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May 30, 2007

Community and Government Services
Government of Nunavut,
Pond Inlet, NT

Attention: Mr. Bhabesh Roy

Qikiqtarjuaq Land Farm
Design and Specifications

Dear Mr. Roy:

Please see the attached package for the design drawings and specification package for the construction of the contaminated soil land farm in Qikiqtarjuaq, NU.

The package was designed and prepared by Dillon staff and incorporated changes to the drawings after review by the Government of Nunavut's representatives.

Trust this meets your approval.

Regards

DILLLON CONSULTING LIMITED

for

Gary Strong, P. Eng

Project Manager

DIVISION 01

PART 1 GENERAL

1.1 Section Includes

.1 Work Covered by Contract Documents.

.2 Contract Method.

.3 Work sequence.

.4 Contractor use of premises.

1.2 Work Covered by Contract Documents

Work under this contract shall include, but not be limited to the following:

Construction of land farm for soil remediation

.1 Construct holding cell for contaminated soils, complete with protective geotextile liner, impermeable geomembrane and 150mm soil buffer layer.

.2 Excavate contaminated soils from designated area, haul to Land farm cell, and spread in preparation for tilling.

Operation of Land Farm

.1 Till contaminated soils twice yearly

.2 Add moisture/nutrients as required by the Engineer to facilitate soil remediation twice yearly

.3 Remove excess snow/dewater as required to maintain optimum moisture content

Decommission Land Farm

.1 Remove remediate soils

.2 Remove and dispose of off-site impermeable liner and protective liner

.3 Level dikes

.4 Work not covered in this contract shall include: supply of liner and geotextile to site

1.3 Contract Method

.1 Construct the land farm work under a stipulated price contract and operations under unit price contract.

.2 Relations and responsibilities between Contractor and Subcontractors assigned by Owner are as defined in Conditions of Contract.

1.4 Work Sequence

.1 Coordinate Progress Schedule with Engineer during construction.

.2 Work Schedule to include:

.1 Construction of land farm - August/September 2007.

.2 Excavation of contaminated soils - September 2007.

.3 Operation of land farm – September 2007 to July 2011

.4 Decommissioning of land farm – August 2011

PART 2 PRODUCTS

2.1 Not Used

.1 Not used.

PART 3 EXECUTION

3.1 Not Used

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Scheduled preconstruction and progress meetings.

1.2 Description

.1 Coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities, and construction Work, with progress of Work of other contractors and Work by Owner, under instructions of Engineer.

1.3 Construction Organization and Start-up

.1 At least 2 days in advance of construction start-up in Qikiqtarjuaq, the Engineer will organize a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.

.2 Senior representatives of the Engineer, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance. Attendance by the Owner is optional.

.3 Agenda to include following:

.1 Appointment of official representative of participants in Work.

.2 Schedule of Work, progress scheduling.

.3 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01510 - Temporary Utilities.

.4 Delivery schedule of specified materials.

.5 Proposed changes, change orders, procedures, approvals required, and administrative requirements (GC).

.6 Monthly progress claims, administrative procedures, photographs, and holdbacks (GC).

.7 Health & safety Orientation Meeting to occur on the first Working Day

.8 Tailgate and Toolbox safety meetings

.9 Other Business.

.4 Comply with Engineer's allocation of mobilization areas of site; for field offices and sheds, access, traffic, and parking facilities.

.5 During construction coordinate use of site and facilities through Engineer's procedures: Submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.

.6 Comply with instructions of Engineer for use of temporary utilities and construction facilities.

.7 Coordinate field engineering and layout work with Engineer.

1.4 On-Site Documents

.1 Maintain at job site, one copy each of the following:

.1 Contract drawings.

.2 Specifications.

.3 Addenda.

.4 Reviewed shop drawings.

.5 Change orders.

.6 Other modifications to Contract.

.7 Field test reports.

.8 Copy of approved Work schedule.

.9 Manufacturers' installation and application instructions.

.10 Labour conditions and wage schedules.

.11 Health & Safety documents and minutes.

1.5 Schedules

.1 Submit preliminary construction progress schedule coordinated with Engineer's project schedule.

.2 After review, revise and resubmit schedule to comply with revised project schedule.

.3 During progress of Work revise and resubmit as directed by Engineer.

1.6 Construction Progress Meetings

.1 During the course of Work, progress meetings will be held as required by the project and will be called by the Engineer.

.2 Contractor, major subcontractors involved in Work and Engineer are to be in attendance. Owner attendance is optional.

.3 Agenda to include following:

.1 Review, approval of minutes of previous meeting.

.2 Review of Work progress since previous meeting.

.3 Field observations, problems, conflicts.

.4 Problems which impede construction schedule.

.5 Review of off-site fabrication delivery schedules.

.6 Corrective measures and procedures to regain projected schedule.

.7 Revision to construction schedule.

.8 Progress schedule, during succeeding work period.

.9 Review submittal schedules: expedite as required.

.10 Maintenance of quality standards.

.11 Review proposed changes for affect on construction schedule and on completion date.

.12 Tail Gate Meetings

.1 Representatives of the Contractor, Sub-Contractors, and Consultant shall conduct daily Tail Gate meetings prior to the commencement of the days operations. Tail Gate meetings are not required on days scheduled for Tool Box meetings.

.2 Tail Gate meetings will address newly recognized or discovered health, safety, or environmental hazards or concerns; incident, accident, mishap, or near-miss reportings; and daily scheduling or reassignments.

.3 Based on the severity or importance of the items addressed during the Tail Gate meeting, the Consultant may request an immediate Tool Box meeting.

.4 The Consultant shall record and post minutes of the Tail gate meetings at the project site.

.13 Tool Box Meetings

.1 Representatives of the Contractor and Consultant shall conduct weekly Tool Box meetings to be attended by the general project workforce prior to the commencement of each weeks operations or when requested by the Consultant.

.2 Tool Box meetings will be employed to inform and allow general discussion of any issues or concerns identified in the Tail Gate meetings by the general workforce; review safety procedures and operations when required; and present updated project requirements and scheduling.

.3 The Consultant shall record and post minutes of the Tool Box meetings at the project site.

.14 Other business.

1.7 Submittals

.1 Make submittal to Engineer for review.

.2 Submit preliminary shop drawings, product data and for review for compliance with Contract Documents; for field dimensions and clearances, for relation to available space, and for relation to Work of other contracts. After review, revise and resubmit for transmittal to Engineer

.3 Submit requests for payment for review, and for transmittal to Engineer.

.4 Submit requests for interpretation of Contract Documents, and obtain instructions through Engineer.

.5 Process substitutions through Engineer.

.6 Process change orders through Engineer.

.7 Deliver closeout submittals for review and preliminary inspections, for transmittal to Engineer.

1.8 Closeout Procedures

.1 Refer to Section 01770 – Closeout Procedures.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Shop drawings and product data.

.2 Samples.

.3 Certificates and transcripts.

1.2 Related Sections

.1 Section 01450 - Quality Control.

1.3 Administrative

.1 Submit to Engineer submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Work affected by submittal shall not proceed until review is complete.

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals prior to submission to Engineer. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.

.6 Notify Engineer, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 Verify field measurements and affected adjacent Work are coordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Engineer’s review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Engineer review.

.10 Keep one reviewed copy of each submission on site.

1.4 Shop Drawings and Product Data

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.3 Allow 5 days for Engineer's review of each submission.

.4 Adjustments made on shop drawings by Engineer are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Engineer prior to proceeding with Work.

.5 Make changes in shop drawings as Engineer may require, consistent with Contract Documents. When resubmitting, notify Engineer in writing of any revisions other than those requested.

.6 Accompany submissions with transmittal letter containing:

.1 Date.

.2 Project title and number.

.3 Contractor's name and address.

.4 Identification and quantity of each shop drawing, product data and sample.

.5 Other pertinent data.

.7 Submissions shall include:

.1 Date and revision dates.

.2 Project title and number.

.3 Name and address of:

.1 Subcontractor.

.2 Supplier.

.3 Manufacturer.

.4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.

.5 Details of appropriate portions of Work as applicable:

.1 Fabrication.

.2 Layout, showing dimensions, including identified field dimensions, and clearances.

.3 Performance characteristics.

.4 Standards.

.5 Relationship to adjacent work.

.8 After Engineer's review, distribute copies.

.9 Submit 6 prints of shop drawings for each requirement requested in specification Sections and as consultant may reasonably request.

.10 Submit 6 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Engineer where shop drawings will not be prepared due to standardized manufacture of product.

.11 Delete information not applicable to project.

.12 Supplement standard information to provide details applicable to project.

.13 If upon review by Engineer, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Inspection and testing, administrative and enforcement requirements.

.2 Tests and mix designs.

1.2 Related Sections

.1 Section 01330 - Submittal Procedures

1.3 Inspection

.1 Allow Engineer access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Engineer instructions, or law of Place of Work.

.3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

.4 Engineer may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents.

