

THE MUNICIPAL DISTRICT OF WILLOW CREEK NO. 26

#26-Hwy 520, Claresholm Industrial Area, Box 550, Claresholm, Alberta T0L 0T0

Phone: (403) 625-3351 Fax: (403) 625-3886

Email: development@mdwillowcreek.com

NOTICE OF MUNICIPAL PLANNING COMMISSION MEETING

Form B

Application No. 084-17

TO: 2-Mile Radius Landowners

Notice is hereby given that an application is being made for a development permit with regard to the following:

NAME OF APPLICANT: Hutterian Brethren of Granum

TYPE OF DEVELOPMENT:

Operate a Class I resource extraction mining operation, within the 55.35 acres (22.40 ha)

LEGAL DESCRIPTION OF SITE: Lot 1-Block1-Plan 1711892
(Ptn. NE 16 & SE 21-10-27-W4M)

PLACE OF MEETING: Municipal Administration Building, Claresholm

TYPE OF MEETING: Regular Municipal Planning Commission

DATE OF MEETING: Wednesday October 18, 2017 at 9.45 a.m.

This development application and all associated information are available for viewing at the Municipal Office at the address shown above during normal hours of operation, or on our website at www.mdwillowcreek.com.

Any person affected by the said proposal has the right to present a written brief prior to the hearing and/or to be present and be heard at the meeting. Any information submitted will become available to the public and may also be shared with the applicant and appropriate government/other agencies and is subject to the provisions of the Freedom of Information and Protection of Privacy Act (FOIP). If you have any questions, please contact The Municipal District of Willow Creek No. 26.

Persons requesting to be heard at the meeting shall submit a written request to be heard to the development officer not later than:

October 13, 2017 (10 consecutive days from the date of this notice)

DATE: September 29, 2017

SIGNED:



Cindy Chisholm
Development Officer
MD of Willow Creek No. 26

THE MUNICIPAL DISTRICT OF WILLOW CREEK NO. 26

Box 550, Claresholm, AB T0L 0T0

Phone (403) 625-3351

Fax (403) 625-3886

www.mdwillowcreek.com

FOR OFFICE USE ONLY

APE April 19
MPC Oct 18/17

APPLICATION FOR A DEVELOPMENT PERMIT

IMPORTANT: This information may also be shared with appropriate government/other agencies (e.g. Alberta Agriculture, Food and Rural Development; Alberta Environment; the regional health authority), and may also be kept on file by those agencies. This information may also be used by and for any or all municipal programs and services. The application and related file contents will become available to the public and are subject to the provisions of the Freedom of Information and Protection of Privacy Act (FOIP). If you have any questions about the collection of this information, please contact The Municipal District of Willow Creek No. 26.

Form A

Application No. 084-17

Fees Submitted: \$ 200.00

Site Inspection: _____

APPLICANT: Hutterian Brethren Church of Granum

Telephone: _____

ADDRESS: _____

Fax: Bus/Cell: _____

MUNICIPAL ADDRESS: _____

REGISTERED OWNER: Hutterian Brethren Church of Granum

Telephone: _____

LEGAL DESCRIPTION: Lot(s) _____ Block _____ Plan _____

OR: Quarter NE Section 16 Township 10 Range 27 W 4 M
and the adjoining SE-21-10-27-W4M

EXISTING USE: Grass Land

PROPOSED USE: Extraction and processing of granular material

PARTICULARS OF PROPOSED DEVELOPMENT: The land will be stripped, topsoil would be stockpiled and overburden soils would be stockpiled. The granular material would be removed, processed and removed from site. The overburden soil and topsoil would be replaced and the area seeded.

(55.35 acres.)

Additional information or clarification can be helpful in processing the application without delay. You may wish to use the back of this form, or attach a separate sheet with such information. **Please fill out the Right of Entry authorization on reverse.**

REGISTERED OWNER OR PERSON ACTING ON BEHALF OF:

I/we agree to the collection and sharing of this information contained in this application, and any other information that may be required to verify and evaluate this application as explained above. I have submitted particulars concerning the completion of the proposed development and agree to comply in all respects with any conditions that may be attached to any development permit that is issued and with any other bylaws that are applicable. I am aware that I may be required to pay for all local improvement costs, which include drainage, sidewalks, road construction, street lighting, water and sewer main extensions, utility connection fees and installation costs at the present established rate.

I have read and understand the terms noted on the reverse side of this form and hereby apply for permission to carry out the development described above and/or on the attached plans and specifications. I further certify that the registered owner(s) of the land described above is aware of this application.

DATE: March 10 - 2017

SIGNED: _____

IMPORTANT: See Over

ADDITIONAL INFORMATION: _____

IMPORTANT:

1. Subject to the provisions of the Land Use Bylaw of The Municipal District of Willow Creek No. 26, the term "development" includes any change in the use of buildings or land.
2. Although the Development Officer is in a position to advise on the principal or details of any proposals, such advice must not be taken in any way as an official consent, and is without prejudice to the decision in connection with the formal application. It must be clearly understood that any development by the applicant within 14 days after receipt of a Development Permit is at his own risk.
3. Please submit a plan or drawing showing locations of existing and proposed buildings, roads, services, boundaries, etc. in sufficient detail to ensure proper consideration of the application. Measurements may be metric or imperial units. It is desirable that the plans and drawings should be on scale appropriate to the development, that is:

Site plans – ratio of 1:1000 or 1:1500
Other drawings – ratio of 1:100 or 1:200

or as required by the Development Officer. However, unless otherwise stipulated, it is not necessary for plans and drawings to be professionally prepared.

4. If a decision is not made within 40 days from the date of the receipt of the application in its complete and final form, the applicant may exercise his right of appeal as though he had been mailed a refusal at the end of the 40-day period unless an agreement for a time extension has been entered into with the municipality.

RIGHT OF ENTRY:

I hereby authorize representatives of The Municipal District of Willow Creek No. 26 to enter my land for the purpose of conducting a site inspection in connection with this application.

This right is granted pursuant to Section 542(1) of the Municipal Government Act.

DATE: March 10-2017 **SIGNED:** _____



October 05, 2017

AMEC File: BX10684

Alberta Environment and Parks
200 – 5th Avenue South
Lethbridge, Alberta T1J 4L1

Attn: Meghan Nannt, Reclamation and Contaminated Sites Approval Coordinator.

**Re: Revision 1: Maximum Future Pit Size Revision (from 56.7 acres to 55.35 acres)
Registration Application: Granum Colony Farming Company Ltd.
Development of Gravel Pit in LSD 15-16-010-27 W4M, LSD 2 and 7 21-010-27-W4M**

This letter is to provide support and clarification to Schedule 1 through 3, Code of Practice for Pits Registration Application for the above noted project, at location shown in Figure 1. All supporting documentation for the application is attached to this letter summary:

Schedule 2 Part 1

- 55.35 ac (22.40 hectare) is the proposed, maximum future pit size (to include disturbed area as shown in the attached drawing Figure 2). Current pit size is 9.27 acres (3.75 hectares).
- Wind and water erosion control measures:
 - Crushing equipment will be placed inside the pit as to reduce the effects of wind
 - A water truck will be onsite to spray the haul road and the area of high traffic (equipment trails, etc.)
 - If there is a time of very high winds and the water truck is not able to suppress the particulate matter, operations will be stopped until wind speeds decrease to the point that the water truck can suppress the particulate matter.
 - Topsoil/subsoil/overburden stockpiles will be contoured to allow easy access to the top of the stockpile for weed spraying, they will be cigar-shaped and will face the prevailing winds.
 - Stockpiles will be seeded to reduce the wind and water erosion.
 - Weed control measures will be implemented throughout the year (spraying/mowing).
- Inactive pit plans:
 - During periods of inactivity the excavation (pit) faces will be sloped at 3:1 to remove danger to the excavation and reduce erosion due to water and wind.
 - Stockpiles will be seeded (grasses or legumes) and spraying/mowing will take place throughout the year to stop the spread and growth of weeds.

