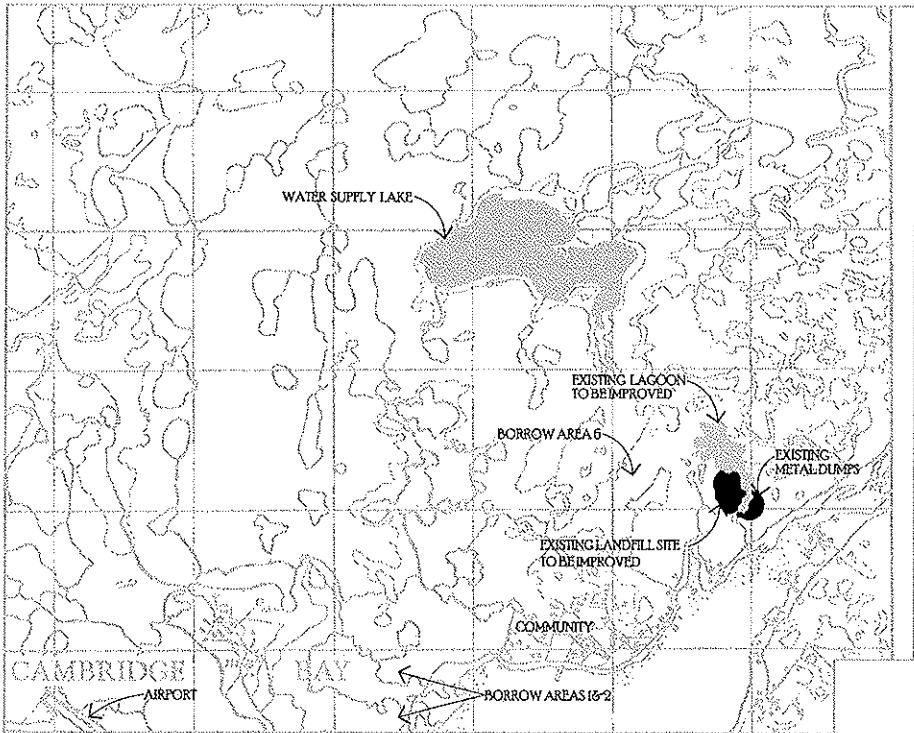


CAMBRIDGE BAY, NUNAVUT

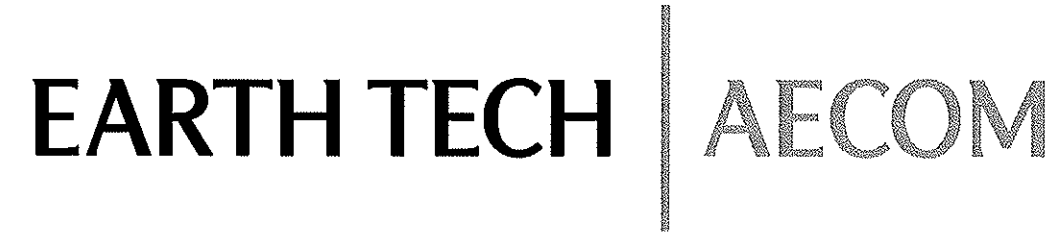
CAMBRIDGE BAY SEWAGE AND SOLID WASTE FACILITIES

ISSUED FOR REGULATORY REVIEW

Project Number 91011
October 3, 2008



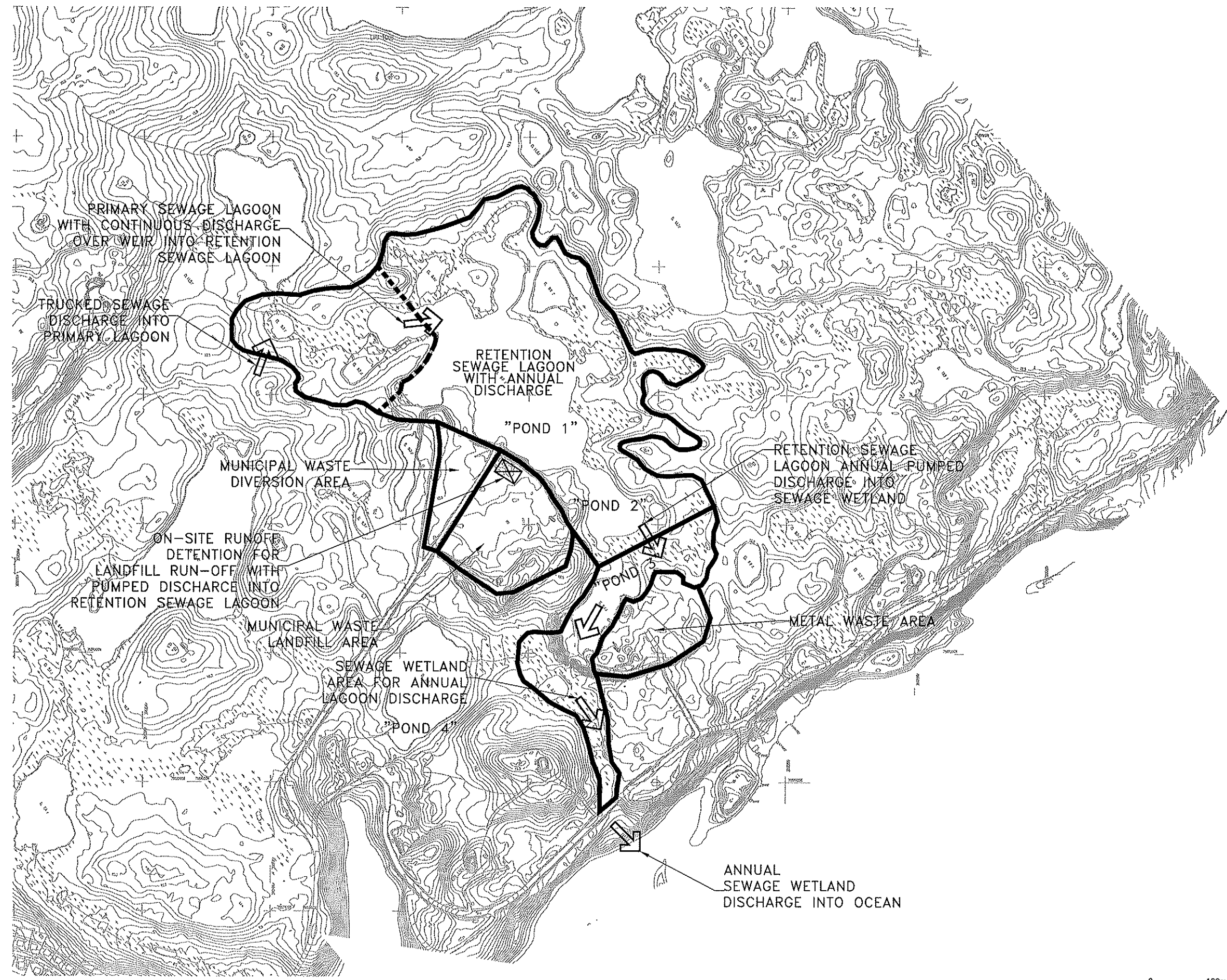
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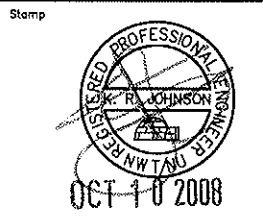
ET Project - 91011

LIST of DRAWINGS		
DWG.	DRAWING TITLE	REV.
C01	PROCESS SUMMARY	A
C02	DRAINAGE PLAN	A
C03	SURVEY CONTROL POINTS	A
C04	SEWAGE LAGOON IMPROVEMENT PLAN	A
C05	SEWAGE LAGOON CROSS SECTIONS	A
C06	SCHEMATIC DETAILS OF BERM STRUCTURES	A
C07	SEWAGE LAGOON IMPROVEMENT DETAILS	A
C08	LANDFILL SITE	A
C09	LANDFILL SITE CROSS SECTIONS	A
C10	LANDFILL SITE IMPROVEMENT DETAILS	A
C11	LANDFILL SITE IMPROVEMENT DETAILS	A
C12	METAL WASTE IMPROVEMENT PLAN	A
C13	METAL WASTE IMPROVEMENT DETAILS	A

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EDMONTON ALBERTA CA
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Drawn M.D.S.
Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

