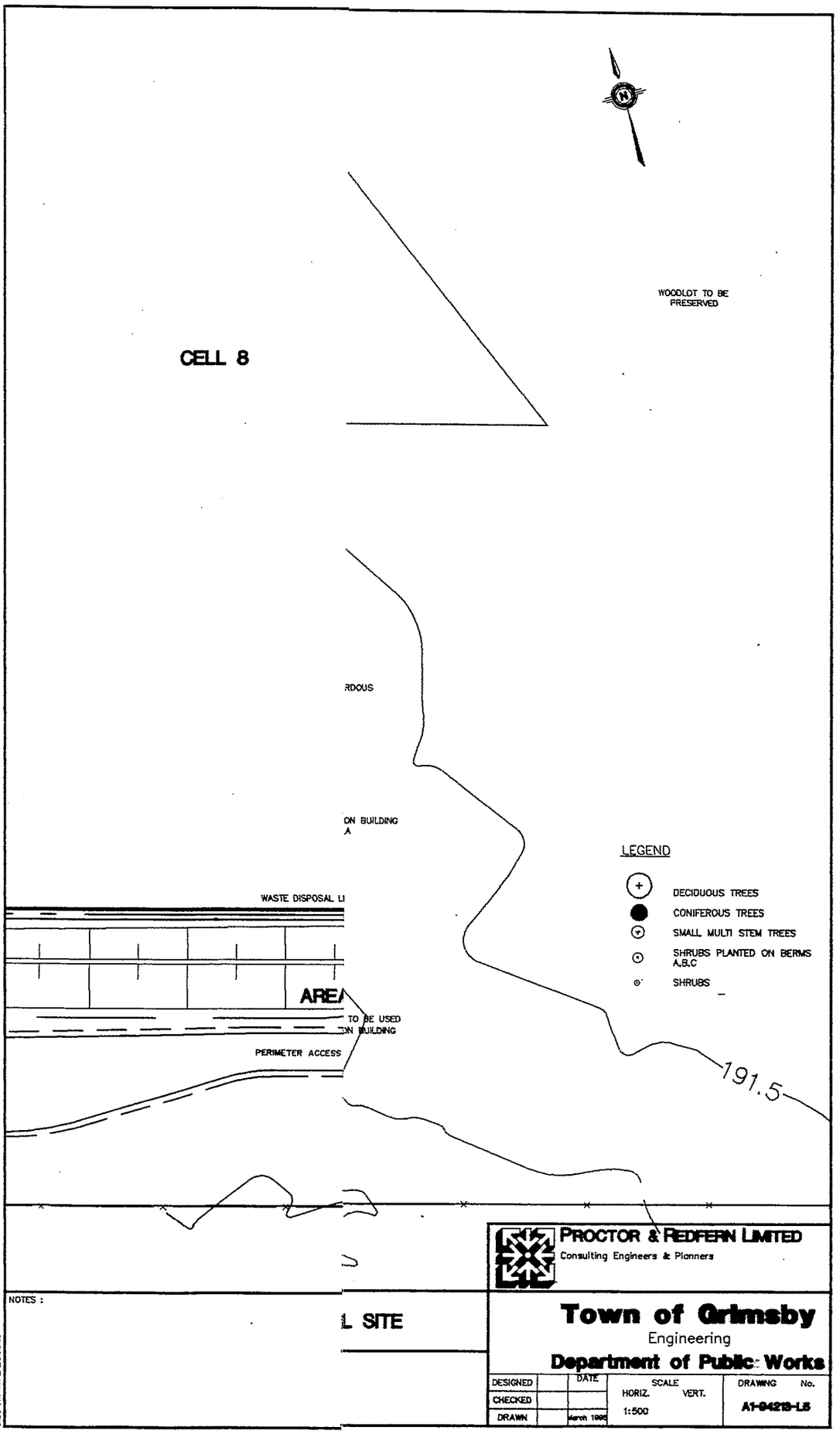
WOODLOT TO BE PRESERVED
CELL 8
RDOUS
ON BUILDING A
WASTE DISPOSAL LI
AREA
TO BE USED
ON BUILDING
PERIMETER ACCESS
191.5
LEGEND
DECIDUOUS TREES
CONIFEROUS TREES
SMALL MULTI STEM TREES
SHRUBS PLANTED ON BERMS A,B,C
SHRUBS
L SITE
NOTES :
PROCTOR & REDFERN LIMITED
Consulting Engineers & Planners
Town of Grimsby
Engineering
Department of Public Works
DESIGNED
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DRAWN
DATE
March 1995
SCALE
HORIZ. VERT.
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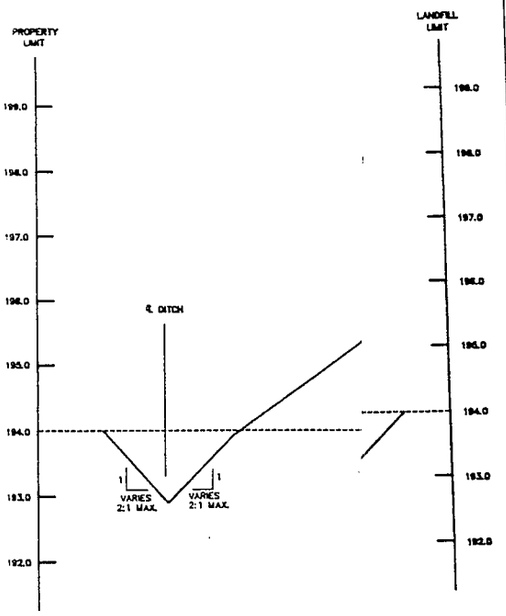
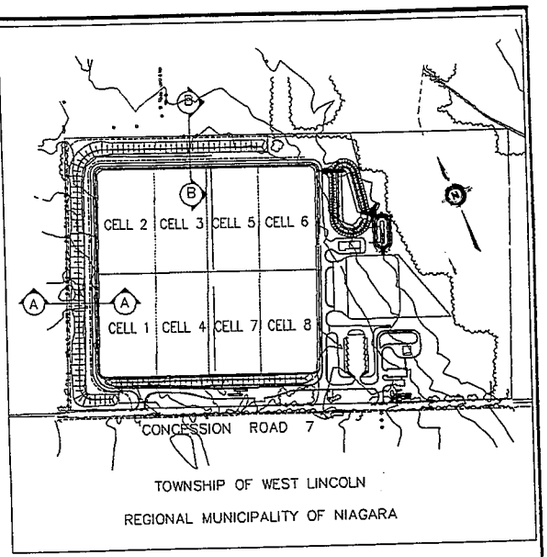
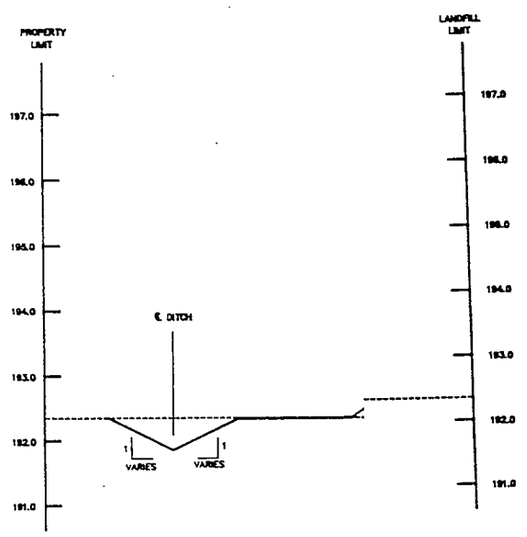
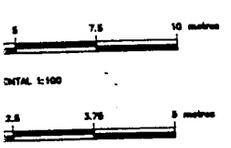
DRAWING No.
A1-94213-L5
CADD File No. LPLAN8.DWG

