

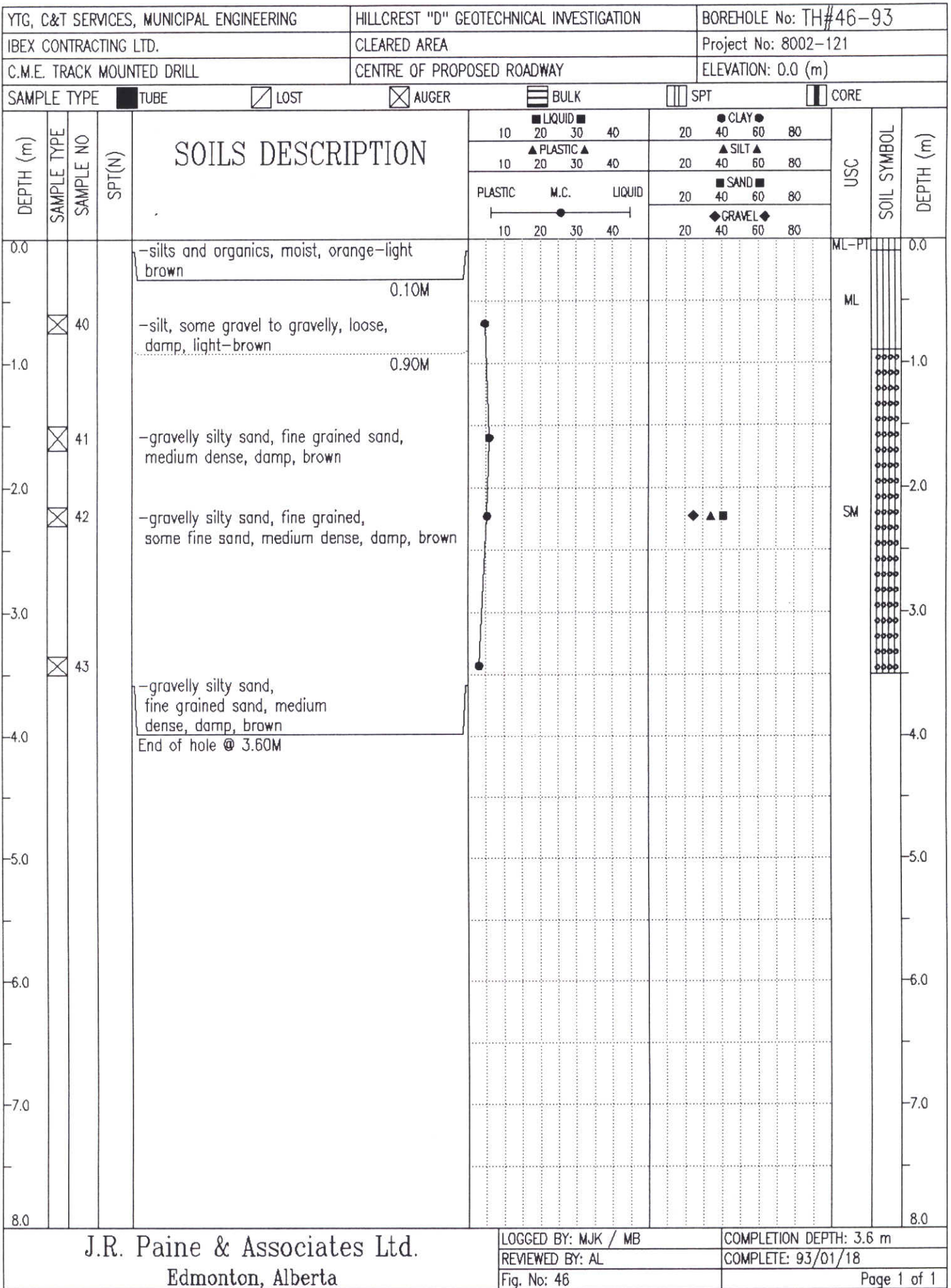
YTG, C&T SERVICES, MUNICIPAL ENGINEERING		HILLCREST "D" GEOTECHNICAL INVESTIGATION		BOREHOLE No: TH#43-93														
IBEX CONTRACTING LTD.		CLEARED AREA		Project No: 8002-121														
C.M.E. TRACK MOUNTED DRILL		CENTRE OF PROPOSED ROADWAY		ELEVATION: 0.0 (m)														
SAMPLE TYPE		<input checked="" type="checkbox"/> TUBE	<input checked="" type="checkbox"/> LOST	<input checked="" type="checkbox"/> AUGER	<input type="checkbox"/> BULK	<input type="checkbox"/> SPT	<input type="checkbox"/> CORE											
DEPTH (m)	SAMPLE TYPE	SAMPLE NO	SPT(N)	SOILS DESCRIPTION			USC	SOIL SYMBOL	DEPTH (m)									
				10	20	30				40	20	40	60	80				
				10	20	30				40	20	40	60	80				
				PLASTIC	M.C.	LIQUID				20	40	60	80	20	40	60	80	
				10	20	30	40	20	40	60	80							
0.0				-silt, some sand, some rootlets, fine grained sand, loose, damp, brown														
				0.10M														
-1.0	<input checked="" type="checkbox"/>	44		-sandy silt, some gravel to gravelly, fine sand, medium dense, damp, light-brown														
				1.20M														
-2.0	<input checked="" type="checkbox"/>	45		-gravelly silty sand, fine sand, (till), dense, damp, brown														
-3.0	<input checked="" type="checkbox"/>	46		-gravelly silty sand, fine grained sand, (till), dense, damp, brown														
				3.65M														
-4.0	<input checked="" type="checkbox"/>	47		-gravelly silty sand, fine sand, (till), medium dense, damp, brown														
-5.0	<input checked="" type="checkbox"/>	48		-gravelly silty sand, fine sand, (till), medium dense, damp, brown														
				4.90M														
-6.0	<input checked="" type="checkbox"/>	49		-sandy gravelly silt, (till), fine to medium sand, dense, damp, brown														
				End of hole @ 5.50M														
-7.0																		
-8.0																		
J.R. Paine & Associates Ltd. Edmonton, Alberta				LOGGED BY: MJK / MB	REVIEWED BY: AL	Fig. No: 34	COMPLETION DEPTH: 5.5 m	COMPLETE: 93/01/18	Page 1 of 1									

YTG, C&T SERVICES, MUNICIPAL ENGINEERING		HILLCREST "D" GEOTECHNICAL INVESTIGATION		BOREHOLE No: TH#44-93											
IBEX CONTRACTING LTD.		CLEARED AREA		Project No: 8002-121											
C.M.E. TRACK MOUNTED DRILL		CENTRE OF PROPOSED ROADWAY		ELEVATION: 0.0 (m)											
SAMPLE TYPE		<input checked="" type="checkbox"/> TUBE <input checked="" type="checkbox"/> LOST <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> SPT <input type="checkbox"/> CORE													
DEPTH (m)	SAMPLE TYPE	SAMPLE NO	SPT(N)	SOILS DESCRIPTION						USC	SOIL SYMBOL	DEPTH (m)			
				<input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> CLAY <input checked="" type="checkbox"/> PLASTIC <input type="checkbox"/> SILT			<input type="checkbox"/> SAND <input type="checkbox"/> GRAVEL								
				PLASTIC		M.C.	LIQUID								
				10	20	30	40	20	40				60	80	
10	20	30	40	20	40	60	80	20	40	60	80	20	40	60	80

0.0	<input checked="" type="checkbox"/>	69		-silt, some sand, some rootlets, loose, damp, brown-orange						ML-PT		0.0
				0.45M								
-1.0	<input checked="" type="checkbox"/>	70		-silty gravelly sand, fine grained sand, loose, dry, brown						SM		-1.0
				1.20M								
-2.0	<input checked="" type="checkbox"/>	71		-gravelly silty sand, fine to medium sand, medium dense, moist, brown						SM		-2.0
				2.15M								
-3.0	<input checked="" type="checkbox"/>	72		-gravelly sandy silt, fine grained sand, traces of oxidation, medium dense, moist, brown								-3.0
-4.0												-4.0
	<input checked="" type="checkbox"/>	73		-gravelly sandy silt, fine grained sand, traces of oxidation, medium dense, moist, brown Hard drilling, possibly cobbles and or boulders						SM		-5.0
-5.0												-5.0
	<input checked="" type="checkbox"/>	74		-gravelly sand silt, fine grained sand, traces of oxidation, medium dense, moist, brown End of hole @ 6.10M								-6.0
-6.0												-6.0
-7.0												-7.0
-8.0												-8.0

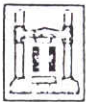
J.R. Paine & Associates Ltd. Edmonton, Alberta		LOGGED BY: MJK / MB	COMPLETION DEPTH: 6.1 m
		REVIEWED BY: AL	COMPLETE: 93/01/18
		Fig. No: 44	Page 1 of 1

YTG, C&T SERVICES, MUNICIPAL ENGINEERING		HILLCREST "D" GEOTECHNICAL INVESTIGATION		BOREHOLE No: TH#45-93						
IBEX CONTRACTING LTD.		CLEARED AREA		Project No: 8002-121						
C.M.E. TRACK MOUNTED DRILL		CENTRE OF PROPOSED ROADWAY		ELEVATION: 0.0 (m)						
SAMPLE TYPE		<input type="checkbox"/> TUBE	<input checked="" type="checkbox"/> LOST	<input checked="" type="checkbox"/> AUGER	<input type="checkbox"/> BULK	<input type="checkbox"/> SPT	<input type="checkbox"/> CORE			
DEPTH (m)	SAMPLE TYPE	SAMPLE NO	SPT(N)	SOILS DESCRIPTION				USC	SOIL SYMBOL	DEPTH (m)
				PLASTIC	M.C.	LIQUID				
				10 20 30 40				20 40 60 80		
				10 20 30 40				20 40 60 80		
								20 40 60 80		
								20 40 60 80		
0.0				-silt, some sand, odd gravel, some rootlets, loose, dry, light-brown				ML-PT		0.0
				0.10M						
-1.0	<input checked="" type="checkbox"/>	85		-sand, trace to some silt, fine sand, loose, dry, light-brown				SP-SM		-1.0
				1.20M						
-2.0				-gravelly sand, fine sand, some silt, medium dense, damp, brown				SW-SM		-2.0
				2.40M						
-3.0	<input checked="" type="checkbox"/>	86		-silty sand, fine sand, some gravel, medium dense, damp, brown						-3.0
	<input checked="" type="checkbox"/>	87								
				4.40M						
-4.0	<input checked="" type="checkbox"/>	88		-sandy silt, some gravel, fine grained, medium dense, damp, brown				SM		-4.0
				4.60M						
-5.0	<input checked="" type="checkbox"/>	89		-gravelly silty sand, (till), fine sand, dense, some oxidation, damp, brown				SM		-5.0
				End of hole @ 5.05M						
8.0									8.0	
J.R. Paine & Associates Ltd. Edmonton, Alberta				LOGGED BY: MJK / MB		COMPLETION DEPTH: 5.1 m				
				REVIEWED BY: AL		COMPLETE: 93/01/18				
				Fig. No: 45				Page 1 of 1		



YTG, C&T SERVICES, MUNICIPAL ENGINEERING		HILLCREST "D" GEOTECHNICAL INVESTIGATION		BOREHOLE No: TH#47-93												
IBEX CONTRACTING LTD.		CLEARED AREA		Project No: 8002-121												
C.M.E. TRACK MOUNTED DRILL		CENTRE OF PROPOSED ROADWAY		ELEVATION: 0.0 (m)												
SAMPLE TYPE		<input checked="" type="checkbox"/> TUBE	<input type="checkbox"/> LOST	<input checked="" type="checkbox"/> AUGER	<input type="checkbox"/> BULK	<input type="checkbox"/> SPT	<input type="checkbox"/> CORE									
DEPTH (m)	SAMPLE TYPE	SAMPLE NO	SPT(N)	SOILS DESCRIPTION				USC	SOIL SYMBOL	DEPTH (m)						
				<input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> PLASTIC <input type="checkbox"/> M.C. <input type="checkbox"/> LIQUID 10 20 30 40 10 20 30 40		<input type="checkbox"/> CLAY <input type="checkbox"/> SILT <input type="checkbox"/> SAND <input type="checkbox"/> GRAVEL 20 40 60 80 20 40 60 80					ML-PT		0.0			
				PLASTIC M.C. LIQUID 10 20 30 40		20 40 60 80								SM		1.0
				10 20 30 40		20 40 60 80										
0.0				-silt, some sand, odd gravel, some rootlets, loose, dry, light-brown 0.10M						0.0						
-1.0	<input checked="" type="checkbox"/>	75		-gravelly silty sand, fine grained, loose, dry, light-brown						-1.0						
-2.0	<input checked="" type="checkbox"/>	76		-silty sand, some gravel, fine sand, medium dense, damp, light-brown						-2.0						
-3.0	<input checked="" type="checkbox"/>	77		-silty sand, some gravel, fine grained sand, medium dense, damp, brown						-3.0						
-4.0	<input checked="" type="checkbox"/>	78		-silty sand, some gravel, fine grained sand, medium dense, damp, brown						-4.0						
-5.0	<input checked="" type="checkbox"/>	79		-silty sand, some gravel, fine grained sand, medium dense, damp, brown End of hole @ 5.05M						-5.0						
-6.0				Standpipe installed Dry @ 0hrs Dry @ 7days S04 Sample #76=no trace						-6.0						
-7.0										-7.0						
-8.0										-8.0						
J.R. Paine & Associates Ltd. Edmonton, Alberta				LOGGED BY: MJK / MB REVIEWED BY: AL Fig. No: 47		COMPLETION DEPTH: 5.1 m COMPLETE: 93/01/18		Page 1 of 1								

YTG, C&T SERVICES, MUNICIPAL ENGINEERING		HILLCREST "D" GEOTECHNICAL INVESTIGATION		BOREHOLE No: TH#48-93													
IBEX CONTRACTING LTD.		CLEARED AREA		Project No: 8002-121													
C.M.E. TRACK MOUNTED DRILL		CENTRE OF PROPOSED ROADWAY		ELEVATION: 0.0 (m)													
SAMPLE TYPE		<input type="checkbox"/> TUBE <input checked="" type="checkbox"/> LOST <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> SPT <input type="checkbox"/> CORE															
DEPTH (m)	SAMPLE TYPE	SAMPLE NO	SPT(N)	SOILS DESCRIPTION				USC				SOIL SYMBOL	DEPTH (m)				
				<input type="checkbox"/> LIQUID <input type="checkbox"/> PLASTIC <input type="checkbox"/> M.C. <input type="checkbox"/> LIQUID		<input type="checkbox"/> CLAY <input type="checkbox"/> SILT <input type="checkbox"/> SAND <input type="checkbox"/> GRAVEL											
				10	20	30	40	20	40	60	80			20	40	60	80
				10	20	30	40	20	40	60	80			20	40	60	80
0.0	<input checked="" type="checkbox"/>	80		-silt, some sand, fine grained, organics present, loose, damp, light-brown								ML-PT	0.0				
				0.60M													
-1.0	<input checked="" type="checkbox"/>	81		-sandy silt, some gravel, fine grained sand, medium dense, damp, light-brown								SM	-1.0				
	<input checked="" type="checkbox"/>	82		-gravelly silty sand, fine grained sand, medium dense, damp, brown								SM					
-2.0				1.85M									-2.0				
-3.0	<input checked="" type="checkbox"/>	83		-gravelly sandy silt(till), fine grained sand, dense, damp, brown								SM	-3.0				
-4.0													-4.0				
-5.0	<input checked="" type="checkbox"/>	84		-gravelly sandy silt(till), fine grained sand, medium dense, damp, brown								SM	-5.0				
				End of hole @ 4.60M									-5.0				
-6.0													-6.0				
-7.0													-7.0				
-8.0													-8.0				
J.R. Paine & Associates Ltd. Edmonton, Alberta				LOGGED BY: MJK / MB REVIEWED BY: AL Fig. No: 48				COMPLETION DEPTH: 4.6 m COMPLETE: 93/01/18				Page 1 of 1					



HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 2 Depth: 1-2-1.7m Project: HILLCREST "D" Subdivision
 Location: TH# 27-93 Made by: MB Job No.: 8002-121A
 Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				
20,000	20.0				100.0
12,500	12.5				92.2
10,000	10.0				
5,000	5.0				81.4
2500	2.5				77.0
1,250	1.25				73.6
800	0.800				
630	0.630				
315	0.315				62.7
250	0.250				59.3
160	0.160				
80	0.080				37.3

Description of Sample gravelly silty sand

Method of Preparation _____ Dry _____ Washed X

Remarks _____

SM

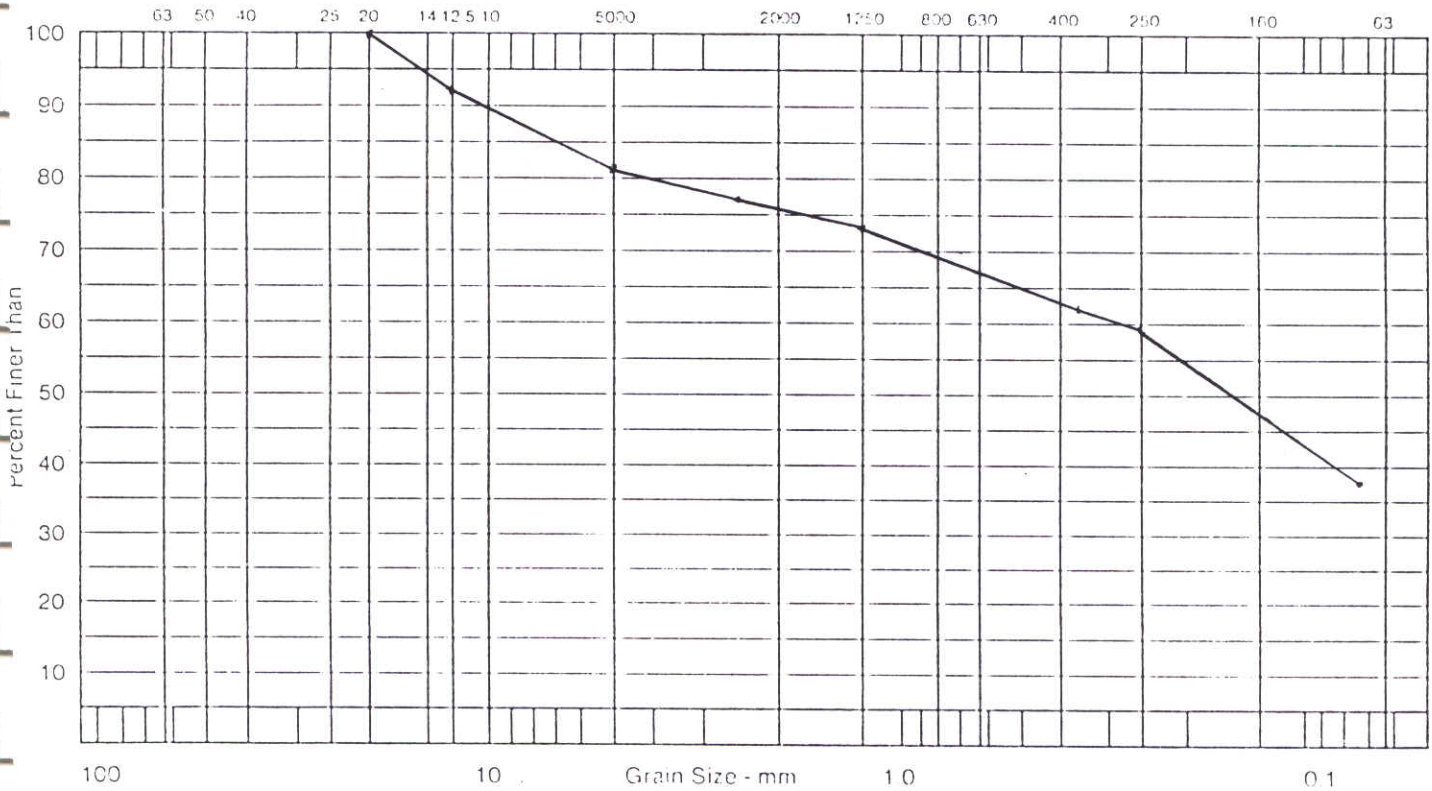
MOISTURE 4.9 %

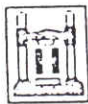
SAND 44.2 %

SILT 37.3 %

GRAVEL 18.6 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 4 Depth: 1.58 - 1.75 m Project: HILLCREST "D" Subdivision
 Location: TH# 43-93 Made by: MB Job No.: 8002-121A
 Ck'd by: _____ Date: 1993/01