1.4 Access to Work

.1 Independent Inspection Agencies

.1 Independent Inspection/Testing Agencies may be engaged by the Owner and Consultant for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Owner.

.2 Provide equipment required for excavating inspection and testing by appointed agencies.

.3 Allow independent inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

.4 Co-operate to provide reasonable facilities for such access.

1.5 Rejected Work

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Engineer as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 If in opinion of Engineer it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Engineer.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Temporary utilities.

1.2 Related Sections

.1 Section 01560 - Temporary Barriers and Enclosures.

1.3 Installation and Removal

.1 Provide temporary utilities controls in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.4 Dewatering

.1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.5 Temporary Power and Light

.1 Provide and pay for temporary power during construction for temporary lighting and operating of power tools.

1.6 Fire Protection

.1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

.2 Burning rubbish and construction waste materials is not permitted on site.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Construction aids.

.2 Parking.

.3 Project identification.

1.2 Related Sections

.1 Section 01510 - Temporary Utilities.

.2 Section 01560 - Temporary Barriers and Enclosures.

1.3 References

.1 Not Used.

1.4 Installation and Removal

.1 Provide construction facilities in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.5 Site Storage/Loading

.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

.2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

1.6 Construction Parking

.1 Parking will be permitted on site provided it does not disrupt performance of Work.

.2 Provide and maintain adequate access to project site.

1.7 Equipment, Tool and Materials Storage

.1 Provide and maintain, in a clean and orderly condition, lockable storage containers for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

1.8 Sanitary Facilities

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.9 Construction Signage

.1 Provide and erect, within three weeks of signing Contract, a project sign in a location designated by Consultant.

.2 Construction sign to be 2438mm x 1219mm, of wood frame and plywood construction, painted with exhibit lettering.

.3 Indicate on sign, name of Owner, Engineer & Contractor, of a design style established by Engineer.

.4 No other signs or advertisements, other than warning signs, are permitted on site.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Barriers.

.2 Environmental Controls.

.3 Fire Routes.

1.2 Related Sections

.1 Section 01510 - Temporary Utilities.

.2 Section 01520 - Construction Facilities.

1.3 Installation and Removal

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.4 Guard Rails and Barricades

.1 Provide secure, rigid guard rails and barricades around deep excavations, and open shafts,

1.5 Access to Site

.1 Provide and maintain access roads and construction runways as may be required for access to Work.

1.6 Fire Routes

.1 Maintain access to property for use by emergency response vehicles.

1.7 Protection for Off-Site and Public Property

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used

END OF SECTION

PART 1 GENERAL

1.1 Fires

.1 Fires and burning of rubbish on site not permitted.

1.2 Disposal of Wastes

.1 Do not bury rubbish and waste materials on site unless approved by Engineer.

.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways.

1.3 Drainage

.1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.

.2 Do not pump water containing suspended materials into waterways.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.4 Pollution Control

.1 Maintain temporary erosion and pollution control features installed under this contract.

.2 Control emissions from equipment and plant to local authorities emission requirements.

.3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 References

.1 Canada Labor Code, Canada Occupational Safety and Health Regulations.

.2 Canadian Standards Association (CSA)

.1 CSA S350-M1980, Code of Practice for Safety in Demolition of Structures.

.3 Nunavut Safety Act.

1.2 Safety Assessment

.1 Perform site specific safety hazard assessment related to project.

1.3 Meetings

.1 Pre-construction meetings: coordinate and hold health and safety pre-construction meeting. Coordinate and hold Tailgate and Toolbox meetings throughout construction.

1.4 Regulatory Requirements

.1 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.

1.5 Responsibility

.1 Be responsible for safety of persons and property on site and for protection of persons off site and environment to extent that they may be affected by conduct of Work.

.2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, territorial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.6 Unforeseen Hazards

.1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, immediately stop Work and advise Engineer verbally and in writing.

1.7 Correction of Non-Compliance

.1 Immediately address health and safety non-compliance issues identified by Engineer.

.2 Provide Engineer with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Engineer may stop work if non-compliance of health and safety regulations is not corrected. The Contractor shall no claim for any extras under such a stoppage.

1.8 Powder Actuated Devices

.1 Use powder actuated devices only after receipt written permission from Engineer.

1.9 Work Stoppage

.1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

.2 Assign responsibility and obligation to Health and Safety Officer to stop or start Work when, at Health and Safety Officer's discretion, it is necessary or advisable for reasons of health or safety. Engineer may also stop Work for health and safety considerations. The Contractor shall no claim for any extras under such a stoppage.

PART 2 PRODUCTS

2.1 Not Used

PART 3 EXECUTION

3.1 Not Used

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Administrative procedures preceding preliminary and final inspections of Work.

1.2 Inspection and Declaration

.1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.

.1 Notify Engineer in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.

.2 Request Engineer’s Inspection.

.2 Engineer’s Inspection: Engineer and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.

.3 Completion: submit written certificate that following have been performed:

.1 Work has been completed and inspected for compliance with Contract Documents.

.2 Defects have been corrected and deficiencies have been completed.

.3 Work is complete and ready for Final Inspection.

.4 Final Inspection: when items noted above are completed, request final inspection of Work by, Engineer, and Contractor. If Owner and Engineer deem Work incomplete, complete outstanding items and request reinspection.

.5 Declaration of Substantial Performance: when Owner and Engineer consider deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for certificate of Substantial Performance.

.6 Commencement of Lien and Warranty Periods: date of Owner’s acceptance of submitted declaration of Substantial Performance shall be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

DIVISION 02

PART 1GENERAL

1.1 Related Work

.1 Section 02449 - Geomembranes
Section 02774 - Soil Land Farm Cell

1.2 References

.1 ASTM D698, Test Methods for Moisture Density Relations of Soils and Soil Aggregate Mixtures Using 2.49 kg Rammer and 304.8 mm Drop.

1.3 Classification Of Excavation

.1 Unclassified excavation: Excavation of material of whatever character encountered in work.

.2 Unsuitable material: Material consisting of properties which are deemed by the Engineer to be detrimental, inadequate or incompatible to the Biofarm or its components.

1.4 Site Conditions

.1 Known underground and surface utility lines and buried objects are as indicated on site plan. Contractor to confirm locations of **all** subsurface utilities with the appropriate agencies.

1.5 Protection

.1 Prevent damage to natural features, benchmarks, existing buildings, utility lines, site appurtenances, and water courses which are to remain. Repair any damaged items as directed by Engineer.

1.6 Measurement For Payment

.1 Construct the land farm work under a stipulated single contract and operations under unit price contract.

PART 2 PRODUCTS

2.1 Materials

.1 Obtain approval from Engineer of excavated or graded material used as fill for grading work. Protect approved material from contamination.

PART 3 EXECUTION

3.1 Excavation

.1 Do not handle soils while in wet or frozen condition or in any manner in which soil structure is adversely affected.

.2 Commence excavating areas as indicated or as directed by Engineer after area has been cleared of any surface debris.

.3 Excavate basin for Biofarm cell to lines and elevations indicated by Engineer.

.4 Stockpile in locations as directed by Engineer. Stockpile height not to exceed 2 m, or grades staked by Engineer.

3.2 Removal Of Unsuitable Material

.1 Remove humus, roots, pockets of silt, and other deleterious material from cell bottom and dike area to depth as indicated by Engineer, and replace and compact with suitable material..

.2 Stockpile unsuitable material in locations as directed by Engineer. Stockpile height not to exceed 2 m, or grades staked by Engineer.

.3 Replace and compact suitable material as directed by the Engineer.

3.3 Grading

.1 Rough grade to levels, profiles, and contours allowing for Biofarm construction as indicated.

3.4 Surplus Material

.1 Stockpile surplus material as directed by Engineer.

.2 Remove and stockpile material unsuitable for fill, grading or landscaping as directed by Engineer.

END OF SECTION

PART 1 GENERAL

1.1 Related Work

.1 Section 02774 - Construction of Soil Biofarm Cell

1.2 References

.1 ASTM C117-87, Test Method for Material Finer Than: 0.075 mm Sieve in Mineral Aggregates by Washing.

.2 ASTM C136-84a, Method for Sieve Analysis of Fine and Coarse Aggregates.

.3 ASTM D698-78, Test Methods for Moisture Density Relations of Soils and Soil Aggregate Mixtures Using 2.49 kg Rammer and 304.8 mm Drop.

.4 ASTM D1557-78, Test Methods for Moisture Density Relations of Soils and Soil-Aggregate Mixtures Using 4.54 kg Rammer and 457 mm Drop.

.5 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.

.6 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

1.3 Definitions

.1 Unclassified excavation: excavation of materials of whatever character encountered in work.

.2 Topsoil: material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.

.3 Uncontaminated material: excavated material from the site which is classified to meet site remediation clean-up criteria and not requiring remediation, as designated by the Engineer.

.4 Contaminated material: all material excavated from the site which requires remediation, as designated by the Engineer.

.5 Waste material: all materials excavated from the site which would not be beneficial or may be deleterious to replacement in the excavation and require off site disposal.