# SCHEDULE "C1"




NOTES :

1. ALL FILL USED IN THE CONSTRUCTION OF BERMS AND SHALL BE SITE EXCAVATED MATERIAL REMOVED FROM AND CELL 3. COMPACT FILL TO 95% SPD.
2. FOR TYPICAL CROSS SECTION DETAILS OF ROADS 3 A TO DRAWING 51.
3. CONTRACTOR SHALL PLACE TOPSOIL AND SEED ALL E SLOPES AS SOON AS POSSIBLE FOLLOWING THE COMP EARTHWORKS AND GRADING, WEATHER PERMITTING.
4. SEE ROAD PLAN PROFILES FOR CROSS SECTIO

# NDFILL SITE

# IONS

PROCTOR & REDFERN LIMITED
Consulting Engineers & Planners

**Town of Grimsby**
Engineering
**Department of Public Works**

| | | DATE | SCALE HORIZ. | SCALE VERT. | DRAWING No. |
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90 File No. SECTIONS

# SCHEDULE "D"

Ontario

Ministry of Environment and Energy

Ministère de l'Environnement et de l'Énergie

*PROVISIONAL CERTIFICATE OF APPROVAL*
*FOR A WASTE DISPOSAL SITE*
*NO. A 121215*


*Under the Environmental Protection Act and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:*

The Towns of Grimsby, Lincoln, Pelham
and the Township of West Lincoln
c/o The Board of Management
160 Livingston Avenue
P.O. Box 159
Grimsby, Ontario
L3M 4G3

*for the use and operation* of a 15.7 ha landfilling site within a total site area of 41.57 ha.

