Original Report

Do Not Remove from Building
Please Return to File

Geotechnical Services
Km 1691.7 to 1717.3, Alaska Highway #1
Yukon, 2004

Volume 1
AUGER DRILLING PROGRAM & GPS DATA

HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. R. Paine & Associates Ltd

EDMONTON • GRANDE PRAIRIE • PEACE RIVER • WHITEHORSE

HOGGAN ENGINEERING & TESTING (1980) LTD.

Geotechnical Services
Km 1691.7 to 1717.3, Alaska Highway #1
Yukon, 2004

Volume 1
AUGER DRILLING PROGRAM & GPS DATA

HOGGAN ENGINEERING & TESTING (1980) LTD.

Volume 1

AUGER DRILLING PROGRAM & GPS DATA

SECTION 1 – AUGER DRILLING PROGRAM

.... TEST HOLE SOILS LOGS
.... MOISTURE CONTENT RESULTS
.... LABORATORY SAMPLE PHOTOS
.... GRAIN SIZE ANALYSES RESULTS

SECTION 2 – GPS DATA

.... GPS DATA

SECTION 1

AUGER DRILLING PROGRAM

TEST HOLE SOILS LOGS

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6767988
Easting: 644064

Project No: 8002-318 Test Hole No: #: 30000 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 16 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm			.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

...th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel, trace silt	352	0.3-0.9			
		- dry to damp, medium dense, brown					
	dg	Sandy Gravel	353 ✓	1.8-2.4			
		- damp, medium dense, brown					
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6768004
Easting: 693363

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30001 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 16 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm			.002mm
GRAVEL		SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Silty Sand/Sandy Silt	354	0.6-1.2			
		- damp, medium dense, brown					
		- organic seams noted to 1.0m depth					
		- some gravels noted between 0.4 to 0.5m					
	50	Sandy Gravel	355	1.8-2.4			
		- damp, medium dense, brown					
		E.O.H. @ 3.0m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6768001
Easting: 643667

Project No: 8002-318 Test Hole No: #: 30002 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: August 16 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ıth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel, trace silt					
		- dry, medium dense, brown					
	SO	Silty Sand to Sand, some silt	356	0.4-0.7			
		- damp, medium dense, brown					
	SO	Sandy Gravel	357	2.1-2.7			
		- damp, dense, brown					
		E.O.H. @ 30m					

TEST HOLE LOG

Northing: 6767987
Easting: 643448

Project No: 8002-318 Test Hole No: #: 30003 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug 16 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel, trace silt	258 ✓	0.3-0.9			
		- damp to moist, medium dense, dark brown/grey					
	do	Sandy Gravel, trace silt	259 ✓	1.8-2.4			
		- dry to damp, dense, brown/grey					
		- possible increase silt w/ depth					
			260 ✓	3.4-4.0			
		E.O.H. @ 4.3					

TEST HOLE LOG

Northing: 6768053
Easting: 643429

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30004 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 16 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

)th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel	361 ✓	0.6-1.2			
		- damp, dense, brown/grey					
	dg	Sandy Gravel, trace silt	362 ✓	1.8-2.4			
		- damp, dense, brown/grey					
			363 ✓	3.4-4.0			
		E.O.H. @ 4.4					
		REFUSAL @ 1.5m - MOVE NORTH 2m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6768019
Easting: 498266

Project No: 8002-318 Test Hole No: #: 30005 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ıth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel,	364	0.3-0.9			
		-dry, medium dense, brown					
	da	Sandy Gravel, trace silt	365	1.8-2.4			
		-damp, medium dense, brown					
			366	3.4-4.0			
		E.O.H. @ 4.0m - Refusal					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6768022
Easting: 643034

Project No: 8002-318 Test Hole No: #: 30177 300058 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel, trace silt	367	0.3-0.9			
		- dry to damp, medium dense, brown					
			368	1.8-2.4			
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6768025
Easting: 642866

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30006 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel, trace silt	369	0.3-0.9			
		- dry to damp, medium dense, brown					
			370	1.8-2.2			
		End @ 3.0m					