1.4 Protection Of Existing Features

.1 Existing buried utilities and structures:

.1 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.

.2 Prior to commencing any excavation work, notify applicable owner or authorities, establish location and state of use of buried utilities and structures.

Clearly mark such locations to prevent disturbance during work.

.3 Confirm locations of buried utilities by careful test excavations.

.4 Maintain and protect from damage: water, sewer, gas, electric, tank farm piping, telephone and other utilities and structures encountered as indicated. Obtain direction of Engineer before moving or otherwise disturbing utilities or structures.

.5 Advise utility company to remove or re-route existing lines in area of excavation. Pay cost for such work.

.6 Record location of maintained, re-routed and abandoned underground lines.

.2 Existing buildings and surface features:

.1 Conduct, with Engineer, condition survey of existing buildings, trees and other plants, lawns, fencing, service poles, wires, rail tracks and paving, survey bench marks and monuments which may be affected by work.

.2 Protect existing buildings and surface features which may be affected by work from damage while work is in progress and repair damage resulting from work at no additional cost.

1.5 Shoring And Bracing

.1 Protection of Existing Features

.1 Install shoring and bracing for protection of existing buildings or features where indicated or where required.

.2 Comply with applicable local regulations to protect existing features, where required.

.3 Engage services of qualified professional engineer who is registered in province or territory in which work is to be carried out to design and inspect cofferdams, shoring, bracing and underpinning required for work.

.4 At least 2 weeks prior to commencing work, submit design and supporting data, where required.

.2 Safety

.1 Shoring and bracing for general excavation work to comply with requirements of Nunavut Safety Act & Regulations

.2 Engineer will not require access to bottom of excavation for sampling. Samples will be taken from bucket of excavator at surface.

1.6 Samples

.1 Submit sample results in accordance with Section 01330 Submittal Procedures.

.2 At least one week prior to commencing work, provide Engineer with the latest proctor density results of the proposed backfill material.

.3 Proctor densities to be performed in accordance with ASTM D698.

1.7 Measurement For Payment

.1 Hauling and Spreading of contaminated materials to the land farm will be measured on a unit price basis. The volume to be paid for shall be the total number of cubic metres of material that are acceptably hauled and spread in accordance with this Specification, as computed from measurements made by the Engineer. The measure of payment will be computed by subtracting waste and clean material volumes from the total excavation volume.

PART 2 PRODUCTS

2.1 Materials

.1 Subbase and Base Course Materials

.1 Crushed, pit run or screened stone, gravel or sand consisting of hard durable particles free from clay lumps, cementation, organic material, frozen material and other deleterious materials.

.2 Gradations to be within limits specified when tested to ASTM C136 and ASTM C117. Sieve sizes to CAN/CGSB-8.1.

Sieve Designation (mm)	% Passing	
	Base Course	Subbase
75	--	100
50	--	--
38.1	--	70 - 100
25	--	--
19	100	50 - 75
12.5	70 - 100	--
9.5	--	40 - 65
4.75	40 - 70	30 - 50
2.00	23 - 50	--
0.425	7 - 25	10 - 30
0.180	--	--
0.075	3 - 8	3 - 8

.2 Subgrade material: granular pit run material or unfrozen excavated materials from other sources (including borrow fill materials). When requested by Engineer, Contractor is to submit a sample of subgrade material to Engineer for testing. At least one week prior to commencing work, inform Engineer of proposed source of subgrade material.

.3 Safety fencing: Temporary snow fencing or equivalent.

PART 3 EXECUTION

3.1 Site Preparation

.1 Install snow fencing around site perimeter, securely fastening fence sections together.

.2 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated, or designated by Engineer on site.

.3 Remove pavements and dispose of off-site at location approved by Engineer.

3.2 Stockpiling

.1 Engineer will determine character of all excavated materials (whether contaminated, waste or uncontaminated).

.2 Stockpile uncontaminated materials in areas designated by Engineer. Stockpile granular materials in manner to prevent segregation.

.3 Protect stockpiled clean materials from contamination.

3.3 Shoring And Bracing

.1 Shoring and bracing required only to protect existing structures as indicated, or if workers must enter excavation. Engineer will test materials from excavator bucket at surface and will not require access to excavation bottom.

.2 Construct temporary works to depths, heights, and locations as required or directed by Engineer.

.3 During backfill operation:

.1 Unless otherwise indicated or as directed by Engineer, remove sheeting and shoring from excavations.

.2 Do not remove bracing until backfilling has reached respective levels of such bracing.

.3 Pull sheeting in increments that will ensure compacted backfill is maintained at an elevation at least 500 mm above toe of sheeting or shoring.

.4 When sheeting is required to remain in place, cut off tops at elevations as indicated, or directed by Engineer.

3.4 Dewatering And Heave Prevention

.1 Keep excavations free of water while work is in progress.

.2 Avoid excavation below ground water table if quick condition or heave is likely to occur. Prevent piping or bottom heave of excavations by ground water lowering, sheet pile cut-offs, or other means, as required.

.3 Protect open excavations against flooding and damage due to surface run-off.

.4 Dispose of water in a manner not detrimental to public and private property, or any portion of work completed or under construction, as directed by Engineer, and as specified in General Requirements.

3.5 Excavation

.1 Excavate to lines, grades, elevations and dimensions as directed by Engineer.

.2 Excavation must not interfere with normal 45° splay of bearing from bottom of any footing.

.3 Engineer will determine character of material that is excavated. Contaminated materials will be hauled to the Biofarm to be constructed under this contract near the tank storage area.. Materials classified as being uncontaminated will be stockpiled on-site at a location designated by the Engineer, for later use as backfill material. Materials classified as waste are to be stockpiled and transported to an off-site disposal facility.

.4 Limits of excavation will be determined by the Engineer, who will notify Contractor when completion of excavation is reached. Do not excavate beyond limits as directed by Engineer

.5 Where required, due to unauthorized over-excavation, correct as follows:

.1 Fill under bearing surfaces and footings with concrete specified for footings fill concrete at no additional cost to Owner.

.2 Backfill in accordance with Clause 3.7 and 3.8 hereof at no additional cost to Owner.

3.6 Hauling Contaminated Materials

.1 Materials excavated from site, which are classified as Contaminated Materials by the Engineer, are to be hauled to the Biofarm near the sewage lagoon area.

.2 Load materials into trucks with sealable tailgates.

.3 Contractor shall fully comply with the requirements of the Transportation of Dangerous Goods Act during the transportation of hazardous waste materials to the Biofarm.

.4 Contractor is responsible for arranging all permits, approvals, and other necessary regulatory requirements related to the biofarm operation. Agencies contacted for permits shall include, but not be limited to, the Nunavut Planning Commission, the Nunavut Impact Review Board, the Nunavut Water Board, Indian and Northern Affairs Canada,

Department of Fisheries and Oceans, Nunavut Tunngavik Incorporated, the Nunavut Surface Rights Tribunal, and the Inuit Heritage Trust.

3.7 Fill Types And Compaction

.1 Install backfill as described below:

.1 Install subgrade material from bottom of excavation to elevation as indicated, in 300 mm compacted thickness layers. Compact backfill material layers to 95 percent of maximum density obtained from ASTM D-698 test procedure.

3.8 Backfilling

.1 Compaction equipment must be capable of obtaining specified densities.

.2 Do not proceed with backfilling operations until Engineer has inspected and approved excavation.

.3 Areas to be backfilled are to be free from debris, snow, ice, water, and frozen ground.

.4 Do not use backfill material which is frozen or contains ice, snow, or debris.

.5 Place backfill material in uniform layers not exceeding specified compacted thickness up to elevations indicated, as specified in Section 3.7. Compact each layer and obtain Engineer's approval to proceed before placing succeeding layer.

3.9 Site Restoration

.1 Upon completion of work, remove surplus materials and debris, trim slopes, and correct defects as directed by Engineer.

.2 Clean and reinstate areas affected by work as directed by Engineer.

.3 Remove fencing, temporary controls and facilities, and other construction equipment from site.

END OF SECTION

PART 1 GENERAL

1.1 Related Work

.1 Section 02774 - Soil Biofarm Cell

1.2 References

.1 ***ANSI/ASTM D882, Test Method for Tensile Properties of Plastics.***

.2 ***ASTM D1004-66(1981), Test Method for Initial Tear Resistance of Plastic Film and Sheeting.***

.3 ***ASTM D1593-81, Specification for Nonrigid Vinyl Chloride Plastic Sheeting.***

.4 ***ASTM D1790-83, Test Method for Brittleness Temperature of Plastic Film by Impact.***

1.3 Shop Drawing

.1 Submit shop drawings in accordance with Section 01330 - Submittal Procedures.

.2 Indicate installation layout, dimensions and details, including anchor trenches and protrusion details.

1.4 Delivery And Storage

.1 The owner will provide the liner and the geotextile to the contractor at the sea lift point in Qikiqtarjuaq.