*all in accordance with the following plans and specifications:*

As per the attached Schedule "A"

*Located:* Part of Lots 6 and 7 and Part of
Unopened Road Allowance between Lots 6 and 7, Concession 7
Township of West Lincoln

*which includes the use of the site only for the* disposal *of the following categories of waste (Note: Use of the site or additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval)* non-hazardous domestic, municipal, commercial, institutional and solid industrial waste

*and subject to the following conditions:*

**DEFINITIONS OF TERMS**

For the purpose of this Certificate of Approval:

1.1 "Director" means one or more of the persons who from time to time are so designated for the purpose of Section 30 of the Environmental Protection Act (EPA).

1.2 "Best Management Practices" means an approach to managing water quality as described in the June 1991 provincial document entitled "Stormwater Quality Best Management Practices".

2.2 The landfill shall be designed, developed, and operated in accordance with the conceptual design outlined in the Reports listed in Schedule "A" of this Certificate of Approval. The final design may be optimized within the range allowed in these Conditions of Approval.

2.3 The waste to be received at the site for disposal is restricted to non-hazardous domestic, municipal, commercial, institutional and solid industrial waste.

2.4 No liquid industrial wastes or hazardous wastes, as defined under Reg. 347, shall be disposed of in the waste disposal fill area of the site.

2.5 On an emergency basis, dewatered sludge from Regional Niagara water treatment plants and pollution control plants, located in Grimsby, Lincoln, Pelham and West Lincoln, and acceptable to the Board of Management may be accepted for disposal at the site. A sludge acceptance and handling protocol shall be developed and incorporated into the Design & Operations Manual.

2.6 Only wastes generated within the geographical boundaries of Grimsby, Lincoln, Pelham and West Lincoln may be received for disposal at the site. An application pursuant to Section 30, EPA will be required to amend this restriction.

2.7 Notwithstanding Clause 2.6, on an emergency basis, non-hazardous domestic, municipal, commercial, institutional and solid industrial waste generated within the Regional Niagara municipalities may be accepted, subject to concurrence by the Board of Management after consultation with the CLC and approval by the Director, pursuant to Section 31, EPA.

2.8 Subject to the Approval of the Regional Director, the proponent may establish and operate at the site a compost area for leaf and yard waste composting. The compost product may be used on-site for soil improvement. The proponent will adhere to MOEE guidelines for the establishment and operation of a leaf and yard waste composting area.

2.9 Subject to the Approval of the Regional Director, the proponent may establish and operate at the site a depot for the collection, temporary storage, and transfer of household hazardous waste. The proponent will adhere to MOEE guidelines for the establishment and operation of a household hazardous waste facility.

2.10 Copies of the applications and supporting documentation required by conditions 2.8 and 2.9 shall be provided to the CLC for their information.

3.2 Construction work schedules shall be submitted to the CLC and the Director for information.

3.3 A letter from an appropriately qualified engineer shall be submitted to the CLC and the Director stating that the facilities have been constructed in accordance with the approved design.

3.4 The following groundwater observation wells shall be properly sealed prior to the cell excavation in accordance with the protocol in Schedule "E":

| | | |
|---|---|---|
| OW1-4 | OW9-4 | OW9-13 |
| OW1-13 | OW9-11A | OW9-15 |
| OW1-15 | OW9-11B | OW9-18 |
| OW1-19 | | |

3.5 Any groundwater observation wells that are damaged beyond repair or whose integrity is in doubt shall be properly sealed and replaced in accordance with the protocol in Schedule "E".

3.6 The proponent shall, subject to owner's permission, install five additional single bedrock wells within the road allowances on Mud Road, Niagara Road 12 and Young Street. These wells will be installed approximately 5 metres into the bedrock and will be used for water level monitoring. If there are problems with the access or installation for any of these wells, the CLC will be notified and the CLC will assist in evaluating options.

3.7 Two additional wells, screened in the sand and gravel above the bedrock, shall be installed at nest OW11 and OW13. One additional shallow well will be installed, screened in the weathered till, at a depth of 2 to 4 metres along the western boundary.

