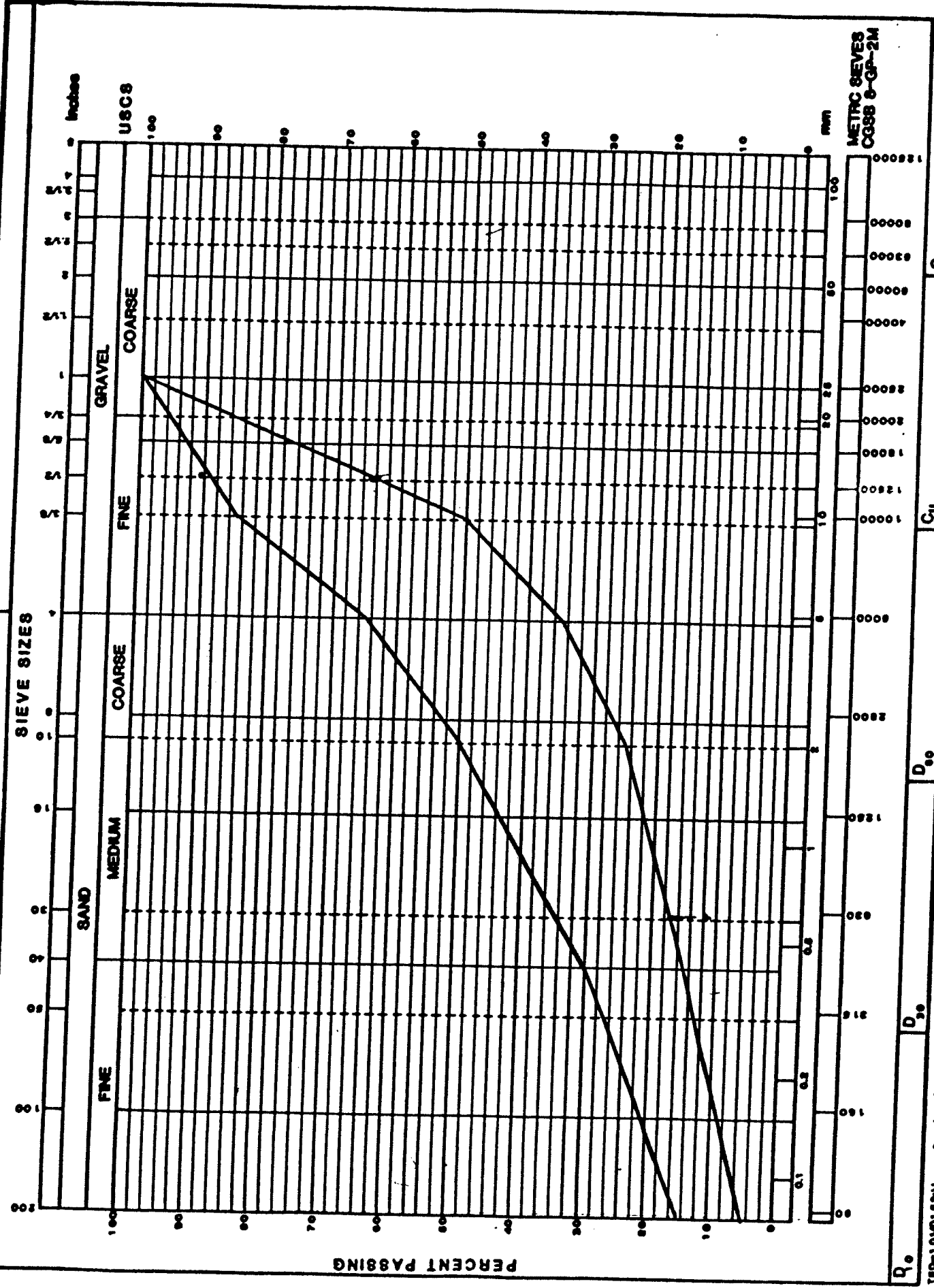


Template

GRAIN SIZE CURVES

General



TESTED BY

SOIL CLASSIFICATION: SAND, MEDIUM, COARSE, FINE, GRAVEL

USCS: 100, 80, 60, 40, 20, 10

METRIC SIEVES CGSB 8-GP-2M: 12000, 8000, 6000, 4000, 2000, 1000, 500, 250, 125, 63, 31.5, 15.75, 7.875, 3.9375, 1.96875, 0.984375, 0.4921875, 0.24609375, 0.123046875, 0.0615234375, 0.03076171875, 0.015380859375

GRAIN SIZE CURVES: P_{60} , D_{30} , D_{60} , C_u , C_c

AASHTO DESIGNATION: M 147-65 (1980) GRADING C

TESTED BY: [Blank]