PART 2 PRODUCTS

2.1 Materials

.1 Geotextile: non-woven polyester.

.1 Supplied in:

.1 adequate number of rolls to cover area indicated, accounting for overlap as per manufacturer's specifications.

.2 Composed of non-woven needle punched polyester

.2 Geomembrane: extruded synthetic sheet.

.1 Supplied in:

.1 4 panel of size as indicated, on attached information.

.2 Composed of oil resistant polyvinyl chloride resin with inhibitors added to base plastic to resist deterioration by ultra-violet and heat exposure for 60 days.

.3 Seams: welded in accordance with manufacturer's recommendations. Physical properties for resin used for welding to be same as those for resin used in manufacture of membrane. Factory-made where possible.

.4 Physical properties: Protective Liner.

.1 Thickness: to ASTM D5199, minimum 2.5 mm.

.2 Tensile strength and elongation at break: to ASTM D4632:

.1 Tensile strength: minimum 1.11 kN.

.2 Elongation: minimum 50 percent.

.3 Tear resistance: to ASTM D4833, 665 N.

.4 Acceptable material: LayField Plastics (1978), non woven geotexiles, "LP 10."

.5 Physical properties: Impermeable Liner.

.1 Thickness: to ASTM D1593, minimum 0.76 mm.

.2 Tensile strength and elongation at break: to ASTM D882:

.1 Tensile strength: minimum 290 kPa.

.2 Elongation: minimum 375 percent.

.3 Tear resistance: to ASTM D1004, Die C, minimum 30 N.

.4 Brittleness temperature: to ASTM D1790, minus 30°C.

.5 Geomembrane: free of striations, roughness, pinholes, bubbles, blisters, undispersed raw materials and any sign of contamination by foreign matter.

.6 Acceptable material: LayField Plastics (1978), arctic liner, "Arctic 30."

PART 3 EXECUTION

3.1 Installation: Impermeable Liner And Protective Liner

.1 Install geomembrane in general accordance with Specification 3.3 of Section 02774 "Soil Land Farm Cell," following these additional instructions.

.2 Place panel in accordance with manufacturer's supplied unfolding directions and installation instructions. Minimize wrinkles, avoid scratches and crimps to geomembranes, and avoid damage to supporting soil.

.3 Do not proceed with panel placement when ambient temperatures are below minus 10°C or above 40°C, during any precipitation, in presence of excessive moisture (eg. fog, dew), nor in presence of high winds.

.4 Protect installed membrane from displacement and damage before, during and after placement of additional material layers.

.5 Replace damaged, torn or permanently twisted panels. Remove rejected damaged panels from site.

.6 Repair minor tears and pinholes by patching until non-destructive testing is successful. Patches to be round or oval in shape, made of same geomembrane material, and extend minimum of 75 mm beyond edge of defect. Repairs to conform to manufacturer's directions and seaming specifications.

3.2 Protection

.1 Do not permit passage of any vehicle directly on any membrane at any time.

END OF SECTION

PART 1 GENERAL

1 References

.1 ASTM D5092 - Standard Practice for Design and Installation of Ground-Water Monitoring Wells in Aquifers

.2 ASTM D5521 - Standard Guide for Development of Ground-Water Monitoring Wells in Granular Aquifers.

PART 2 PRODUCTS

2.1 Materials

.1 Schedule 40 50 mm diameter PVC Piping Risers, threaded.

.2 Machine slotted Schedule 40 50 mm diameter PVC Screens, threaded.

.3 Geosock

.4 PVC, bottom and top caps

.5 Metal flush mount casing protectors

PART 3 EXECUTION

3.1 Installation

.1 Monitoring well installation to be done in accordance with ASTM D5092, and ASTM D552. Installation detail shown on Drawing C103.

.2 The use of solvents or chemical sealers in the installation will not be approved. All piping must be connected via threads or friction couplings.

END OF SECTION

PART 1 GENERAL

1.1 Related Work

Section 02210 - Site Grading.
Section 02449 - Geomembranes.

1.2 References

.1 ASTM C117-87, Test Method for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.

.2 ASTM C136-84a, Method for Sieve Analysis of Fine and Coarse Aggregates.

.3 ASTM D698-78, Test Methods for Moisture Density Relations of Soils and Soil Aggregate Mixtures Using 2.49 kg Rammer and 304.8 mm Drop.

.4 CAN/CGSB-8.1-88, Sieves Testing, Woven Wire.

.5 CAN/CGSB-8.2-M88, Sieves Testing, Woven Wire, Metric.

PART 2 PRODUCTS

2.1 Materials

.1 Liner: geomembranes to Section 02449 - Geomembranes.

PART 3 EXECUTION

3.1 Dike Construction

.1 Construct dikes as indicated, using material from excavation, as directed by Engineer.

.2 Place dike materials in 300 mm compacted thickness layers and compact each layer to 95 % of proctor density.

.3 Hand finish or grade surface of compacted dike to remove stones over 75 mm in size and other debris.

3.2 Protective Lining

.1 Check surface on which protective liner is to be placed and remove projections that may puncture lining.

.2 Place liner panels as directed by Engineer or as indicated. Anchor panels temporarily using sand bags or other weights that will not damage liner.

.3 Excavate anchor trenches at locations as indicated.

.4 Place and secure liner over dykes and in anchor trenches.

.5 Backfill and compact anchor trenches.

.6 Finish slopes and top of dike as indicated.

.7 Complete flashing and sealing of penetrations as indicated.

3.3 Flexible Lining

.1 Check surface on which flexible liner is to be placed and remove projections that may puncture lining.

.2 Place liner panels as directed by Engineer or as indicated. Anchor panels temporarily using sand bags or other weights that will not damage liner.

.3 Excavate anchor trenches at locations as indicated.

.4 Place and secure liner over dykes and in anchor trenches.

.5 Backfill and compact anchor trenches.

.6 Finish slopes and top of dike as indicated.

.7 Complete flashing and sealing of penetrations as indicated.

.8 Place 150 mm buffer material cover blanket as indicated. Do not conduct compaction activities of the buffer material. Apply additional measures as directed by the Engineer to ensure filter material can be identified from future overlying contaminated soils.

3.4 Clean Up

.1 Stockpile surplus material and debris on site, as directed by Engineer.

END OF SECTION

PART 1GENERAL

1 Description

.1 This Specification shall cover all phases of the spreading, tillage, levelling, and aeration of contaminated materials in the treatment cells. It shall also cover control of site drainage and all other works involved in the facility operations. There are five tillage/aeration events scheduled per annum.

PART 2 PRODUCTS

2.1 Nutrients

.1 Nutrient type(s) and grade(s) to be determined by the Engineer prior to application.

PART 3 EXECUTION

3.1 Operation Of Treatment Cells

.1 Contractor shall level contaminated soils within the cells prior to tilling.

.2 Till contaminated soils designated by the Engineer at a frequency of 2 times per year, spanning the construction season.

.3 Contractor shall remove excess snow accumulations within the cell just prior to spring thaw to minimize melt water.

.4 Treatment cells shall be dewatered as directed by Engineer.

.5 Contractor shall increase the moisture content or nutrient levels of the contaminated soils, as directed by the Engineer. Water is to be pumped from the drainage sump or other approved area and distributed evenly over the contaminated soils, when required. Nutrients shall be slow-release polymer coated prills with a NPK ration of 24:2:1, unless otherwise specified by the Engineer.

3.2 Spreading/Levelling Of Contaminated Soils

.1 The Contractor shall spread and level the soil by mechanical means to the satisfaction of the Engineer prior to aerating and tilling.

.2 Soils are to be spread an average thickness of 200 mm within the cells. Avoid intermixing of contaminated soils and buffer layer protecting the underlying liner.

.3 Spreading/levelling equipment must be capable of performing spreading/levelling activities without over-compacting contaminated soils. Minimize equipment transportation across soils within the cells.

3.3 Tillage/Aeration Of Contaminated Soils

.1 The Contractor shall aerate the contaminated soils by mechanical means to the satisfaction of the Engineer.

.2 The frequency of aeration tillings shall be 2 times per year spanning the construction season.

.3 Aeration equipment must be capable of adequately turning over the soil to a minimum depth of 200 mm. Increasing tillage depth may penetrate the buffer layer protecting the underlying liner. If buffer material is encountered during tillage, adjust tillage depth accordingly.

END OF SECTION

PART 1 GENERAL

1.1 Description of Work

.1 A new length of chain link fence is to be supplied and installed at the front of the sewage and solid waste site as illustrated by the drawings.

.2 Existing fencing at the rear of the sewage and solid waste site is to be repaired using existing materials and supplementing where required.

1.2 References

.1 ASTMA53-90b, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.

.2 ASTMA90-81(1991), Test Method for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.

.3 ASTMA525M-91b, Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot Dip Process.

.4 CAN/CSA-A23.1-M90, Concrete Materials and Methods of Concrete Construction.

.5 CAN/CSA-G164-M92, Hot Dip Galvanizing of Irregularly Shaped Articles.