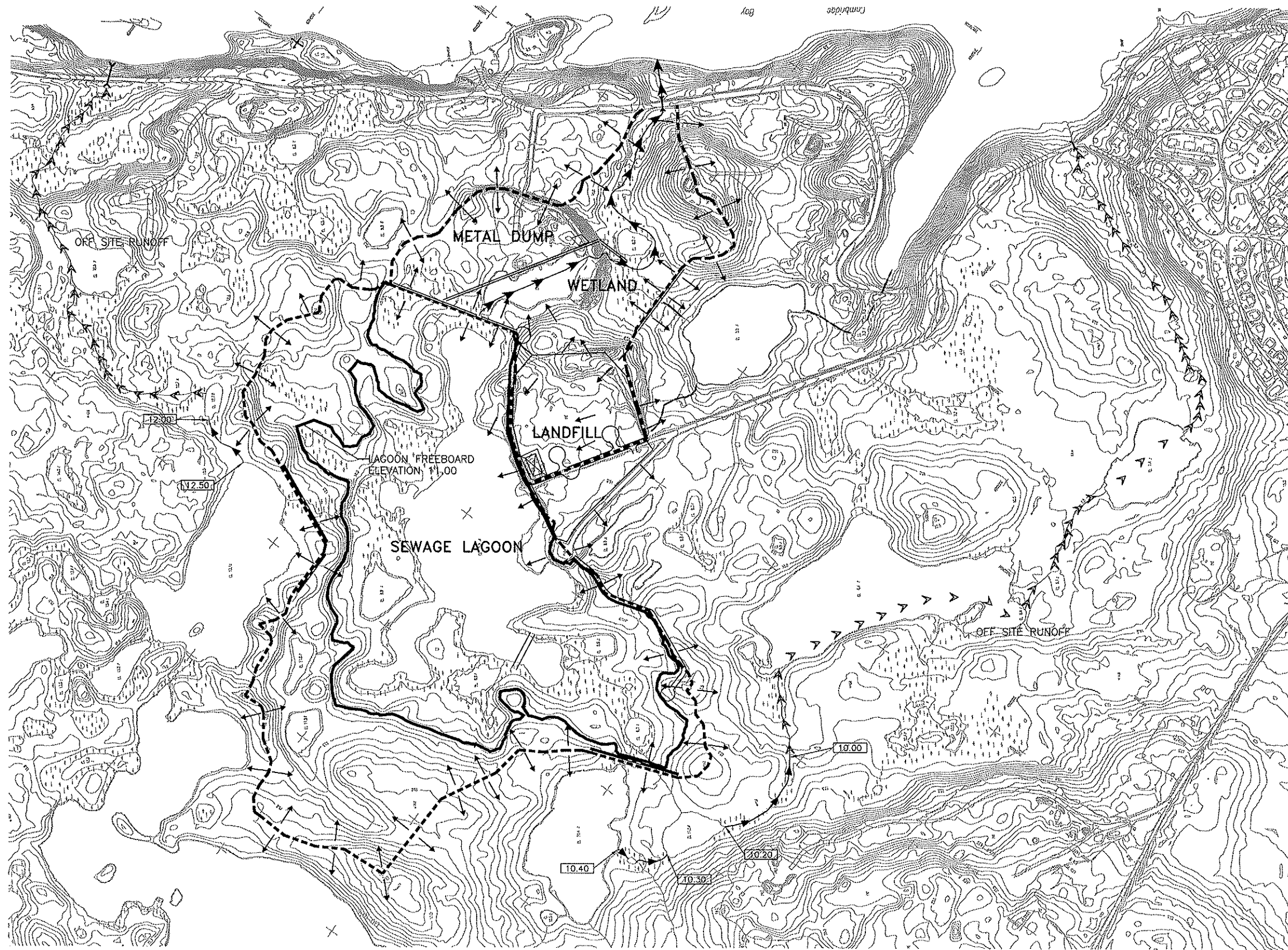
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Project No. 91011
Drawing No. C-01
Date 08/10/03
Revision A



PLOT DATE: 9 October 2008 PLOT BY: SUMMERS, MATTHEW

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LEGEND

- RUNOFF DIRECTION
- RUNOFF BOUNDARY
- LAGOON FREEBOARD
- RUNOFF DIVERSION BERM
- RUNOFF DIVERSION CHANNEL
- SEWAGE TREATMENT BERM
- SEASONAL SEWAGE DISCHARGE
- CHANNEL REGRADING
- NEW CULVERT
- LANDFILL RUNOFF DETENTION
- PROPOSED CHANNEL ELEVATION

Stamp



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Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

Drawing Title
**DRAINAGE
PLAN**

Scale:

1:3000

Project No.

91011

Drawing No.

C-02

Date

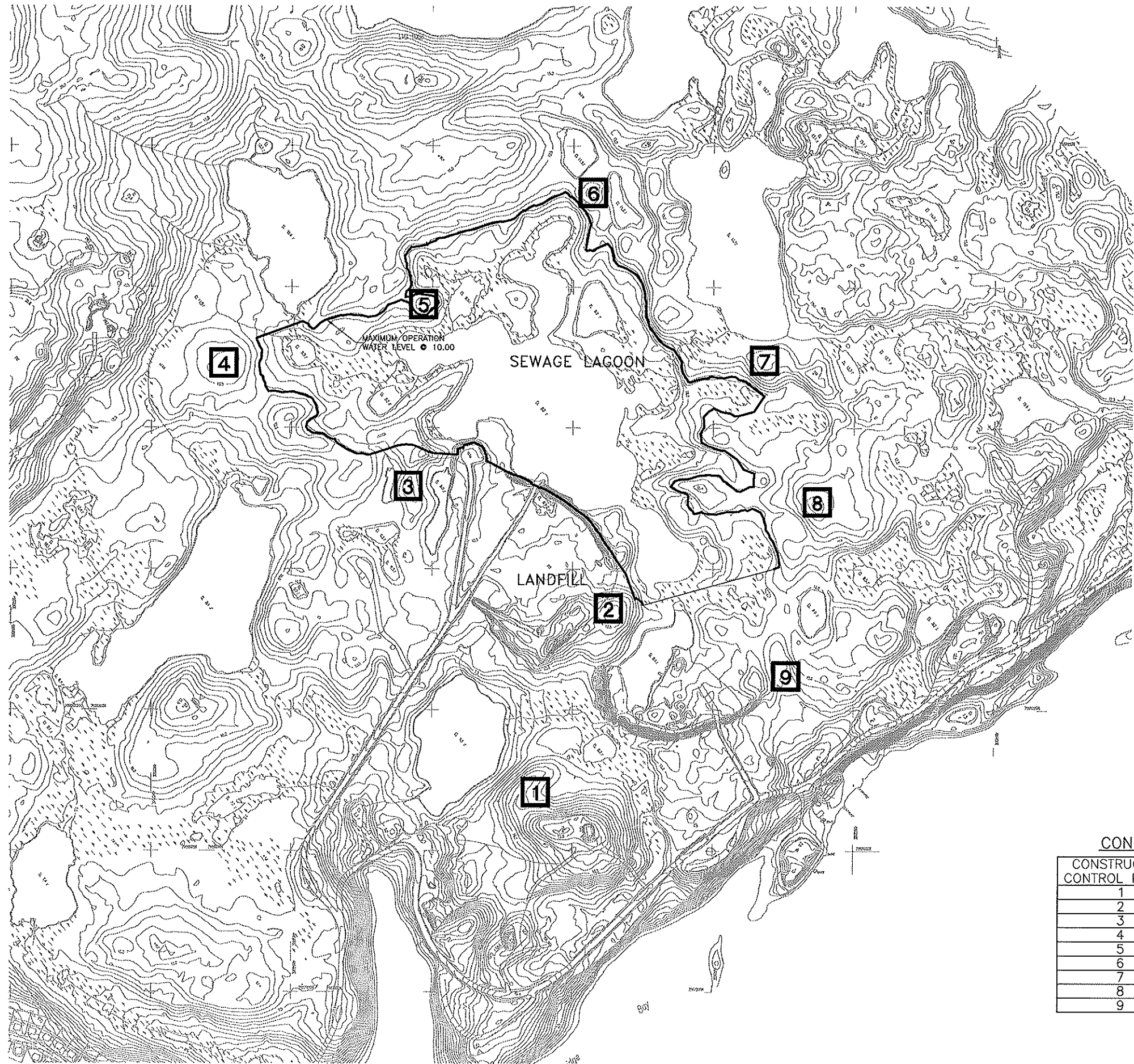
08/10/03

Revision

A

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CONSTRUCTION CONTROL POINT TABLE

CONSTRUCTION CONTROL POINTS	NORTHING	EASTING
1	7668080.00	498750.00
2	7668350.00	498850.00
3	7668570.00	498580.00
4	7668690.00	498300.00
5	7668780.00	498590.00
6	7668960.00	498790.00
7	7668700.00	499070.00
8	7668490.00	499170.00
9	7668250.00	499100.00



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LEGEND

1 CONSTRUCTION CONTROL POINT
REBAR POST

Stamp

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REVISIONS

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Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

Drawing Title
**SURVEY
CONTROL
POINTS**

Scale:
1:3000

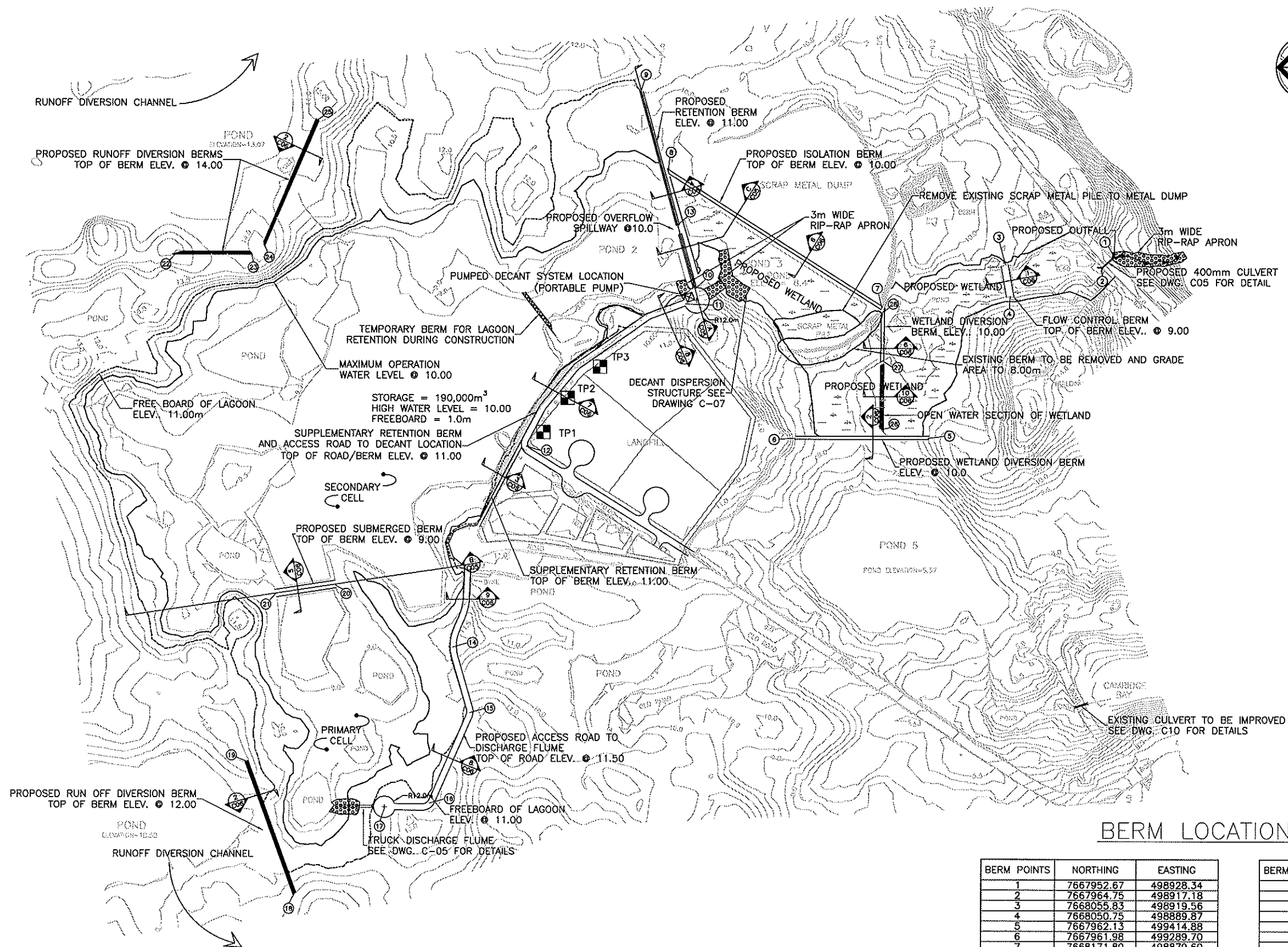
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91011