Example #1

LABORATORY TEST RESULT SUMMARY

PROJECT: Fort Norman F19

PROJECT #: FN-19

SAMPLE #	GRAVEL (%)	SAND (%)	FINES (%)
<u>FN-01-301</u>	79.5	16.5	4.0

SAMPLE DESCRIPTION: GRAVEL AND SAND (GP), subrounded

Washed Sieve Analysis



Example * 2

Northwest Territories Granular Program

SAMPLE DATA SUMMARY

Project BAKER LAKE GRANULAR INVESTIGATION		Compiled by FRED COLLINS	
Source # 5 - SCREENED STOCKPILE		Date 10/02/92	
Sample I.D. BL-12	Sample I.D.	Sample I.D.	Sample I.D.
Date JULY 04/91	Date	Date	Date
Location NORTHEAST	Location	Location	Location
Method SHOVEL	Method	Method	Method
Test Hole No. #12	Test Hole No.	Test Hole No.	Test Hole No.
Depth STOCKPILE	Depth	Depth	Depth
Visual GRAVEL 2' MINUS	Visual	Visual	Visual
U.S.C. GW	U.S.C.	U.S.C.	U.S.C.
Organics NIL	Organics	Organics	Organics
Dry Sieve % gravel % sand % fines	Dry Sieve % gravel % sand % fines	Dry Sieve % gravel % sand % fines	Dry Sieve % gravel % sand % fines
Washed Sieve 70.0 % gravel 27.0 % sand 03.0 % fines	Washed Sieve % gravel % sand % fines	Washed Sieve % gravel % sand % fines	Washed Sieve % gravel % sand % fines
L.A. Abrasion % loss Grading	L.A. Abrasion % loss Grading	L.A. Abrasion % loss Grading	L.A. Abrasion % loss Grading
Lab Crush 25 mm 69.0 % gravel 27.7 % sand 3.3 % fines	Lab Crush % gravel % sand % fines	Lab Crush % gravel % sand % fines	Lab Crush % gravel % sand % fines
Fractured Face Count 2 FACE 97% F.F.C	Fractured Face Count F.F.C	Fractured Face Count F.F.C	Fractured Face Count F.F.C
Flat & Elongated Particles 15% F.E.P.	Flat & Elongated Particles F.E.P.	Flat & Elongated Particles F.E.P.	Flat & Elongated Particles F.E.P.
Proctor Atterberg Limits P.L. L.L. P.I. N.P.	Proctor Atterberg Limits P.L. L.L. P.I.	Proctor Atterberg Limits P.L. L.L. P.I.	Proctor Atterberg Limits P.L. L.L. P.I.
Colour Index 3	Colour Index	Colour Index	Colour Index
Petrographic No.	Petrographic No.	Petrographic No.	Petrographic No.
Moisture	Moisture	Moisture	Moisture



Northwest Territories Granular Program

Grain Size Analysis Example # 2

GRAIN SIZE ANALYSIS

Project	BAKER LAKE GRANULAR INVESTIGATION														Compiled by	FRED COLLINS			
Source	SOURCE 5 - SCREENED STOCKPILE														Date	10/02/92			
Sample#	SIEVE SIZES																		
	#200	#100	#50	#40	#30	#16	#10	#8	#4	3/8	1/2	5/8	3/4	1	1 1/2	2	2 1/2	3	
BL-12	40	50	60	70	80	14	17	19	28	44	62	70	84	98	100				
Average																			