Schedule 2 Part 2

- See Figure 2 showing all disturbed areas and existing and proposed pit sizes
- Groundwater encountered in test pits:
 - Groundwater was not encountered to the termination depth of the test pits (4.6 m).
- Mitigative measures if ground water is encountered during mining:
 - During the mining process if ground water is encountered all mining operations will be halted and an investigation to confirm ground water or perched water will take

place. If the water table is found to be the source of the seepage AEP will be contacted and a Water Act Approval application will be submitted.

- CLI soil class for agriculture of the pre-disturbed landscape:
 - Soil capability class was found to be Class 2C

Reclamation seed mixture:

- Seed mixture to be used will be Alberta Transportation Zone 4 native seed mix.

Seed Mix Zone	Native Seed Mix - Zone 4		Percentage by Dry Weight
	Common Name	Latin Name	
4 Mixedgrass and Dry Mixedgrass	Slender Wheat Grass	Agropyron trachycaulum	30%
	Canada Wildrye	Elymus canadensis	15%
	Mountain Brome	Bromus carinatus	15%
	Northern Wheat Grass	Agropyron dasystachyum	10%
	Western Wheat Grass	Agropyron smithii	5%
	Indian Rice Grass	Orzyopsis hymenoides	5%
	Alkali Grass	Puccinellia distans	10%
	Needle and Thread Grass	Stipa comata	10%

- Estimated expected life of the pit:
 - 50 yrs
- Will the access road stay in place following reclamation:
 - The access road will stay in place for the entire lifespan of the pit, during final reclamation the access road will be removed and reclaimed, as part of Phase 3 reclamation.

Site Drawings and Cross Sections

- Scale drawings of current conditions
 - See attached drawings
 - Stockpile locations shown on drawing for Horizon A, horizon B and overburden (Figure 2). Reject material will be stockpiled in the bottom of the open pit in efforts to reduce disturbed areas outside of excavation.
- Cross section drawings
 - See attached Figure 3 for cross section drawings of existing conditions and reclaimed conditions for Phase 1 through 3.
- 6.0 m buffer inside proposed pit limits as shown in Figure 2 and 3.
- Mining Setback for Kyispkap Creek Minimum 56 m
 - All mining operations will be limited to the proposed limit of excavation plus 6.0 m buffer inside buffer. At no time is the proposed limit of excavations closer than 56 m from Kyispkap Creek as shown in Figure 2.

Security

- See attached Cost of Reclamation Estimate for Security on Private Lands.

Closure

We trust this information is satisfactory for your present purpose. If you have any questions, please contact our office at your convenience.

Sincerely,

**With appreciation,
Amec Foster Wheeler
Environment & Infrastructure,**

Scott Roughead, C.E.T.
Senior Environmental Technologist
ASET Member #: 098653

Attachments:

**Code of Practice for Pits Registration Application Schedule 1 through 3;
Figure 1: Surrounding Area Plan;
Figure 2: Site Plan;
Figure 3: Gravel Pit Cross Sections;
Figure 4: Reclamation Site Plan.
Figure 5: Test Pit Location Plan
Table 1: Test Pit Summary Table**

**Code of Practice for Pits
Registration Application (Schedule 1)**

Date: 20-June-2017

Previous *Environmental Protection and Enhancement Act* Approval Number: N.A.

Water Act authorization required? ☐ Yes ☒ No

If Yes, ☐ application submitted or current *Water Act* Authorization Number: _____

Name of Applicant (company or person in whose name the pit will be registered):

Granum Colony Farming Company Ltd.

Address:

Phone:

e-mail:

Name of Person Submitting Application: Scott Roughead

Company Name: Amec Foster Wheeler

Job Title: Project Manager

Address:

Phone:

Facsimile

e-mail:

Signature:

Name of Primary Contact for Pit: Leonard Hofer

Job Title: Manager

Address: :

Phone:

Facsimile:

e-mail:

Pit Location Municipal Address or LSD-Sec-Twp-Rge-Mer	Registered Owners Name, Address and Phone Number	Occupants Name, Address and Phone Number
15-16-010-27-W4m	Granum Colony Farming Company Ltd.	Granum Colony Farming Company Ltd.
2-21-010-27-W4M	Granum Colony Farming Company Ltd.	Granum Colony Farming Company Ltd.
7-21-010-27-W4M	Granum Colony Farming Company Ltd.	Granum Colony Farming Company Ltd.

Activities Plan (Schedule 2)

Part 1 Information

Aggregate Type (check off all that apply): ☒ Gravel ☒ Sand ☐ Clay ☐ Marl

Current Size of Pit: 3.75 hectares

Average Thickness:

Topsoil 21.2 cm Subsoil 8 cm Overburden 29.2 cm Aggregate 3.6 m

Topsoil Texture (check all that apply):

☐ organic soil ☐ mineral soil ☐ clay loam ☐ silty loam ☐ sand ☒ sandy loam

☐ loam ☐ clay ☐ silt ☐ other _____

Description of techniques to prevent wind and water erosion, and to limit the movement of dust from the pit: Pits will be mined in stages, pit operations will be in bottom of pit, aggregate contained in pit no higher than 10 m, water truck on-Site.

Participation in local or regional air monitoring initiative: No

Inactive pit conservation and reclamation techniques: Re-grade and cut phases to 3:1, cover with topsoil, implement weed control

☒ Scale drawings and cross-sections of existing pit conditions and planned sequence of operation attached.

Part 2 Information

Maximum planned size of pit: 55.35 acres

Depth to groundwater (metres) in test holes (indicate each depth if multiple holes): No
Groundwater encountered within 4.6 m of ground surface.

Planned activities at the pit (check off all that apply): ☐ wet pit excavation

☐ concrete production ☐ mixing salt and aggregate ☐ mixing asphalt with aggregate

☐ spraying truck boxes ☐ aggregate washing ☐ use of alternative materials for reclamation

Mitigative measures for all of the above activities: Dry aggregate production only

Proposed land uses for reclaimed pit (check all appropriate boxes):

☐ cultivation _____% ☐ hayland _____% ☒ pasture 100 _____%

☐ native range _____% ☐ grassland _____% ☐ forest _____%

☐ wildlife habitat _____% ☐ waterbody _____% ☐ proposed subdivision _____%

☐ other (specify) _____%

Pit water release (rationale for release, techniques and discharge points): No surface water run-off will leave Site, all water will be retained to pit and allowed to seep into base.

Average topsoil replacement depth (cm): 20

Average subsoil replacement depth (cm): 8

☒ Scale drawings and cross-sections of reclaimed pit conditions attached.

Description of surface water bodies in the reclaimed pit: No water bodies

Design: N.A.

Intended use: N.A.