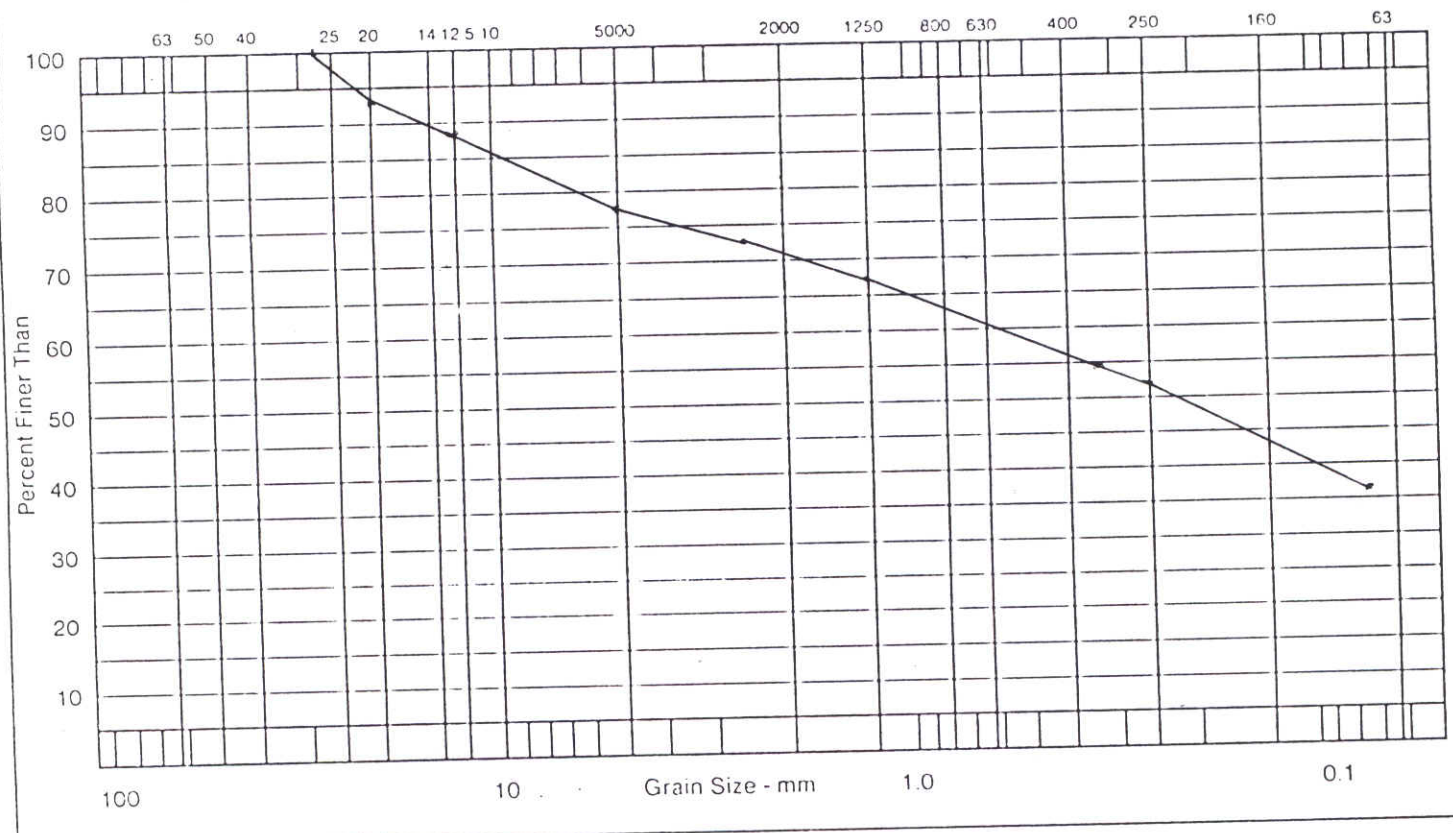
Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				93.3
12,500	12.5				88.2
10,000	10.0				
5,000	5.0				77.5
2500	2.5				72.1
1,250	1.25				67.2
800	0.800				
630	0.630				
315	0.315				54.9
250	0.250				51.8
160	0.160				
80	0.080				35.3

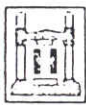
Description of Sample _____
gravelly silty sand, SM

 Time of Sieving _____ Min. 15

Method of Preparation _____ Dry _____ Washed
 Remarks _____

MOISTURE 5.4 %
 SAND 42.2 %
 SILT 35.3 %
 GRAVEL 22.5 %





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 11 Depth: 0.6-1.1m

Project: HILLCREST "D" Subdivision

Location: TH# 37-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				97.5
12,500	12.5				87.3
10,000	10.0				
5,000	5.0				64.8
2500	2.5				53.3
1,250	1.25				44.7
800	0.800				
630	0.630				
315	0.315				29.2
250	0.250				26.6
160	0.160				
80	0.080				16.7

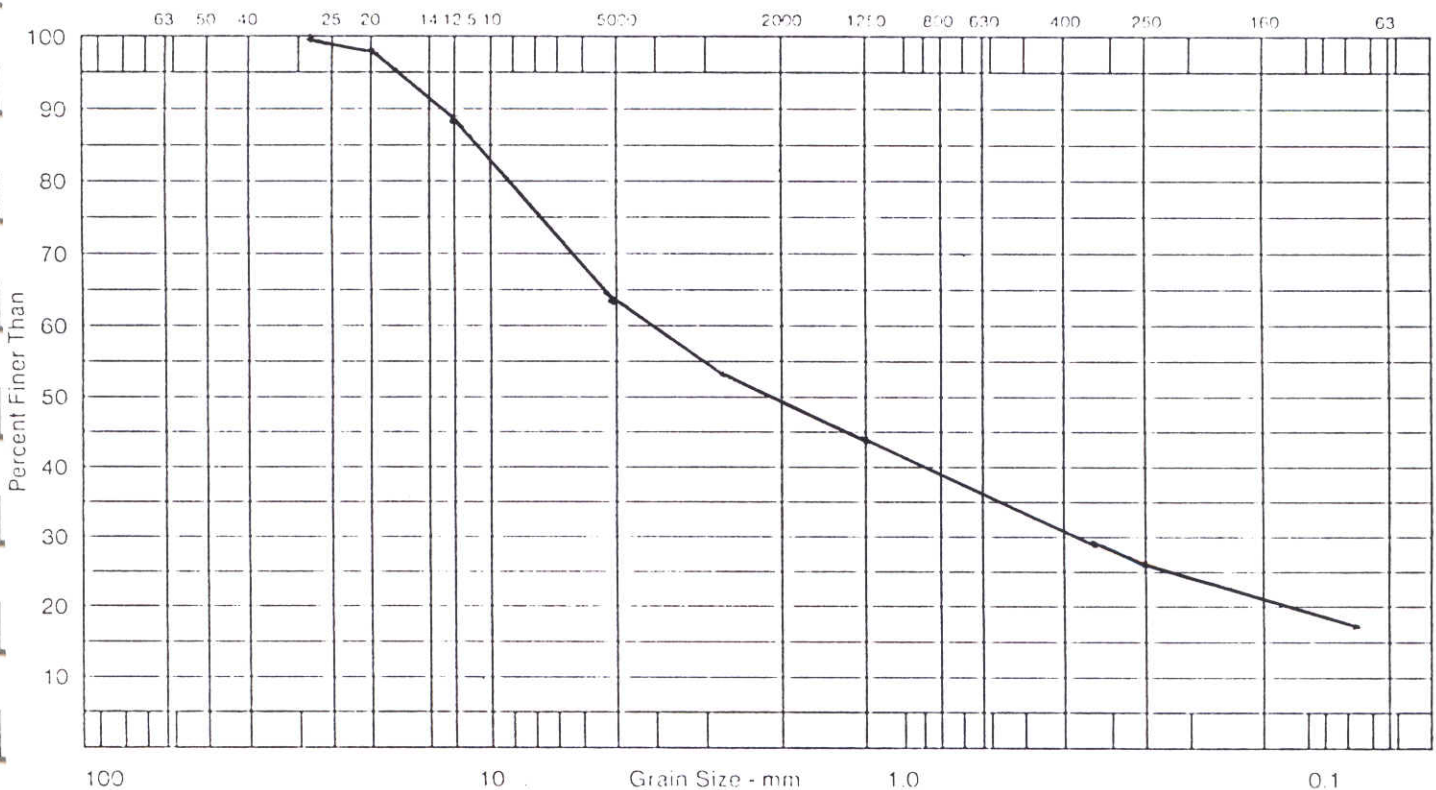
Description of Sample _____
Silty gravelly sand
SM

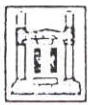
Method of Preparation _____ Dry _____ Washed X

Remarks _____

MOISTURE 3.2 %
 SAND 48.1 %
 SILT 16.7 %
 GRAVEL 35.2 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

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3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 15 Depth: 0.8-1.3 m Project: HILLCREST "D" Subdivision
 Location: TH# 36-93 Made by: MB Job No.: 8002-121A
 Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				100.0
28000	28.0				86.8
20,000	20.0				72.2
12,500	12.5				65.0
10,000	10.0				
5,000	5.0				56.4
2500	2.5				52.2
1,250	1.25				48.4
800	0.800				
630	0.630				
315	0.315				38.8
250	0.250				36.3
160	0.160				
80	0.080				21.6

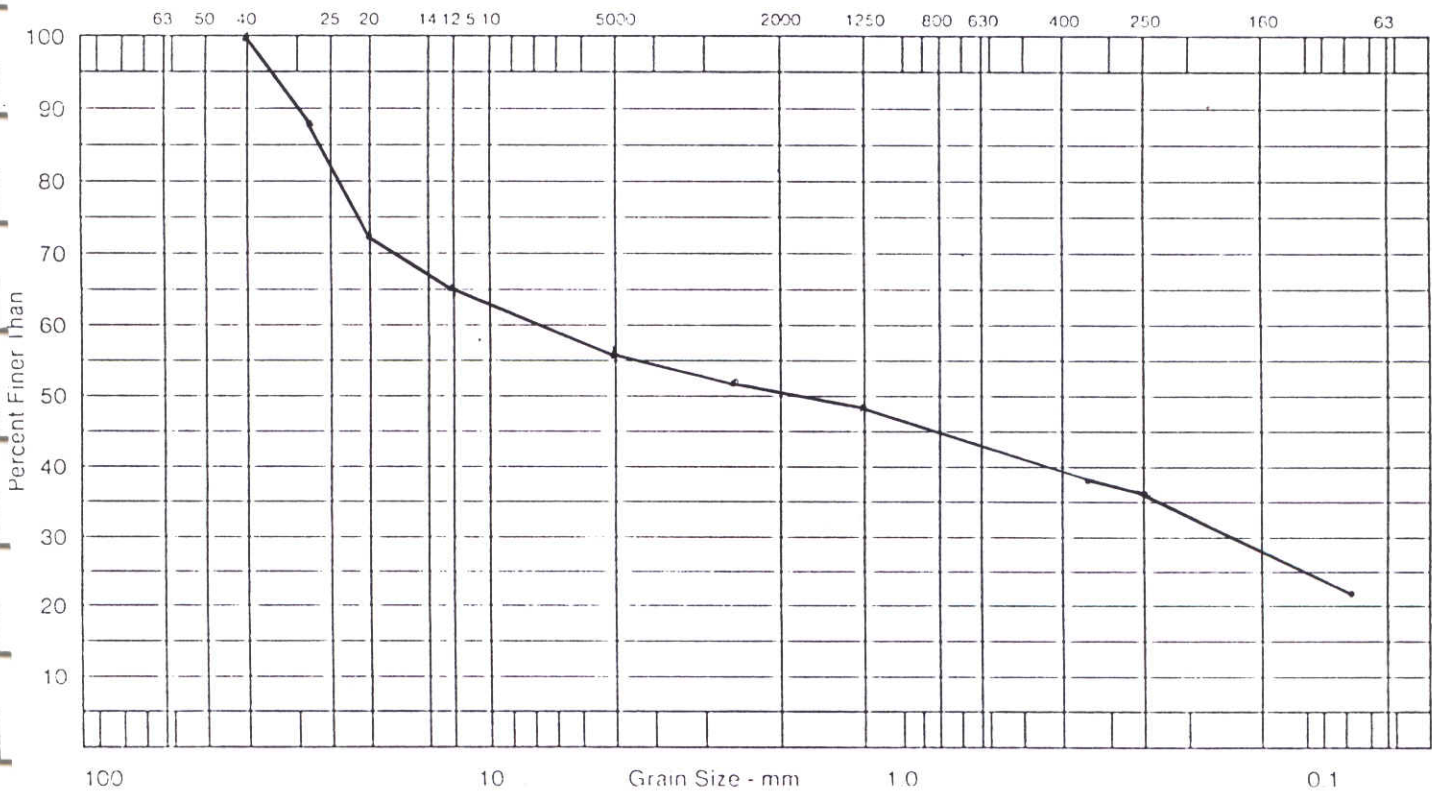
Description of Sample silty sandy gravel to silty gravelly sand
GM - SM

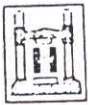
Method of Preparation _____ Dry _____ Washed x

Remarks _____

MOISTURE 5.0 %
 SAND 34.8 %
 SILT 21.6 %
 GRAVEL 43.6 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 16 Depth: 1.40-1.58 m Project: HILLCREST "D" Subdivision
 Location: TH# 36-93 Made by: MB Job No.: 8002-121A
 CK'd by: _____ Date: 1993/01

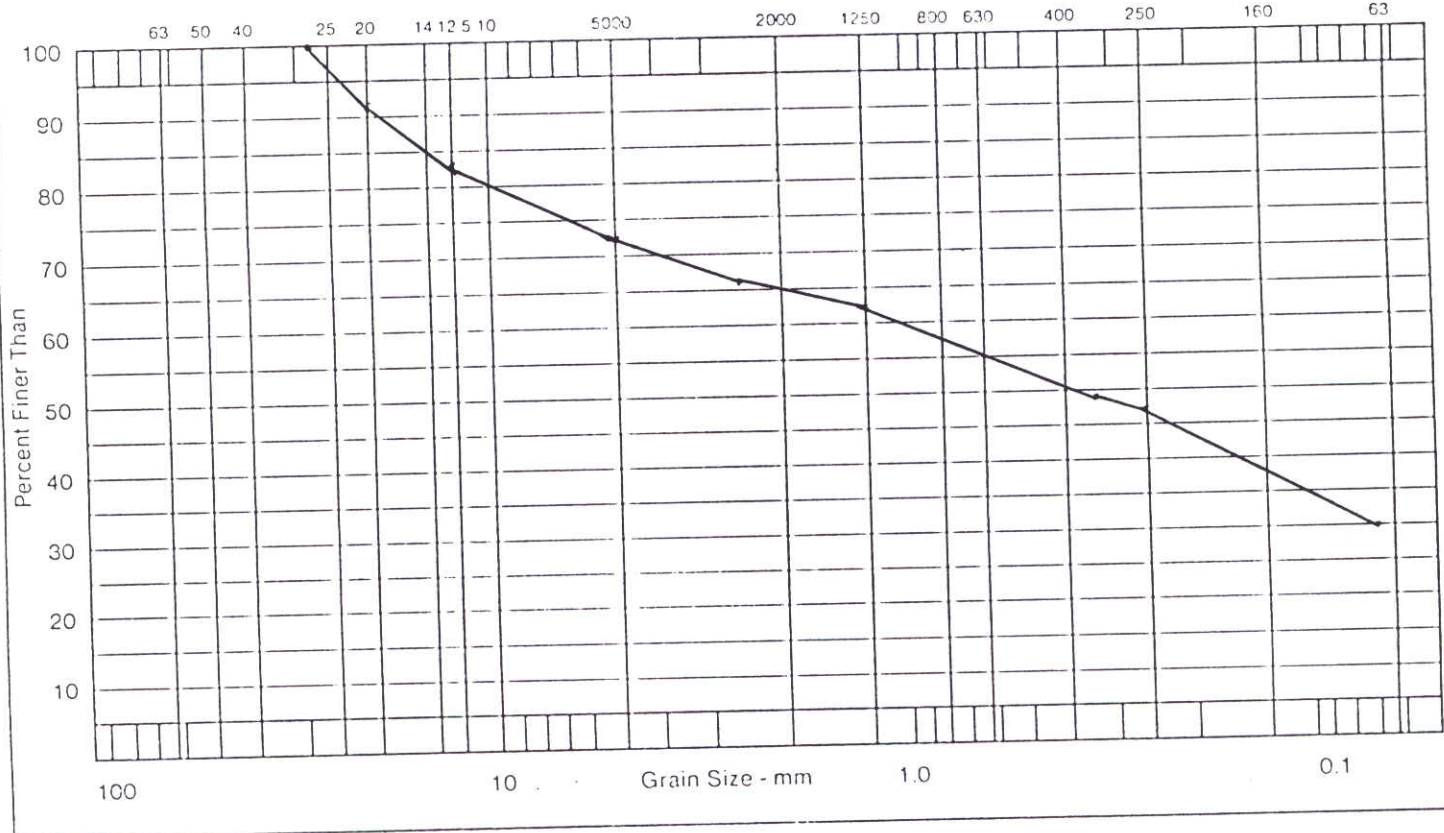
Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				90.6
12,500	12.5				82.9
10,000	10.0				
5,000	5.0				71.7
2500	2.5				66.2
1,250	1.25				61.5
800	0.800				
630	0.630				
315	0.315				49.8
250	0.250				46.7
160	0.160				
80	0.080				30.0

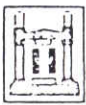
Description of Sample _____
gravelly silty sand, SM

Method of Preparation _____ Dry _____ Washed X

Remarks _____
MOISTURE 8.3 %
SAND 41.7 %
SILT 30.0 %
GRAVEL 28.3 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 24 Depth: 2.8-3.3m

Project: HILLCREST "D" Subdivision

Location: TH# 38-93

Made by: MB Job No.: 8002-121A

CK'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				
20,000	20.0				100.0
12,500	12.5				94.4
10,000	10.0				
5,000	5.0				87.8
2500	2.5				82.7
1,250	1.25				78.1
800	0.800				
630	0.630				
315	0.315				64.4
250	0.250				60.8
160	0.160				
80	0.080				41.4