Drawing No.
C-03

Date
08/10/03

Revision
A

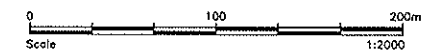
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BERM LOCATION POINTS

BERM POINTS	NORTHING	EASTING
1	7667952.67	498928.34
2	7667964.75	498917.18
3	7668055.83	498919.56
4	7668050.75	498889.87
5	7667962.13	499414.88
6	7667961.98	499289.70
7	7668171.80	498879.60
8	7668372.90	499006.76
9	7668397.97	499082.42
10	7668347.00	498898.03
11	7668357.13	498883.20
12	7668505.96	498748.79
13	7668363.63	498956.63
14	7668573.61	498560.76

BERM POINTS	NORTHING	EASTING
15	7668557.39	498499.29
16	7668597.34	498411.69
17	7668638.10	498410.28
18	7668722.31	498329.19
19	7669767.59	498452.94
20	7668684.04	498619.15
21	7669740.07	498610.20
22	7668835.17	498930.79
23	7668764.43	498930.23
24	7668752.28	498938.93
25	7668702.41	499054.24
26	7668171.72	498764.31
27	7668171.12	498829.37
28	7668170.52	498875.70



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LEGEND

EDGE OF ROAD (ELEV. 10.0m)	---
DRAINAGE ROUTE	---
RIP-RAP	---
SEWAGE LAGOON/WETLAND BERM	---
RUNOFF DIVERSION BERM	---
OPEN WATER SECTION OF WETLAND	---
TEST PIT LOCATION (TP1)	---
FREE BOARD	---
MAX OPERATION WATER LEVEL	---
OPEN WATER SECTION	---

WATER ELEVATIONS ARE EXPRESSED IN METERS OR DECIMALS THEREOF.

Stamp



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REVISIONS



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Drawn M.D.S. / S.A.B.
Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

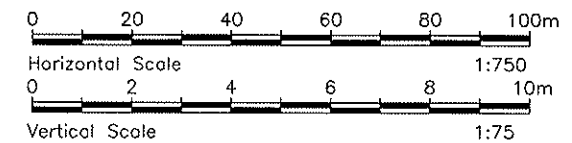
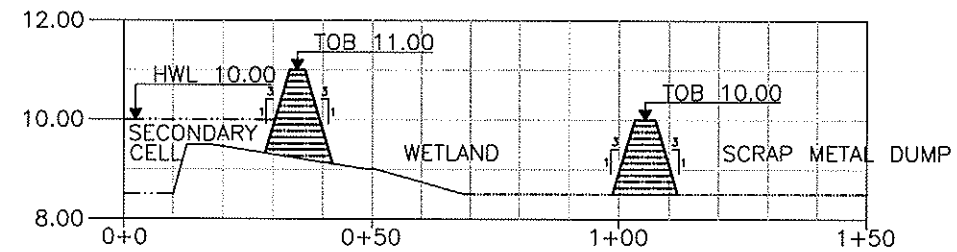
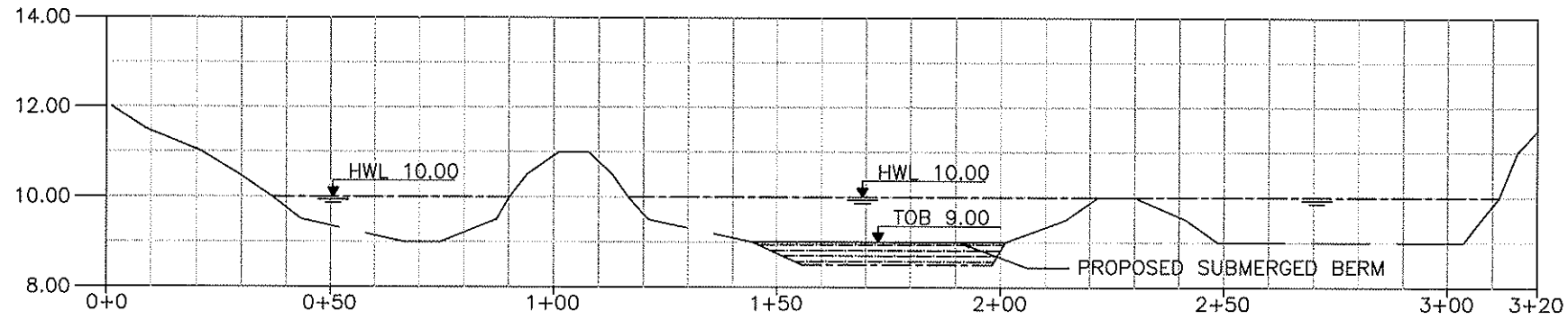
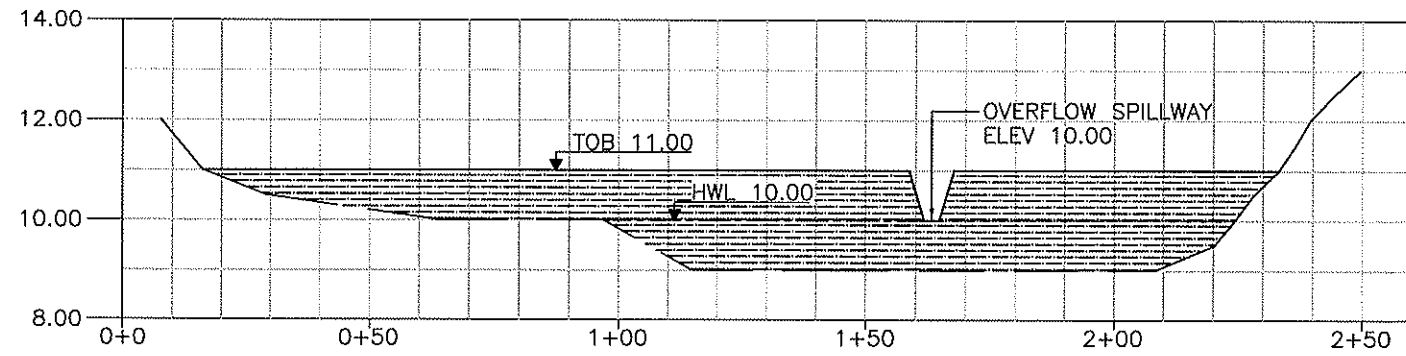
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SEWAGE LAGOON
IMPROVEMENT
PLAN

Scale:
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Project No.
91011
Drawing No.
C-04
Date
08/10/03
Revision
A

PLOT DATE: 9 October 2008 PLOT BY: SUMMERS, MATTHEW

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LEGEND

EXISTING GROUND
CONSTRUCTED GROUND LEVEL
WATER LEVEL

Stamp



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Drawn M.D.S.

Project Title
Government of Nunavut
Cambridge Bay
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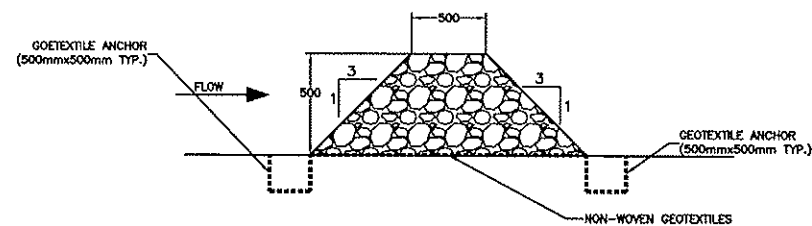
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SEWAGE
LAGOON
CROSS
SECTIONS

Scale:
AS STATED

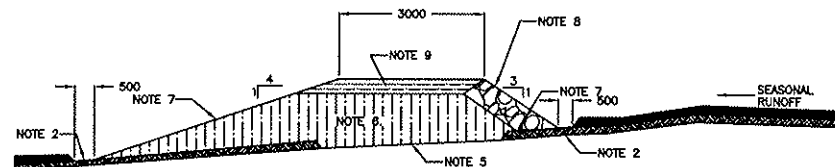
Project No. 91011 Date 08/10/03

Drawing No. C-05 Revision A

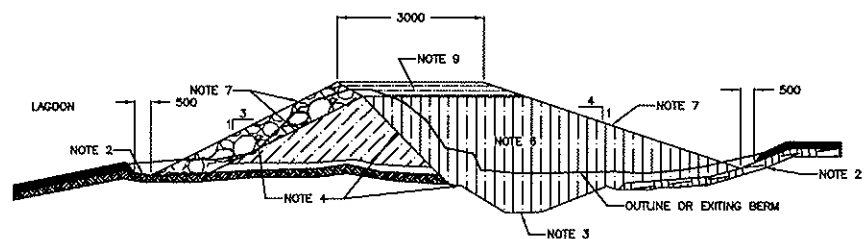
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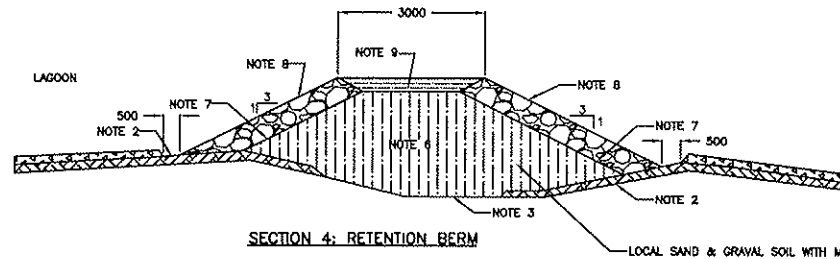
SECTION 1: WETLAND FLOW CONTROL BERM