Water elevation at full supply level: N.A. _____

Slope of land one metre above full supply level: N.A. _____

Slope of land one metre below full supply level: N.A. _____

Signature and title of person who developed Activities Plan:

Scott Roughead,
Project Manager

Security Estimate (Schedule 3)

Acres of land certified at \$250/acre: 0 Acres x \$250 = 0 (a)

☒ Detailed full-cost security calculation attached Total full-cost = \$ 175,549__ (b)

Area of land at full-cost 27.1 acres Cost/acre = \$6,477.82_____

Total security to be provided ((a) + (b)): **\$ 175,549.00**

Proposed method of payment: ☒ Letter of Credit ☐ Cash ☐ Other (explain) _____

Signature and title of person submitting estimate:

Scott Roughead, Project Manager

COST OF RECLAMATION ESTIMATE FOR SECURITY ON PRIVATE LAND

NOTE: This cost estimate must be verified and accepted by the Director. Unusual situations may require a more detailed estimate. The security is not required with this application, but must be provided before a registration is issued.

APPLICANT: Granum Colony Farming Company Ltd

LAND LOCATION: 15-16-010-27W4 - 2&7 21-010-27-W4

Please indicate what is required to ensure full cost of reclamation for this location:

☒ Mob/Demob ☒ Stockpile Removal ☒ Recontouring/Grading ☒ Decompaction ☒ Site/Vegetation Preparation ☒ Revegetation
☐ Fertilization ☒ Weed Management ☐ Facilities Removal (Buildings/Scales/Infrastructure) ☐ Other _____

GENERAL

1 Does this operation have a historical approval? NO If YES, Approval # _____

SECURITY SANCTIONED AT \$625.00 PER HA (\$250.00 PER ACRE) (pre 1993 ACTIVITIES)

2 Number of ha (acres) disturbed under an approval issued prior to September 1, 1993 (include pit area, processing area, stockpile sites and access roads)? _____ 0 (A)

3 Security maintained at the above rate: (A) _____ x \$625 per ha (\$250 per acre) = \$ _____ 0 (B)

COST OF RECLAMATION (ACTIVITIES from 1993 to present)

4 Costs associated with Mobilization/Demobilization = \$ _____ 10,000 (C)
Provide list of equipment utilized: Highway Tractor with trailer, pilot car

5. Number of ha (acres) intended to be disturbed over the life of the operation (max), including pre 1993 disturbance? _____ 55.35 ac (D)

6. In addition to the area noted in item 2 (area A), how many ha (acres) have been and/or will be disturbed before reclamation can begin? _____ 27.1 ac (E)

7. VOLUME/COST of REPLACING RECLAMATION MATERIALS (topsoil, subsoil, reject and overburden) that will be stockpiled before progressive reclamation can begin (based on area (E)):

(a) Estimated topsoil stockpile volume: _____ 23,030 cubic metres

(b) Estimated subsoil stockpile volume: _____ cubic metres

(c) Estimated reject/other stockpile volume: _____ 2,763 cubic metres

(d) Estimated overburden stockpile volume: _____ 3,500 cubic metres

TOTAL STOCKPILE VOLUME (TSV): _____ 29,293 cubic metres

Equipment (list all) to be utilized: _____ Motor Scraper _____ at rate of \$ _____ 2.50 /cubic meter

(e) Cost of replacing reclamation material: TSV _____ 29,293 x \$ _____ 2.50 per cubic metre = \$ 73,232.00 (F)

8. COSTS ASSOCIATED WITH: Removal of Stockpile/area, Bank removal, Grading and Decompaction of disturbance.

Estimated hours to remove stockpile area, bank removal and slope/grade the disturbance (E) _____ 40 hours (G, e.g. G1+G2...)

Equipment to be used and hourly rate* _____ Motor Scraper _____ at _____ \$380.00 /hour (G1)

Equipment to be used and hourly rate* _____ D6 Dozer _____ at _____ \$174.00 /hour (G2)

Estimated hours to grade, contour and decompact the disturbance (D-A) _____ 14 hours (H)

Equipment to be used and hourly rate* _____ CAT 140 G Grader _____ at _____ \$182.00 /hour

- *Hourly Rates Based on most current Equipment Rental RATES GUIDE published by ARHCA, unless as supported by independent 3rd party cost estimate (selected from a minimum of 3 estimates)

Provide discussion on basis of equipment rates _____ ARHCA _____

TOTAL COST TO RECLAIM: Stockpile area, grading/contouring and decompaction and rock picking: = Total \$ 24,708 ((G1+G2+...) + H)

9. Cost of Revegetation, Fertilization, Weed Control and Maintenance

Area Disturbed ((Area E) or as supported by activities plan): 27.1 ac

(h) Cost of revegetation, fertilization, weed control and maintaining the site: (Area) 27.1 ac x \$ 1,500 per ac = \$ 40,650.00 (I)

10. Costs associated with Facilities Removal (e.g. Buildings, scales, infrastructure, access road) = \$ 10,000 (J)
Provide list of facilities/infrastructure: scale house, crusher, scale, access road

11. SECURITY REQUIRED ESTIMATED COST OF RECLAMATION (C+F+G+H+I+J) = \$ 159,590.00 (K)

12. Cost of Contingency/Administration

Total Estimated Cost of Reclamation (K) 159,590.00

Estimated cost to execute contingency plan and administration/supervision** 10 % of total estimated cost of reclamation (L**)

** These costs represent, e.g., redesign, engineering, drawings, plans, supervision of work and unforeseen aspects (traditionally 10-15%)
Represent as whole value (e.g. 10% = 1.1, 15% = 1.15) for purposes of calculation and determining (M) value.

TOTAL COST OF SECURITY (K*L) 175,549.00 (M)