TEST HOLE LOG

Northing: 6768030
Easting: 643663

Project No: 8002-318 Test Hole No: #: 30007 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug .18 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel, trace silt	371	0.3-0.9			
		- dry to damp, medium dense, brown					
			372	1.8-2.4			
		E.O.H. @ 3.0m					
		Note: Less Gravel Recovery w/ Depth					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6768033
Easting: 642462

Project No: 8002-318 Test Hole No: #: 30008 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		SANDY GRAVEL / GRAVELLY SAND, trace silt	373	0.3-0.9			
		- damp, medium dense, brown					
			374	1.8-2.4			
		E.O.H. @ 3.0m					
		NOTE: LESS GRAVEL RECOVERY W/ DEPTH					

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6768038
Easting: 642264

Project No: 8002-318 Test Hole No: #: 30009 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 13 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		SANDY GRAVEL / GRAVELLY SAND, trace silt	375	0.3-0.9			
		- damp, medium dense, brown					
			376	1.8-2.4			
		E.O.H. @ 3.0m					
		NOTE: LESS GRAVEL RECOVERY W/ DEPTH					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

Northing: 6768040
Easting: 642066

Project No: 8002-318 Test Hole No: #: 30010 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel/Gravelly Sand, trace silt	378	0.3-0.9			
		- dry to damp, medium dense, brown					
			379	2.1-2.7			
		E.O.H. @ 3.0m					
		Note: Less Gravel Recovery w/ depth					

TEST HOLE LOG

Northing: 6768044
Easting: 641864

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30011 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel, trace silt	379	0.3-0.9			
		- damp to moist, medium dense, brown/dark grey					
			380	2.1-2.7			
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6768049
Easting: 641666

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30012 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel	381	0.3-0.9			
		- dry to damp, medium dense, brown					
	no	As Above	382	1.8-2.4			
		- damp					
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6768054
Easting: 641469

Project No: 8002-318 Test Hole No: #: 30013 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 18 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel.	383	0.5-1.0			
		- dry to damp, medium dense, brown					
	do	As Above	384	2.1-2.7			
		- damp.					
		E.O.H. @ 3.0m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6768036
Easting: 641286

Project No: 8002-318 Test Hole No: #: 3001 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: August 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel,	385	0.3-0.9			
		- damp, medium dense, brown					
			386	1.8-2.4			
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6767935
Easting: 641051

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30015 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Gravelly Sand					
		- damp to moist, medium dense, brown					
	50	Silt, some sand to Sandy	387 ✓	.3-.8			
		- moist, soft, grey					
		- organics noted					
to	1.2	Sandy Gravel	388 ✓	1.8-2.4			
		- damp to moist, medium dense, brown					
	2.7	Sandy Silt, some gravel					
		- damp to moist, soft, grey/brown					
		E.O.H. @ 3.0m					
		NOTE: PLOTTED HOLE ON PLAN: GPS LOCATION NOT					
		THE SAME. POSITIONED HOLE @ SAND INVERT, LHS					

TEST HOLE LOG

Northing: 6767966
Easting: 641011

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30016 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel, trace silt	389	0.0-0.4			
		- moist, medium dense, brown					
	30	Silty Sand / Sandy Silt					
		- moist to wet, soft, brown					
	50	Sandy Gravel, trace silt	390	2.1-2.4			
		- moist, medium dense, brown					
2.8	dc	Silty Sand, some gravel to Gravelly					
		- moist, medium dense, brown					
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6767834
Easting: 640871

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30017 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
6		SANDY GRAVEL,	391	0.2-0.9			
		- dry to damp, medium dense, brown					
			392	1.8-2.4			
		E.O.H. @ 3.0m					
		NOTE: WITHIN SHOULDER OF EXISTING ROAD					

TEST HOLE LOG

Northing: 6976797
Easting: 640691

Project No: 8002-318 Test Hole No: #: 30018 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug 18 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel	393	0.3-0.9			
		- dry to damp, medium dense, brown					
	do	Gravelly Sand / Sandy Gravel	394	2.1-2.7			
		- damp, medium dense, brown					
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6767579
Easting: 640524