**Clay Liner**

4.1 A remoulded clay liner, a minimum of 1.0 metre thick, shall be constructed by remoulding the suitable on-site till material to the lowest practicable permeability as determined by the pre-design testing outlined in Condition 4.2. The clay liner shall be built at the base of the waste disposal fill area and at the side slopes of the landfill (below ground level) as described in the Reports listed in Schedule "A" of this Certificate of Approval.

5.4 Leachate retention tanks may be constructed at the site to allow loading into vacuum trucks where it will be hauled to the leachate pumping station at the Park Road landfill site for ultimate treatment at the Baker Road Water Pollution Control Plant in Grimsby.

5.5 When it is deemed that hauling leachate from the site to the pumping station at the Park Road landfill site is no longer economical, the proponent shall construct a pumping station and a forcemain from the site to the existing sewage forcemain on South Grimsby Road 6.

**Surface Water Management**

6.1 Appropriate measures, including at least those described below, shall be taken to protect the quality of water of the tributary of the Forty Mile Creek, and to minimize fluctuations in the quantities of surface water as compared to those which would occur in the absence of a landfill at the site.

On-site surface water collection and containment structures shall be designed to:

(a) convey, at a minimum, the 100-year design storm with erosion control protection up to the twenty-five year storm condition for permanent on-site storm ditches;

(b) ensure that there are no increases in post-development flow rates over pre-development flow rates for a range of storms up to and including the one in one-hundred year storm;

(c) surface water collection and containment structures shall be designed using the appropriate computer modelling method of hydrological and hydraulic calculations as specified in "Flood Plain Management in Ontario, Technical Guidelines, Ministry of Natural Resources", in "Stormwater Management Guidelines, Central Region, Ministry of Natural Resources" and utilize Best Management Practices.

**Landfill Buffer and On-Site Screening**

7.1 The proponent shall construct an earth berm and plant vegetation along the west and north side of the site to mitigate or minimize visual impacts resulting from the construction and operation of the landfill site, as described in the Report No. 1 listed in Schedule "A" of this Certificate of Approval.

9.5 Leachate seeps, when identified, shall be stopped from flowing into surface water ditches, swales or ponds to prevent off-site surface water contamination. Repair to seeps shall be undertaken as soon as possible. A leachate seep control protocol shall be developed and incorporated into the Design & Operations Manual.

9.6 Access to the site shall be via Concession Road 7 from Niagara Road 12.

9.7 Posted speed signs shall be placed on-site, and traffic calming shall be implemented, if required, to control vehicular movement during waste disposal operations.

9.8 Traffic control and road improvements shall be undertaken as outlined in Reports 1 & 2 of Schedule "A".

9.9 The proponent shall maintain daily records, at the site, and available to the CLC. The records shall include but not be limited to:

(a) Total daily quantity of waste received at the site;

(b) The origin and type of waste received at the site and identification of the hauler delivering the waste by licence number or truck number;

(c) All complaints from the public received by the proponent and an indication of the action and timing of the response by the proponent;

(d) The results of any tests done to determine the acceptability of waste at the site;

(e) Record of any prescribed monitoring, maintenance and operation of the landfill facilities that was accomplished; and

(f) A list of all vehicles that were refused entry to the site, identified by a licence number and the reason(s) for refusal.

9.10 A sign shall be posted at the access to the site during construction activities pre-acceptance of waste advising residents of the twenty-four hour telephone number to register concerns relating to the site construction activity. The complaints protocol shall include a protocol for the complaints registered during the construction phase.

(c) Daily, or as required, removal of collected litter from litter control fencing referred to above.

(d) A detailed litter control protocol shall be developed and incorporated into the Design & Operations Manual.

11.2 The proponent shall inspect at least weekly and after every high wind episode or complaint received the landfill buffer area, the surrounding road network and adjacent properties and as specified in the litter control protocol.

11.3 All litter created by landfill operations shall be picked up and disposed at the landfill within two working days.

**Dust Control**

12.1 The proponent shall take all practicable steps to minimize dust impacts associated with any landfill related construction and the landfilling operations.

12.2 All on-site travel routes shall be treated with water or other dust suppression materials as required to suppress visible dust being carried beyond the property boundary.

12.3 Daily inspection of haul roads and exposed areas in dry weather shall be undertaken and, if required, control measures implemented to control dust.

12.4 A dust control protocol shall be developed and incorporated into the Design & Operations Manual.

**Noise Control**

13.1 All construction equipment associated with the development, operation and closure of the landfill shall comply with the MOEE Model Municipal Noise By-Law Publication NPC-115 or any other approved noise abatement standards.