Description of Sample _____
Silty sand, some gravel
SM - ML

Method of Preparation _____ Dry _____ Washed x

Remarks _____

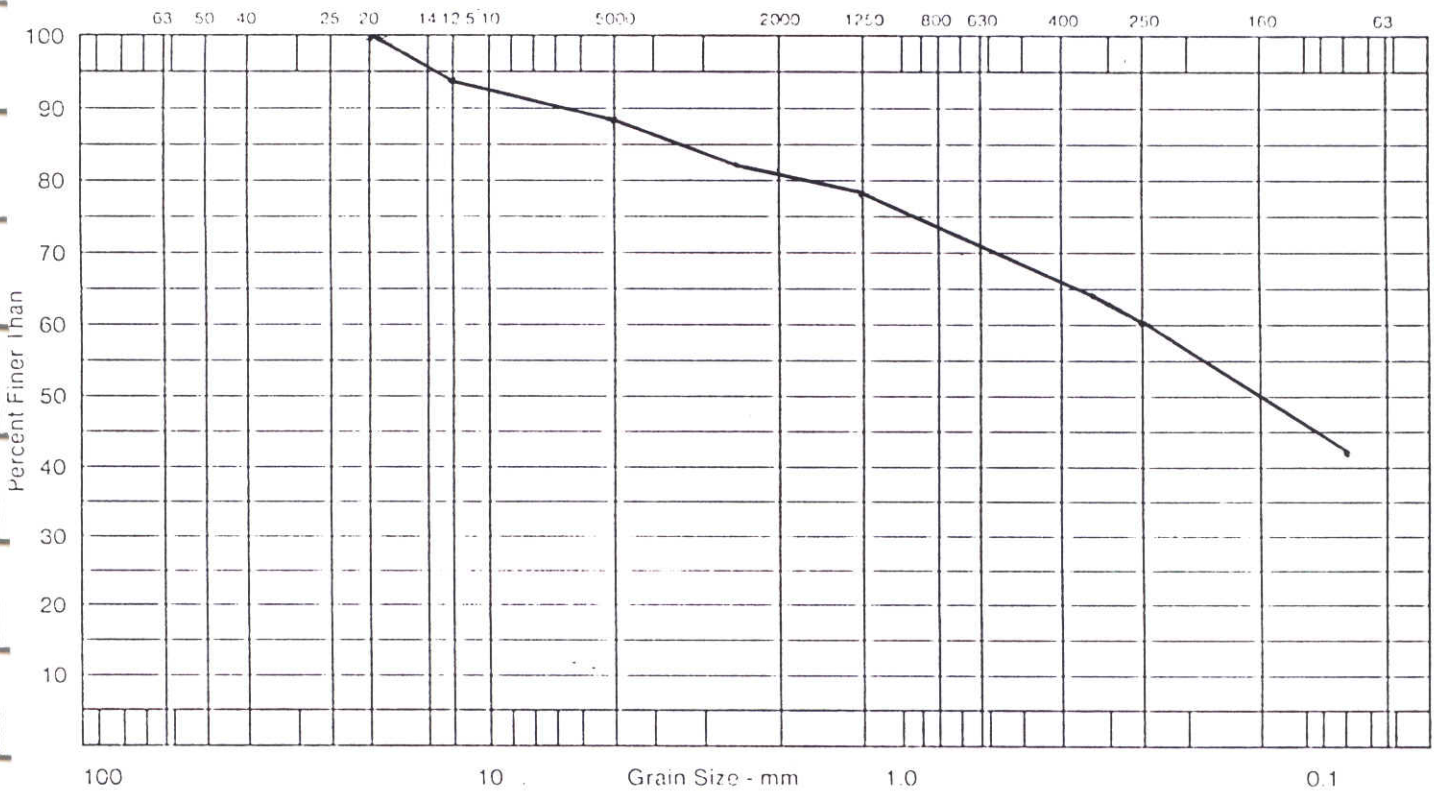
MOISTURE 5.5 %

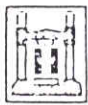
SAND 46.4 %

SILT 41.4 %

GRAVEL 12.2 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 25 Depth: 3.5-4.0m Project: HILLCREST "D" Subdivision
 Location: TH# 38-93 Made by: MB Job No.: 8002-121A
 Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				100.0
28000	28.0				86.3
20,000	20.0				78.9
12,500	12.5				74.5
10,000	10.0				
5,000	5.0				64.6
2500	2.5				61.2
1,250	1.25				57.6
800	0.800				
630	0.630				
315	0.315				47.9
250	0.250				45.3
160	0.160				
80	0.080				31.7

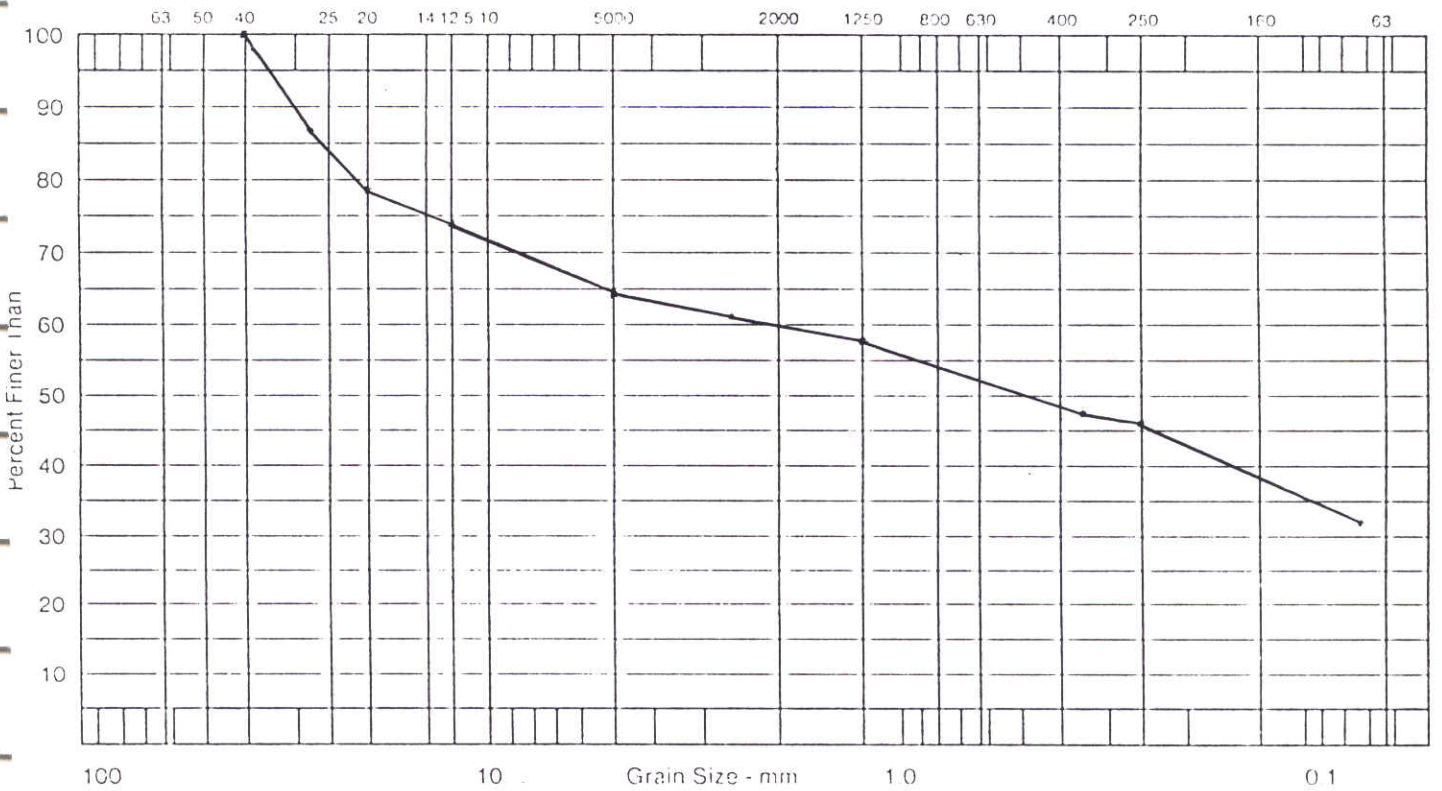
Description of Sample silty sandy gravel to silty gravelly sand
SM

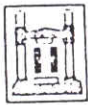
Method of Preparation _____ Dry _____ Washed

Remarks _____

MOISTURE 3.9 %
 SAND 32.8 %
 SILT 31.7 %
 GRAVEL 35.4 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: VTG, C&T Services, Municipal Eng.

Sample: S# 42 Depth: 2.20 - 2.36 m

Project: HILLCREST "D" Subdivision

Location: TH# 46-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				100.0
28000	28.0				89.2
20,000	20.0				81.9
12,500	12.5				
10,000	10.0				75.3
5,000	5.0				69.8
2500	2.5				65.2
1,250	1.25				
800	0.800				
630	0.630				
315	0.315				52.7
250	0.250				50.2
160	0.160				
80	0.080				34.2

Description of Sample _____

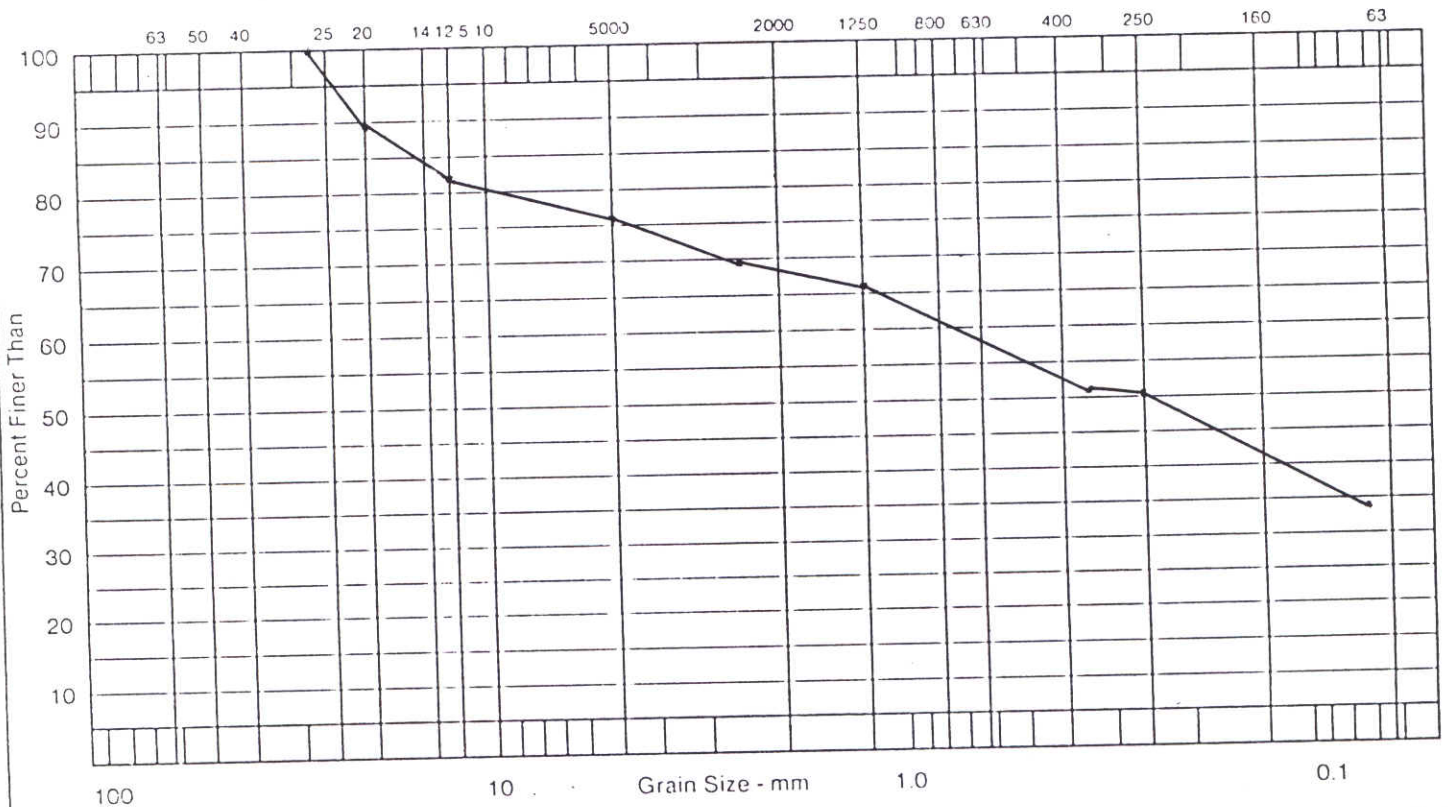
gravelly silty sand, SM

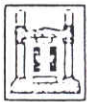
Method of Preparation _____ Dry _____ Washed

Remarks _____

MOISTURE 5.2 %
 SAND 41.1 %
 SILT 34.2 %
 GRAVEL 24.7 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 70 Depth: 0.75-1.2m

Project: HILLCREST "D" Subdivision

Location: TH# 44-93

Made by: MB Job No.: 8002-121A

CK'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				86.5
12,500	12.5				79.5
10,000	10.0				
5,000	5.0				63.1
2500	2.5				55.2
1,250	1.25				50.0
800	0.800				
630	0.630				
315	0.315				39.9
250	0.250				37.5
160	0.160				
80	0.080				24.6

Description of Sample silty gravelly sand to silty sandy gravel, SM-GM

Method of Preparation _____ Dry _____ Washed x

Remarks _____

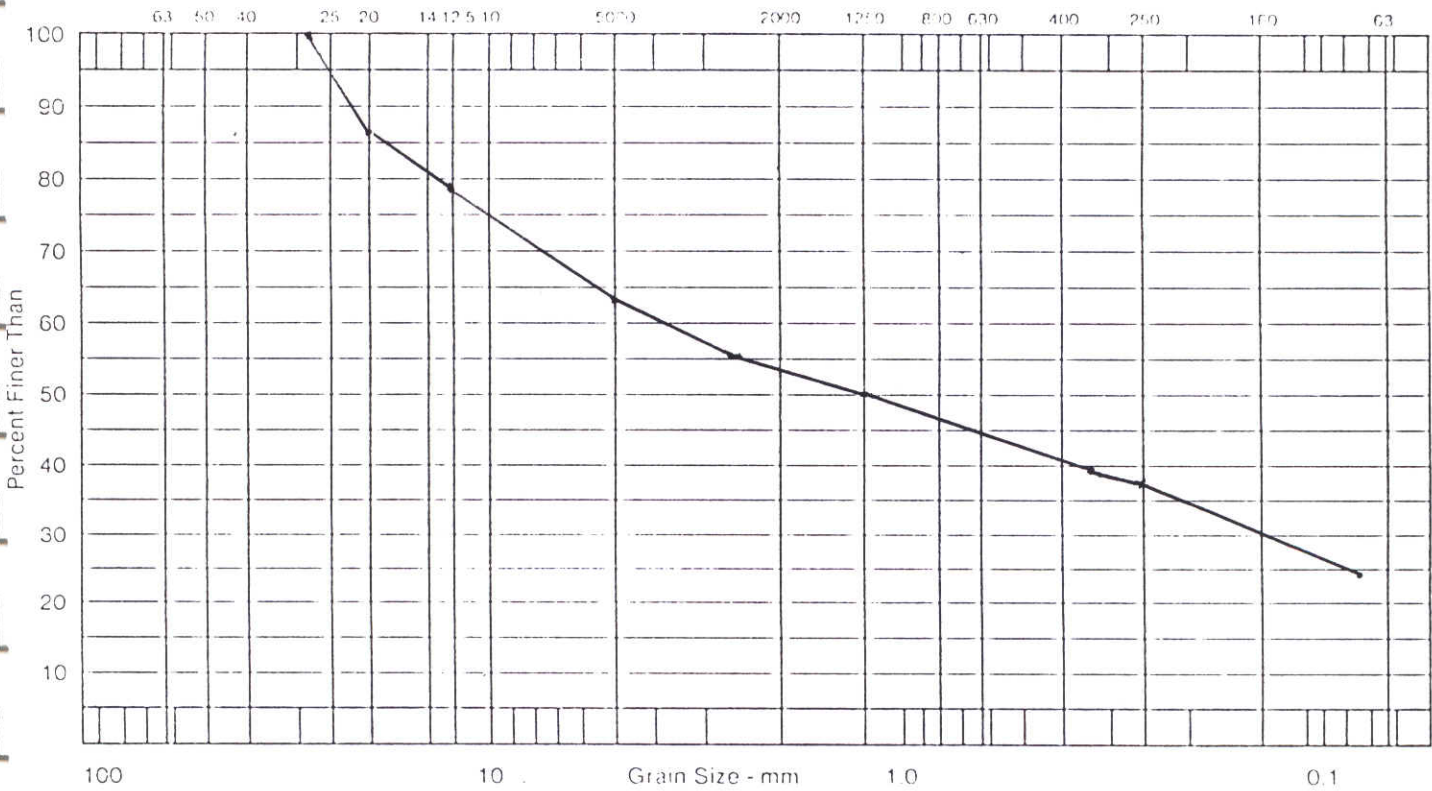
MOISTURE 3.7 %

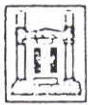
SAND 38.5 %

SILT 24.6 %

GRAVEL 36.9 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 75 Depth: 0.75-1.2 m Project: HILLCREST "D" Subdivision
 Location: TH# 47-93 Made by: MB Job No.: 8002-121A
 Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				91.7
12,500	12.5				81.5
10,000	10.0				
5,000	5.0				
2500	2.5				75.8
1,250	1.25				71.3
800	0.800				66.7
630	0.630				
315	0.315				52.6
250	0.250				49.3
160	0.160				
80	0.080				27.9

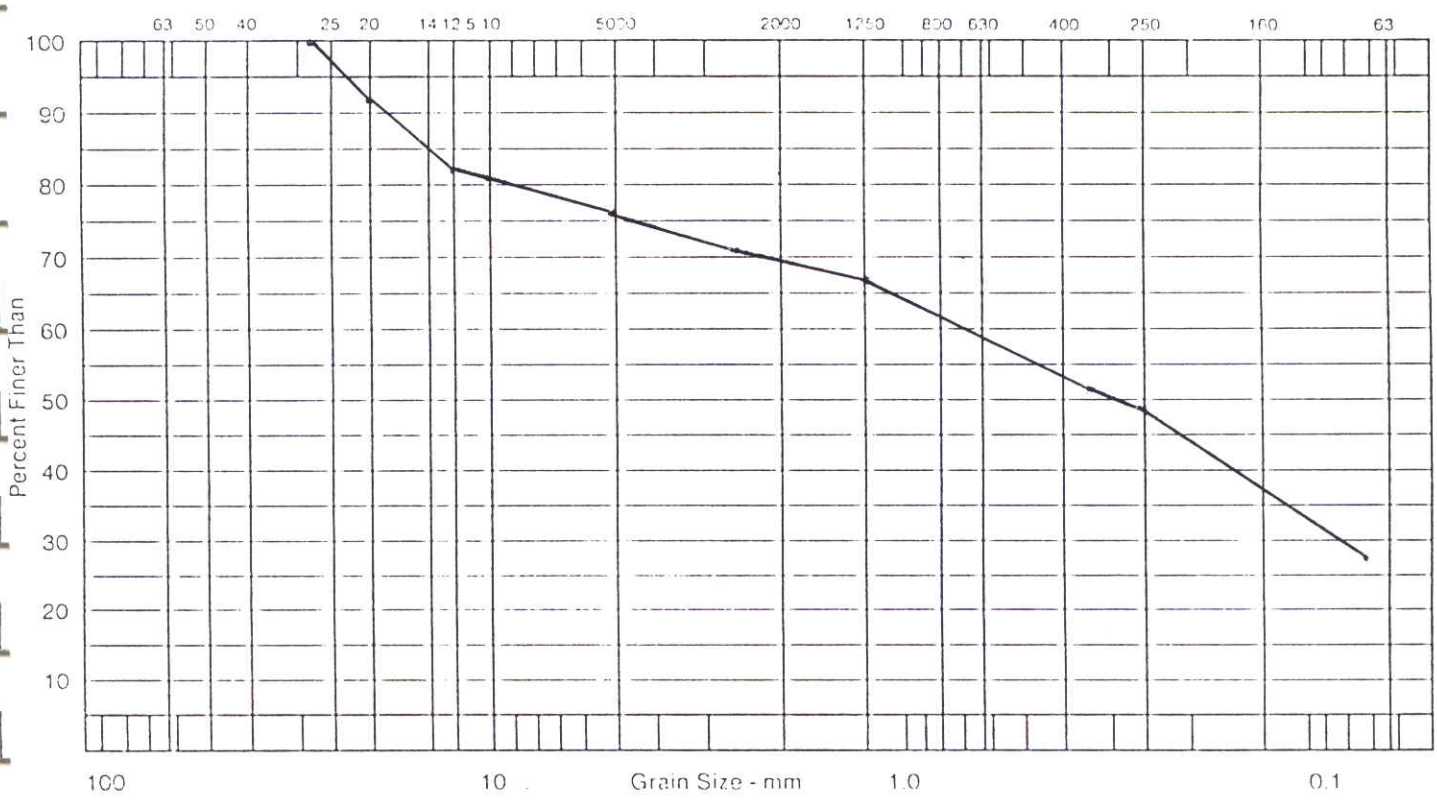
Description of Sample _____
gravelly silty sand
SM