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30019 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug.18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ıth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration,TSF
0		Gravelly Sand/ Sandy Gravel, trace silt	395	0.3-0.9			
		- damp, medium dense, brown					
		- silt seam noted @ 0.9m (≈ 75mm thick)					
		- silt seam noted @ 1.2m (≈ 100mm thick)					
	do	Silty Sandy Gravel to Silty Gravelly Sand	396	2.1-2.7			
		- damp to moist, medium dense, brown					
		- silt present mostly in seams					
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6767452
Easting: 640350

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30020 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

" 5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel / Gravelly Sand	397	0.3-0.9			
		- damp to moist, medium dense, brown					
9	do	Sandy Gravel					
		- wet to saturated.					
		- pea gravels					
1.5	do	Silt, some sand	398	1.8-2.4			
		- moist to wet, firm, grey					
		- significant organics throughout (decomposed rootlets/grasses)					
		E.O.H @ 3.0m					

TEST HOLE LOG

Northing: 6767341
Easting: 640193

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30021 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Silty Sand / Sandy Silt	399	0.3-0.9			
		- damp to moist, medium dense, brown					
		- variable silt & sand seams intermixed					
		- organics noted throughout					
	SO	Silt, some sand	400	2.1-2.7			
		- moist to wet, soft to firm, grey					
		- increase silt w/ depth					
		- some interbedded organics					
		E 0.4, E 3.0m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6767232
Easting: 640041

Project No: 8002-318 Test Hole No: #: 30022 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		SILT, some sand to sandy	401 ✓	0.5-1.0			
		- moist to wet, soft to firm, brown					
		- most sand present in seams to 75 mm thick					
		- organics noted throughout					
	cl	Sandy, trace to some silt, trace gravel	402 ✓	1.5-2.1			
		- wet, medium dense, brown					
	so	SILT, some clay	403 ✓	2.6-2.9			
		- moist, firm, grey w/ blue hue					
		- low plastic					
		EOH @ 3.0m					

TEST HOLE LOG

Northing: 6767125
Easting: 639890

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30023 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Silty Sand / Sandy Silt	404 ✓	0.3-0.9			
		- damp to moist, medium dense, brown					
		- organics noted throughout					
	so	Silt, trace to some sand	405 ✓	1.2-1.8			
		- damp to moist, firm, brown w/ some grey seams					
	sb	Sand, trace to some silt					
		- saturated, medium dense, brown					
	cb	Silt, some clay					
		- damp to moist, firm, grey w/ blue mix					
		- low plasma					
		E 0.4 @ 3.0m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6766983
Easting: 639687

Project No: 8002-318 Test Hole No: #: 30024 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

...pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Silt, some sand	406	0.3-0.9			
		- moist, soft to firm, brown					
		Gravelly Sand					
		- wet, medium dense, brown					
		Silt, some sand					
		- moist, soft to firm, brown					
		Gravelly Sand	407	1.5-2.1			
		- saturated, medium dense, brown					
		Sandy Silt	408	2.1-2.7			
		- wet, soft to firm, grey/brown					
		E.O.H. @ 3.0m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6766885
Easting: 639558

Project No: 8002-318 Test Hole No: #: 30025 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Silt/Silty Sand					
		- dry, medium dense, light brown					
	SG	Gravelly Sand	409 ✓	0.3-0.9			
		- damp, medium dense, brown					
	SO	Silt, some sand	410 ✓	1.8-2.4			
		- damp to moist, soft to firm, brown w/ grey & black seams					
		- significant organic silts (black)					
	SF	Silt, some sand, trace gravel					
		- damp to moist, firm to stiff, brown					
		- non to low plastic					
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6766765
Easting: 639356

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30026 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 18 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel, trace silt	411 ✓	0.3-0.9			
		- dry to damp, medium dense, brown					
.5	GC	Sandy Silt / Silty Sand	412 ✓	2.1-2.7			
		- dry, medium dense, light brown / grey					
		- somewhat powdery...					
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6766735
Easting: 639213