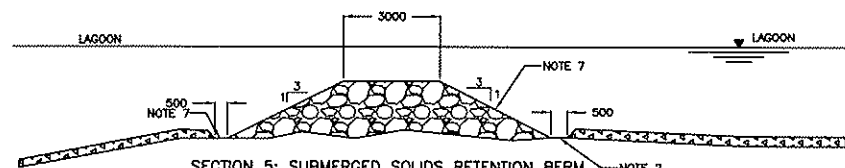
SECTION 2: TYPICAL RUNOFF CONTROL & DIVERSION BERM



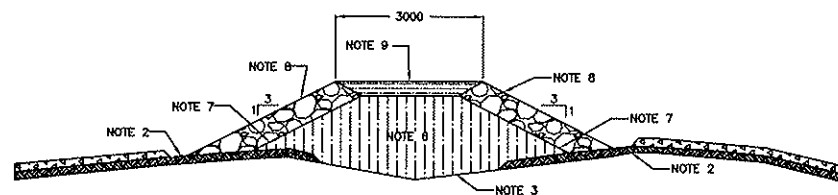
SECTION 3: SUPPLEMENTARY RETENTION BERM



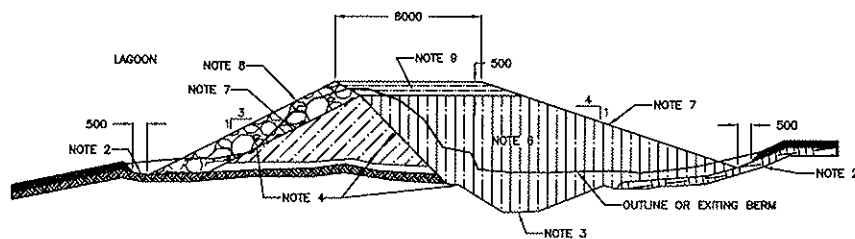
SECTION 4: RETENTION BERM



SECTION 5: SUBMERGED SOLIDS RETENTION BERM



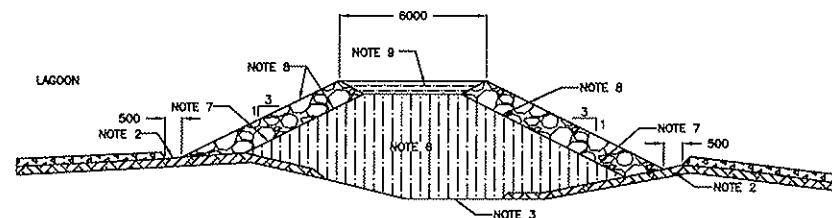
SECTION 6: ISOLATION AND DIVERSION BERM



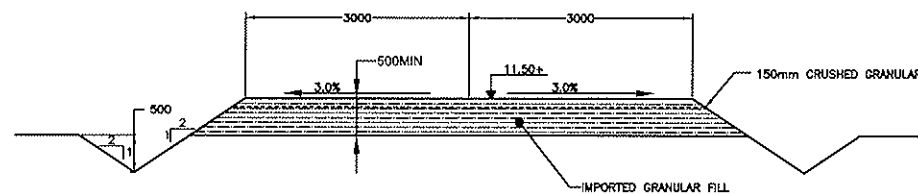
SECTION 7: SUPPLEMENTARY RETENTION BERM WITH ACCESS ROAD TO DECANT LOCATION

NOTES:

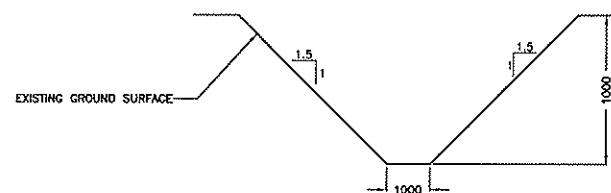
1. ESTABLISH CENTER AND PERIMETER DIMENSIONS OF PROPOSED BERM.
2. REMOVE ALL SURFACE ORGANICS TO A DISTANCE OF 0.5m BEYOND TOE OF BERM.
3. ESTABLISH CREST ALIGNMENT OF PROPOSED LOW PERMEABILITY BERM AND EXCAVATE A FURTHER 150mm DEPTH OR MORE TO A WIDTH EXTENDING 0.3m BEYOND THE EDGES OF THE CREST. REMOVE ALL COBBLES, BOULDERS AND COARSE GRAVEL AND EXPOSE NATIVE FINE GRAINED SOIL. PROOF ROLL AND COMPACT PREPARED SURFACE. ENSURE ALL REMNANTS OF FORMER DRAINAGE CHANNELS ARE REMOVED.
4. TRIM EXISTING BERMS TO A 1:1 SLOPE WHERE ADDITIONAL LOW PERMEABILITY LOCAL FILL IS TO BE PLACED OR TO 2H:1V WHERE RIP RAP MATERIAL IS TO BE PLACED. REUSE SUITABLE MATERIAL, DISPOSE OF OVERLY WET OR CONTAMINATED MATERIAL FROM BERMS. SUB EXCAVATE AT EXTERIOR EDGE OF EXISTING BERM IN AREA OF TP-2 TO REMOVE ALL BURNT DEBRIS FROM FORMER LANDFILL OPERATION FROM UNDER PROPOSED BERM CONSTRUCTION AREA.
5. REMOVE WATER FROM EXCAVATIONS THROUGH GRAVITY DRAINAGE OR PUMPING. WHERE INCOMING WATER PERSISTS, PLACE A MIXTURE OF 25% 'CLAY' (FROM BORROW AREA 1 OR 2) WITH 75% LOW PERMEABILITY LOCAL FILL AND TAMP INTO BOTTOM OF CLEANED EXCAVATION AFTER REMOVAL OF EXCESS WATER. REPEAT WITH ADDITIONAL LIFTS OF SIMILAR MATERIAL UNTIL 0.3m ABOVE THE LEVEL OF INCOMING WATER/LOCAL WATER TABLE. ALLOW THIS FILL TO STABILIZE UNTIL IT CAN SUPPORT THE PASSAGE OF A HALF LOADED DUMP TRUCK. IF NECESSARY, CUT A 3m WIDE TRENCH ALONG THE MIDDLE OF OVERLY WET CLAY FILL AND PLACE AND COMPACT ADDITIONAL CLAY FILL IN LIFTS TO ACHIEVE THIS OBJECTIVE. ADDITIONAL LIFTS OF LOCAL LOW PERMEABILITY FILL MATERIAL CAN THEN BE PLACED AND COMPACTED AS SPECIFIED.
6. USE LOCAL SAND AND GRAVEL SOIL (150mm MINUS MATERIALS SEE SPECIFICATION) WITH A MINIMUM OF 10% FINES TO CONSTRUCT CORE OF BERM IN MAXIMUM 0.3m THICK LIFTS. SCREEN OUT OVERSIZE MATERIAL AND USE FOR RIP RAP. COMPACT EACH LIFT TO 95% OF MAXIMUM STANDARD PROCTOR DRY DENSITY AT 0% TO 2% ABOVE ITS OPTIMUM MOISTURE CONTENT.
7. ENDS OF BERM SHALL MEET WITH LOCAL TERRAIN. SLOPE SIDES OF FILL TO A MAXIMUM SLOPE OF 4H:1V WHERE SLOPE FACE IS NOT RIP RAPPED, AND TO A MAXIMUM SLOPE OF 3H:1V WHERE FACE IS RIP RAP.
8. ADD A 0.7m HORIZONTAL WIDTH OF RIP RAP MATERIAL TO ALL FACES EXPOSED TO STANDING OR RUNNING WATER AS INDICATED. RIP RAP SHALL CONSIST OF HARD ANGULAR ROCK WITH SIZES RANGING FROM 0.5m TO SAND WELL GRADED AND TAMPED INTO PLACE.
9. COVER CREST OF ABOVE WATER RETENTION BERMS WITH MINIMUM OF 0.3m THICK LIFT OF CRUSHED STONE WITH MINIMAL WIDTH OF 3m (CREST WIDTH).



SECTION 8: RETENTION BERM AND ROAD



SECTION 9: TYPICAL ROAD STRUCTURE



SECTION 10: WETLAND OPEN WATER SECTION

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LEGEND

	ORGANIC GROUND COVER
	GRANULAR SURFACE ROCK
	SILTY SAND & GRAVEL
	RIP RAP ROCKFILL
	CRUSHED STONE
	EXISTING GROUND

Stamp



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REVISIONS



Design M.Y. \ K.R.J.

Drawn M.D.S.

Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

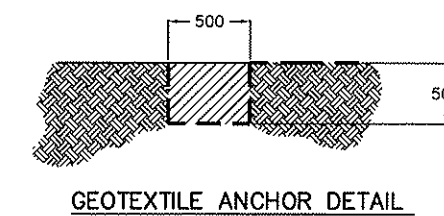
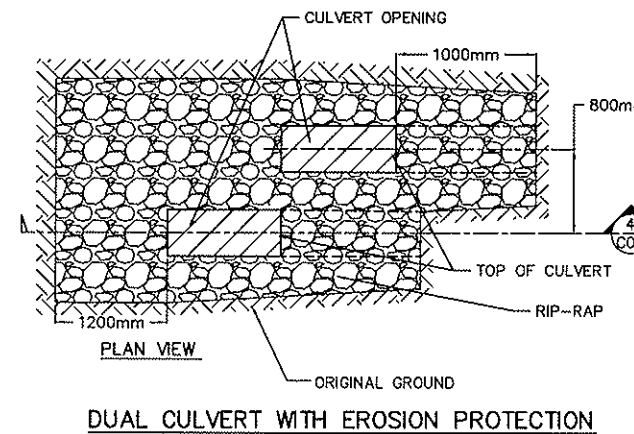
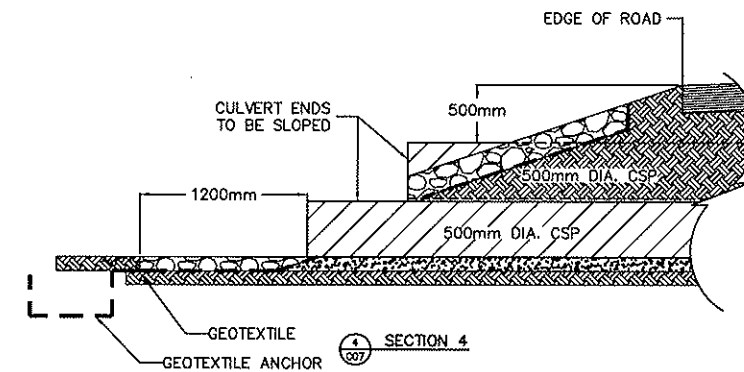
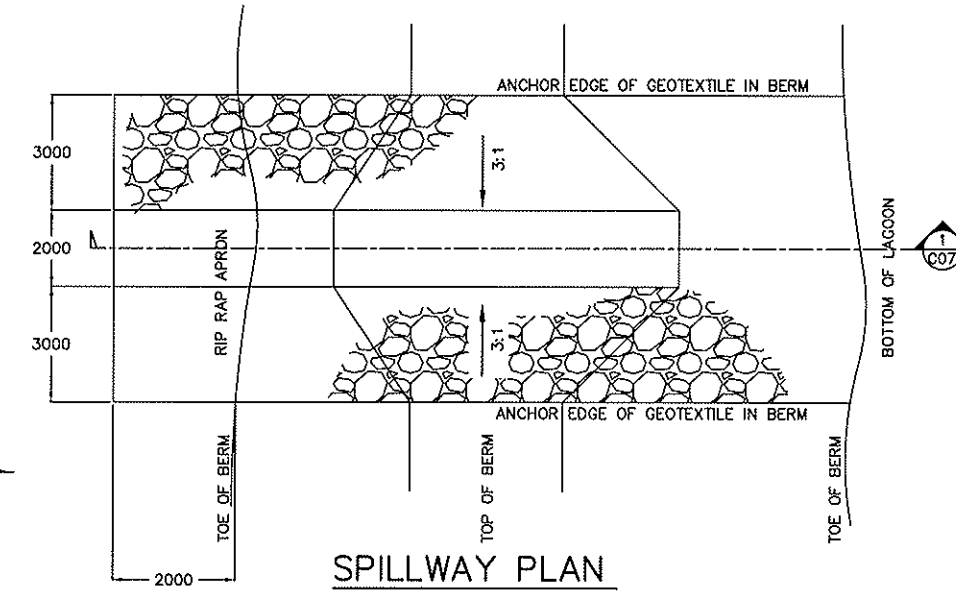
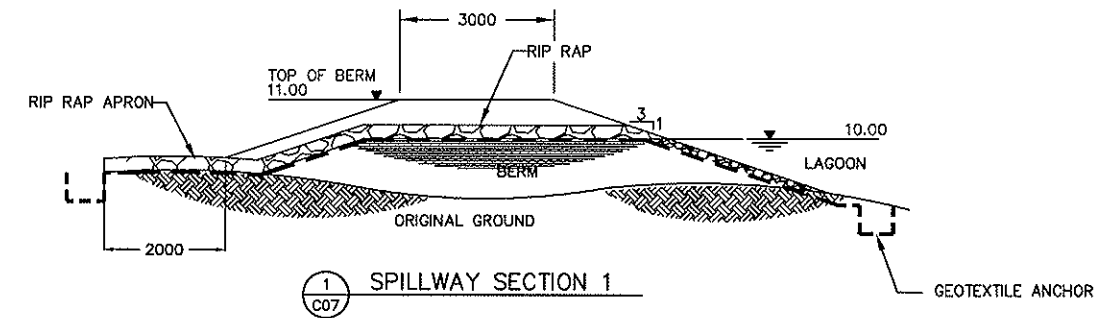
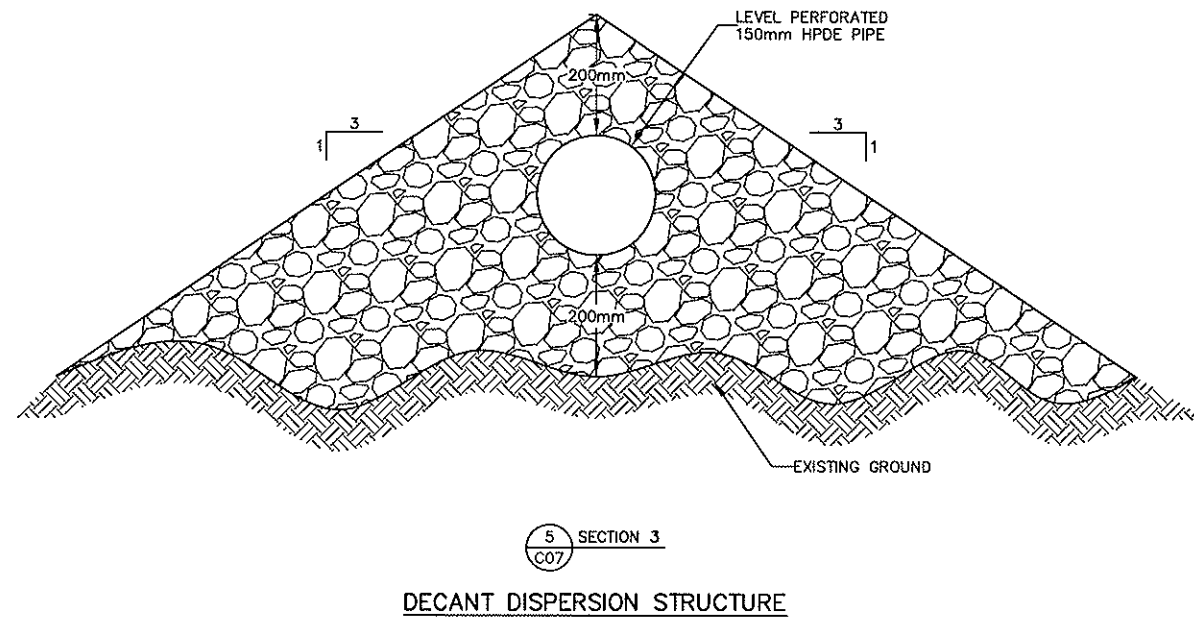
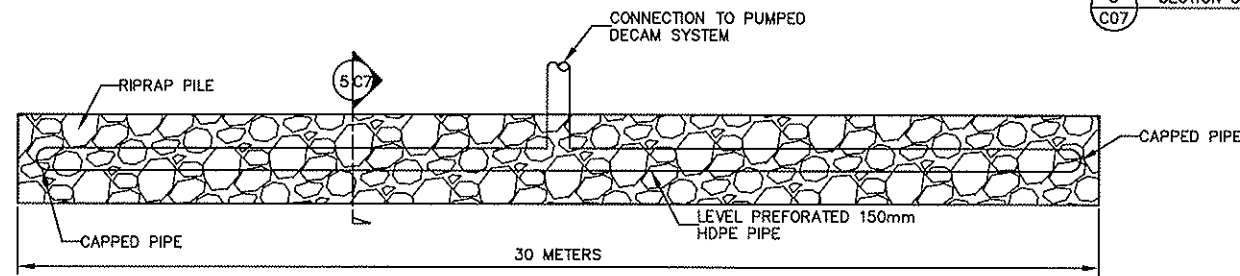
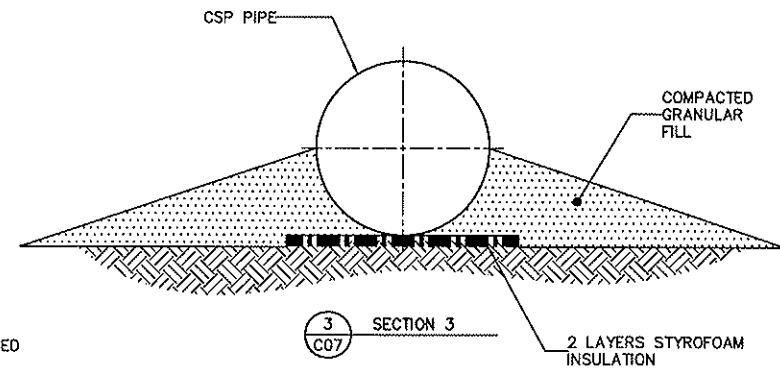
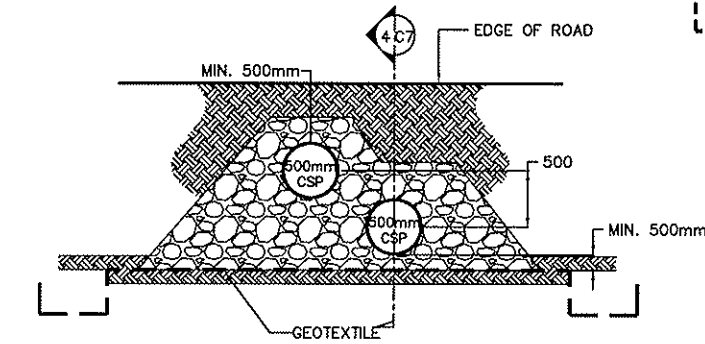
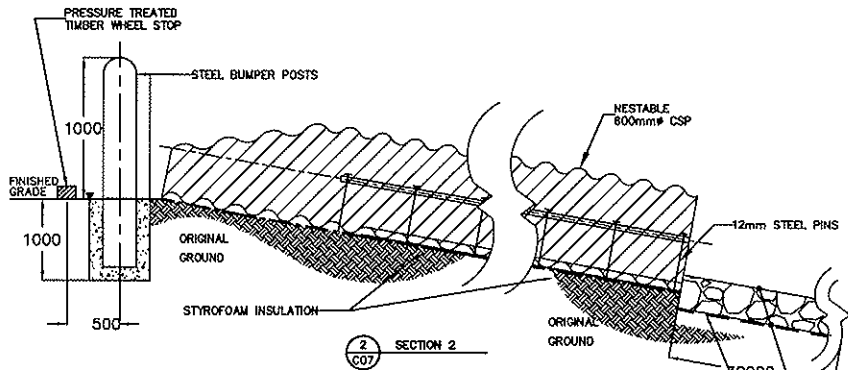
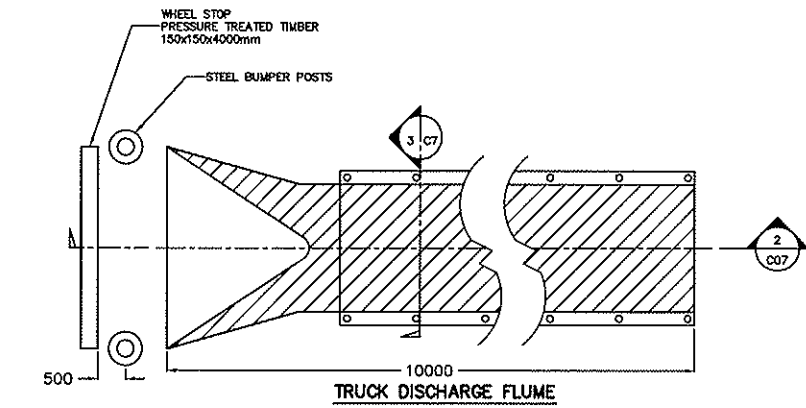
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SCHEMATIC
DETAILS OF
BERM
STRUCTURES