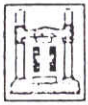
Method of Preparation _____ Dry _____ Washed X

Remarks _____

Time of Sieving _____ Min. 15

MOISTURE 3.2 %
 SAND 47.8 %
 SILT 27.9 %
 GRAVEL 24.2 %





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 82 Depth: 1.4-1.9m

Project: HILLCREST "D" Subdivision

Location: TH# 48-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				94.8
12,500	12.5				87.1
10,000	10.0				
5,000	5.0				69.9
2500	2.5				62.5
1,250	1.25				57.3
800	0.800				
630	0.630				
315	0.315				47.4
250	0.250				45.1
160	0.160				
80	0.080				34.0

Description of Sample _____
gravelly silty sand to
gravelly sandy silt
SM-ML

Method of Preparation _____ Dry _____ Washed X

Remarks _____

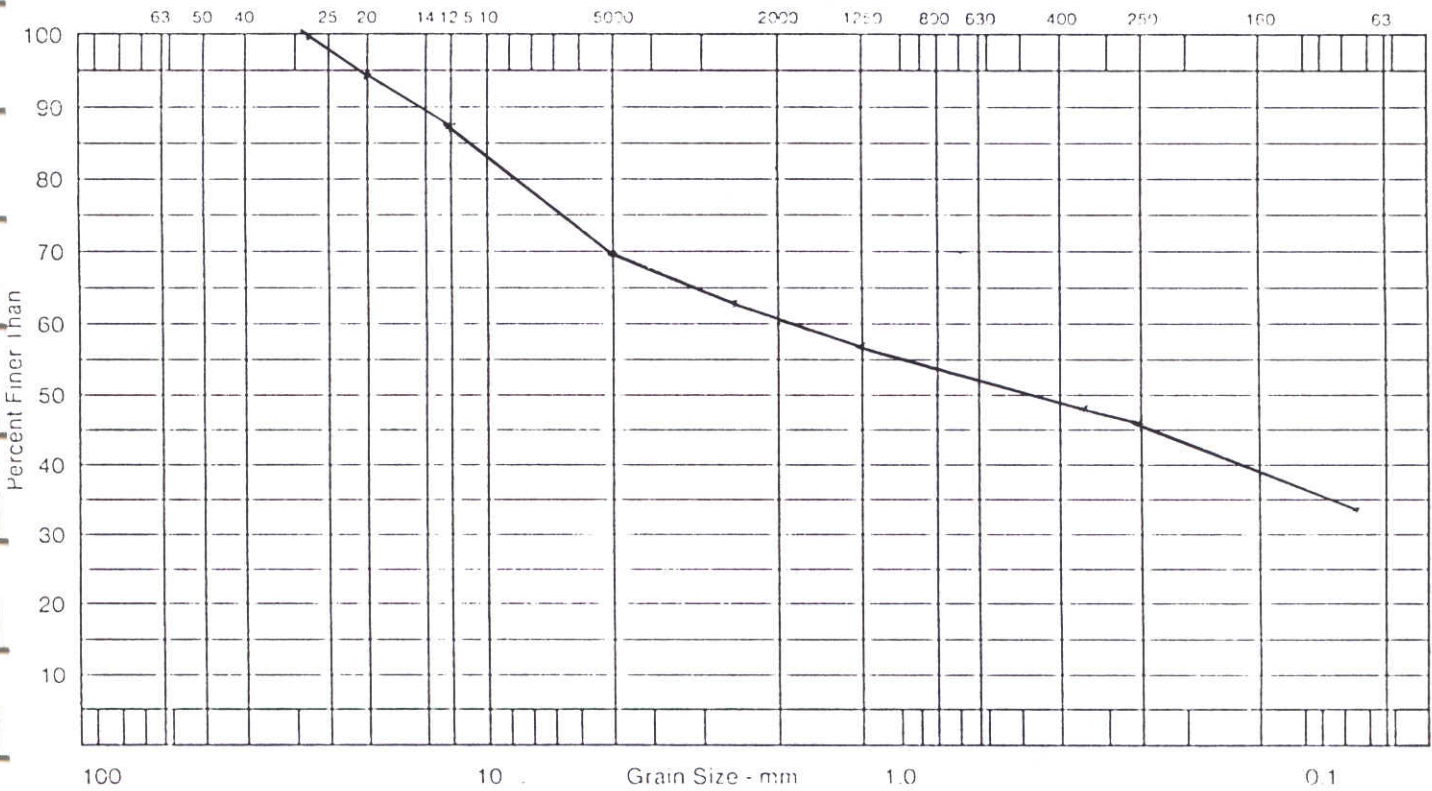
MOISTURE 5.8 %

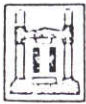
SAND 35.9 %

SILT 34.0 %

GRAVEL 30.1 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 84 Depth: 4.1-4.6 m

Project: HILLCREST "D" Subdivision

Location: TH# 48-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				
20,000	20.0				100.0
12,500	12.5				92.5
10,000	10.0				
5,000	5.0				85.6
2500	2.5				80.0
1,250	1.25				75.7
800	0.800				
630	0.630				
315	0.315				64.0
250	0.250				61.6
160	0.160				
80	0.080				43.8

Description of Sample _____
Silty sand to sandy silt,
SM-ML
some gravel

Method of Preparation _____ Dry _____ Washed X

Remarks _____

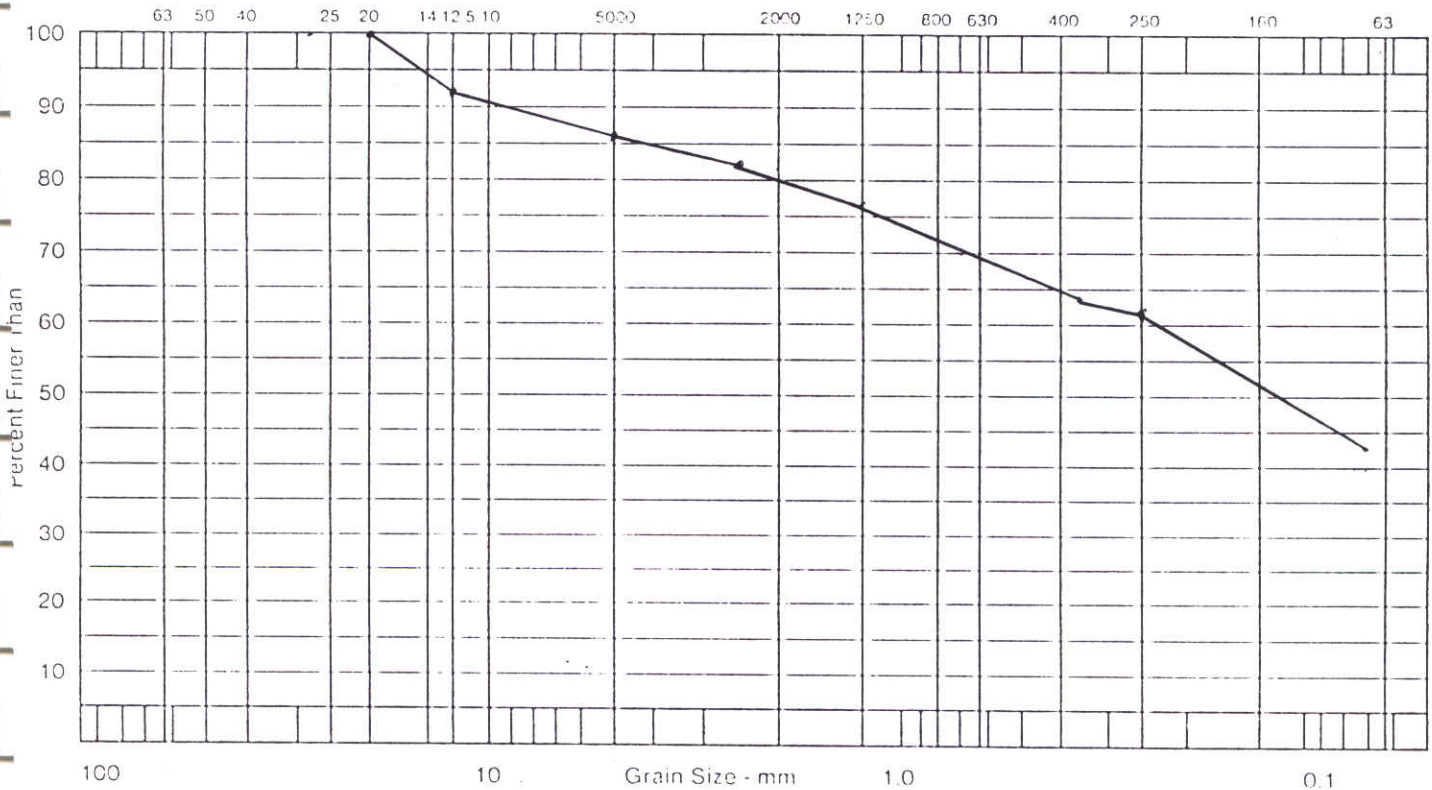
MOISTURE 7.0 %

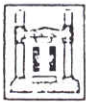
SAND 41.7 %

SILT 43.8 %

GRAVEL 14.4 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 92 Depth: 1.2-1.7 m

Project: HILLCREST "D" Subdivision

Location: TH# 28-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				100.0
40,000	40.0				75.5
28000	28.0				71.3
20,000	20.0				69.3
12,500	12.5				66.4
10,000	10.0				
5,000	5.0				60.1
2500	2.5				55.2
1,250	1.25				50.8
800	0.800				
630	0.630				
315	0.315				38.4
250	0.250				35.6
160	0.160				
80	0.080				24.5

Description of Sample Silty gravelly sand to silty sandy gravel
SM-GM

Method of Preparation _____ Dry _____ Washed X

Remarks _____

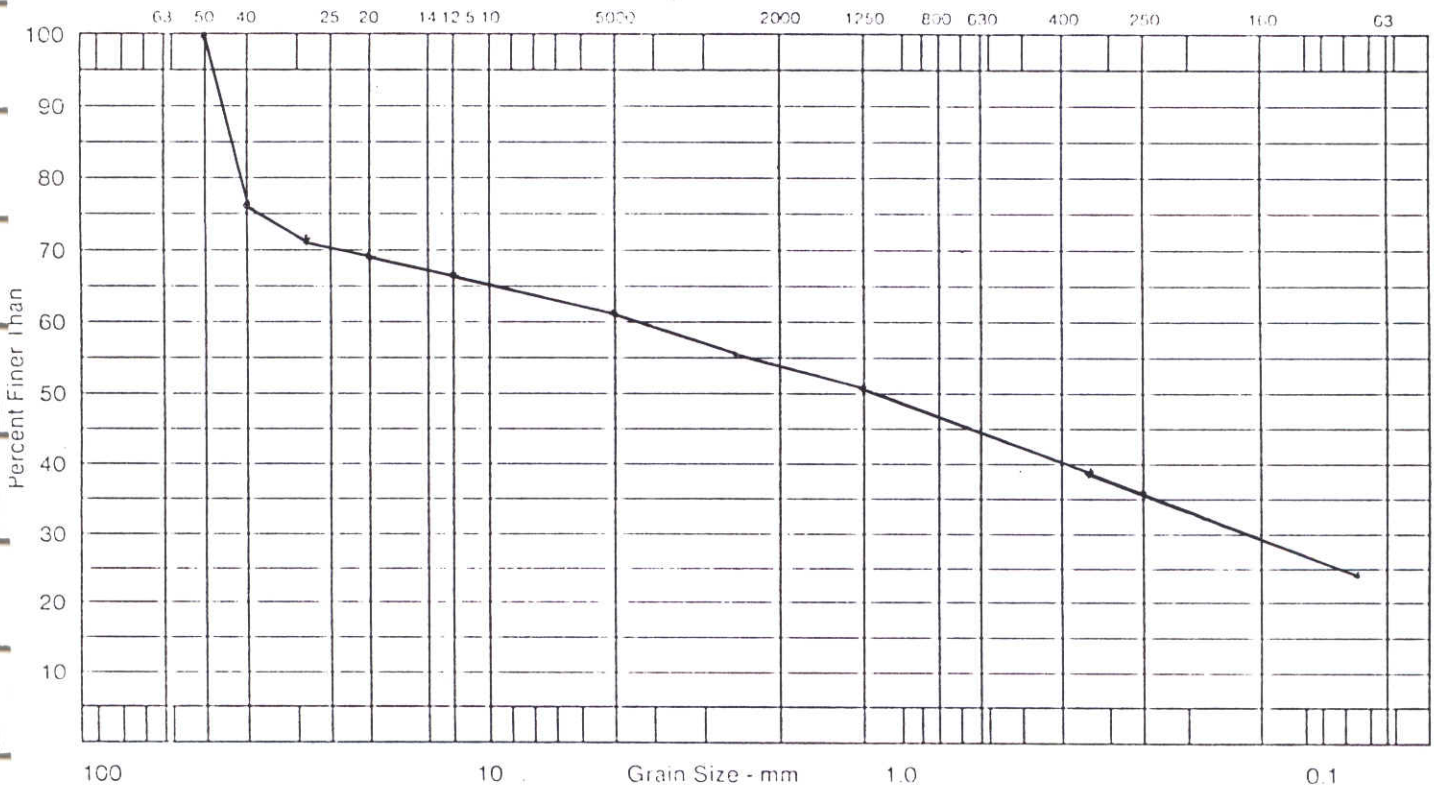
MOISTURE 5.1 %

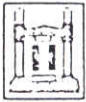
SAND 35.6 %

SILT 24.5 %

GRAVEL 39.9 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 103 Depth: 1.7-2.2 m

Project: HILLCREST "D" Subdivision

Location: TH# 29-93

Made by: MB Job No.: 8002-121A

CK'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63.000	63.0				
50.000	50.0				
40.000	40.0				
28000	28.0				100.0
20.000	20.0				96.8
12.500	12.5				94.0
10.000	10.0				
5.000	5.0				82.9
2500	2.5				77.6
1.250	1.25				71.7
800	0.800				
630	0.630				
315	0.315				54.2
250	0.250				49.7
160	0.160				
80	0.080				27.8

Description of Sample gravelly, silty sand
SM

Method of Preparation _____ Dry _____ Washed x

Remarks _____

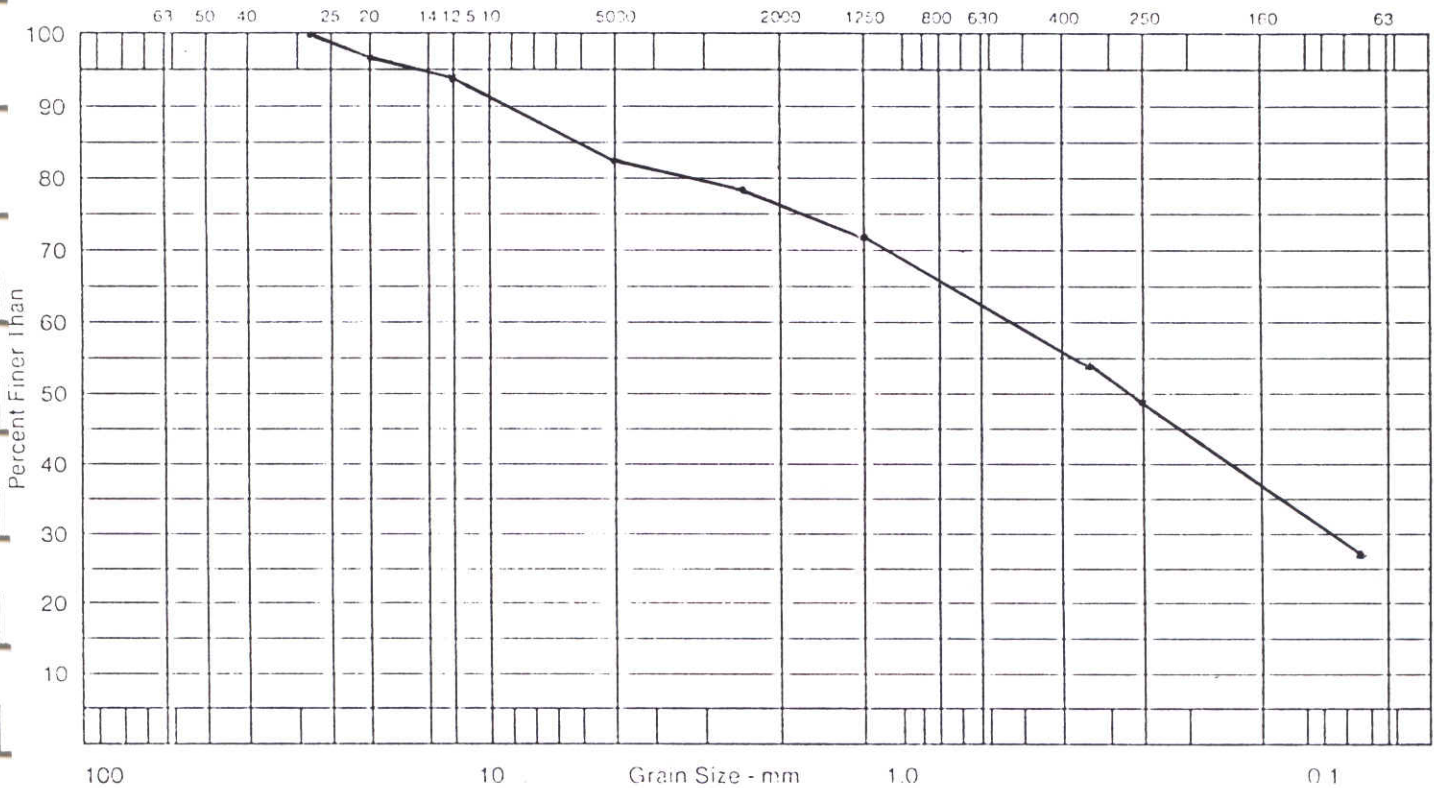
MOISTURE 7.6 %

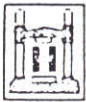
SAND 55.1 %

SILT 27.8 %

GRAVEL 17.1 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 108 Depth: 2.90 - 3.05 m

Project: HILLCREST "D" Subdivision

Location: TH# 23-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				100.0
28000	28.0				89.6
20,000	20.0				82.7
12,500	12.5				76.0
10,000	10.0				
5,000	5.0				64.0
2500	2.5				58.5
1,250	1.25				54.6
800	0.800				
630	0.630				
315	0.315				44.8
250	0.250				42.2
160	0.160				
80	0.080				27.1