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30027 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel / Gravelly Sand	#13 ✓	0.1-0.6			
		- saturated, medium dense, brown					
	so	Silty Sand / Sandy Silt					
		- saturated, soft, grey					
	no	Silt	#14 ✓	1.8-2.4			
		- moist, firm, brown w/ some black organic seams					
		- some organic silts					
	so	Silty Gravelly Sand					
		- saturated, medium dense, brown					
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6766708
Easting: 639228

Project No: 8002-318 Test Hole No: #: 30028 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG. 19 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Gravelly Sand	415 ✓	0.3-0.9			
		- wet, medium dense, brown					
	SM	Sandy Silt / Silty Sand	416 ✓	2.4-3.0			
		- saturated, soft to firm, brown					
		E.O.H. @ 3.0m					

HOGGAN ENGINEERING & TESTING (1980) LTD.

TEST HOLE LOG

Northing: 6766653
Easting: 639106

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30029 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		SANDY GRAVEL	#17 ✓	0.3-0.9			
		- dry to damp, medium dense, brown					
	SO	GRAVELLY SAND, SOME SILT	#18 ✓	2.4-2.9		SLOW GRINDY DRILLING @ 2.1m	
		- dry, dense, light brown					
		E.O.H. @ 3.0m - REFUSAL					
		REFUSAL @ 2.9m - MOVE NORTH 2m					
		REFUSAL @ 3.0m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6766548
Easting: 638909

Project No: 8002-318 Test Hole No: #: 20030 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ıth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		SANDY GRAVEL	419	0.3-0.9			
		- damp, medium dense, brown					
		- cobbles to 200mm all over surface (creek wash)					
.5	SG	SANDY GRAVEL	420	1.8-2.4			
		- saturated, medium dense, brown					
		E.O.H. @ 30m					
		TESTHOLE IN CREEK BED - (DRY).					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6766525
Easting: 638926

Project No: 8002-318 Test Hole No: #: 30031 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL	SAND	SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel, trace silt	421 ✓	0.3-0.9			
		- damp, medium dense, brown					
	SO	Silty Sand	422 ✓	1.2-1.5			
		- damp, medium dense, brown					
		- some decomposed wood					
	GG	Sandy Gravel, trace silt	423 ✓	2.4-2.9			
		- moist, medium dense, brown					
		E.O.H. @ 3.0m					
		Testhole in Creek Bed (Dry)					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6766403
Easting: 638807

Project No: 8002-318 Test Hole No: #: 30032 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
2		Sandy Gravel	424	0.3-0.9			
		- damp, medium dense, brown					
4	SO	Silty Sand	425	2.4-3.0			
		- moist, medium dense, brown					
		- some decomposed organics (wood)					
		E.O.H. @ 3.0m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6766235
Easting: 638653

Project No: 8002-318 Test Hole No: #: 30033 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel	426 ✓	0.3-0.9			
		- damp, medium dense, brown					
1.5	SO	Silty Sand	427 ✓	1.5-2.1			
		- damp, medium dense, brown w/ some black organic stains					
		- some organic silts					
2.1	da	Gravelly Sand, trace silt	428 ✓	2.1-2.7			
		- damp, loose/medium dense, brown					
		E.O.H. @ 3.0m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6766172
Easting: 638452

Project No: 8002-318 Test Hole No: #: 30034 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel / Gravelly Sand	429 ✓	0.3-0.9			
		- damp, medium dense, brown					
	so	Organic Silts					
		- damp to moist, soft, dark brown					
	da	Sandy Gravel, trace silt	430 ✓	1.8-2.4			
		- saturated, medium dense, brown					
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6766094
Easting: 638287

Project No: 8002-318 Test Hole No: #: 30035 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 19 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Gravelly Sand/Sandy Gravel	431 ✓	0.3-0.9			
		- dry to damp, medium dense, brown					
	do	As Above	432 ✓	2.1-2.7			
		- damp.					
		E.O.H. @ 3.0m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6766043
Easting: 638093