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Project No. 91011 Date 08/10/03

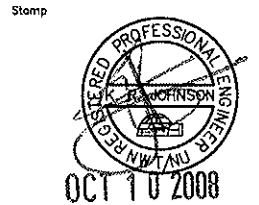
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- NOTES:
1. RIP RAP IS TO BE HAND PLACED.
 2. INLET AND OUTLET AREAS OF CULVERT TO SUFFICIENTLY BE EXCAVATED FOR GEOTEXTILE AND RIP RAP REPLACEMENT

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EARTH TECH | AECOM
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REVISIONS

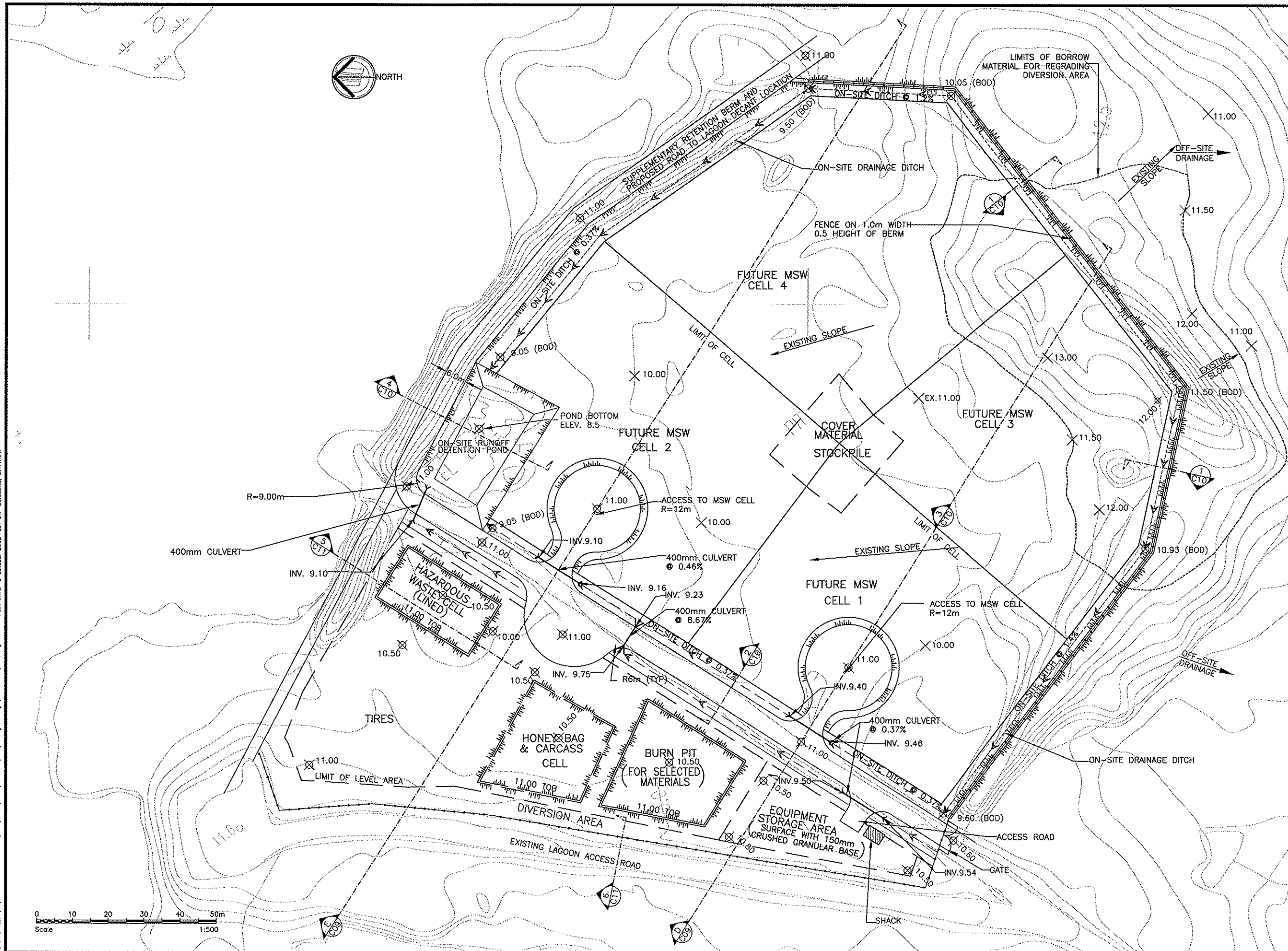
No.	Date	Description
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Design M.Y. / K.R.J.
Drawn M.D.S.
Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

Drawing Title
SEWAGE
LAGOON
IMPROVEMENT
DETAILS
Scale:
NOT TO SCALE
Project No.
91011
Date
08/10/03
Drawing No.
C-07
Revision
A

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T5S 1J4
1-780-488-6800

LEGEND

- 12.5 PROPOSED ELEVATION
- CHAINED FENCE
- GATE
- PROPOSED DITCH
- 0.5% SLOPE GRADE
- 9.05 (BOD) ELEVATION OF BOTTOM OF DITCH
- 11.00 EXISTING ELEVATION
- BORROW MATERIAL LIMIT AREA
- 10.50 TOB ELEVATION OF TOP OF BERM
- PERIMETER BERM

Stamp



A 2008 10/03 ISSUED FOR REGULATORY REVIEW

No. Date Description

REVISIONS



Design M.Y.

Drawn M.D.S

Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

Drawing Title
**LANDFILL
SITE
IMPROVEMENT
PLAN**

Scale:
1:500

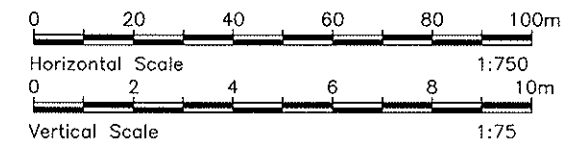
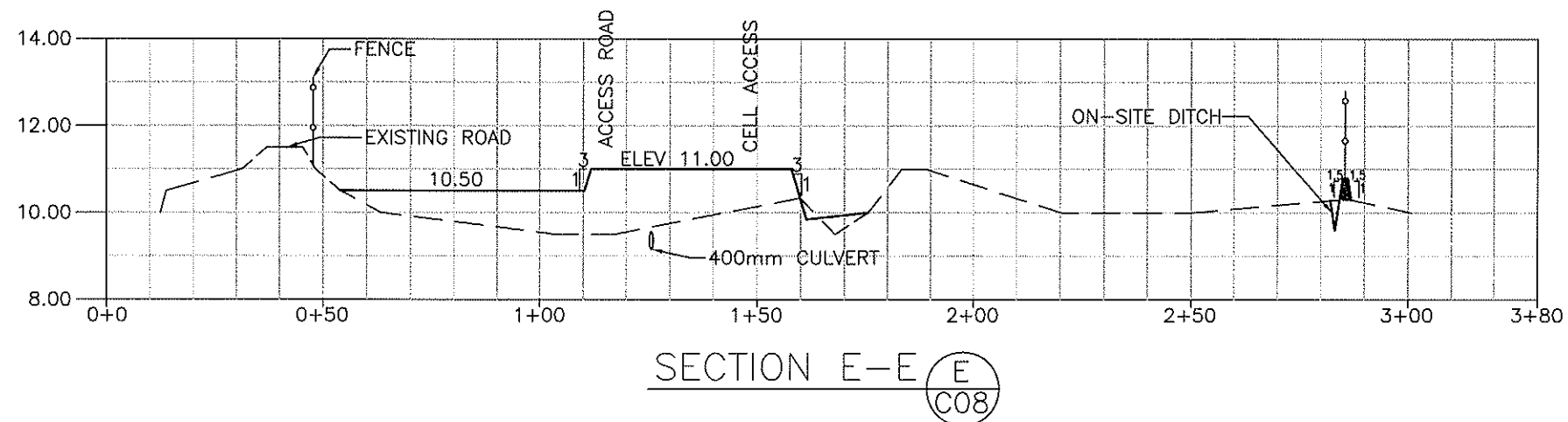
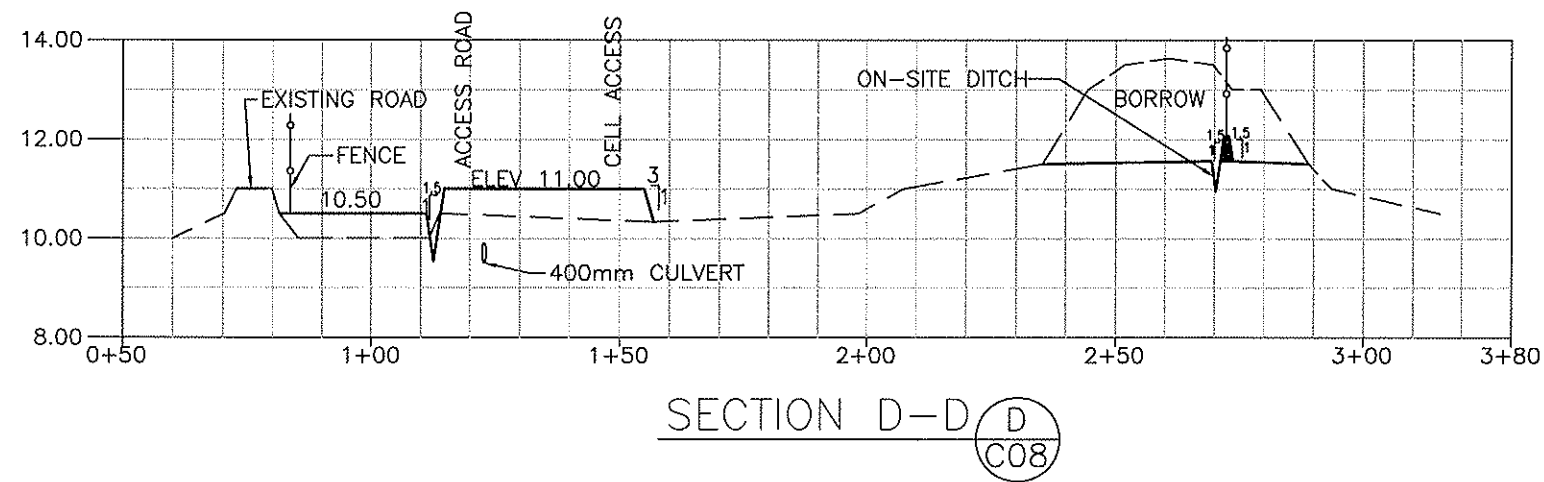
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C-08