13. CURRENT/EXISTING SECURITY (if applicable) = \$ N.A. (N)

14. TOTAL SECURITY BALANCE (M - N) = N.A.

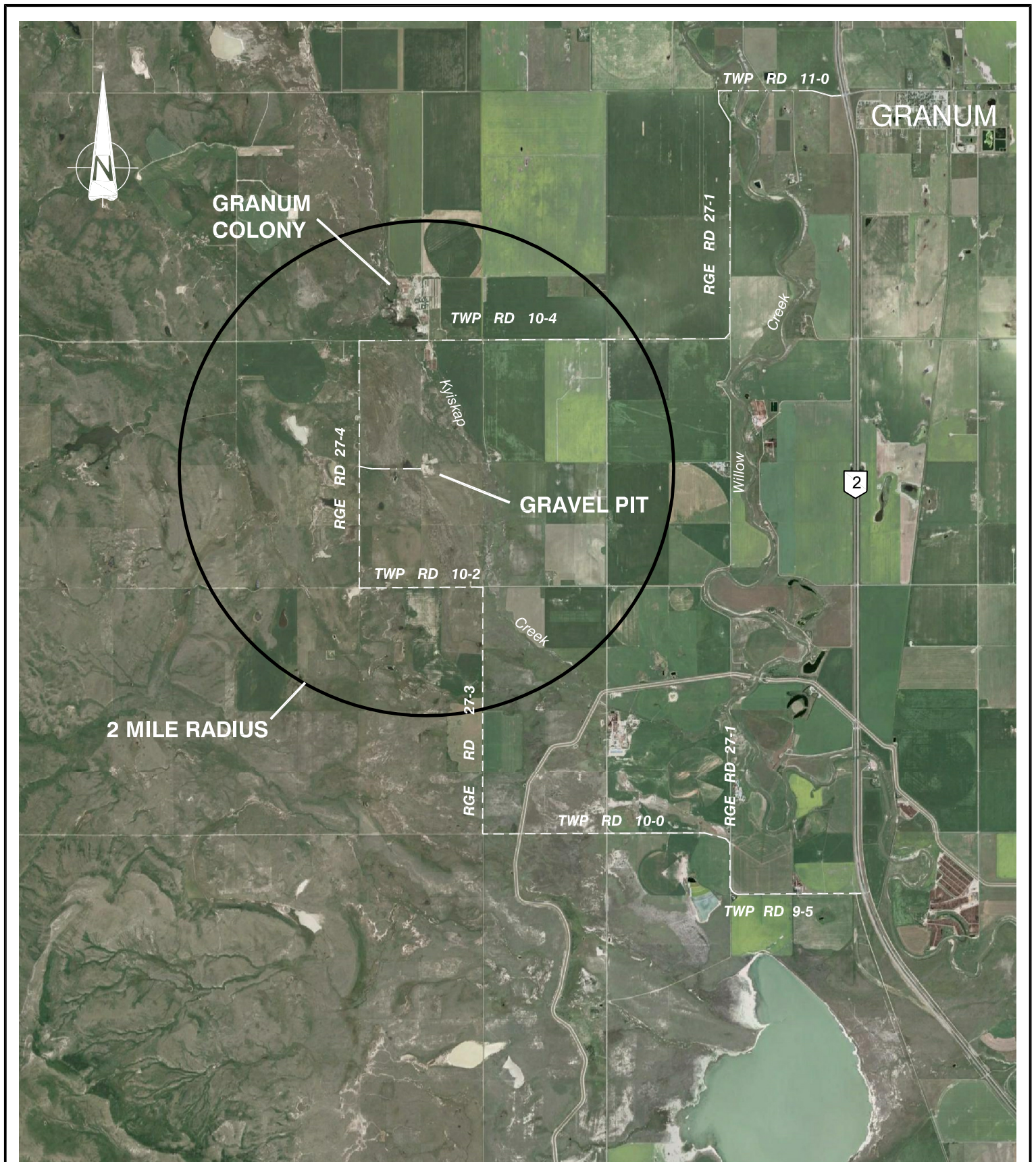
I certify that the information provided in this application is an accurate description of the site and of the operation and reclamation of the pit. I will conserve and reclaim the site as described in this application, follow the terms and conditions of the approval, and secure a Reclamation Certificate upon completion.

NAME Leonard Hofer (please print)

SIGNATURE _____

TITLE Secretary

DATE June 29 0 2017



Amec Foster Wheeler Environment & Infrastructure

469 - 40th Street South
Lethbridge, Alberta CANADA T1J 4M1
Tel. (403) 327-7474
Fax (403) 327-7682



GRANUM COLONY

TITLE
SURROUNDING AREA PLAN

PROJECT
Proposed Granum Colony Gravel Pit Expansion
NE16-10-27-W4M / SE21-10-27-W4M
near Granum, Alberta

DWN BY:

BJ

DATUM:

NA

DATE:

OCTOBER 2016

CHK'D BY:

JL

PROJECT NO:

SCALE:

NTS

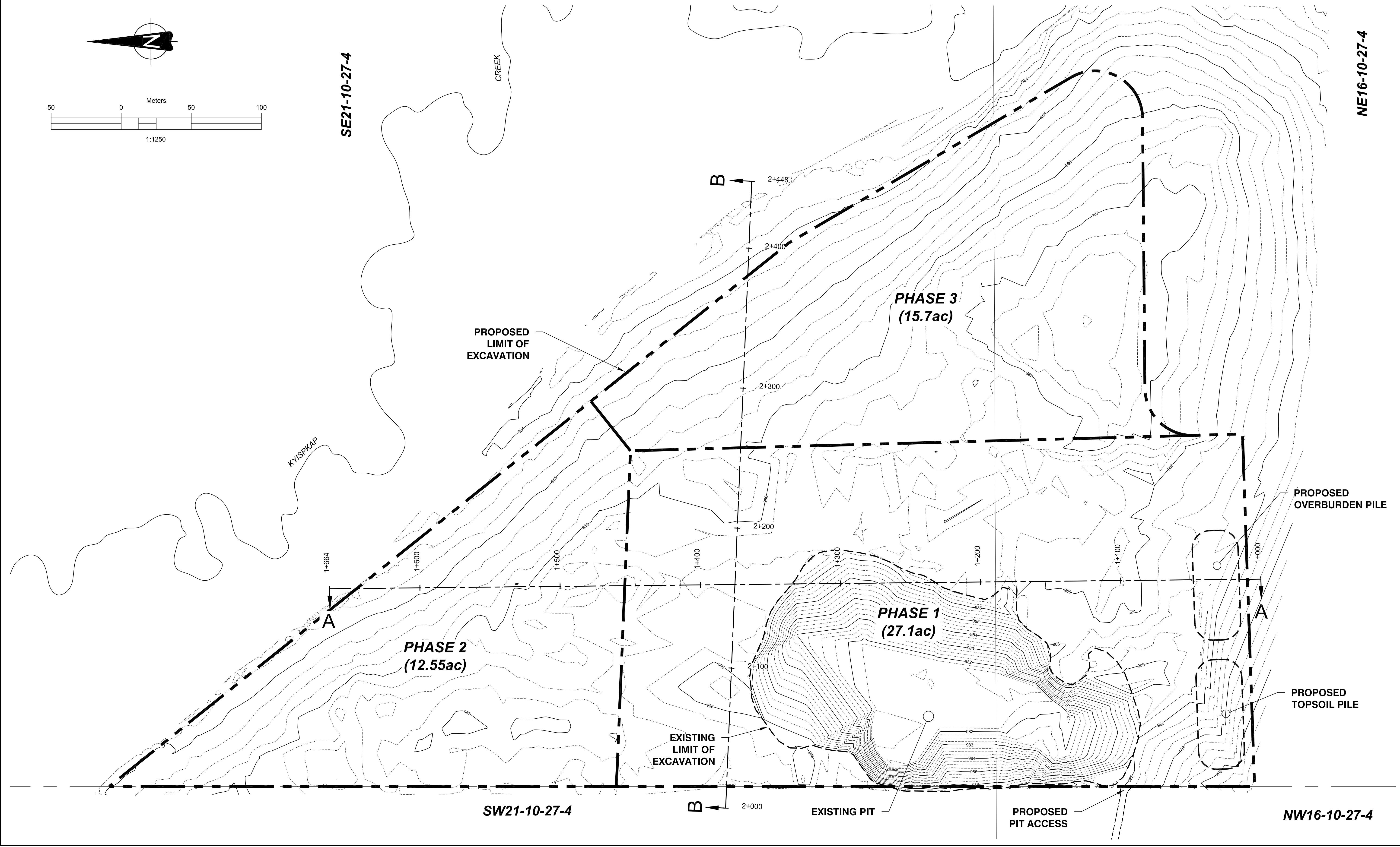
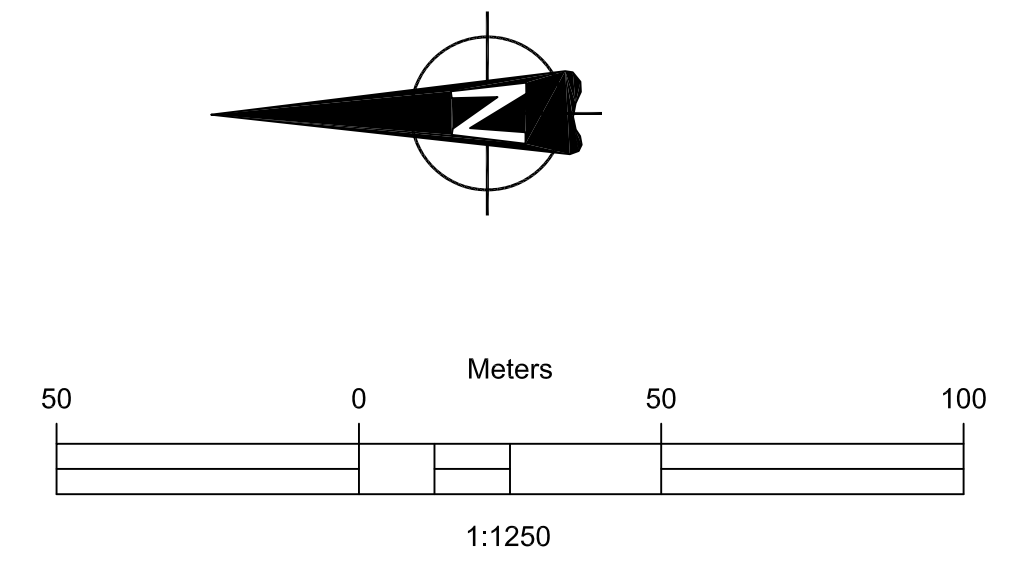
BX10684