Project No: 8002-318 Test Hole No: #: 30036 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Gravelly Sand	433	0.3-0.9			
		- damp, medium dense, brown					
	So	Sand	434	2.1-2.7			
		- wet, medium dense, brown					
		E.O.H. @ 3.0m					

TEST HOLE LOG

Northing: 6765969
Easting: 637902

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30037 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm	0.74mm	.002mm
GRAVEL	SAND	SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		SILT, some sand to Sandy, trace gravel	435	0.3-0.9			
		- wet, soft, dark brown					
		- some organic silts to 0.6m depth.					
1.5	da	GRAVELLY SILTY SAND	436	2.1-2.7		Sandy Gravelly Silt	
		- wet, soft to firm, grey					
			437	3.4-4.0			
		E.O.H @ 4.0m - REFUSAL					
		REFUSAL @ 4.0m - MOVE 2m NORTH					
		REFUSAL @ 4.0m - E.O.H.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6765920
Easting: 637704

Project No: 8002-318 Test Hole No: #: 30030 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy, some Silt, trace gravel	438 ✓	0.3-0.9			
		- damp, medium dense, brown					
	dc	Gravelly Sand / Sandy Gravel, trace silt	439 ✓	1.8-2.4		Grindy Refusal @ 1.2m	
		-damp, medium dense, brown					
2	SG	Sandy Gravel / Gravelly Sand	440 ✓	3.2-3.6			
		-saturated, medium dense, brown					
		- pea gravels					
		E.O.H. @ 4.0m					

14:00
01/18/04

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6765818
Easting: 637562

Project No: 8002-318 Test Hole No: #: 30039 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Silty Gravelly Sand	441 ✓	0.3-0.9			
		- damp, medium dense, brown					
			442 ✓	1.8-2.4			
		E.O.H. @ 2.4m - REFUSAL					
		Refusal @ 2.4m - move North 2m					
		Refusal @ 2.4m - E.O.H.					

TEST HOLE LOG

Northing: 6765598
Easting: 637443

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30040 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 19 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel	443 ✓	0-0.6			
		- saturated, loose, brown					
0.6	SG	Sand, trace to some silt	444 ✓	0.6-1.2			
		- saturated, loose, brown					
1.2	clg	Sand	445 ✓	1.8-2.4			
		- saturated, medium dense, dark grey					
3.0	SG	Organics (PEAT)	446 ✓	3.0-3.6			
		- saturated, dark brown					
		- some intermixed sand seams					
		E.O.H. @ 4.3m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6765457
Easting: 637428

Project No: 8002-318 Test Hole No: #: 30041 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 20 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel / Gravelly Sand	447	1.4m	SPT		PHOTO #1
		- dry to damp, medium dense, brown					
		- 15, 26 - REFUSAL @ 10"					
		#0.4. @ 2.4m - REFUSAL					
		AUGER REFUSAL @ 2.4m - MOVE 2m NORTH					
		" " @ 1.5m - " " "					
		" " @ 1.8m - @ 0.4					

TEST HOLE LOG

Northing: 6765198
Easting: 637411

Project No: 8002-318 Test Hole No: #: 30042 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG. 20 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
1		Sand,	448	1.4m			1 PHOTO
		- saturated, med to dense, brown					
		- 6,9,9 - Rock in end of barrel 7" recovery					
2.9		Silty Sand/Sandy Silt	449	2.9m			1 PHOTO
		- saturated, medium dense, grey/brown					
		- 3,3,4 - 15" recovery (-3" sloughed)					
		Silty Sand	450	4.4m			2 PHOTO
		- saturated, medium dense, grey/brown					
		- 1.5, 2.5, 3 - Recovery unknown due to difficulty					
		Remove Spoon From Rod					
		Silty Sand	451	5.9			2 PHOTO
		- saturated, medium dense, brown					
		- 11,8,7 - Recovery 15" - (-6" sloughed) See Photo					
		Silty Sand/Sandy Silt	452	7.5			1 PHOTO
		- saturated, medium dense, brown					
		- 2,3,4 - Recovery 8" - (Rest of sample liquid)					
		Silty Sand/Sandy Silt, some gravel	453	9.0			2 PHOTOS
		- damp to moist, dense, brown - some oxides					
		- 14,23,27 - Recovery					