13.2 A landfill equipment maintenance program shall be implemented. Particular regard shall be given to maintaining, and, where feasible, improving the noise muffling systems on landfill equipment.

**Gas Monitoring**

21.1 All on-site building shall have gas monitoring and detection systems, to be detailed in the Design & Operations Manual, and shall incorporate measures that will not allow a build-up of landfill gases to occur. If these systems detect a build-up of gases, the proponent shall propose a gas monitoring program for the site for approval by the Director.

**Operations Monitoring**

22.1 The landfill operation shall be monitored to ensure that operations are being undertaken as outlined in Report No. 1 listed in Schedule "A" of this Provisional Certificate of Approval, as modified in the Design & Operations Manual or as required in this certificate or the conditions attached to this certificate.

22.2 The effectiveness of the on-site landscaping and the woodlot to screen the landfill operations from the view of adjacent residents shall be monitored. Details of the landscape planting plan, monitoring program and ongoing vegetative management plan to be incorporated in the Design & Operations Manual.

22.3 On-site surface water collection and containment structures shall be inspected at least once in each year and dredged as required. The dredged material shall be disposed of within the site.

22.4 The leachate collection pipes along the perimeter of the waste disposal fill area shall be inspected using a T.V. camera inspection, as a minimum, once every three years throughout the contaminating lifespan of the waste disposal site.

22.5 A woodlot monitoring program shall be implemented for the on-site woodlot. The program shall be carried out by a professional botanist or forester. The results are to be reported as part of the Annual Report.

**ANNUAL REPORTS**

An annual monitoring report and an annual operations report shall be submitted to the CLC and the Regional Director no later than July 1st of the following year being reported on.

(e) An assessment of the operation and performance of the leachate collection facilities.

(f) An assessment of the operation and performance of surface water collection and containment structures.

(g) Any complaints received; how the complaints were addressed; and any measures established to prevent further complaints.

(h) A statement as to compliance with the Conditions of Approval and with the inspection and reporting requirements of the Conditions.

(i) An updated landfill site plan showing the areas of fill, buffer zones and present contours, along with monitoring locations and surface water control facilities.

(j) Any approved changes to the operation, equipment and procedures on the site.

(k) Any recommendation respecting the proposed changes in the operation of the site.

**CONTINGENCY PLAN**

25.1 Contingency plans are to be implemented if site monitoring indicates that the hydraulic trap is not functioning or Reasonable Use Policy criteria are being exceeded in the bedrock aquifer at the site boundaries. If the groundwater and surface water monitoring program identifies a potential for off-site leachate contamination, the proponent shall take the necessary steps to implement the contingency plan(s), as outlined in Report No. 1 listed in Schedule "A" of this Certificate of Approval.

25.2 a) If monitoring determines that the leachate head in the landfill has risen above the head in the bedrock aquifer (approximately 192 masl), then the following measures shall be implemented:

i) Eight shallow observation wells screened across the fractured weathered till shall be installed adjacent to the drainage ditch at regular intervals around the landfill perimeter. These wells shall be added to the monitoring program in Schedule "B".

**LEGISLATIVE REQUIREMENTS**

26. It is a condition of this Provisional Certificate of Approval that the holder must forthwith on request permit provincial officers to carry out inspections authorized by Section 156, 157 or 158 of the Environmental Protection Act, Section 10, 10a or 10b of the Ontario Water Resources Act or Section 19 or 20 of the Pesticides Act of any place, other than any room actually used as a dwelling, to which this Provisional Certificate of Approval relates.

27. Requirements specified in this Provisional Certificate of Approval are minimum requirements and do not abrogate the need to take all reasonable steps to avoid violating the provisions of the applicable legislation.

28. The requirements of this Provisional Certificate of Approval are severable. If any requirement of this Provisional Certificate of Approval, or the application of any requirement of this Provisional Certificate to any circumstances, is held invalid, the application of such requirement to other circumstances and the remainder of this Provisional Certificate of Approval shall not be affected thereby.

## *SCHEDULE "B"*

This Schedule "B" forms part of Provisional Certificate of Approval No. A 121215:

### Groundwater Monitoring Program

The following groundwater monitoring program will be carried out on an annual basis.

1. Water Levels

All on-site observation wells and wells installed to satisfy Condition No. 3.6 will be monitored quarterly for water levels.

A continuous water level recorder will be installed at PW1 to establish short-term and seasonal fluctuations while it is in operation.