Description of Sample _____
Silty gravelly sand to silty sandy gravel
SM - GM

Method of Preparation _____ Dry _____ Washed

Remarks _____

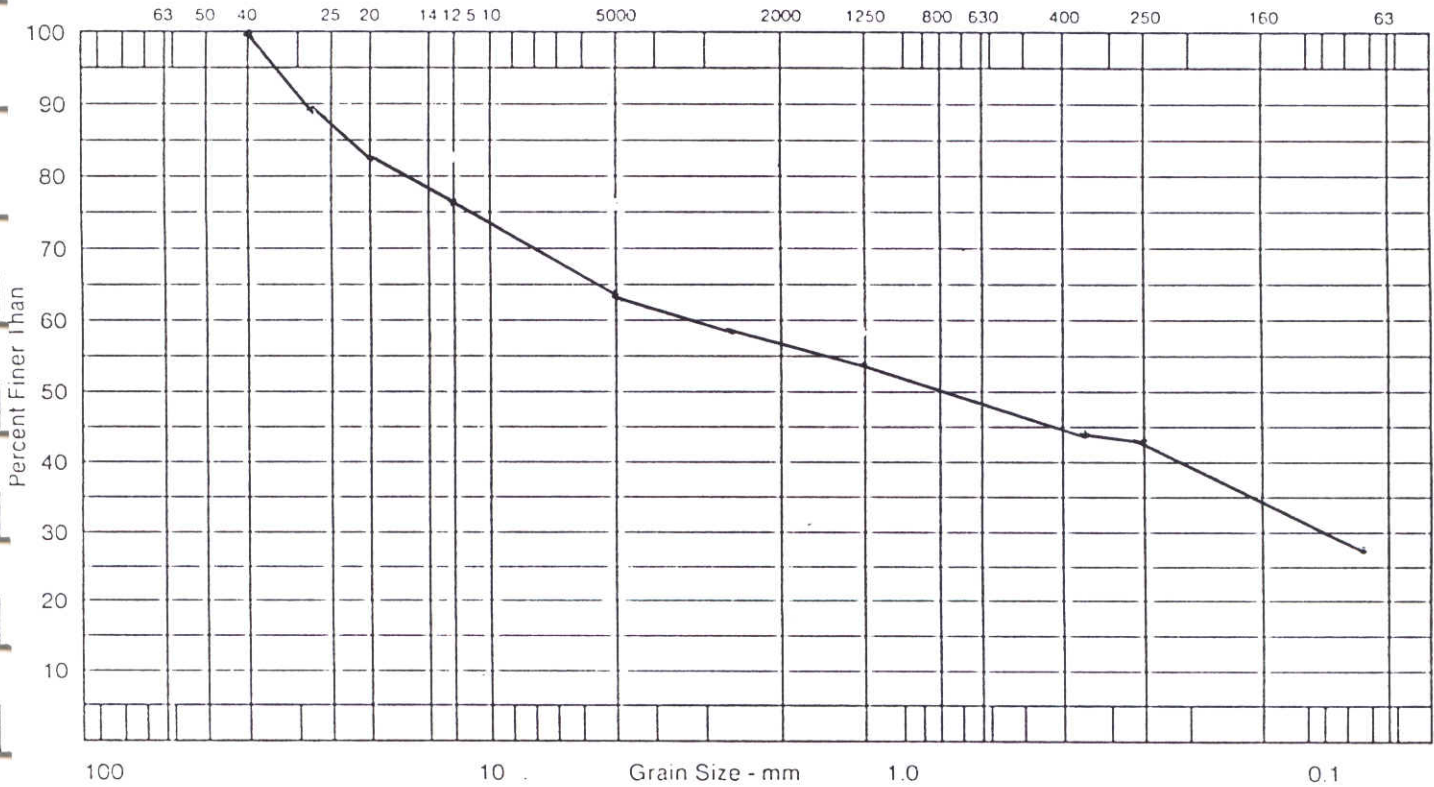
MOISTURE 4.1 %

SAND 36.9 %

SILT 27.1 %

GRAVEL 36.0 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 113 Depth: 3-5-4.0

Project: HILLCREST "D" Subdivision

Location: TH# 16-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				
20,000	20.0				100.0
12,500	12.5				99.1
10,000	10.0				
5,000	5.0				95.4
2500	2.5				92.6
1,250	1.25				90.0
800	0.800				
630	0.630				
315	0.315				80.1
250	0.250				75.7
160	0.160				
80	0.080				45.9

Description of Sample _____
Sandy silt to silty sand
ML-SM

Method of Preparation _____ Dry _____ Washed X

Remarks _____

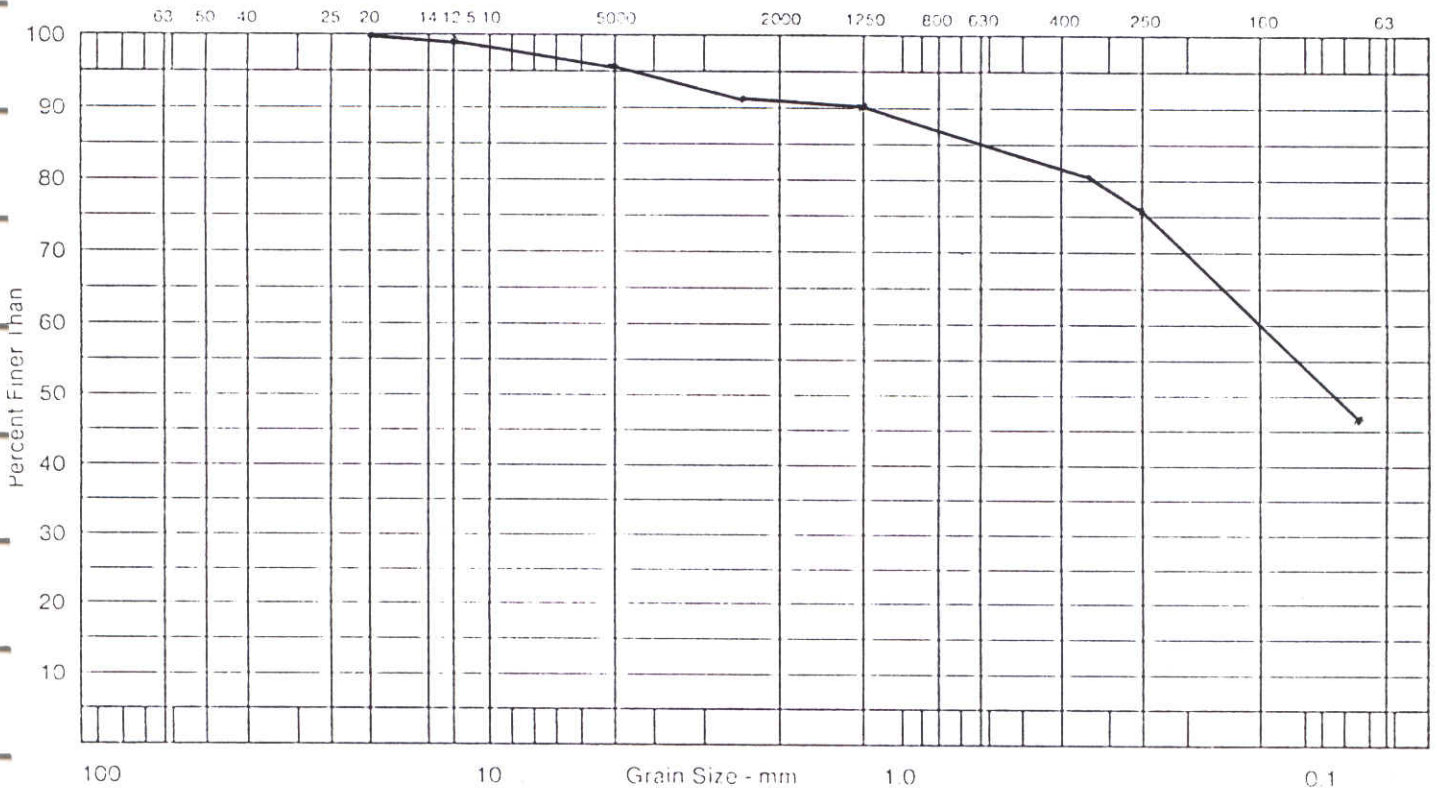
MOISTURE 7.7 %

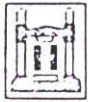
SAND 49.5 %

SILT 45.9 %

GRAVEL 4.6 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 119 Depth: 1-7-2.3 m Project: HILLCREST "D" Subdivision
 Location: TH# 24-93 Made by: MB Job No.: 8002-121A
 Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				
20,000	20.0				100.0
12,500	12.5				96.9
10,000	10.0				
5,000	5.0				84.5
2500	2.5				77.6
1,250	1.25				70.8
800	0.800				
630	0.630				
315	0.315				48.5
250	0.250				43.2
160	0.160				
80	0.080				22.0

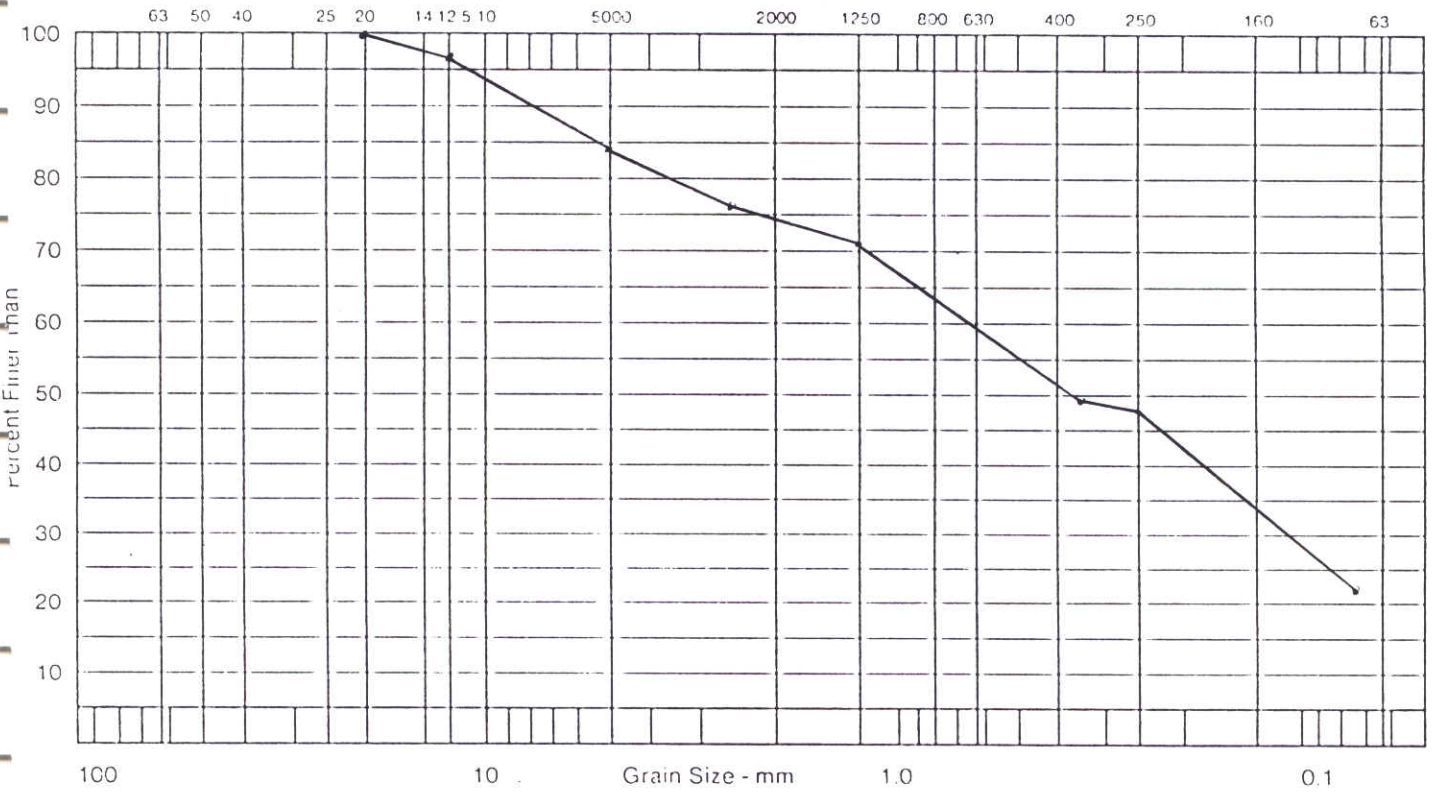
Description of Sample _____
gravelly silty sand

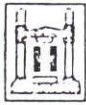
SM

Method of Preparation _____ Dry _____ Washed X

Remarks _____
MOISTURE 7.6 %
SAND 62.5 %
SILT 22.0 %
GRAVEL 15.5 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 123 Depth: 5.6-6.1

Project: HILLCREST "D" Subdivision

Location: TH# 24-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				
20,000	20.0				100.0
12,500	12.5				95.2
10,000	10.0				
5,000	5.0				87.3
2500	2.5				82.5
1,250	1.25				79.4
800	0.800				
630	0.630				
315	0.315				64.0
250	0.250				60.2
160	0.160				
80	0.080				36.1

Description of Sample Silty sand, some gravel
SM

Method of Preparation _____ Dry _____ Washed x

Remarks _____

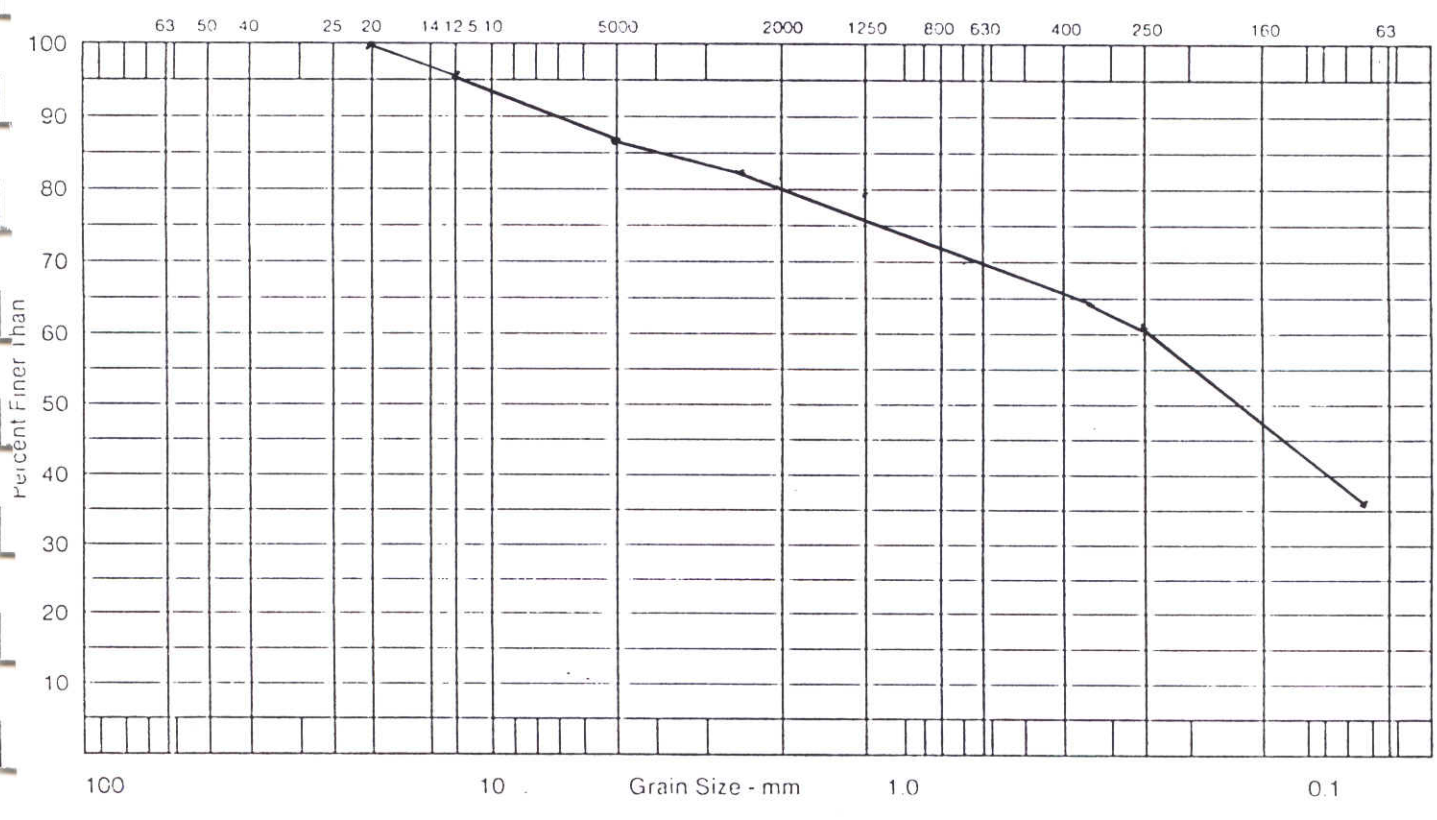
MOISTURE 7.5 %

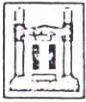
SAND 51.2 %

SILT 36.1 %

GRAVEL 12.7 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 126 Depth: 0.7-1.2 m

Project: HILLCREST "D" Subdivision

Location: TH# 30-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				98.3
12,500	12.5				95.9
10,000	10.0				
5,000	5.0				87.1
2500	2.5				82.8
1,250	1.25				79.0
800	0.800				
630	0.630				
315	0.315				68.5
250	0.250				65.3
160	0.160				
80	0.080				43.5

Description of Sample sandy silt to silty sand, some gravel
SM-M-L

Method of Preparation _____ Dry _____ Washed x

Remarks _____

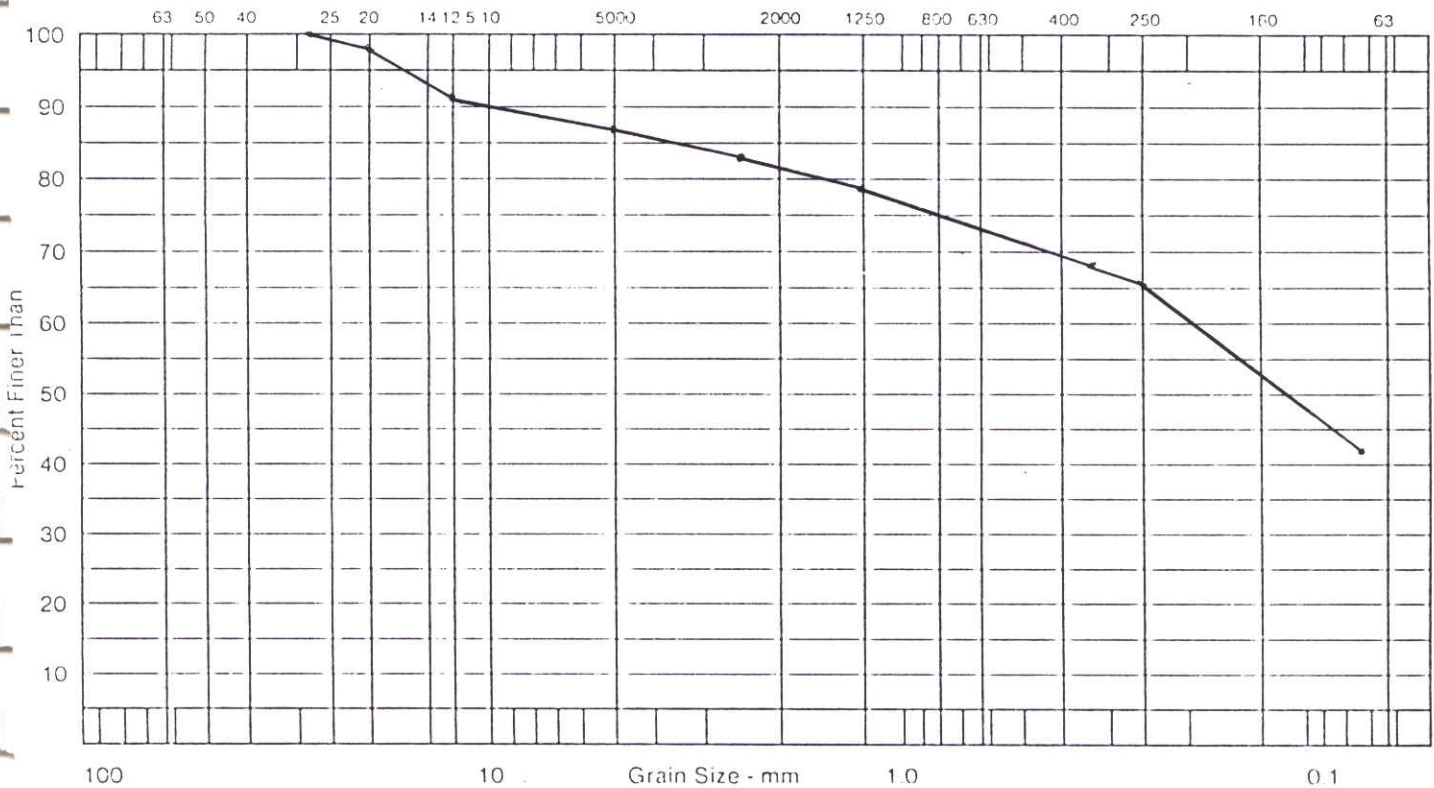
MOISTURE 5.8 %

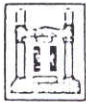
SAND 43.6 %

SILT 43.5 %

GRAVEL 12.9 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: VTG, C&T Services, Municipal Eng.