TEST HOLE LOG

Northing: 6764763
Easting: 636832.66

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 300 43 PGW1 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 24 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Silty Sandy Gravel to Silty Gravelly Sand	454	1.4m			1 Photo
		- saturated, medium dense, brown					
		- 10, 24, 45 - 7" Recovery					
		- Lots of Gravels in Spoon					
		Silty Sand	455	2.9m			1 Photo
		- saturated, medium dense, brown/grey					Wrecked Basket
		- 2, 7, 9 - 7" Recovery					
		Silt, trace to some clay	456	4.4			1 Photo
		- saturated, soft, grey					
		- low to non plastic					
		- 1, 2, 1 - 18" Recovery (-3" sloughed)					
		Clayey Silt, some sand	457	5.9			No Photo
		- saturated, soft, grey					
		- 1, 2, 2 - 10" Recovery (Remainder is Liquid)					
		- Weight of Hammer Pushed 5".					
		- non to low plastic					
		- Bottom 4" was Sandy Silt					
							1 Photo
		Sandy Silt	458	7.5			
		- saturated, soft, grey					
		5, 7, 7 - 24" Recovery (-3" sloughed) Full Recovery					

TEST HOLE LOG

Northing:
Easting:

Project No: 8002-318 Test Hole No: #: 300A3 Pg.2 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 21 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

" 5mm	0.74mm	.002mm
GRAVEL	SAND	SILT CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Clayey Silt	459	9.0			1P+0TO
		- saturated, soft, grey - low plastic					
		- Weight of Hammer Pushed Full Spoon (No Blows)					
		- 15" Recovery					
		-					
		Clayey Silt / Silty Clay	460	10.5			1P+0TO
		- saturated, soft, grey - low plastic					
		- Weight of Hammer Pushed Full Spoon (No Blows)					
		- Full Recovery 24"					
		- 100mm thick decomposed organic layer (black/dark grey)					
		End of Hole					

TEST HOLE LOG

Northing: 6764727
Easting: 636668

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 300+1 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 21 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

oth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy, trace silt	461 ✓	0.3-0.9			
		- saturated, medium dense, grey					
	da	Silty Gravelly Sand to Silty Sandy Gravel	462 ✓	1.5-2.1			
		- saturated, medium dense, brown					
.4	sa	Silt, trace to some clay	463 ✓	2.4-2.9			
		- wet, soft to firm, grey					
		- non to low plastic					
	as	Silty Sand, trace to some gravel	464 ✓	4.1-4.4			
		- saturated, medium dense, grey					
		EOH @ 4.6m					

TEST HOLE LOG

Northing: 6764640
Easting: 636398

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30045 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 21 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sand					
		- saturated, medium dense, grey					
	SG	Gravelly Sand, some silt to Silty	465 ✓	0.3-0.9			
		- saturated, medium dense, brown/grey					
	dg	Sand, trace silt	466 ✓	2.1-2.7			
		- saturated, medium dense, grey					
			467 ✓	4.0-4.4			
		E.O.H. @ 4.6m					

TEST HOLE LOG

Northing: 6764571
Easting: 634229

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30046 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 21 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
?		Sandy Gravel, some silt to Silty	468	1.4m			1 Photo
		- saturated, medium dense, grey/brown					
		- 21, 21, 21 - 6" recovery					
		Silt, trace to some Sand	469	2.9			1 Photo
		- wet, soft to firm, grey					
		6, 8, 11 - 15" recovery (-3" sloughed)					
		Sand, some silt to Silty	470	4.4			1 Photo
		- wet, medium dense, brown/grey					
		2, 2, 4 - 6" recovery (Remainder of Spoon is Liquid)					
		Sand, some silt to Silty	471	5.9			1 Photo
		- wet, medium dense, grey					
		- 3, 7, 5 - 16" recovery (Remainder of Spoon is Liquid)					
		E.O.H. @ 6.6m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6764452
Easting: 636077