FIGURE 1

No.	REVISION	BY	DATE	SURVEYED	BY	DATE	PHOTO No.	xxxx	COORDINATE DATA	PLAN No.	xxxx	BAR CODE	PLAN DESCRIPTION	PROCESS	BY	DATE
				DESIGNED	GROTH	30/05/16	TITLE SEARCH		NAD 83	CONTRACT No.	xxxx/99		Granum Gravel Pit	TO IDMS		
				CHECKED									SITEPLAN	TO GIS		
				DRAWN	B JOHNSON	28/05/16	GRAPHICS FILE		BASE LONGITUDE	PLAN LOCATION			SE 21-10-27-W4M	MICROFILMED		

LEGEND:

	LIMITS OF DISTURBANCE		OVERHEAD POWER LINE		TESTPIT
	PROPERTY LINE		POWER POLE		BUILDING
	BARBWIRE FENCE		GUY WIRE		TEXAS GATE
	PLANK FENCE		FOUND IRON PIN		
	ROAD SHOULDER		CONTROL POINT		



CONSULTANT		DESIGNER	CHECKER	Granum Colony Gravel Pit SITEPLAN NE 16-10-27-W4M SE 21-10-27-W4M						
JOB No.	BX10684									PLAN No.
amec foster wheeler 										
		DATE _____	DATE _____	REGION		PLAN No.	PROJECT	SCALE	SHEET	
				SOUTHERN		FIGURE 2	BX10684	1:750	2 of 5	

No.	REVISION	BY	DATE	SURVEYED	DESIGNED	CHECKED	DRAWN	DATE	BY	PROCESS	TO DIMS	TO GIS	MICROFILMED

PLAN DESCRIPTION	Granum Gravel Pit	SITEPLAN	SE 21-10-27-W4M

BAR CODE	xxxx	PLAN No.	CONTRACT No.	PLAN LOCATION

COORDINATE DATA	NAD 83	BASE LONGITUDE

PHOTO No.	TITLE SEARCH DATE	GRAPHICS FILE	DATE	BY
			30/05/16	G.ROTH

DATE	BY	SURVEYED	DESIGNED	CHECKED	DRAWN

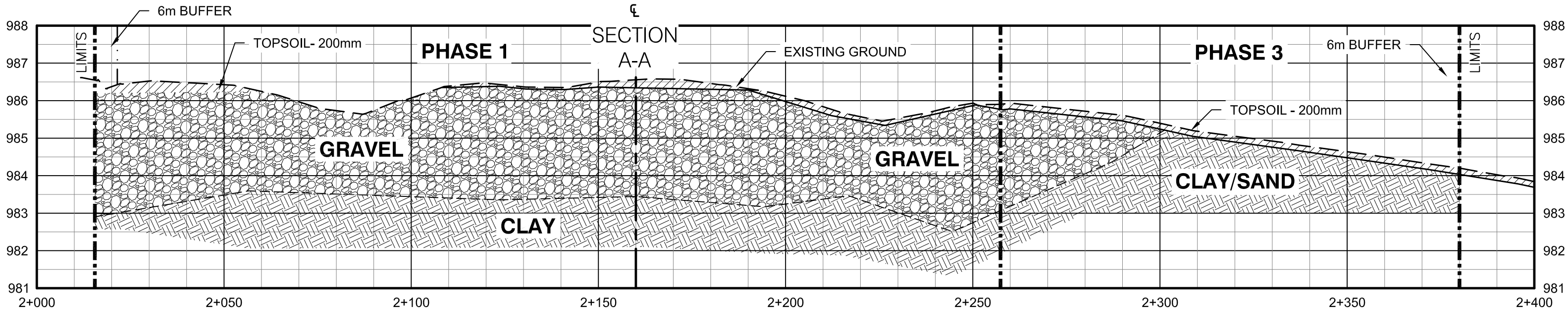
No.	REVISION	DATE	BY

CONSULTANT		amc foster wheeler	DESIGNER	CHECKER	Granum Colony Gravel Pit	SECTIONS	NE 16-10-27-W4M SE 21-10-27-W4M	REGION	PLAN No.	PROJECT	SCALE	SHEET	
JOB No.	BX10684												PLAN No.