Sample: S# 131 Depth: 0.6-1.0m

Project: HILLCREST "D" Subdivision

Location: TH# 31-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				100.0
28000	28.0				89.3
20,000	20.0				81.3
12,500	12.5				73.0
10,000	10.0				
5,000	5.0				62.3
2500	2.5				57.2
1,250	1.25				53.0
800	0.800				
630	0.630				
315	0.315				42.9
250	0.250				40.4
160	0.160				
80	0.080				25.2

Description of Sample silty gravelly sand to silty sandy gravel SM-GM

Method of Preparation _____ Dry _____ Washed x

Remarks _____

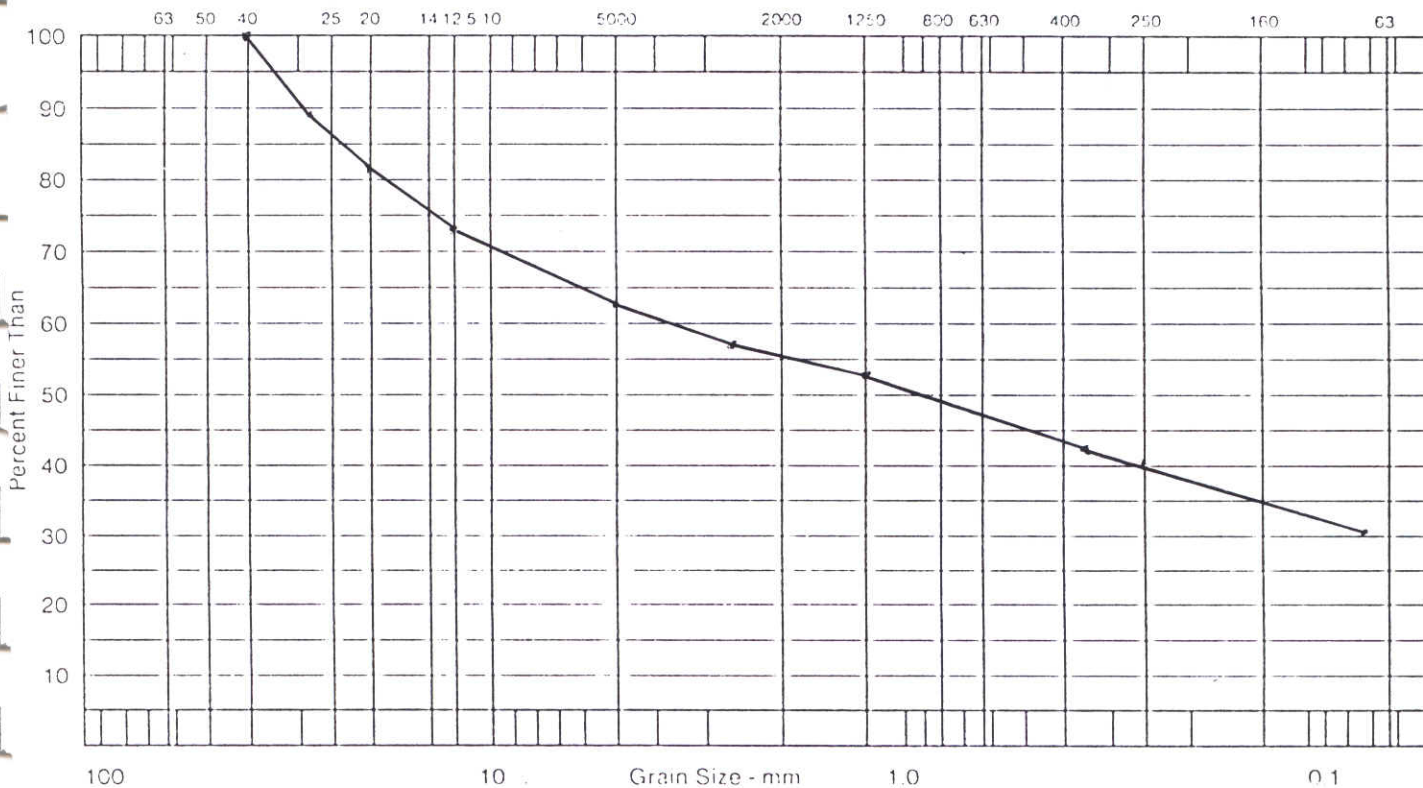
MOISTURE 3.5 %

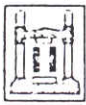
SAND 37.1 %

SILT 25.2 %

GRAVEL 37.7 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 138 Depth: 2.5-3.0m

Project: HILLCREST "D" Subdivision

Location: TH# 32-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				100.0
28000	28.0				84.8
20,000	20.0				77.1
12,500	12.5				71.1
10,000	10.0				
5,000	5.0				63.2
2500	2.5				59.4
1,250	1.25				55.9
800	0.800				
630	0.630				
315	0.315				45.5
250	0.250				42.4
160	0.160				
80	0.080				25.8

Description of Sample Silty gravelly sand to silty sandy gravel
SM-GM

Method of Preparation _____ Dry _____ Washed x

Remarks _____

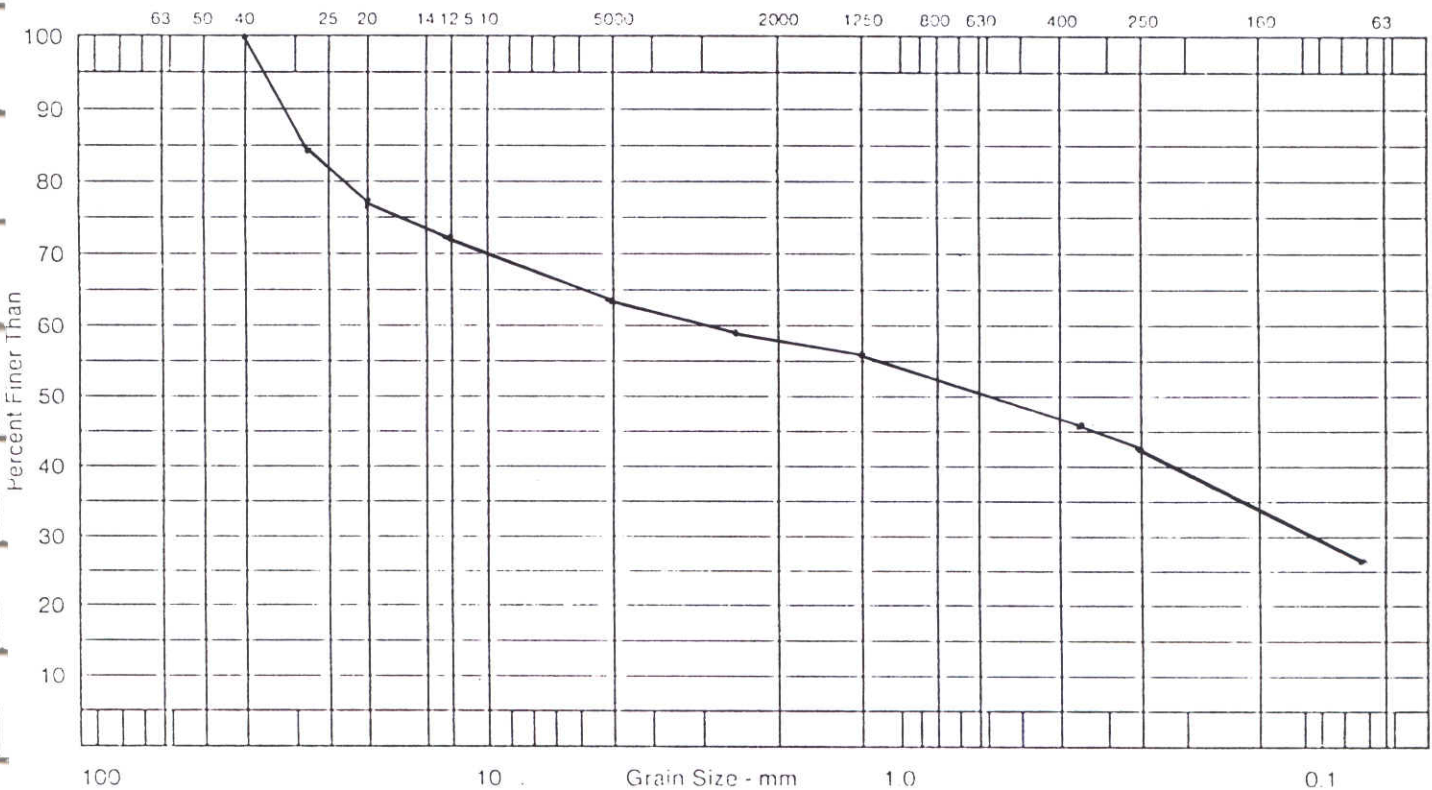
MOISTURE 3.9 %

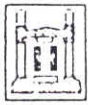
SAND 37.4 %

SILT 25.8 %

GRAVEL 36.8 %

Time of Sieving _____ Min. 15





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An Affiliate of J. R. Paine & Associates Ltd



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 144 Depth: 3.5 - 4.0m Project: HILLCREST "D" Subdivision
 Location: TH# 25-93 Made by: MB Job No.: 8002-121A
 Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				100.0
28000	28.0				93.3
20,000	20.0				92.8
12,500	12.5				88.2
10,000	10.0				
5,000	5.0				78.0
2500	2.5				72.3
1,250	1.25				67.0
800	0.800				
630	0.630				
315	0.315				56.4
250	0.250				53.9
160	0.160				
80	0.080				38.2

Description of Sample _____

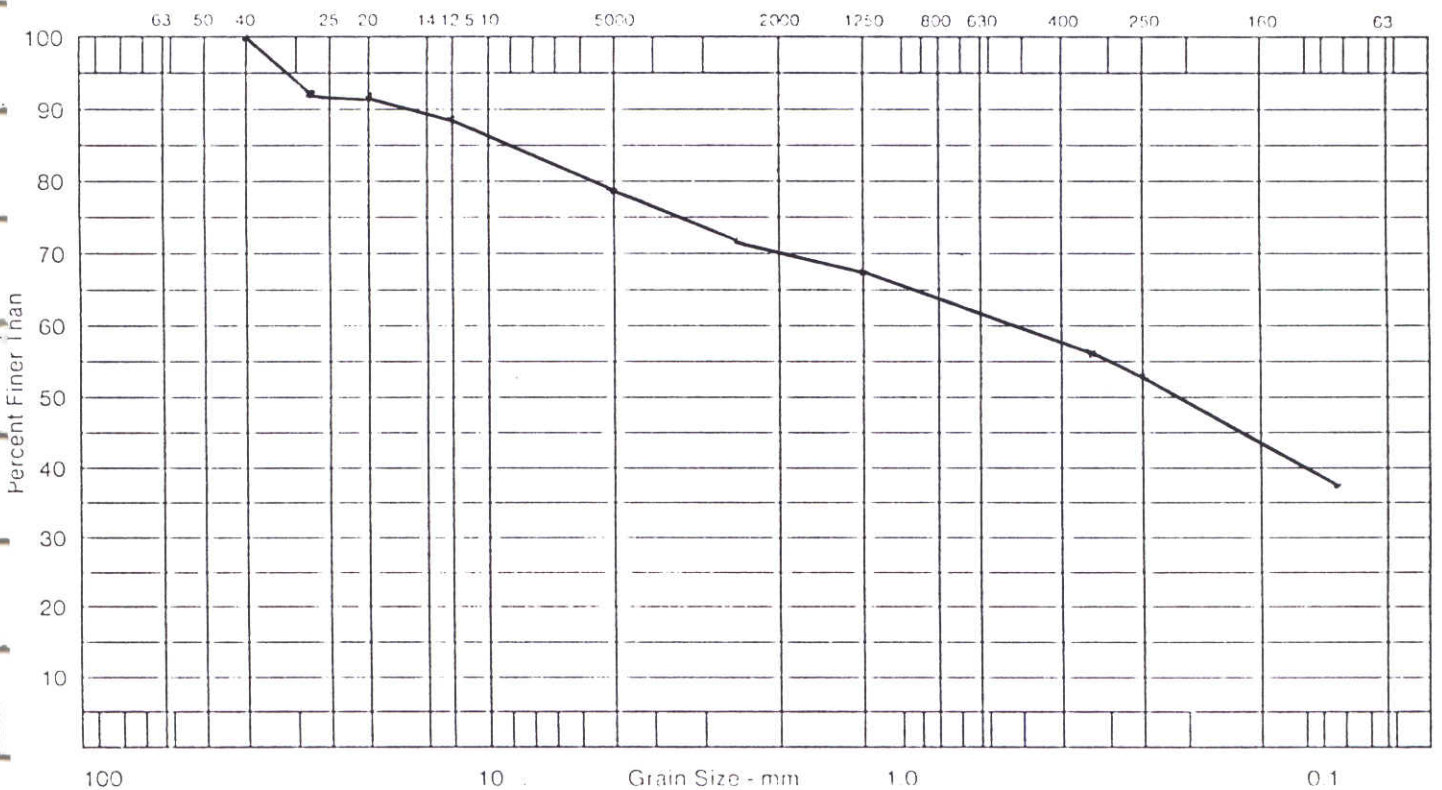
Method of Preparation _____ Dry _____ Washed

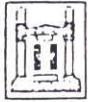
Remarks _____

SM
gravelly silty sand to gravelly
sandy silt

MOISTURE 4.3 %
SAND 39.8 %
SILT 38.2 %
GRAVEL 22.0 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 149 Depth: 4.4-4.9m Project: HILLCREST "D" Subdivision
 Location: TH# 19-93 Made by: MB Job No.: 8002-121A
 Ck'd by: _____ Date: 1993/01

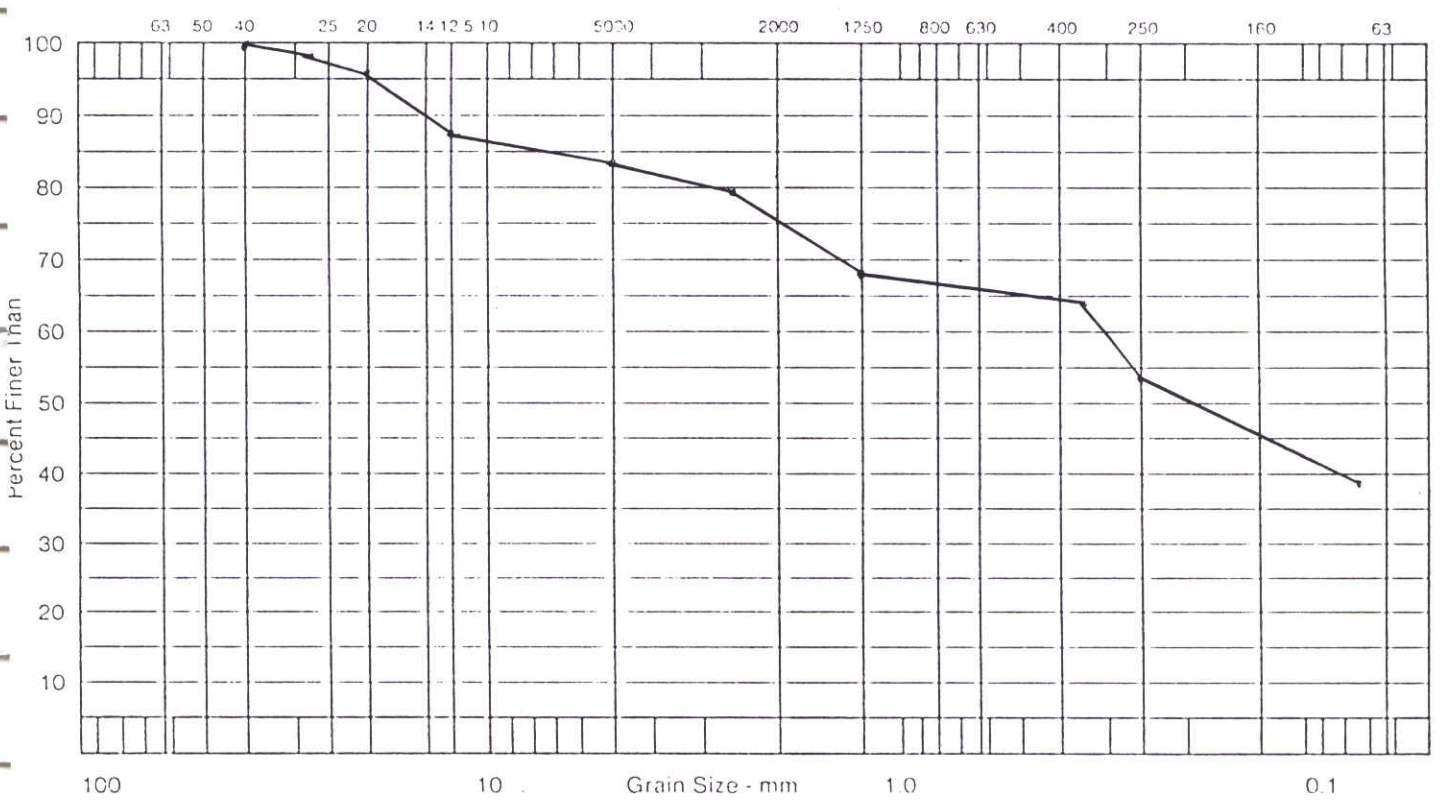
Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				100.0
28000	28.0				98.2
20,000	20.0				95.8
12,500	12.5				87.8
10,000	10.0				
5,000	5.0				83.0
2500	2.5				79.0
1,250	1.25				67.9
800	0.800				
630	0.630				
315	0.315				64.6
250	0.250				52.9
160	0.160				
80	0.080				39.5

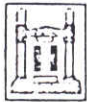
Description of Sample _____
gravelly silty sand
SM

Method of Preparation _____ Dry _____ Washed X

Remarks _____
MOISTURE 15.2 %
SAND 43.5 %
SILT 39.5 %
GRAVEL 17.0 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 152 Depth: 1.6-2.1 m

Project: HILLCREST "D" Subdivision

Location: TH# 18-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				91.5
12,500	12.5				88.5
10,000	10.0				
5,000	5.0				79.7
2500	2.5				73.8
1,250	1.25				68.6
800	0.800				
630	0.630				
315	0.315				52.1
250	0.250				47.9
160	0.160				
80	0.080				25.9