.6 CAN/CGSB-138.1-M80, Fence, Chain Link, Fabric.

.7 CAN/CGSB-138.2-M80, Fence, Chain Link, Framework, Zinc-Coated, Steel.

.8 CAN/CGSB-138.3-M80, Fence, Chain Link - Installation.

.9 CAN/CGSB-138.4-M82, Fence, Chain Link, Gates.

.10 CAN/CGSB-1.181-92, Ready-Mixed Organic Zinc-Rich Coating.

1.3 Shop Drawings

.1 Submit shop drawings and product data to Engineer for review prior to procurement.

1.4 Measurement for Payment

.1 Payment for supply and erection of wire fence will be made per terms of contract.

PART 2 PRODUCTS

2.1 Materials

.1 Concrete mixes and materials: to Section 03302- Cast-in-Place Concrete CAN/CSA-A23.1.

.2 Chain-link fence fabric: to CAN/CGSB-138.1.

.1 Hot-dip galvanized number 6 gauge steel wire woven to 50mm mesh.

.2 Height of fabric: as indicated on drawings.

.3 Top selvedge should be 5 twisted finish

.4 Bottom selvedge should be knuckle finish.

.3 Posts, braces and rails: to CAN/CGSB-138.2, galvanized steel pipe. Dimensions as indicated.

.4 Bottom tension wire: to CAN/CGSB-138.1, Table2, single strand, galvanized steel wire, 5mm diameter fastened every 18".

.5 Tie wire fasteners: to CAN/CGSB-138.1, Table 2, aluminum alloy wire single strand.

.6 Tension bar: to ASTMA525M, 5x20mm minimum galvanized steel.

.7 Gates: to CAN/CGSB-138.4.

.8 Gate frames: to ASTMA53, galvanized steel pipe, standard weight 25mm outside diameter pipe.

.1 Fabricate gates as indicated with electrically welded joints, and hot-dip galvanized or painted with zinc pigmented paint (in field) after welding.

.2 Fasten fence fabric to gate with twisted selvage at top.

.3 Furnish gates with galvanized malleable iron hinges, latch and latch catch with provision for padlock which can be attached and operated from either side of installed gate.

.4 Furnish double gates with chain hook to hold gates open and center rest with drop bolt for closed position.

.9 Fittings and hardware: to CAN/CGSB-138.2, cast aluminum alloy, galvanized steel or malleable or ductile cast iron. Tension bar bands: 3x20mm minimum galvanized steel or 5x20mm minimum aluminum. Post caps to provide waterproof fit, to fasten securely over posts and to carry top rail. Overhang tops to provide waterproof fit, to hold top rails.

.10 Organic zinc rich coating: to CAN/CGSB-1.181.

2.2 Finishes

.1 Galvanizing:

.1 For chain link fabric: to CAN/CGSB-138.1 Grade[2].

.2 For pipe: 92g/m2minimum to ASTMA90.

.3 For other fittings: to CAN/CSA-G164.

PART 3 EXECUTION

3.1 Grading

.1 Remove debris and correct ground undulations along fence line to obtain smooth uniform gradient between posts. Provide clearance between bottom of fence and ground surface of no more than 50mm.

3.2 Erection of Fence

.1 Erect fence to layout as provided by the Engineer and in accordance with CAN/CGSB-138.3.

.2 Excavate postholes to dimensions indicated on the drawings for cast in place concrete, or approved alternate.

.3 Installation of posts:

.1 Space intermediate posts at 2.0m

.2 Space corner, end and gate posts 2.0m from adjacent post.

.3 Locate and erect gate posts as indicated.

.4 Install posts true to line and plumb such that 1.8m of fabric projects above ground.

.4 Fencing with steel posts:

.1 End, corner and gate posts

.2 Intermediate posts adjacent to end, corner and gate posts.

.3 Intermediate posts every 60m along fence line.

.5 Install additional straining posts at sharp changes in grade and where directed by Engineer.

.6 Install corner post where change in alignment exceeds 10°.

.7 Install end posts at end of fence and at buildings. Install gate posts on both sides of gate openings.

.8 Place concrete in post holes then embed posts into concrete or approved alternate to depths indicated. Extend concrete 50mm above ground level and slope to drain away from posts. Brace to hold posts in plumb position and true to alignment and elevation until concrete has set.

.9 Do not install fence fabric until concrete has cured a minimum of 5 days.

.10 Install brace between end and gate posts and nearest line post, placed in center of panel and parallel to ground surface. Install braces on both sides of corner and straining posts in similar manner.

.11 Install top rail between posts and fasten securely to posts and secure waterproof caps and overhang tops.

.12 Install bottom tension wire, stretch tightly and fasten securely to end, corner, gate and straining posts with turnbuckles and tension bar bands.

.13 Lay out fence fabric. Stretch tightly to tension recommended by manufacturer and fasten to end, corner, gate and straining posts with tension bar secured to post with tension bar bands spaced at 300mm intervals. Knuckled selvedge at bottom. Twisted selvedge at top.

.14 Secure fabric to top rails, line posts and bottom tension wire with tie wires at 450mm intervals. Give tie wires minimum two twists.

3.3 Installation of Gates

.1 Install gates in locations as per construction layout.

.2 Level ground between gate posts and set gate bottom approximately 100mm above ground surface.

.3 Locate anchor pipe for drop bolt and install pipe flush with ground.

.4 Install gate stops where indicated.

3.4 Touch up

.1 Clean damaged surfaces with wire brush removing loose and cracked coatings. Apply two coats of organic zinc-rich paint to damaged areas in accordance manufacturers' instructions.

3.5 Cleaning

.1 Clean and trim areas disturbed by operations. Dispose of surplus material as directed by Engineer.

END OF SECTION

PART 1 GENERAL

1.1 Related Work

.1 Section 02774 - Soil Biofarm Cell.

1.2 Measurement For Payment

.1 Decommissioning of the Biofarm will be measured on a lump sum basis. The number to be paid for shall be the total number of Biofarms that are acceptably decommissioned in accordance with this Specification, as computed from measurements made by the Engineer.

Decommissioning of the Biofarm will be paid for at the Contract Unit Price each for "Decommission Biofarm," measured as specified above, which price shall be payment in full for supplying all materials and performing all operations herein described, and all other items incidental to the Work included in this Specification.

PART 2 EXECUTION

2.1 Removal Of Liners

.1 All liner material shall be removed and disposed of off-site as directed by Engineer.

2.2 Levelling Dikes

.1 Level dikes and grade material.

.2 Compact material to approximate in-situ density or 95 percent of Proctor Density, as directed by the Engineer.

.3 Spread material in uniform layers not exceeding 300 mm, over unfrozen subgrade, free of standing water.

2.3 Restoration Of Stockpile Sites

.1 Restore stockpile sites acceptable to Engineer.

2.4 Surplus Material

.1 Dispose of materials not required as directed by Engineer.

2.5 Decommission At Site

.1 Upon completion of work, remove debris, trim surfaces, and leave work site clean.

2. Reinstate areas and existing works outside of the site to conditions that existed prior to commencement of work to the satisfaction of the Engineer.

END OF SECTION

DIVISION 03

PART 1 GENERAL

1.1 Standard

.1 Concrete materials and methods of construction: to CAN/CSA-A23.1- 94 unless otherwise specified.

1.2 Inspection

.1 Give Engineer minimum 24h notice before each concrete pour.

1.3 Shop Drawings

.1 Submit placing drawings and product data to Engineer prior to procurement.

PART 2 PRODUCTS

2.1 Materials

.1 Portland cement: to CAN/CSA-A5- 93, Type 10.

.2 Shrinkage compensating grout: pre-mixed, non-metallic aggregate, 25 MPa compressive strength at 28 days.

.3 All other concrete materials: to CAN/CSA-A23.1-94.

2.2 Mix Proportions

.1 Method: Alternative (1) of CAN/CSA-A23.1-94 .

.2 Cement type: as specified under 2.1.

.3 Minimum 28 day compressive strengths and exposure classifications:

.1 All other concrete: 25 MPa; C-4.

.4 Nominal size of coarse aggregate: Clause14 of CAN/CSA-A23.1- 94.

.5 Slump: to Table 6 of CAN/CSA-A23.1- 94.

.6 Air content: all concrete to contain purposely entrained air in accordance with Table10 of CAN/CSA-A23.1- 94.

.7 Admixtures: to Clause 6 of CAN/CSA-A23.1- 94.

PART 3 EXECUTION

3.1 Finishes

.1 Formed surfaces exposed to view: sack rubbed finish in accordance with CAN/CSA-A23.1-94.

.2 Equipment pads: smooth trowelled surface; finishing tolerance classification: Very Flat

3.2 Curing

.1 Cure and protect concrete in accordance with CAN/CSA-A23.1-94, except that curing compounds shall not be used where bond is required by subsequent topping or coating.

3.3 Grout

.1 Grout voids under baseplates.

.2 Grout into place, bolts and other items of concrete hardware, that are not placed prior to pouring concrete.