DATE	DATE

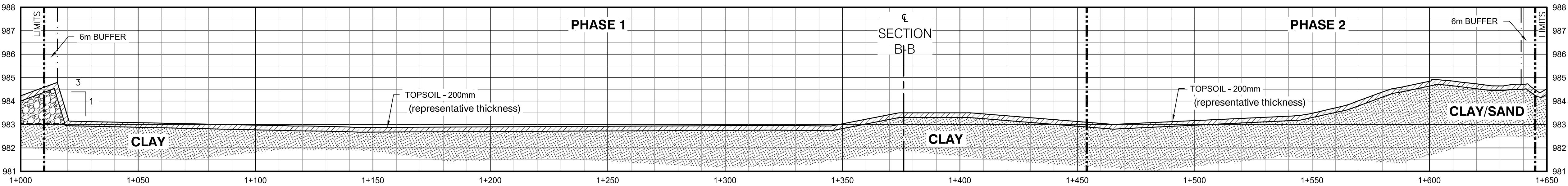
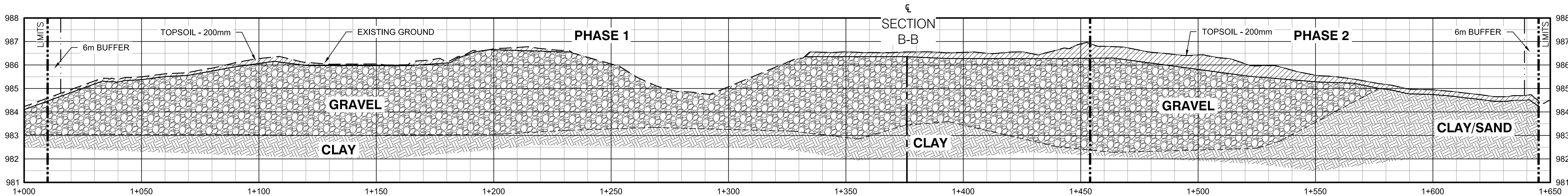
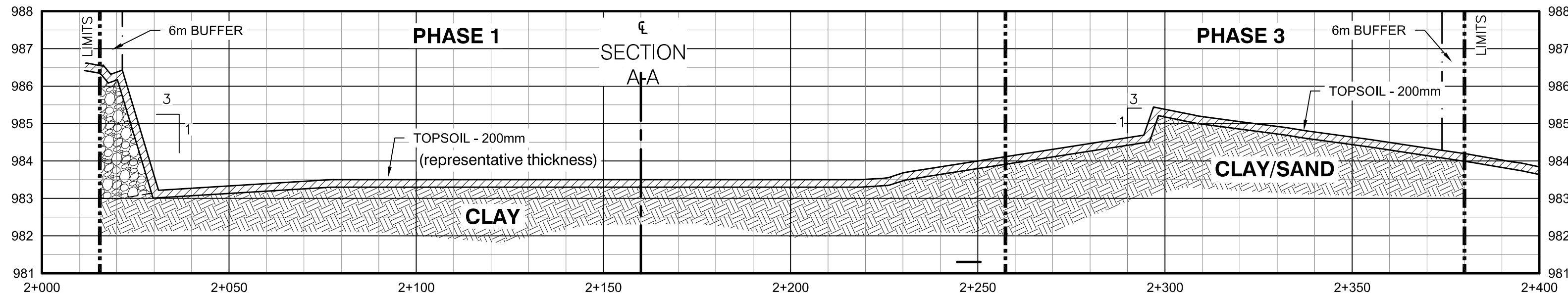
REGION	PLAN No.	PROJECT	SCALE	SHEET
SOUTHERN	FIGURE 3	BX10684	AS SHOWN	3 of 5

METRIC



AVERAGE TOPSOIL/SUBSOIL
RECLAMATION DEPTH

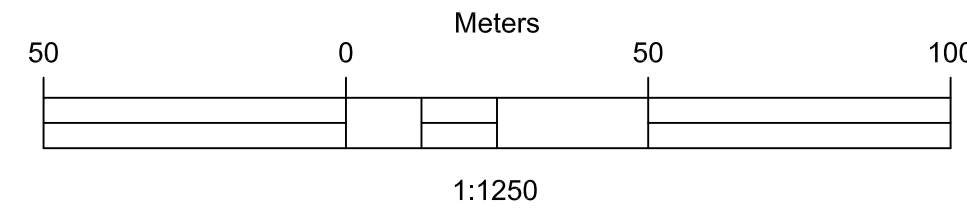
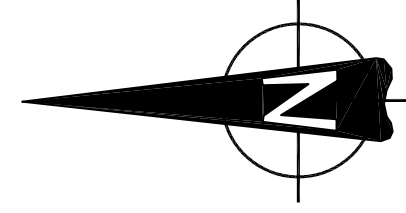
Topsoil = 200mm
Subsoil = 80mm



No.	REVISION	BY	DATE	SURVEYED	BY	DATE	PHOTO No.	xxxx	COORDINATE DATA	PLAN No.	xxxx	BAR CODE	PLAN DESCRIPTION	PROCESS	BY	DATE
				DESIGNED	G.ROTH	30/05/16	TITLE SEARCH		NAD 83	CONTRACT No.	xxxx/99		Granum Gravel Pit	TO IDMS		
				CHECKED									SITEPLAN	TO GIS		
				DRAWN	B. JOHNSON	28/06/16	GRAPHICS FILE		BASE LONGITUDE	PLAN LOCATION			SE 21-10-27-W4M	MICROFILMED		

LEGEND:

- | | | | | |
|---|--|--|---|---|
|  |  |  |  |  |
| LIMITS OF DISTURBANCE | | | OVERHEAD POWER LINE | TESTPIT |
| | | | | |
| PROPERTY LINE | | | POWER POLE | BUILDING |
| | | | | |
| BARBWIRE FENCE | | | GUY WIRE | TEXAS GATE |
|  | | |  | |
| PLANK FENCE | | | FOUND IRON PIN | |
| | | | | |
| ROAD SHOULDER | | | CONTROL POINT | |



SE21-10-27-4

CREEK

KYISPKAP

NATIVE GRASSLAND

PHASE 2
(12.55ac)

PHASE 3
(15.7ac)

PHASE 1
(27.1ac)