Project No: 8002-318 Test Hole No: #: 30047 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 21 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel, trace to some silt	472 ✓	0.3-0.9			
		- saturated, medium dense, brown					
			473 ✓	2.1-2.7			
6	dg	Silty Sand,	474 ✓	3.7-4.3			
		- saturated, medium dense, grey					
		E.O.H. @ 4.6m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6764453
Easting: 635652

Project No: 8002-318 Test Hole No: #: 30049 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 21 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

" 5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		SILT					
		- moist to wet, soft to firm, brown					
		- decomposed organics to 0.3					
1.6	SC	CLAYEY SILT	475 ✓	0.6-1.2			
		- moist to wet, soft to firm, grey					
		- low plastic					
	SA	SILT, some sand to SANDY	476 ✓	1.8-2.4			
		- wet, soft to firm, grey					
		- fine grained sands					
	SC	CLAYEY SILT	477 ✓	2.6-2.9			
		- wet, firm, grey					
		- low plastic					
3.7	SA	SILT, some sand to SANDY	478 ✓	4.0-4.4			
		- moist to wet, firm, grey					
		E.O.H. @ 4.6					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6764514
Easting: 635461

Project No: 8002-318 Test Hole No: #: 36050 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 21, 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ıth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Silty Sand / Sandy Silt					
		- damp, medium dense, brown					
		- organics noted to 0.3m (rootlets / grasses)					
). to	SO	Silt, trace to some clay	479 ✓	0.6-1.2			
		- moist to wet, soft to firm, grey					
			480 ✓	2.1-2.9			
.0	da	Silt, some sand to Sandy	481 ✓	3.2-3.6			
		- moist, soft to firm, grey					
		- fine grained sands					
6	da	Silt, some clay to CLAYEY	482 ✓	4.0-4.4			
		- wet, soft, grey					
		E.O.H. @ 4.6m					

TEST HOLE LOG

Northing: 6764643
Easting: 635300

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30051 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 22 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm		.002mm
GRAVEL	SAND	SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

oth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Silt	483	1.4			1 photo
		- saturated, grey					
		- 4,5,4 - 14" Recovery					
		Silty Sand	484	2.9			2 photo
		- saturated, grey					1 with 483, back in photo
		- 1,2,4 - 10" Recovery (Rest of spoon is liquified)					
		Silty Sand	485	4.4			1 photo
		- saturated, grey					
		- Pushed in 1" with weight of hammer					
		- Weight + 1, 2, 3 - 8" Recovery (Remainder liquified)					
		Silty Sand	486	5.9			1 photo
		- saturated, grey					
		1, 1, 1 - 8" Recovery (Remainder liquified)					
		E.O.H. @ 6.9m					

TEST HOLE LOG

Northing: 6764793
Easting: 635196

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30062 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 25 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm			.002mm
GRAVEL		SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
1		Silty Sand	487	1.4m			1, Plots
		- saturated, grey					
		3,4,10 - Full Recovery					
		No Sample From 2.9m - Hole Filled In = 1.0m					
		No Sample From 4.4m - Hole Infilled w/ Silts = 1.0m					
		E.O.H. @ 4.4m					
		Attempt #1 - E.O.H. @ 2.9m = 1.0m of Silts Up Hollow					
		- move 4m North					
		Attempt #2 - E.O.H. @ 4.4m - 1.0m of Silts in Hollow					
		At 2.5m & 4.4m - E.O.H.					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing:
Easting:

Project No: 8002-318 Test Hole No: #: 3005.3 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 25 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Silty Sand	488	1.4m			No Plate
		- saturated, grey/brown					
		- 2,3,2 - 14" Recovery					
		Silty Sand	489	2.9m			
		- saturated, grey/brown					
		- 3,3,3					
		No Sample 4m - 1.0m infill					
		No Sample 5.9m - 2.4m infill					
		- Bit stuck in hollow due to silt/sand plug.					
		E.O.H.C 5.9m					

TEST HOLE LOG

Northing:
Easting:

Project No: 8002-318 Test Hole No: #: 3005g Hand Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 25 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

3" 5mm 0.74mm .002mm

GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		SAND, SOME SILT	#30	1.4			
		- SATURATED, BROWN/GRAY					
		- 1,2,6 - FULL RECOVERY					
		NO SAMPLE FROM 2.9m - 0.9m SLOUGH IN HOLE					
		E.O.H. @ 2.9m - HOLLOW					
		- MORE 3m NORTH - REDRILL SOLID.					