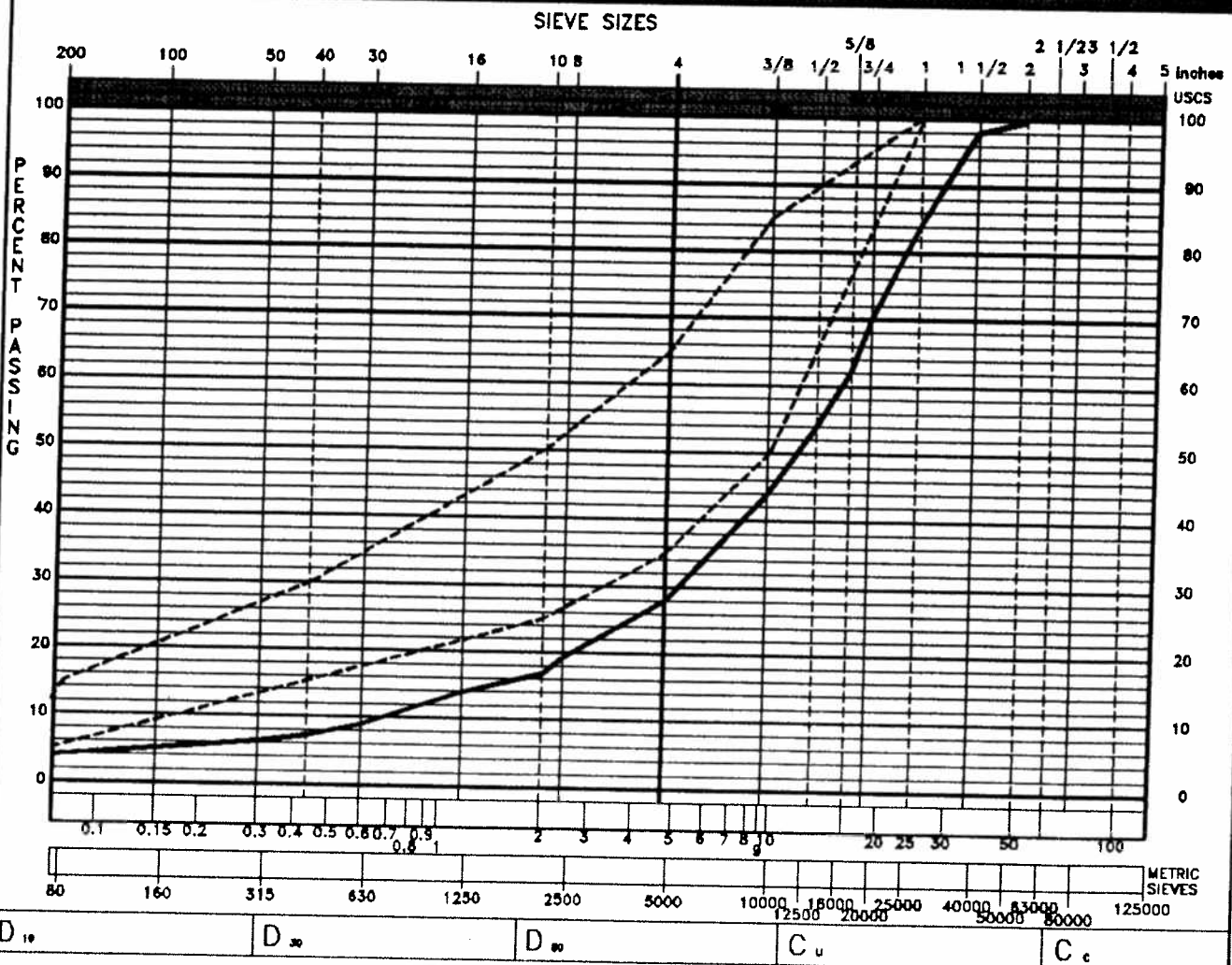


TABLE 1: PIT-RUN GRAVEL GRADING STANDARDS

Sieve Size	Percent Passing by Mass
75.0 mm	100
5.0 mm	25 - 50
0.08 mm	3 - 8

TABLE 2: ASTM C136 CRUSHED GRAVEL GRADATIONS

Sieve Size	Percent Passing by Mass	
	20 mm Minus Crush	50 mm Minus Crush
50 mm	100	100
20 mm	60 - 95	65 - 95
12.5 mm	40 - 65	50 - 75
5.0 mm	20 - 40	30 - 55
1.25 mm	10 - 25	20 - 40
0.315 mm	2 - 8	10 - 25
0.08 mm	-	2 - 8

TABLE 3: COARSE GRAVEL GRADATION

Sieve Size	Percent Passing by Mass (Nominal Gravel Size)	
	50 mm	40 mm
50 mm	100	-
40 mm	90 - 100	100
25 mm	-	95 - 100
20 mm	35 - 70	-
12.5 mm	-	25 - 60
10 mm	10 - 30	-
5 mm	0 - 5	0 - 10
2.5 mm	-	0 - 5



TABLE 4: RECOMMENDED GRADATION FOR GRAVEL

25 mm Minus Crushed Gravel	
Sieve Size	Percent Passing by Weight
25 mm	100
20 mm	95 - 100
10 mm	60 - 80
4.75 mm	40 - 60
2.36 mm	28 - 48
600 µm	13 - 29
300 µm	9 - 21
150 µm	6 - 15
75 µm	4 - 10
75 mm Minus Screened Gravel	
Sieve Size	Percent Passing by Weight
75 mm	100
40 mm	60 - 80
20 mm	40 - 66
10 mm	25 - 54
4.75 mm	15 - 43
2.36 mm	10 - 35
600 µm	5 - 23
150 µm	3 - 12
75 µm	2 - 10

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- 1.5 Definitions (Cont'd) .5 Lot Sample Mean: The arithmetic mean of a set of 5 or more test results constituting the sample for a given Lot and obtained from cores of Compacted mix.
- .1 Stratified Random Sample: A set of test measurements taken, one each from a 5 or more separate (stratified) areas or segments within a Lot in an unbiased way.