Private Wells

The private wells listed below will be monitored monthly for one year to establish a seasonal hydrograph for each well. The locations of these wells are shown on Map 3-3 of Report No. 3 listed in Schedule "A" of this Certificate of Approval.

| | | | |
|---|---|---|---|
| MOE1400 | MBL10a | MBL22 | MBL118 |
| MOE1439 | MBL3 | MBL105 | MBL144 |
| MOE1467 | MBL16 | MBL115 | MBL145 |
| MOE2217 | MBL17 | MBL117 | |

2. Observation Wells

The following observation wells will be sampled semi-annually:

| | | | | | |
|---|---|---|---|---|---|
| OW2-4 | OW4-4 | OW5-4 | OW7-4 | OW10-4 | OW12-4 |
| OW2-11 | OW4-10A | OW5-14 | OW7-10 | OW10-12 | OW12-14 |
| OW2-19 | OW4-12 | OW5-20 | OW7-15 | OW11-4 | OW13-4 |
| OW3-4 | OW4-13 | OW6-4 | OW8-4 | OW11-12 | OW13-14 |
| OW3-9 | OW4-16 | OW6-10 | OW8-9 | | |
| OW3-15 | | OW6-15 | OW8-15 | | |

The three new wells required by Condition No. 3.7 will be added and included to this list.

PW1 shall be sampled if and when it is pumped.

## *SCHEDULE "C"*

This Schedule "C" forms part of Provisional Certificate of Approval No. A 121215:

### Surface Water Monitoring Program

The following surface water monitoring program will be carried out monthly.

1. Stream Flow

The stream flow at the following stations will be recorded including the station conditions (i.e. flooded, frozen, stagnant, etc.). Samples should be taken during a variety of different storm flow conditions including best efforts to sample, where possible, after major storm events.

SS6 SS7 SS8 SS9 (detention pond)

The locations of the stations are shown on Figure 7-1 of Report No. 3 in Schedule "A" of this Certificate of Approval.

2. Surface Water Parameters

The surface water samples will be analyzed for the following parameters:

| | | |
|---|---|---|
| pH | TKN | zinc |
| conductivity | phosphorus | chromium |
| alkalinity | temperature*** | cadmium |
| chloride | lead | volatile organics* |
| sulphate | phenol | strontium |
| calcium | DOC | aluminum |
| sodium | DIC | PCBs** |
| potassium | COD | pesticides** |
| magnesium | suspended solids | iron |
| total & unionized ammonia | manganese | dissolved oxygen*** |
| nitrate | copper | PAHs** |
| nitrite | | |

* Volatile organics will be analyzed quarterly at Stations SS6 and SS9.
** Pesticides, PCBs and PAHs will be analyzed once a year at Station SS6.
*** At Station SS9 only.

3. Sediment Monitoring

Twice a year, during early summer and late fall, sediment samples will be taken at SS6. They will be analyzed for grain size, total organic carbon, heavy metals, PCBs, and PAHs.

## *SCHEDULE "E"*

This Schedule "E" forms part of Provisional Certificate of Approval No. A 121215:

### Protocol for Observation Well Abandonment

Observation wells will be sealed in the following manner by a qualified and licensed well driller under the supervision of a qualified hydrogeologist. For the wells within the landfill footprint, this must be done prior to any cell excavation.

1. The screened or open hole section of the bedrock observation wells will be filled with pea gravel to prevent interface with the aquifer conditions. The screened section of any sand and gravel wells will be filled with sand. This is not required for till wells.

2. A 1 metre thick gravel-type bentonite seal will be placed on top of the gravel or sand.

3. Measurements by sounding must be taken throughout the above processes to verify the placement of materials at the appropriate depths.

4. Cement/bentonite grout will be mixed to manufacturer's specifications and the density verified using a mud balance.

5. The well will be pressure grouted from the top of the bentonite seal using a tremie line until the grout mixture discharging from the well casing is of the same density as the initial mixture.

6. The grout must be allowed to set for at least 24 hours before the area around the well is disturbed.

7. The excavation contractor must leave the well and a stable column of soil during cell excavation.

8. When final base elevations for the cell are reached, the soil around the grouted well shall be removed. The grouted well assembly must be cut and capped at least 0.6 metres below the base elevation of the remoulded liner.

9. The 0.6 metre excavation over the well head must be backfilled with till recompacted to the same specifications as the remoulded liner.

10. The location of the sealed well must be surveyed and noted on the as-constructed maps.