Date
08/10/03

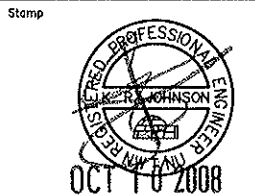
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EDMONTON ALBERTA CA
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LEGEND
----- EXISTING GROUND
----- CONSTRUCTED GROUND LEVEL
----- WATER LEVEL



No.	Date	Description
A	2008 09/03	ISSUED FOR REGULATORY REVIEW

REVISIONS

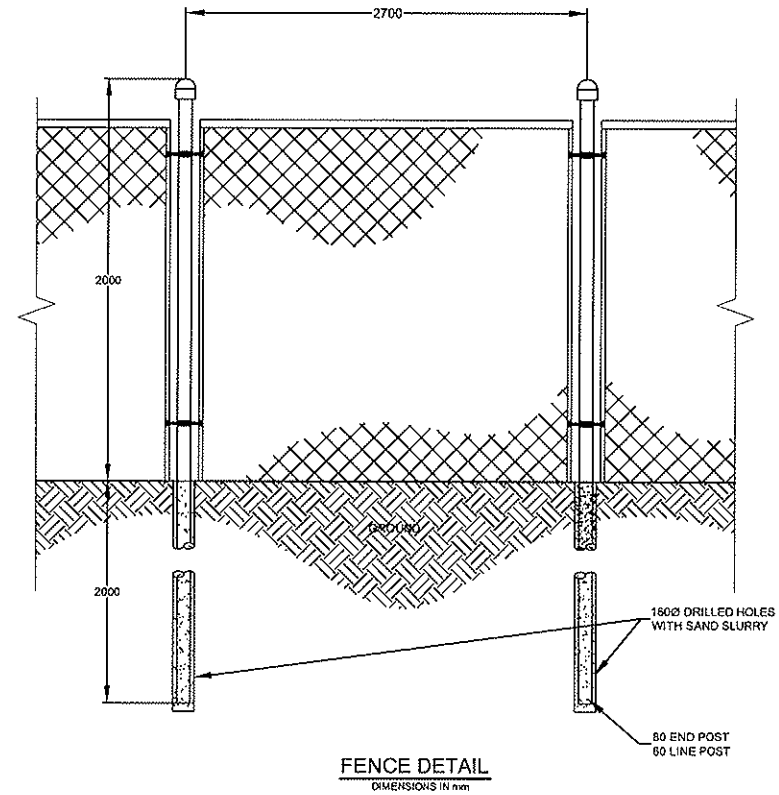
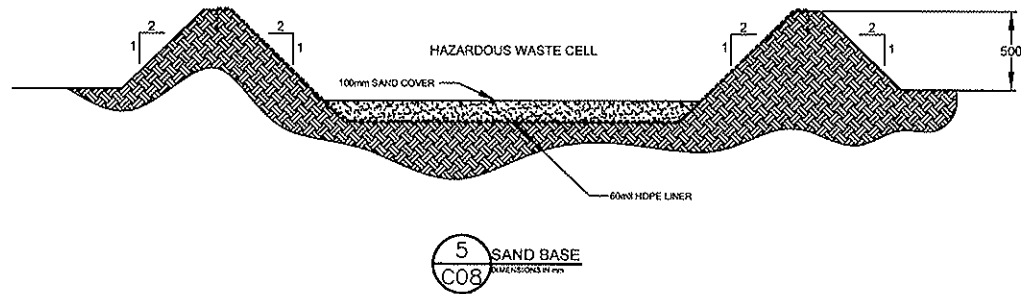
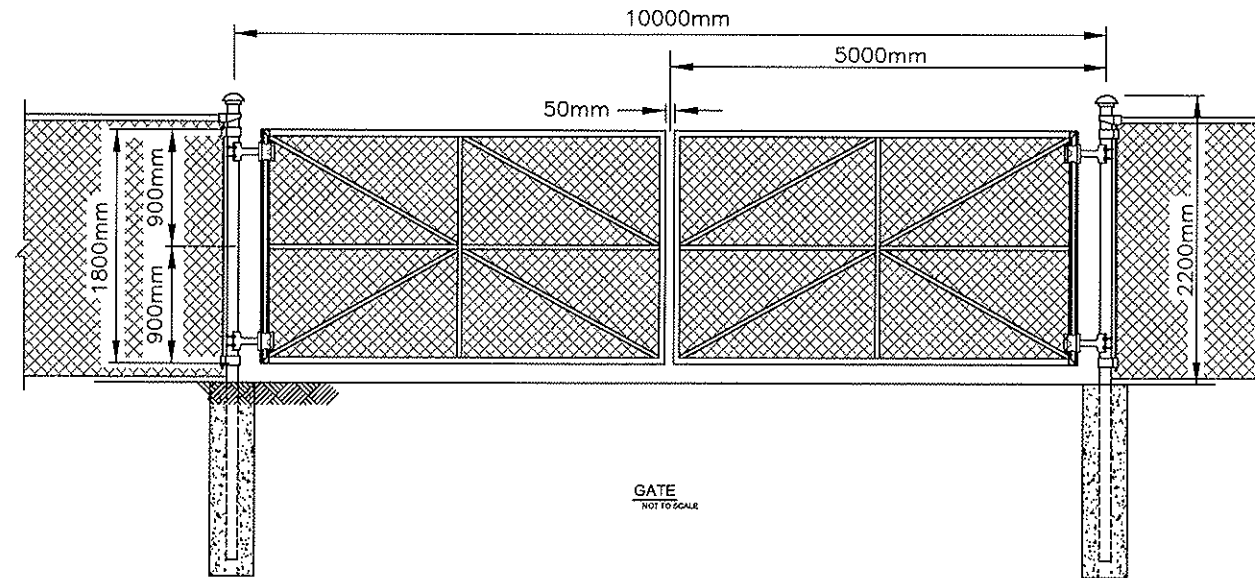
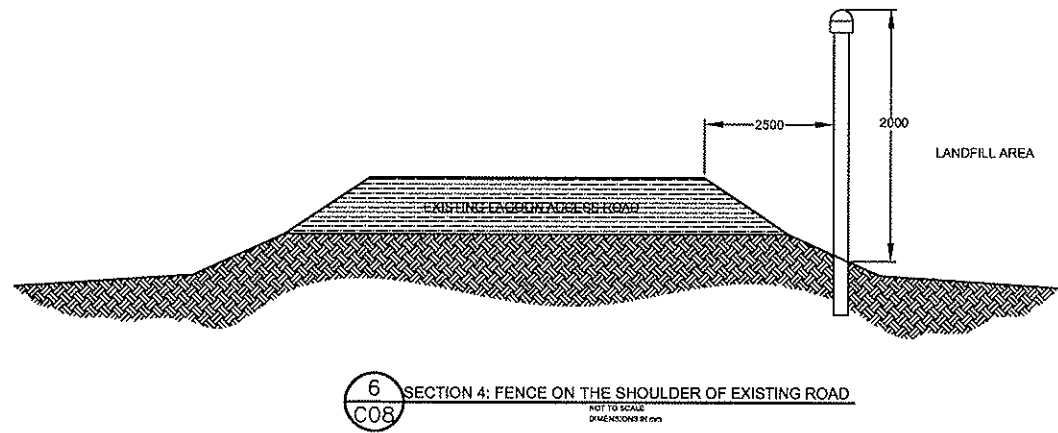


Design M.Y. / K.R.J.
Drawn M.D.S.
Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

Drawing Title
**LANDFILL SITE
CROSS
SECTIONS**

Scale:
AS NOTED
Project No. 91011
Drawing No. C-09
Date 08/09/03
Revision A

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PREPARED BY:

EARTH TECH | AECOM

17203 - 103 AVENUE
EDMONTON ALBERTA CA
T5S 1J4
1-780-488-6800

Stamp



No.	Date	Description
A	2008 10/03	ISSUED FOR REGULATORY REVIEW

REVISIONS



Design M.Y. / K.R.J.