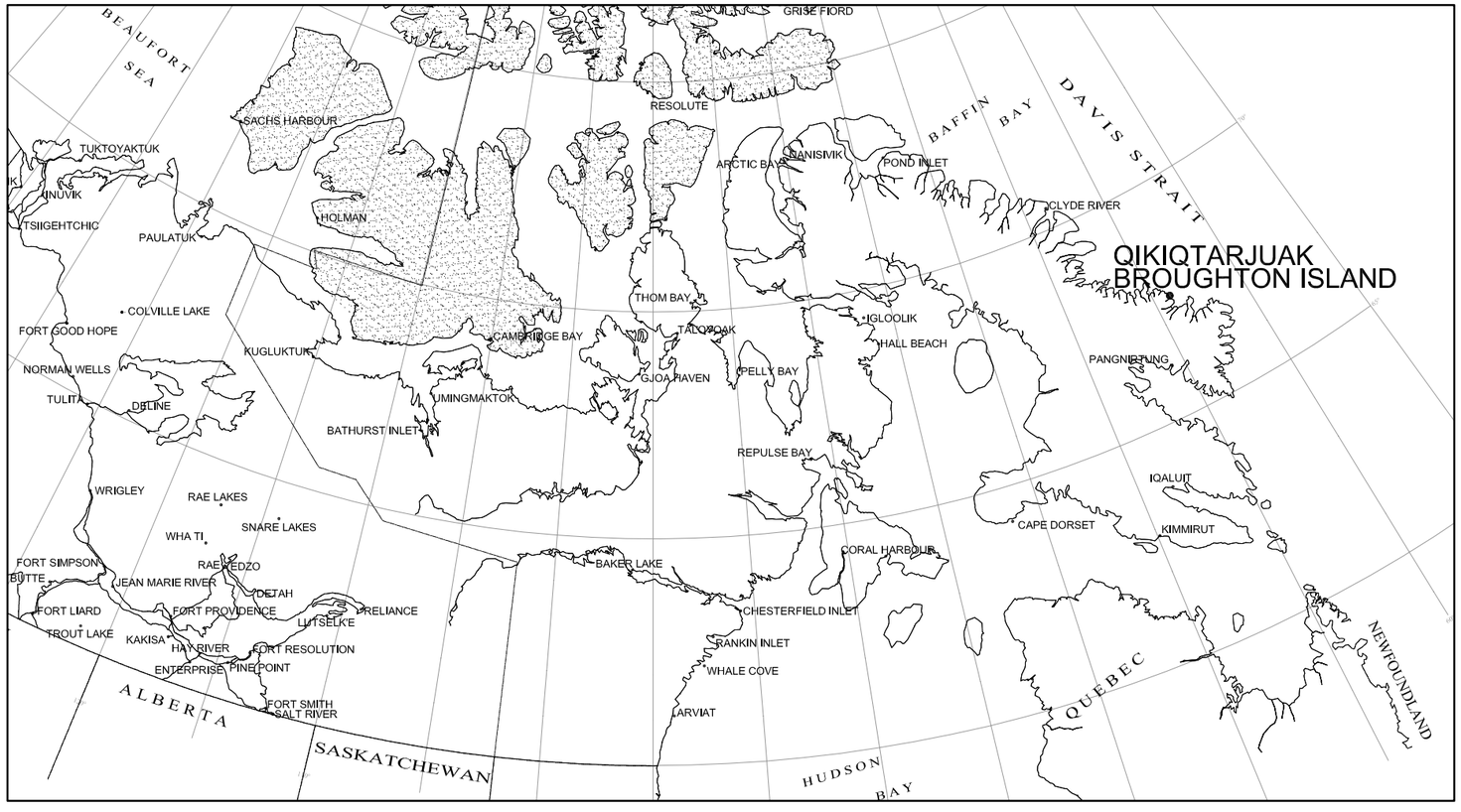
.3 Mix and place grout.

END OF SECTION

Drawings

THE GOVERNMENT OF NUNAVUT
COMMUNITY AND GOVERNMENT SERVICES

PROJECT: QIKIQTARJUAQ LANDFILL CONSTRUCTION - TENDER DRAWINGS
LOCATION: QIKIQTARJUAQ, NU
PROJECT NO: 06-5846-1000
DATE: MAY 2007



List of Drawings	
Sheet Number	Sheet Title
100	Cover
101	Site Plan
102	Contaminated Sites and New Landfarm Location Site Plans
103	Lagoon Plan
104	Landfarm Sections and Details
105	Chain Link Fence and Monitoring Well Details

DILLON CONSULTING

EDIT DATE: 17.05.2007 PLOT DATE: administrator 17.05.2007 CAD FILE: 41tpw g:\cad\06584\rev4\cover.dwg

DRAWING NUMBER 100

CHANGE	DATE	DESCRIPTION	CHECK
2	05/17/07	ISSUED FOR TENDER	GS
1	08/06/06	ISSUED FOR CLIENT REVIEW	GS

REVISIONS

DESIGN	DRAWN	CHECKED	DATE
GS	TPW	GS	MAY 2007

Nunavut

PROJECT

GOVERNMENT OF NUNAVUT
QIKIQTARJUAQ LANDFILL
CONSTRUCTION

TITLE

SITE PLAN

DILLON CONSULTING

SCALE	AS SHOWN
DILLON PROJECT NUMBER	06-5846-1000
CLIENT PROJECT NUMBER	06-5846-1000
DRAWING NUMBER	101

EDIT DATE: 17.05.2007 PLOT DATE: administrator 17.05.2007 ACAD FILE: 41tpw g:\cad\065846\rev4\065846-101.dwg