PART 2 - PRODUCTS

- 2.1 Materials .1 Granular Material to Section 02701 -
Aggregates: General and following requirements:
- .1 Crushed stone or gravel consisting of hard, durable, angular particles, free from oversize material, clay lumps, cementation, organic materials, 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-8.2.
- .1 Gradation to:

<u>Sieve Designation</u>	<u>Passing</u>
16 mm	100
9.5 mm	50-85
4.75 mm	35-65
2.00 mm	25-50
0.425 mm	15-30
0.075 mm	8-15

- .3 Other properties as follows:
- .1 Liquid Limit: to ASTM D4318, Maximum 25.
- .2 Plasticity Index: to ASTM D4318, Maximum 6.
- .3 Los Angeles Abrasion: to ASTM C131, Gradation 'A'. Max % loss by weight: 45.
- .4 Crushed particles: at least 60% of particles by mass within each of following sieve designation ranges to have at least 2 freshly fractured faces. Material to be divided into ranges using methods of ASTM C136.

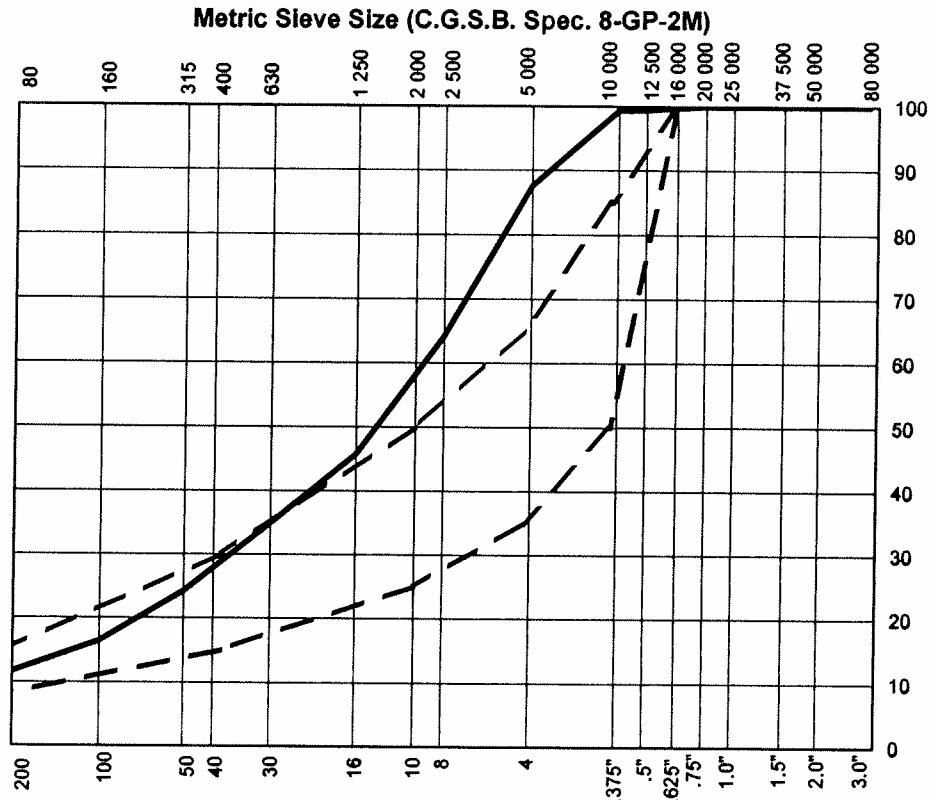
<u>Passing</u>	<u>Retained on</u>
16.0 mm	4.75 mm
to	

EBA Engineering Consultants Ltd.

AGGREGATE ANALYSIS REPORT

Project: 2006 Testing Services Lab Number: 4344-2
 Address: Yellowknife, NT. Sample Description: -16 mm crush
 Project Number: 1780182.001 Sample Number: n/a
 Date Tested: October 20, 2006 Natural Moisture Content: 5.0%
 Client: GNWT, DOT-Airports Colour Plate No.: n/d
Yellowknife, NT. Bulk Relative Density: n/d
 Apparent Relative Density (SSD): n/d
 Attention: Mr. William D. Chapple Apparent Relative Density: n/d
 Absorption: n/d

Sieve Sizes		% Passing
U.S.	Metric	
3"	80 000	
2"	50 000	
1.5"	37 500	
1"	25 000	
.75"	20 000	
.625"	16 000	100
.5"	12 500	99
.375"	10 000	99
No. 4	5 000	88
No. 8	2 500	64
16	1250	46
30	630	35
50	315	24
100	160	16
200	80	11.6



U.S. Standard Sieve Size - approximate (A.S.T.M. Des. E 11)

Remarks: Spec Bond: Granular edge material gradation,
Airside Pavement Rehabilitation & Apron Reconfiguration, Norman Wells, CT100098
 Reviewed By: _____ P.Eng.

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