Description of Sample gravelly silty sand
SM

Method of Preparation _____ Dry _____ Washed X

Remarks _____

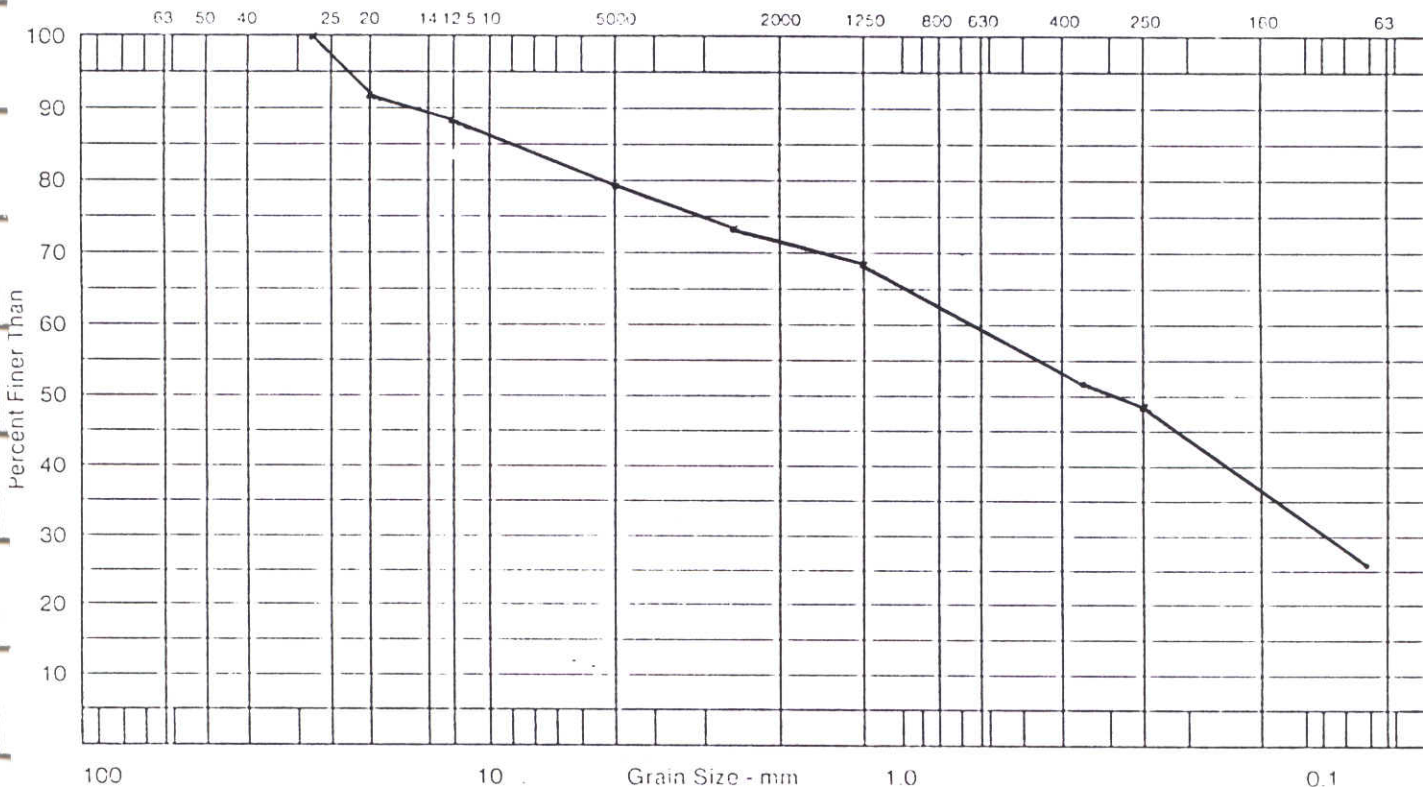
MOISTURE 6.8 %

SAND 53.8 %

SILT 25.9 %

GRAVEL 20.3 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 164 Depth: 7.2-7.7m Project: HILLCREST "D" Subdivision
 Location: TH# 9-93 Made by: MB Job No.: 8002-121A
 CK'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				97.4
12,500	12.5				91.1
10,000	10.0				
5,000	5.0				86.5
2500	2.5				83.5
1,250	1.25				80.4
800	0.800				
630	0.630				
315	0.315				68.0
250	0.250				63.5
160	0.160				
80	0.080				34.4

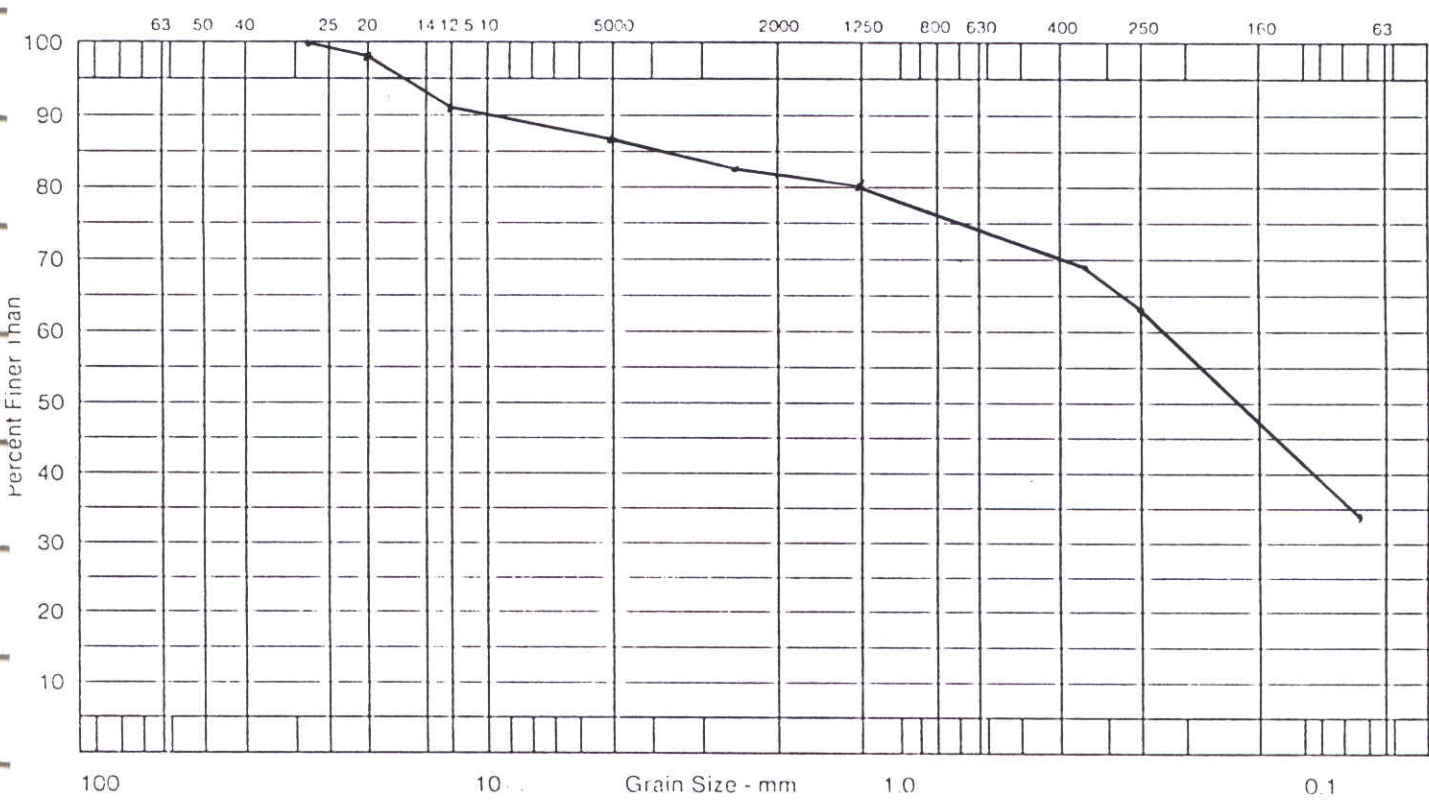
Description of Sample _____
silty sand, some gravel

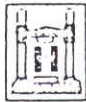
SM

Method of Preparation _____ Dry _____ Washed x
 Remarks _____

MOISTURE 7.0 %
SAND 52.1 %
SILT 34.4 %
GRAVEL 13.5 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 173 Depth: 5.0-5.5m Project: HILLCREST "D" Subdivision
 Location: TH# 14-93 Made by: MB Job No.: 8002-121A
 CK'd by: _____ Date: 1993/01

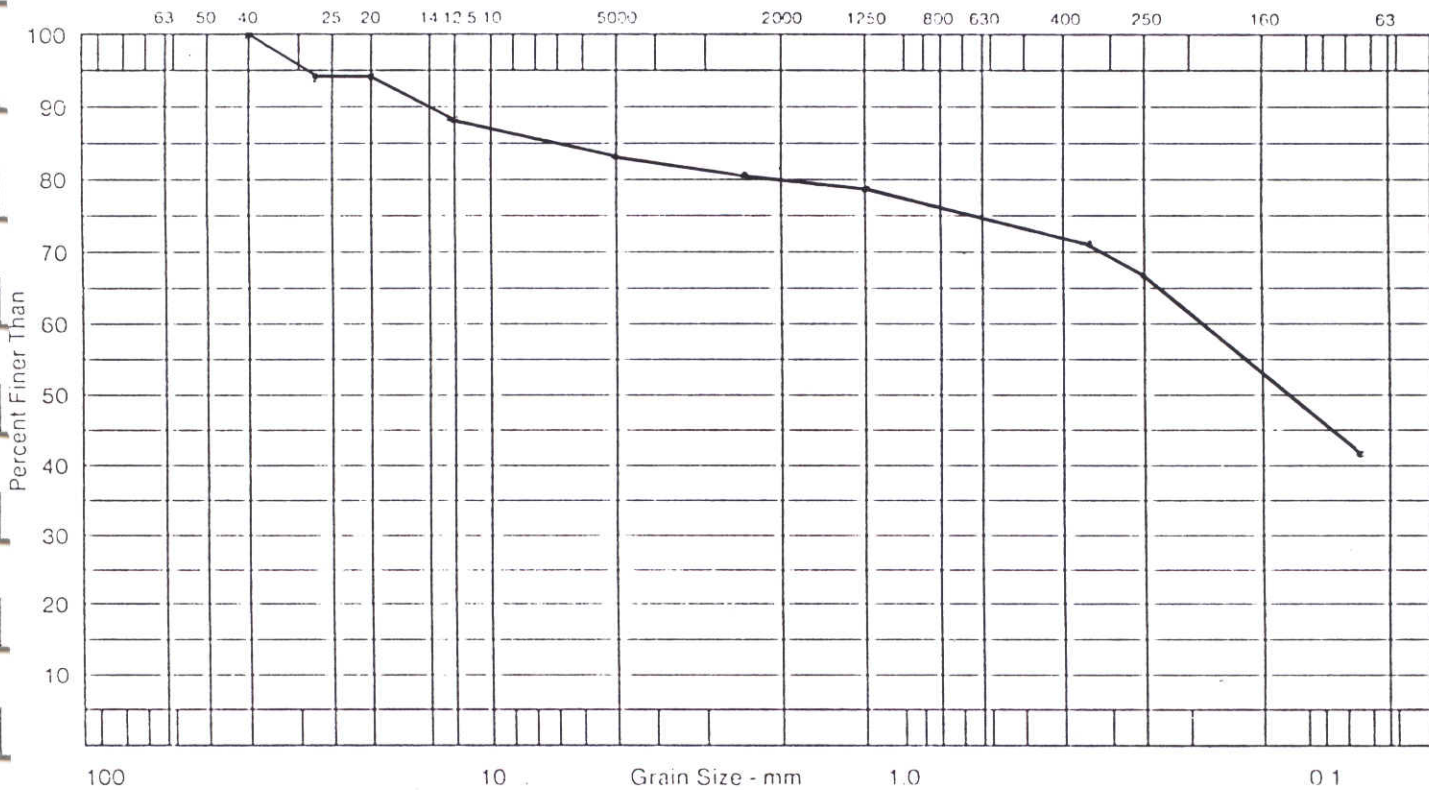
Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				100.0
28000	28.0				94.6
20,000	20.0				94.6
12,500	12.5				88.3
10,000	10.0				
5,000	5.0				83.4
2500	2.5				80.8
1,250	1.25				78.6
800	0.800				
630	0.630				
315	0.315				70.2
250	0.250				66.9
160	0.160				
80	0.080				41.9

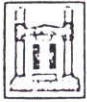
Description of Sample sandy silt to silty sand, some gravel
SM - ML

Method of Preparation _____ Dry _____ Washed x
 Remarks _____

MOISTURE 6.9 %
SAND 41.5 %
SILT 41.9 %
GRAVEL 16.6 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 179 Depth: 1.4-1.9 m Project: HILLCREST "D" Subdivision
 Location: TH# 15-93 Made by: MB Job No.: 8002-121A
 Ck'd by: _____ Date: 1993/01

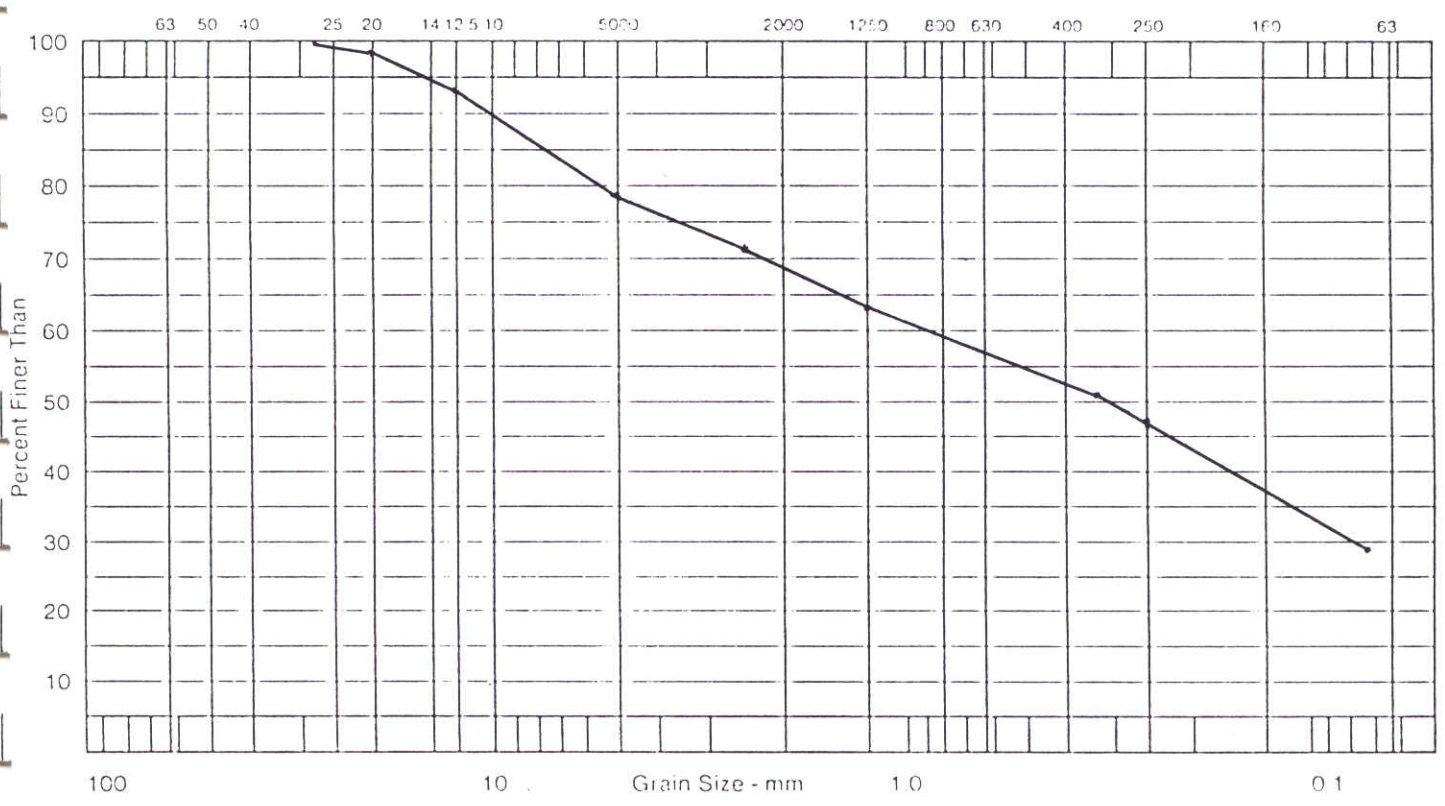
Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				98.0
12,500	12.5				93.1
10,000	10.0				
5,000	5.0				78.8
2500	2.5				70.4
1,250	1.25				63.9
800	0.800				
630	0.630				
315	0.315				50.2
250	0.250				46.9
160	0.160				
80	0.080				28.7

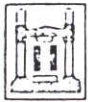
Description of Sample _____
gravelly silty sand
SM

Method of Preparation _____ Dry _____ Washed x
 Remarks _____

Time of Sieving _____ Min. 15

MOISTURE 3.9 %
 SAND 50.1 %
 SILT 28.7 %
 GRAVEL 21.2 %





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 190 Depth: 3.5-4.0m

Project: HILLCREST "D" Subdivision

Location: TH# 13-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				
20,000	20.0				100.0
12,500	12.5				98.5
10,000	10.0				
5,000	5.0				91.3
2500	2.5				86.8
1,250	1.25				82.7
800	0.800				
630	0.630				
315	0.315				71.3
250	0.250				68.0
160	0.160				
80	0.080				45.9

Description of Sample sandy silt to silty sand, trace gravel
SM-ML

Method of Preparation _____ Dry _____ Washed x

Remarks _____

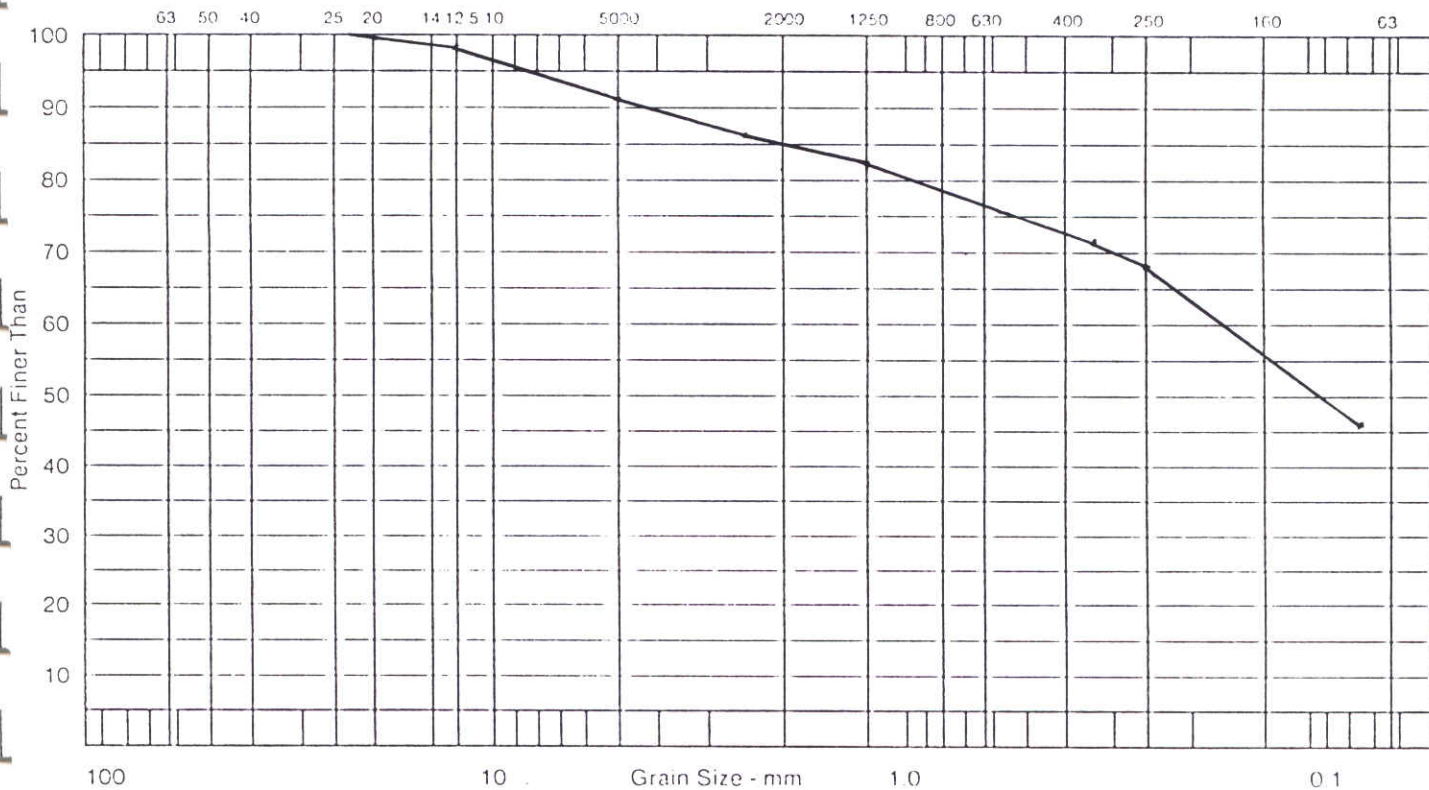
MOISTURE 4.6 %

SAND 45.4 %

SILT 45.9 %

GRAVEL 8.7 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.
 Sample: S# 199 Depth: 1.5-2.0m Project: HILLCREST "D" Subdivision
 Location: TH# 21-93 Made by: MB Job No.: 8002-121A
 Ck'd by: _____ Date: 1993/01