1 102 102 CONTAMINATED SITE LOCATION
SCALE 1:6000

2 102 102 NEW LANDFARM LOCATION
SCALE 1:6000

CHANGE	DATE	DESCRIPTION	CHECK
2	05/17/07	ISSUED FOR TENDER	GS
1	08/06/06	ISSUED FOR CLIENT REVIEW	GS

REVISIONS

DESIGN	DRAWN	CHECKED	DATE
GS	TPW	GS	MAY 2007

Nunavut

PROJECT

GOVERNMENT OF NUNAVUT
QIKIQTARJUAQ LANDFILL
CONSTRUCTION

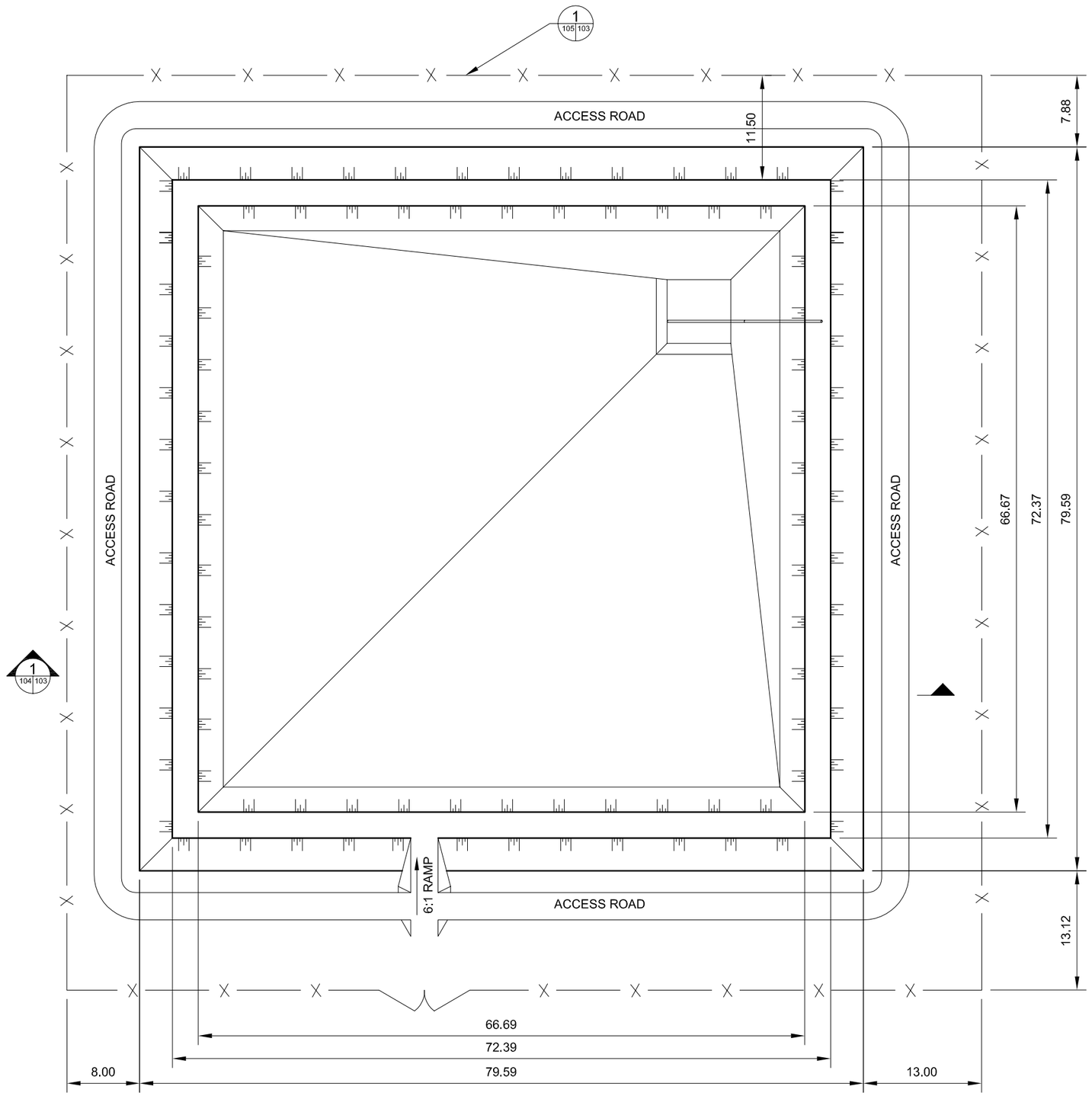
TITLE

CONTAMINATED SITES AND NEW LANDFARM LOCATION SITE PLANS

DILLON CONSULTING

SCALE	AS SHOWN
DILLON PROJECT NUMBER	06-5846-1000
CLIENT PROJECT NUMBER	06-5846-1000
DRAWING NUMBER	102

EDIT DATE: 17.05.2007 PLOT DATE: administrator 17.05.2007 ACAD FILE: 41tpw g:\cad\065846\rev4\065846-tender.dwg



NOTES:

FINE GRANULAR BEDDING AND EMBANKMENT (RECOMPACTED NATIVE FILL) SHALL BE COMPACTED TO 95% OF PROCTOR DENSITY AT THE DISCRETION OF THE SITE ENGINEER.

CONTAMINATED SOILS FROM SPILL AREA STOCKPILE WILL BE EXCAVATED AND HAULED ALONG DESIGNATED ROUTE AND DEPOSITED AT THE SOIL REMEDIATION FACILITY LOCATED AT THE COMMUNITY LANDFILL AREA.

APPROXIMATE VOLUME OF THE STOCKPILE IS 1000m^3

SCOPE OF WORK FOR SOIL REMEDIATION PROJECT:

EXCAVATE SOILS AT THE STOCKPILE AS INDICATED. MATERIALS HAULED TO FACILITY ARE TO BE DISTRIBUTED IN TREATMENT CELL TO A MAXIMUM THICKNESS OF 300mm.

CONTAMINATED SOILS TO BE REMEDIATED BY PERIODIC TILLAGE AS PER SPECIFICATIONS.

TO MAINTAIN THE CONTAMINATED SOILS AT OPTIMUM MOISTURE CONTENT, WATER COLLECTED FROM THE LEACHATE COLLECTION SYSTEM IS TO BE SPRAYED IN THE CELL. EXCESS WATER IS TO BE PUMPED FROM THE LEACHATE COLLECTION SYSTEM AND DEPOSITED IN ACCORDANCE WITH THE GENERAL REQUIREMENTS SECTION OF THE SPECIFICATION AND THE APPLICABLE REGULATIONS.

EXCAVATIONS AT THE RESUPPLY AREA TO BE BACK FILLED AFTER ALL CONTAMINATED MATERIALS HAVE BEEN REMOVED AND CERTIFIED "CLEAN" BY THE OWNER.

FOLLOWING SUCCESSFUL REMEDIATION OF ALL CONTAMINATED SOILS, ALL REMEDIATED SOILS FROM TREATMENT CELLS ARE TO BE HAULED AND SPREAD IN A LOCATION SPECIFIED BY THE CONSULTANT ON SITE.

FOLLOWING REMOVAL OF CONTAMINATED SOILS FROM TREATMENT FACILITY, DECOMMISSION SOIL REMEDIATION FACILITY AND RESTORE ALL CONSTRUCTION AND OPERATION AREAS TO CONDITION EQUAL TO OR BETTER THAN WHICH EXISTED PRIOR TO CONSTRUCTION.

SEE SPECIFICATION FOR FURTHER DETAILS AND INSTRUCTIONS.

CHANGE	DATE	DESCRIPTION	CHECK
2	05/17/07	ISSUED FOR TENDER	GS
1	08/06/06	ISSUED FOR CLIENT REVIEW	GS

REVISIONS

DESIGN	DRAWN	CHECKED	DATE
GS	TPW	GS	MAY 2007

THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF THE NORTHWEST TERRITORIES
PERMIT NUMBER
P 010
DILLON CONSULTING LIMITED

REGISTERED PROFESSIONAL ENGINEER
G. STRONG
N.W.T.

Nunavut

PROJECT

GOVERNMENT OF NUNAVUT
QIKIQTARJUAQ LANDFILL
CONSTRUCTION

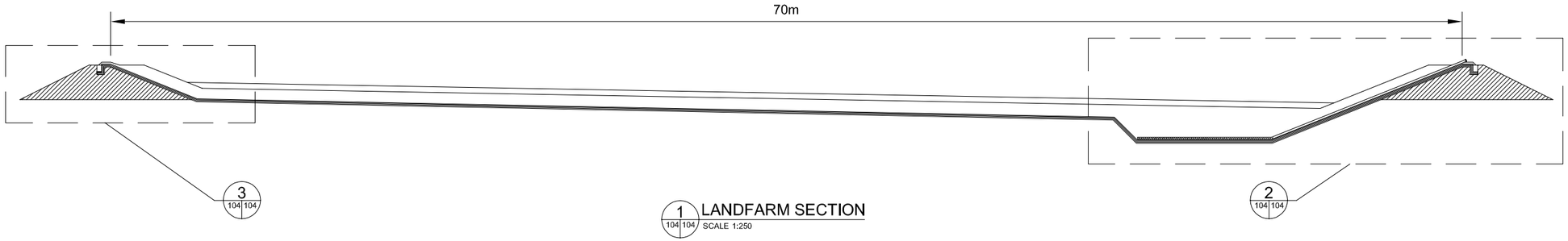
TITLE

LAGOON PLAN

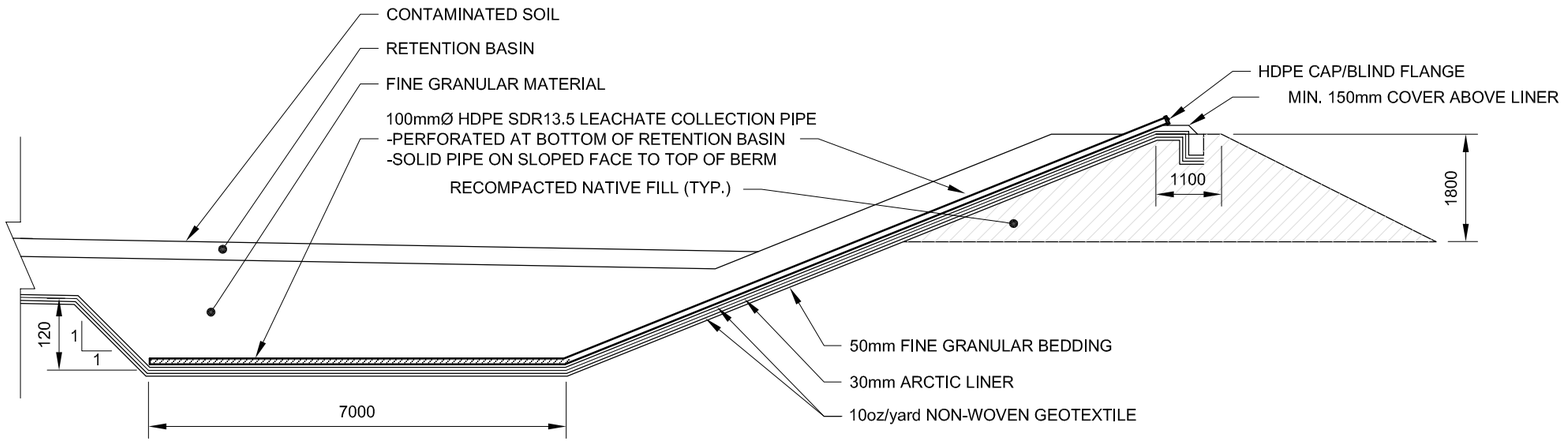
DILLON CONSULTING

SCALE	AS SHOWN
DILLON PROJECT NUMBER	06-5846-1000
CLIENT PROJECT NUMBER	06-5846-1000
DRAWING NUMBER	103

EDIT DATE: 17.05.2007 PLOT DATE: administrator 17.05.2007 ACAD FILE: 41tpw g:\cad\06\5846\rev4\065846-tender.dwg