TOP OF BANK

TOP OF BANK

TOP OF BANK

PROPOSED PIT ACCESS

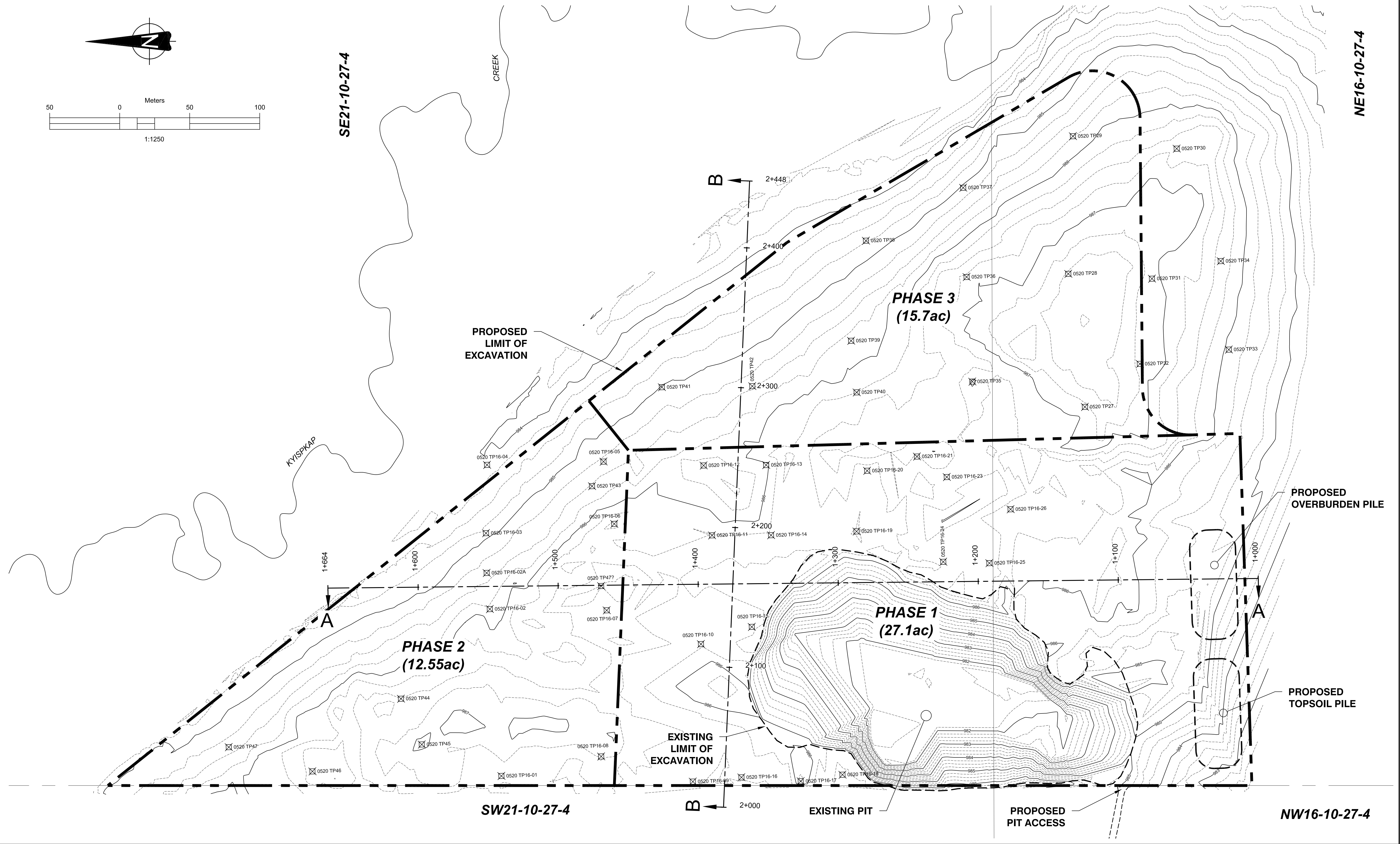
NW16-10-27-4

SW21-10-27-4

CONSULTANT			DESIGNER	CHECKER	Granum Colony Gravel Pit															
JOB No.	BX10684	PLAN No.			RECLAMATION SITEPLAN															
amec foster wheeler 					NE 16-10-27-W4M SE 21-10-27-W4M															
DATE _____			DATE _____																	
			<table><tr><th>REGION</th><th>PLAN No.</th><th>PROJECT</th><th>SCALE</th><th>SHEET</th></tr><tr><td>SOUTHERN</td><td>FIGURE 4</td><td>BX10684</td><td>1:1250</td><td>4 of 5</td></tr></table>								REGION	PLAN No.	PROJECT	SCALE	SHEET	SOUTHERN	FIGURE 4	BX10684	1:1250	4 of 5
REGION	PLAN No.	PROJECT	SCALE	SHEET																
SOUTHERN	FIGURE 4	BX10684	1:1250	4 of 5																

No.	REVISION	BY	DATE	SURVEYED	BY	DATE	PHOTO No.	xxxx	COORDINATE DATA	PLAN No.	xxxx	BAR CODE	PLAN DESCRIPTION	PROCESS	BY	DATE
				DESIGNED	GROTH	30/05/16	TITLE SEARCH		NAD 83	CONTRACT No.	xxxx/99		Granum Gravel Pit	TO IDMS		
				CHECKED									SITEPLAN	TO GIS		
				DRAWN	B JOHNSON	28/05/16	GRAPHICS FILE		BASE LONGITUDE	PLAN LOCATION			SE 21-10-27-W4M	MICROFILMED		

CONSULTANT			DESIGNER	CHECKER	Granum Colony Gravel Pit					
JOB No.	BX10684	PLAN No.			TEST PIT LOCATION PLAN					
					NE 16-10-27-W4M SE 21-10-27-W4M					
			DATE _____	DATE _____	REGION	PLAN No.	PROJECT	SCALE	SHEET	
					SOUTHERN	FIGURE: 5	BX10684	1:750	5 of 5	



TEST PIT SUMMARY TABLE

Amec Foster Wheeler File: BX10684
Granum Colony Test Pits

TP16-01		
Depth:		
0.0 – 0.2	TOPSOIL	
0.2 – 4.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.1 – 2.4	... sand layer, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	





TP16-02		
Depth:		
0.0 – 0.25	TOPSOIL	
0.25 – 3.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist ... sand layer, moist	
1.8 – 2.1		
3.6 – 4.3	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.3	End of Test Pit at 4.3 m depth - open and dry upon completion of excavation.	





TP16-03		
Depth:		
0.0 – 0.2	TOPSOIL	
0.2 – 3.9	CLAY – medium plastic, silty, sandy, trace gravel, stiff, brown, moist	
3.9	End of Test Pit at 3.9 m depth <i>- open and dry upon completion of excavation.</i>	





TP16-04		
Depth:		
0.0 – 0.2	TOPSOIL	
0.2 – 4.6	CLAY – medium plastic, silty, sandy, trace gravel, stiff, brown, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	





TP16-05		
Depth:		
0.0 – 0.15	TOPSOIL	
0.15 – 4.6	CLAY – medium plastic, silty, sandy, trace gravel, stiff, brown, moist	
3.9	... very moist to wet below 3.9 m depth	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	





TP16-06		
<i>Depth:</i>		
0.0 – 0.25	TOPSOIL	
0.25 – 3.1	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.1 – 3.45	SAND - silty, fine grained	
3.45 – 4.0	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.0	End of Test Pit at 4.0 m depth - open and dry upon completion of excavation.	





TP16-07		
Depth:		
0.0 – 0.25	TOPSOIL	
0.25 – 4.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.1 – 2.4	... sand layer, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	





TP16-08		
Depth:		
0.0 – 0.25	TOPSOIL	
0.25 – 0.75	CLAY – medium plastic, silty, sandy, trace gravel, stiff, brown, damp to moist	
0.75 – 4.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	





TP16-09		
Depth:		
0.0 – 0.15	TOPSOIL	
0.15 – 4.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.7 – 3.0	... sand layer, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	





TP16-10		
<i>Depth:</i>		
0.0 – 2.8	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.3 – 2.6	... sand layer, moist	
2.8 – 4.3	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.3	End of Test Pit at 4.3 m depth - open and dry upon completion of excavation.	





TP16-11		
<i>Depth:</i>		
0.0 – 2.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.2 – 2.4	... sand layer, moist	
2.6 – 4.2	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.2	End of Test Pit at 4.2 m depth - open and dry upon completion of excavation.	





TP16-12		
<i>Depth:</i>		
0.0 – 3.9	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.2 – 2.5	... sand layer, moist	
3.9 – 4.6	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	

TP16-13		
<i>Depth:</i>		
0.0 – 2.7	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.1 – 2.5	... sand layer, moist	
2.7 – 4.3	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.3	End of Test Pit at 4.3 m depth - open and dry upon completion of excavation.	



TP16-14		
<i>Depth:</i>		
0.0 – 3.9	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.7 – 3.1	... sand layer, moist	
3.9 – 4.6	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	

TP16-15		
<i>Depth:</i>		
0.0 – 3.2	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.7 – 2.95	... sand layer, moist	
3.2 – 4.3	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.3	End of Test Pit at 4.3 m depth - open and dry upon completion of excavation.	



TP16-16		
Depth:		
0.0 – 0.2	TOPSOIL	
0.2 – 2.75	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
1.8 – 2.1	... sand layer, moist	
2.75 – 4.3	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.3	End of Test Pit at 4.3 m depth - open and dry upon completion of excavation.	





TP16-17		
<i>Depth:</i>		
0.0 – 0.2	TOPSOIL	
0.2 – 2.75	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
1.8 – 2.1	... sand layer, moist	
2.75 – 4.3	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.3	End of Test Pit at 4.3 m depth - open and dry upon completion of excavation.	





TP16-18		
<i>Depth:</i>		
0.0 – 4.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
4.1 – 4.3	... sand layer, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	

TP16-19		
<i>Depth:</i>		
0.0 – 4.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.8 – 4.1	... sand layer, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	



TP16-20		
Depth:		
0.0 – 0.2	TOPSOIL	
0.2 – 4.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.9 – 4.1	... sand layer, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	





TP16-21		
Depth:		
0.0 – 0.2	TOPSOIL	
0.2 – 4.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.6 – 3.9	... sand layer, moist	
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.	