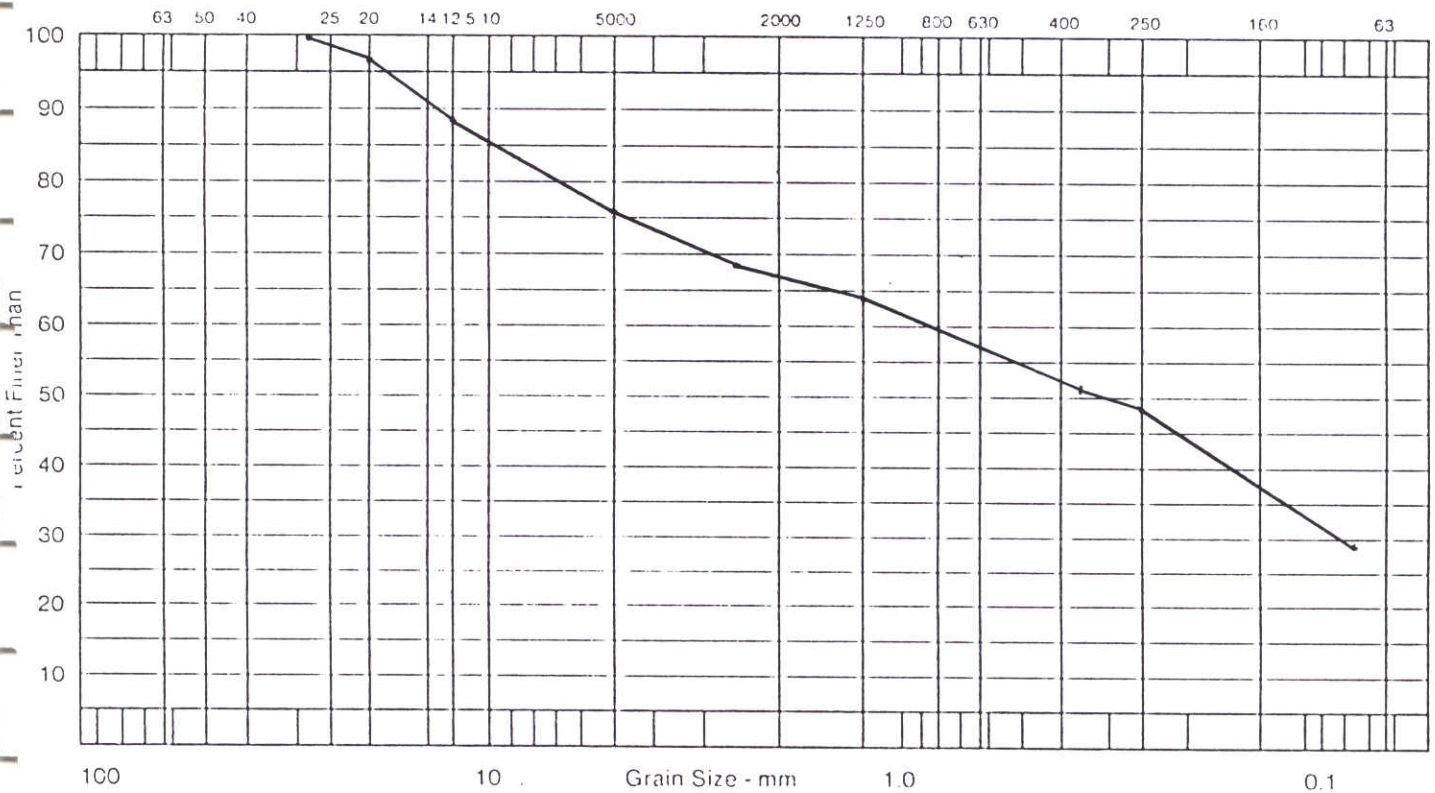
Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				96.4
12,500	12.5				88.1
10,000	10.0				
5,000	5.0				75.3
2500	2.5				68.9
1,250	1.25				64.0
800	0.800				
630	0.630				
315	0.315				51.4
250	0.250				48.1
160	0.160				
80	0.080				29.8

Description of Sample gravelly silty sand.
SM

Method of Preparation _____ Dry _____ Washed X
 Remarks _____

MOISTURE 3.4 %
 SAND 45.5 %
 SILT 29.8 %
 GRAVEL 24.7 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: YTG, C&T Services, Municipal Eng.

Sample: S# 204 Depth: 2.7-3.2m

Project: HILLCREST "D" Subdivision

Location: TH# 22-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				100.0
28000	28.0				75.2
20,000	20.0				73.8
12,500	12.5				70.7
10,000	10.0				
5,000	5.0				63.6
2500	2.5				60.7
1,250	1.25				58.6
800	0.800				
630	0.630				
315	0.315				48.1
250	0.250				44.3
160	0.160				
80	0.080				22.0

Description of Sample silty gravelly sand
SM

Method of Preparation _____ Dry _____ Washed x

Remarks _____

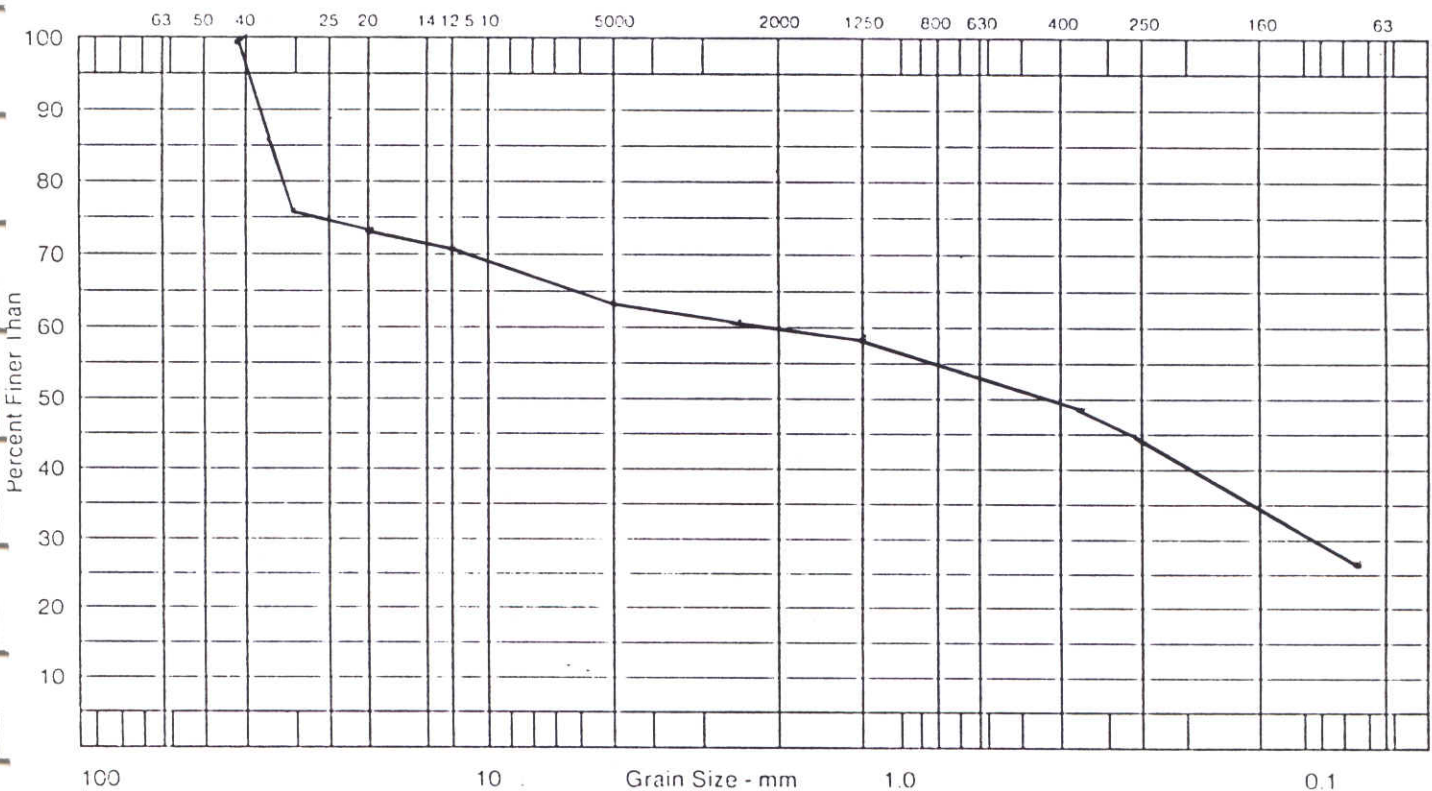
MOISTURE 5.4 %

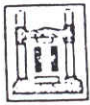
SAND 41.6 %

SILT 22.0 %

GRAVEL 36.4 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: VTG, C&T Services, Municipal Eng.

Sample: S# 213 Depth: 2.90 - 3.05 m

Project: HILLCREST "D" Subdivision

Location: TH# 6-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				
50,000	50.0				
40,000	40.0				
28000	28.0				100.0
20,000	20.0				89.7
12,500	12.5				
10,000	10.0				78.4
5,000	5.0				74.4
2500	2.5				70.5
1,250	1.25				
800	0.800				
630	0.630				
315	0.315				59.1
250	0.250				55.4
160	0.160				
80	0.080				33.3

Description of Sample _____

gravelly silty sand, SM

Method of Preparation _____ Dry _____ Washed

Remarks _____

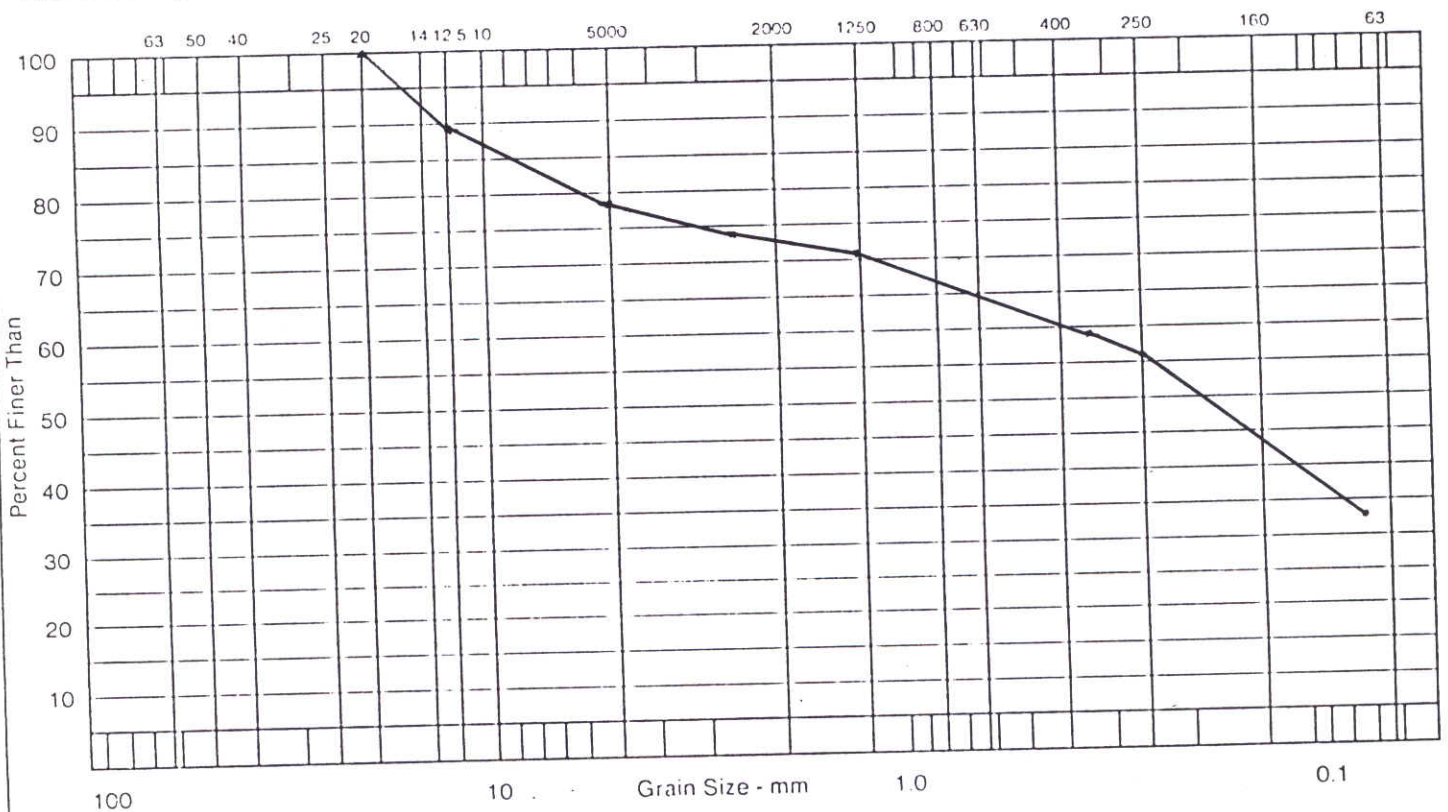
MOISTURE 6.9 %

SAND 45.2 %

SILT 33.3 %

GRAVEL 21.6 %

Time of Sieving _____ Min. 15





HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd.



3051 Parsons Road, Edmonton, Alberta T6N 1C8

Client: VTG, C&T Services, Municipal Eng.

Sample: S# 226 Depth: 3.81 - 3.96

Project: HILLCREST "D" Subdivision

Location: TH# 1-93

Made by: MB Job No.: 8002-121A

Ck'd by: _____ Date: 1993/01

Sieve No.	Size of Opening MM	Weight Retained gms	Total Wt. Finer Than gms	Percent Finer Than	% Finer Than Basis Orig. Sample
63,000	63.0				100.0
50,000	50.0				80.3
40,000	40.0				66.3
28000	28.0				61.8
20,000	20.0				56.4
12,500	12.5				55.2
10,000	10.0				
5,000	5.0				49.9
2500	2.5				46.6
1,250	1.25				43.3
800	0.800				
630	0.630				
315	0.315				38.9
250	0.250				32.1
160	0.160				
80	0.080				20.9

Description of Sample _____

Silty sandy gravel, GM

Method of Preparation _____ Dry _____ Washed X

Remarks _____

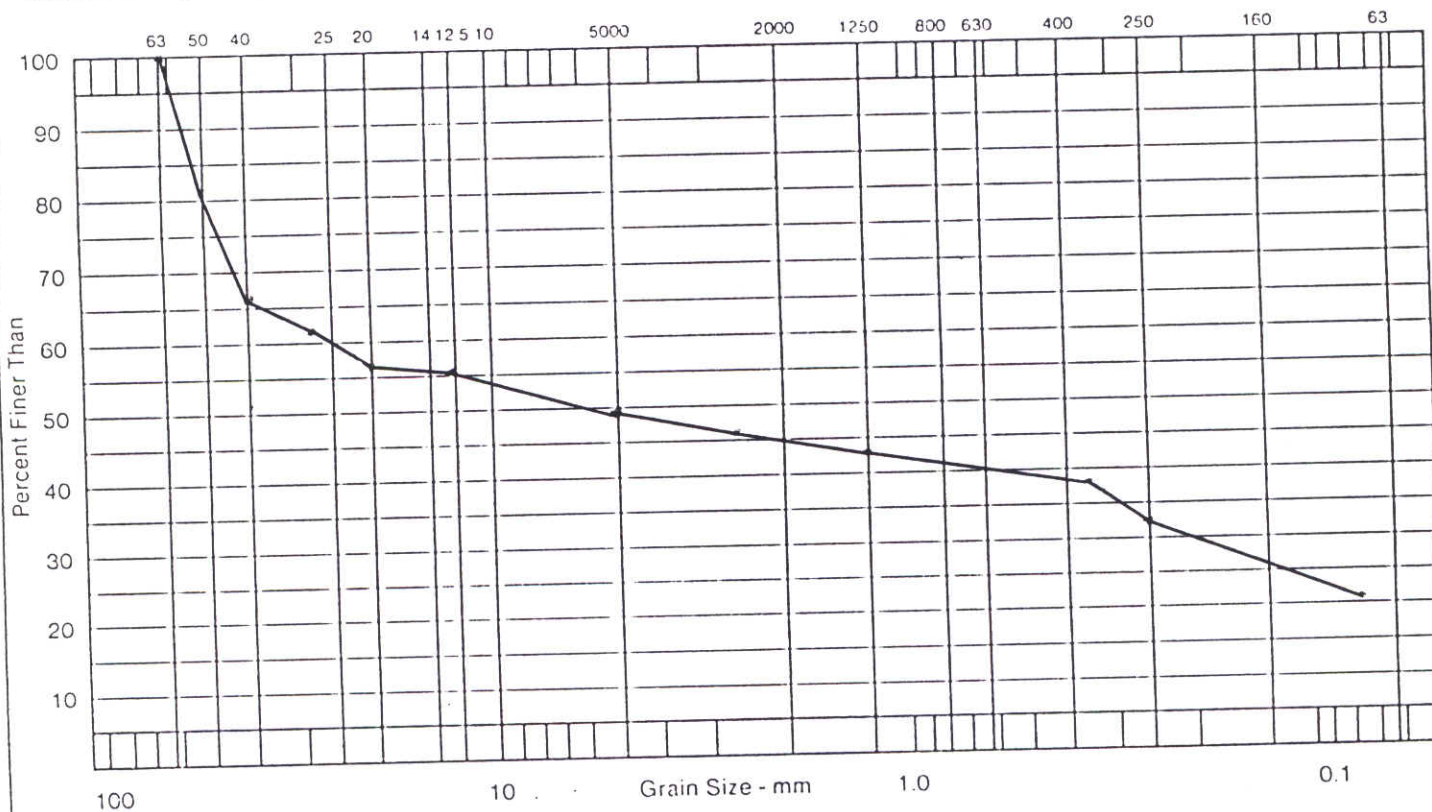
MOISTURE 4.6 %

SAND 29.0 %

SILT 20.9 %

GRAVEL 50.1 %

Time of Sieving _____ Min. 15



APPENDIX IV
-Summary of Imported Granular Construction
Material Grain Size Distribution

SUMMARY OF RECOMMENDED IMPORTED GRANULAR

CONSTRUCTION MATERIAL GRAIN SIZE DISTRIBUTIONS

CLIENT: GOVERNMENT OF YUKON DATE: 1993/02/01
Community and Transportation Services
Municipal Engineering Branch M-4
Box 2703
Whitehorse, Yukon
Y1A 2C6

PROJECT: Geotechnical Investigation FILE: 8002-121A
Hillcrest Area "D" Subdivision
Whitehorse, Yukon Territory

ATTENTION: Mr. Jim Mayoh, P. Eng.

1. PIPE BEDDING SAND

<u>Sieve Number</u>	<u>%Passing By Weight</u>
10,000	100
5,000	80-100
2,000	55-100
630	25- 65
250	10- 40
63	2- 10

2. IMPORTED FILL

-Imported Granular Fill for use as subgrade (if required)

<u>Sieve Number</u>	<u>%Passing By Weight</u>
80,000	100
25,000	60-100
12,500	40- 90
5,000	20- 65
1,250	9- 35
315	5- 23
80	4- 10

Continued

HOGGAN ENGINEERING & TESTING (1980) LTD.

3. 50mm MINUS SUB-BASE GRAVEL

<u>Sieve Number</u>	<u>%Passing By Weight</u>
50,000	100
25,000	60-80
5,000	22-54
2,000	13-42
400	5-24
63	0- 8

4. 20mm MINUS BASE CRUSHED GRAVEL

<u>Sieve Number</u>	<u>%Passing By Weight</u>
20,000	100
12,500	64-100
5,000	36- 72
1,250	12- 42
315	4- 22
80	3- 8

5. 12.5mm ASPHALT AGGREGATE

<u>Sieve Number</u>	<u>%Passing By Weight</u>
12,500	100
5,000	55-75
2,000	35-55
400	15-30
160	5-16
80	3- 8

***NOTE:** The above are recommended grain size distributions for granular construction materials. Additional specifications for the construction materials may be detailed in the contract specifications.