Drawn M.D.S.

Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

Drawing Title

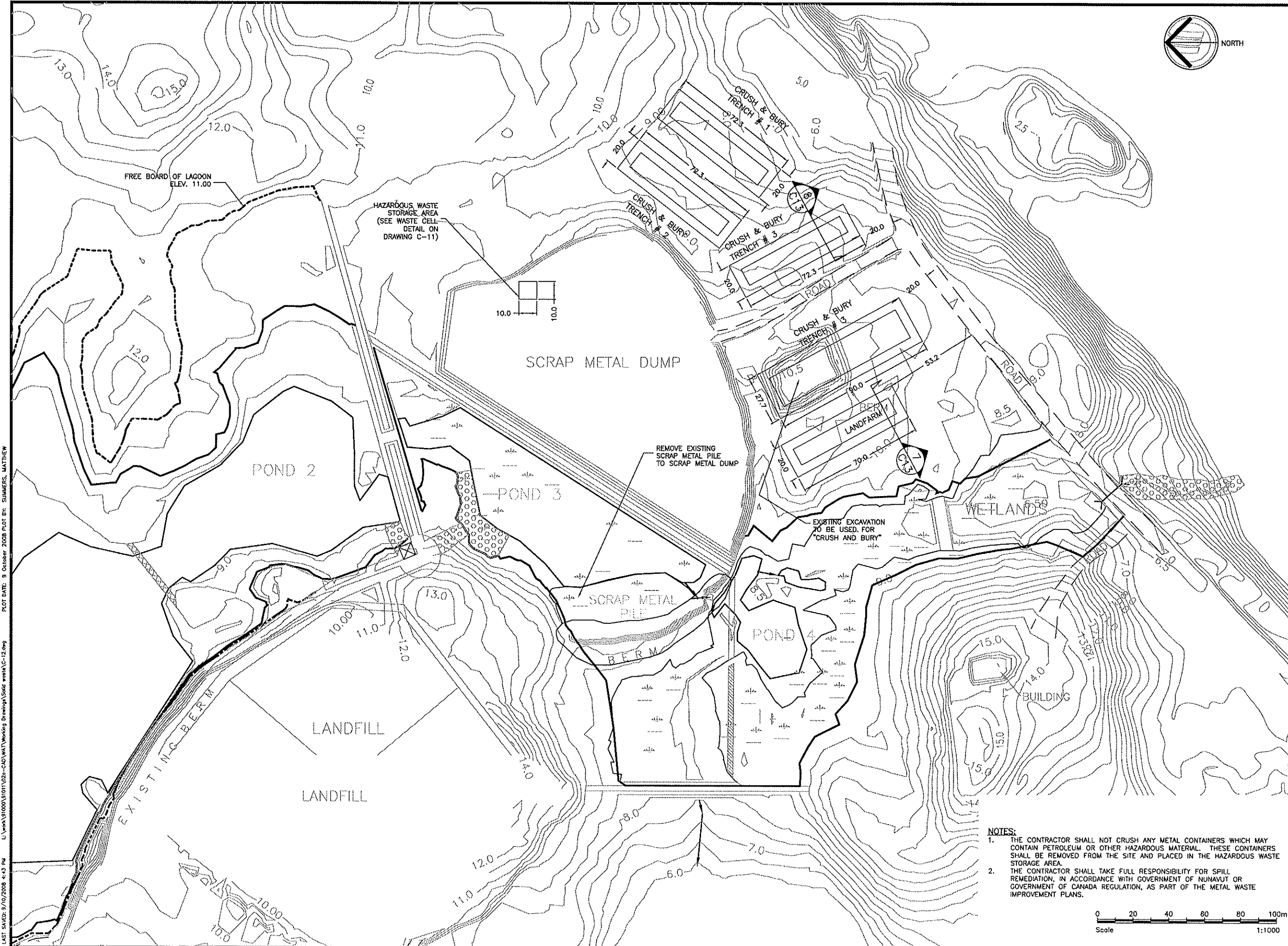
LANDFILL SITE
IMPROVEMENTS
DETAILS

Scale:
NOT TO SCALE

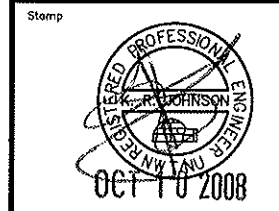
Project No. 91011 Date 08/10/03

Drawing No. C-11 Revision A

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A	2008 10/03	ISSUED FOR REGULATORY REVIEW
No.	Date	Description



Design K.R.J.
Drawn M.D.S.
Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

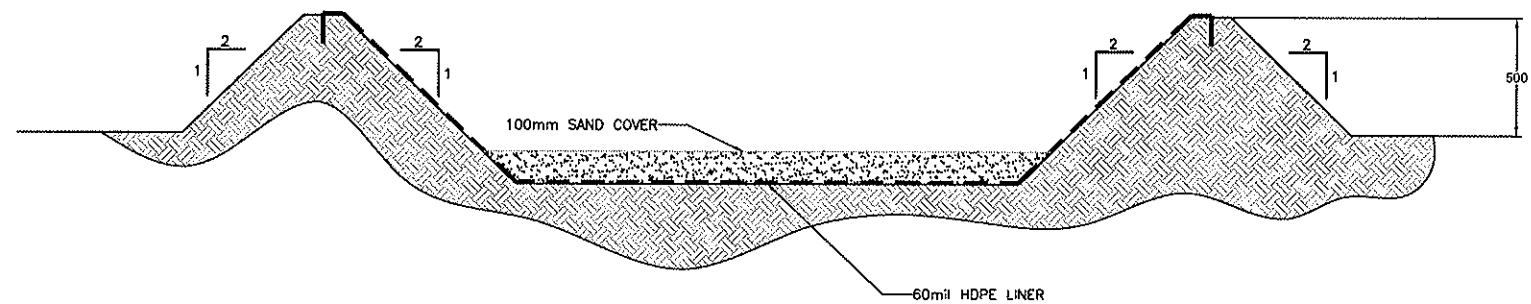
Drawing Title
METAL WASTE IMPROVEMENT PLAN
Scale: 1:1000
Project No. 91011
Drawing No. C-12
Date 08/10/03
Revision A

- NOTES:**
1. THE CONTRACTOR SHALL NOT CRUSH ANY METAL CONTAINERS WHICH MAY CONTAIN PETROLEUM OR OTHER HAZARDOUS MATERIAL. THESE CONTAINERS SHALL BE REMOVED FROM THE SITE AND PLACED IN THE HAZARDOUS WASTE STORAGE AREA.
 2. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR SPILL REMEDIATION, IN ACCORDANCE WITH GOVERNMENT OF NUNAVUT OR GOVERNMENT OF CANADA REGULATION, AS PART OF THE METAL WASTE IMPROVEMENT PLANS.

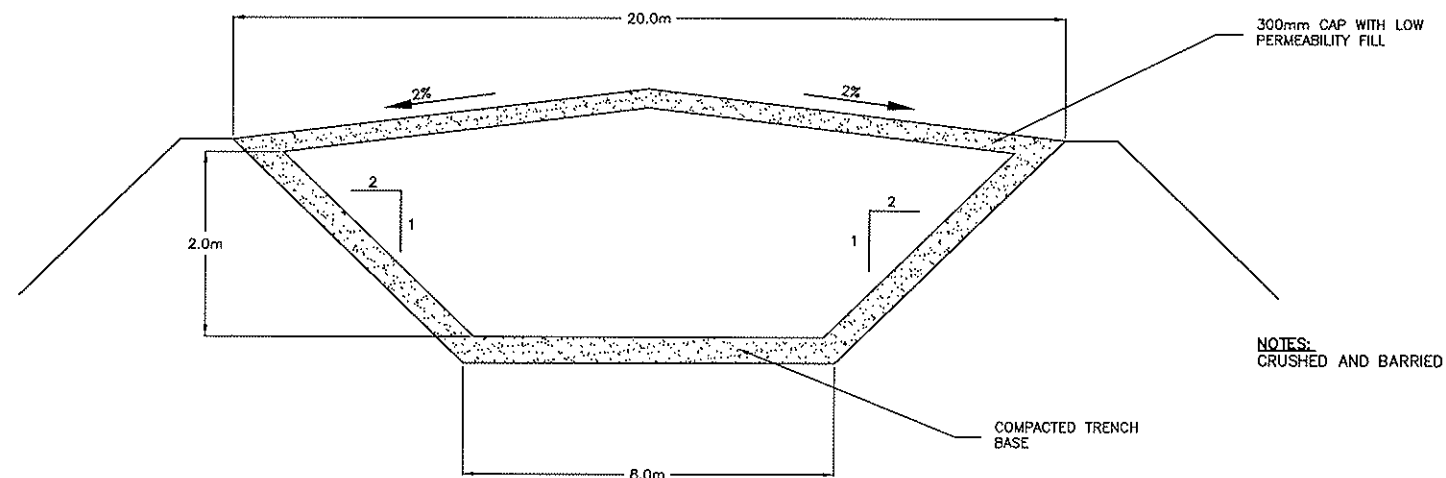
Plot Date: 9 October 2008 Plot By: SUMMERS, MATTHEW

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7 LANDFARM CELL & HAZARDOUS WASTE STORAGE
C12 NOT TO SCALE



8 CRUSHED & BURIED CELL
C12 NOT TO SCALE

PREPARED BY:

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No.	Date	Description

REVISIONS



Design M.Y. / K.R.J.

Drawn M.D.S.

Project Title
Government of Nunavut
Cambridge Bay
Waste Facilities

Drawing Title

METAL
WASTE
IMPROVEMENT
DETAILS

Scale:
NOT TO SCALE

Project No. 91011 Date 08/10/03

Drawing No. C-13 Revision A