TP16-22		
Depth:		
0.0 – 0.2	TOPSOIL	
0.2 – 2.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.6 – 4.1	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.1	End of Test Pit at 4.1 m depth - open and dry upon completion of excavation.	





TP16-23		
<i>Depth:</i>		
0.0 – 2.4	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.4 – 3.4	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
3.4	End of Test Pit at 3.4 m depth - open and dry upon completion of excavation.	

TP16-24		
<i>Depth:</i>		
0.0 – 3.2	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.2 – 3.9	SAND - silty, medium grained	
3.9	End of Test Pit at 3.9 m depth - open and dry upon completion of excavation.	



TP16-25		
Depth:		
0.0 – 3.5	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.5 – 3.9	SAND - silty, medium grained	
3.9	End of Test Pit at 3.9 m depth <i>- open and dry upon completion of excavation.</i>	





TP16-26		
Depth:		
0.0 – 2.7	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
2.7 – 3.3	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
3.3	End of Test Pit at 3.3 m depth <i>- open and dry upon completion of excavation.</i>	





TP17-27		
Depth:		
0.0 – 0.2	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
0.2 – 4.1	SAND – medium grained, occasional cobbles, compact, brown, moist	
1.6	...gravelly from 1.6 m to 1.9 m	
4.1	End of Test Pit at 4.1 m depth - open and dry upon completion of excavation.	





TP17-28	
Depth:	
0.0 – 0.25	TOPSOIL – sandy, silty, trace clay, dark brown, moist
0.25 – 4.6	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist
4.6	End of Test Pit at 4.6 m depth - open and dry upon completion of excavation.





TP17-29		
Depth:		
0.0 – 0.24	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
0.24 – 3.1	SAND – medium grained, occasional cobbles, compact, brown, moist	
3.1	End of Test Pit at 4.1 m depth - open and dry upon completion of excavation.	





TP17-30		
<i>Depth:</i>		
0.0 – 0.18	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
0.18 – 1.0	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
1.0 – 2.6	SAND – medium grained, occasional cobbles, compact, brown, moist	
2.6 – 3.0	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.0 – 4.0	SAND – medium grained, occasional cobbles, compact, brown, moist	
	End of Test Pit at 4.0 m depth - open and dry upon completion of excavation.	





TP17-31		
<i>Depth:</i>		
0.0 – 0.30	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
0.30 – 3.0	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.0 – 4.0	SAND – medium grained, occasional cobbles, compact, brown, moist	
4.0	End of Test Pit at 4.0 m depth <i>- open and dry upon completion of excavation.</i>	





TP17-32		
Depth:		
0.0 – 0.25	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
0.25 – 3.2	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.2 – 4.0	SAND – medium grained, occasional cobbles, compact, brown, moist	
4.0	End of Test Pit at 4.0 m depth - open and dry upon completion of excavation.	





TP17-33		
Depth:		
0.0 – 0.25	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
3.2 – 3.0	SAND – medium grained, occasional cobbles, compact, brown, moist	
3.0	End of Test Pit at 3.0 m depth <i>- open and dry upon completion of excavation.</i>	





TP17-34		
Depth:		
0.0– 0.17	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
0.17– 1.0	SAND – medium grained, occasional cobbles, compact, brown, moist	
1.0 - 1.7	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
1.7 – 3.5	SAND – medium grained, occasional cobbles, compact, brown, moist	
	End of Test Pit at 3.5 m depth - open and dry upon completion of excavation.	





TP17-35		
Depth:		
0.0– 0.22	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
0.22– 0.50	SAND – medium grained, occasional cobbles, compact, brown, moist	
0.50 - 4.0	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist End of Test Pit at 4.0 m depth <i>- open and dry upon completion of excavation.</i>	





TP17-36		
Depth:		
0.0– 0.15	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
0.15 - 4.4	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist End of Test Pit at 4.4 m depth <i>- open and dry upon completion of excavation.</i>	





TP17-37		
Depth:		
0.0– 0.23	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
0.23– 3.3	SAND – medium grained, occasional cobbles, compact, brown, moist	
3.3	End of Test Pit at 3.3 m depth <i>- open and dry upon completion of excavation.</i>	





TP17-38		
Depth:		
0.0– 0.23	TOPSOIL – sandy, silty, trace clay, dark brown, moist	
0.23– 3.3	SAND – medium grained, occasional cobbles, compact, brown, moist	
3.3	End of Test Pit at 3.3 m depth <i>- open and dry upon completion of excavation.</i>	





TP17-39		
<i>Depth:</i>		
0.0 – 0.27	TOPSOIL - sandy, silty, trace clay, dark brown, moist	
0.27 - 0.90	SAND – medium grained, occasional cobbles, compact, brown, moist	
0.90 – 4.0	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
4.0 – 4.4	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.4	End of Test Pit at 4.4 m depth - open and dry upon completion of excavation.	





TP17-40		
Depth:		
0.0 – 0.16	TOPSOIL - sandy, silty, trace clay, dark brown, moist	
0.16 – 4.0	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
4.0 – 4.4	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.4	End of Test Pit at 4.4 m depth - open and dry upon completion of excavation.	





TP17-41		
<i>Depth:</i>		
0.0 – 0.16	TOPSOIL - sandy, silty, trace clay, dark brown, moist	
0.16 – 3.0	SAND – fine to medium grained, compact, brown, moist	
3.0	End of Test Pit at 3.0 m depth - open and dry upon completion of excavation.	

TP17-42		
<i>Depth:</i>		
0.0 – 0.20	TOPSOIL - sandy, silty, trace clay, dark brown, moist	
0.20 – 3.0	SAND – fine to medium grained, compact, brown, moist	
3.0	End of Test Pit at 3.0 m depth - open and dry upon completion of excavation.	





TP17-43		
Depth:		
0.0 – 0.20	TOPSOIL - sandy, silty, trace clay, dark brown, moist	
0.20 – 3.0	SAND – fine to medium grained, compact, brown, moist	
3.0	End of Test Pit at 3.0 m depth <i>- open and dry upon completion of excavation.</i>	





TP17-44		
Depth:		
0.0 – 0.17	TOPSOIL - sandy, silty, trace clay, dark brown, moist	
0.17 – 4.0	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
4.0 – 4.4	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.4	End of Test Pit at 4.4 m depth - open and dry upon completion of excavation.	





TP17-45		
<i>Depth:</i>		
0.0 – 0.17	TOPSOIL - sandy, silty, trace clay, dark brown, moist	
0.17 – 4.0	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
4.0 – 4.4	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.4	End of Test Pit at 4.4 m depth - open and dry upon completion of excavation.	





TP17-46		
<i>Depth:</i>		
0.0 – 0.17	TOPSOIL - sandy, silty, trace clay, dark brown, moist	
0.17 – 3.9	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.9 – 4.2	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
4.2	End of Test Pit at 4.2 m depth - open and dry upon completion of excavation.	

TP17-47		
<i>Depth:</i>		
0.0 – 0.14	TOPSOIL - sandy, silty, trace clay, dark brown, moist	
0.14 – 3.0	GRAVEL – sandy, occasional cobbles and boulders, compact, grey, moist	
3.0 – 3.7	CLAY TILL – medium plastic, silty, sandy, trace gravel, oxide & coal inclusions, stiff, brown, moist	
3.7	End of Test Pit at 3.7 m depth - open and dry upon completion of excavation.	