1 104 104 LANDFARM SECTION
SCALE 1:250



2 104 104 LAND FARM DETAIL
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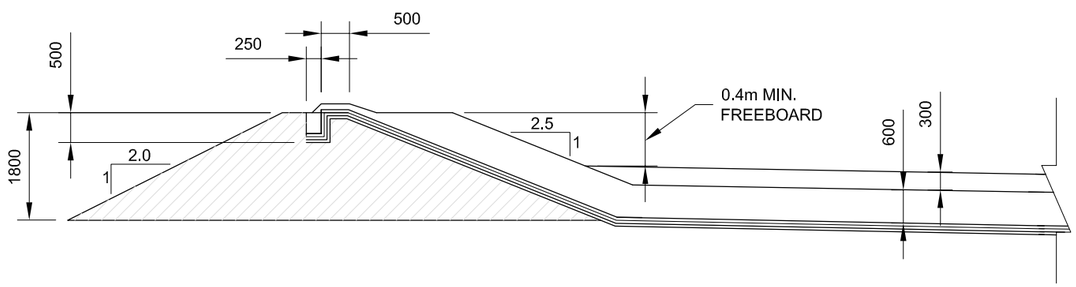


3 104 104 LAND FARM DETAIL
SCALE 1:100

CHANGE	DATE	DESCRIPTION	CHECK
2	05/17/07	ISSUED FOR TENDER	GS
1	08/06/06	ISSUED FOR CLIENT REVIEW	GS

REVISIONS

DESIGN	DRAWN	CHECKED	DATE
GS	TPW	GS	MAY 2007

THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF THE NORTHWEST TERRITORIES
PERMIT NUMBER
DILLON CONSULTING LIMITED

REGISTERED PROFESSIONAL ENGINEER
G. STRONG
N.W.T.

Nunavut

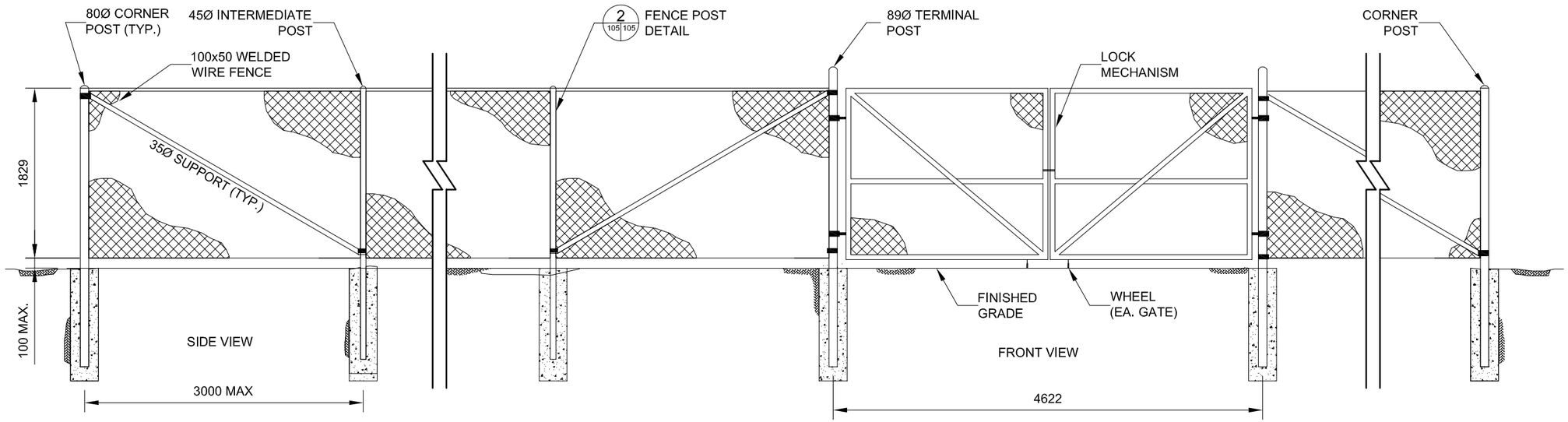
PROJECT
GOVERNMENT OF NUNAVUT
QIKIQTARJUAQ LANDFILL
CONSTRUCTION

TITLE
LANDFARM SECTIONS AND DETAILS

DILLON CONSULTING

SCALE: AS SHOWN
DILLON PROJECT NUMBER: 06-5846-1000
CLIENT PROJECT NUMBER: 06-5846-1000
DRAWING NUMBER: 104

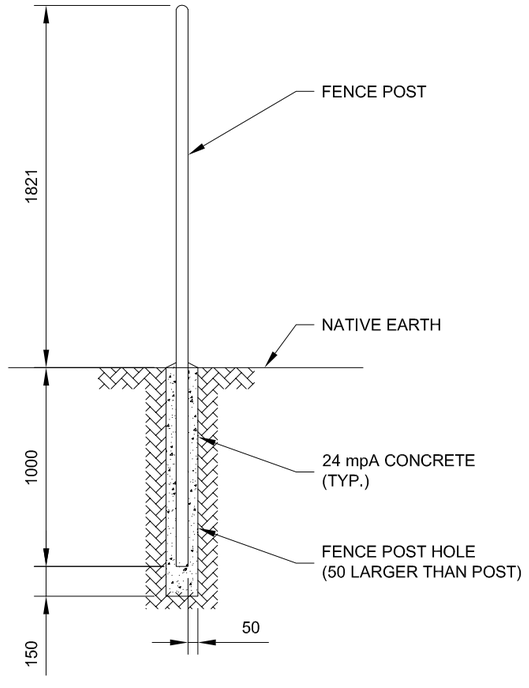
EDIT DATE: 17.05.2007 PLOT DATE: administrator 17.05.2007 ACAD FILE: 41tpw g:\cad\065846\rev4\065846-tender.dwg



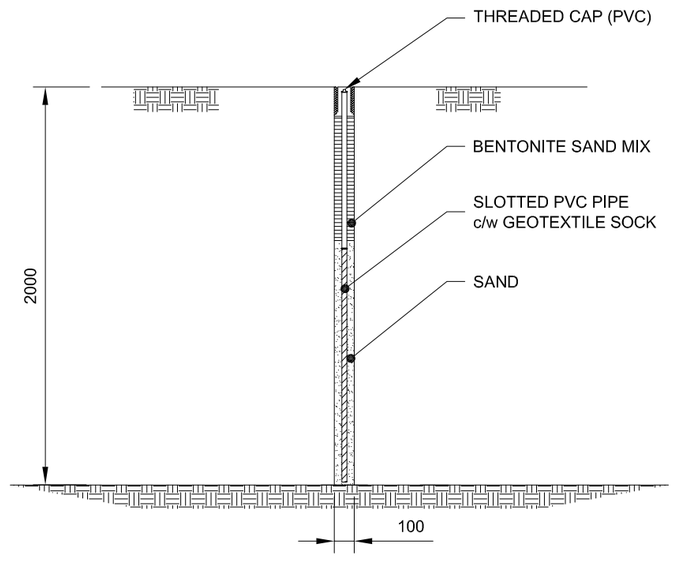
1 105 105 CHAIN LINK FENCE DETAIL
SCALE 1:50

NOTES:

1. DETAIL SHOP DRAWINGS TO BE SUBMITTED OF FENCING SYSTEM FOR REVIEW AND APPROVAL.
2. PADLOCK AND TWO KEYS TO BE PROVIDED FOR EACH GATE - ALL LOCKS KEYED ALIKE.
3. ALL FENCING TO BE HOT DIPPED GALVANIZED.
4. GATE AND CORNER POSTS TO BE SET INTO CONCRETE BASE. PROVIDE DIAGONAL BRACING @ 30m INTERVALS AND AT CORNER POSTS.
5. INTERMEDIATE POSTS TO BE MAX. 3000 c/c SPACING OR AS RECOMMENDED BY FENCING SUPPLIER.



2 105 105 FENCE POST DETAIL
SCALE 1:30



3 105 105 MONITORING WELL DETAIL
SCALE 1:30

CHANGE	DATE	DESCRIPTION	CHECK
2	05/17/07	ISSUED FOR TENDER	GS
1	08/06/06	ISSUED FOR CLIENT REVIEW	GS

REVISIONS

DESIGN	DRAWN	CHECKED	DATE
GS	TPW	GS	MAY 2007

THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF THE NORTHWEST TERRITORIES
PERMIT NUMBER 010
DILLON CONSULTING LIMITED

REGISTERED PROFESSIONAL ENGINEER G. STRONG N.W.T.

Nunavut

PROJECT
GOVERNMENT OF NUNAVUT
QIKIQTARJUAQ LANDFILL CONSTRUCTION

TITLE
CHAIN LINK FENCE AND MONITORING WELL DETAILS

DILLON CONSULTING

SCALE	AS SHOWN
DILLON PROJECT NUMBER	06-5846-1000
CLIENT PROJECT NUMBER	06-5846-1000
DRAWING NUMBER	105

EDIT DATE: 17.05.2007 PLOT DATE: administrator 17.05.2007 ACAD FILE: 41tpw gt:\cad\065846\rev4\065846-tender.dwg