TEST HOLE LOG

Northing: 6765115
Easting: 634941

Project No: 8002-318 Test Hole No: #: 30054 South Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 26 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

oth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Silt, some sand	491	0.2-0.8			
		- moist to wet, soft to firm, brown					
		- organics noted to 0.6m					
.9	da	Sand, some silt	492	1.8-2.4			
		- saturated, medium dense, brown/grey					
			493	3.7-4.3			
			494	4.8-5.5			
.7	da	Silty Sand	495	6.7-7.1			
		- saturated, medium dense, brown grey					
	da	Silty Sand w/2 Silt Seams to 0.3m thickness	496	7.9-8.5			
		- saturated, soft, grey/brown					
	da	Silty Sand to Sand, some silt	497	9.5-10.0			
		- saturated, medium dense, grey/brown					
		E.O.H. @ 10.5m					

TEST HOLE LOG

Northing: 6765279
Easting: 634837

Project No: 8002-318 Test Hole No: #: 30055 PG#1 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 26 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL	SAND	SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Silt, some sand	498	0.3-0.9			
		- moist to wet, soft to firm, brown w/ some grey seams					
		- organics noted to 0.9m					
:2	dc	Silt	499	2.1-2.7			
		- wet to saturated, soft, grey					
	so	Silty Sand / Sandy Silt	500	3.7-4.3			
		- saturated, soft, grey/brown					
		- very soupy					
9	dc	Silty Sand / Sandy Silt	501	4.9-5.5			
		- saturated, soft, grey/brown					
		- 0.2m thick silt seam @ 5.2m - firm, low plastic					
.!	dc	Silty Sand	502	6.7-7.3			
		- saturated, medium dense, brown/grey					
			503	7.9-8.5			
0.0	dc	Silty Sand to Sand, some silt	504	10.0-10.5			
		- saturated, medium dense, brown/grey					
		- silt seam noted @ 11.0m = 0.2m thick - soft, low plastic					
			505	11.3-11.7			

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6765277
Easting: 634837

Project No: 8002-318 Test Hole No: #: 30055 PG № 2 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 26 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND	SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		- silt seam @ 12.8m ≈ 200mm thick - soft, low plastic	506	12.8 - 13.+			
			507	14.0 - 14.6			
		E.O.H. @ 15.1m -					
		NOTE: Too Sandy to Attempt Hvanes					

TEST HOLE LOG

Northing: 6765296
Easting: 634756

Project No: 8002-318 Test Hole No: #: 30056 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Dec. 27 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravelly Silt	528	0.3-0.9			
		- saturated, medium dense, brown					
	so	Sand, trace to some silt	529	2.1-2.7			
		- saturated, medium dense, brown					
			530	3.7-4.3			
			531	4.9-5.5			
4	dg	Sandy Silt / Silty Sand	532	6.7-7.3			
		- saturated, soft, brown					
		- some seams of silt to 300mm thick - soft, grey					
			533	7.9-8.5			
	dg	Sand, some silt	534	9.8-10.4			
		- saturated, medium dense, brown					
			535	11.0-11.6			
5	dg	Silty Sand	536	12.8-13.4			
		- saturated, medium dense, brown					
		- some silt seams to 200mm thick - soft, grey					
			537	14.0-14.6			
3.9	dg	Sand, trace to some silt					
		- saturated, medium dense, brown					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6765406
Easting: 634728

Project No: 8002-318 Test Hole No: #: 30057 pg.1 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 26 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

)th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
6		SILT, some sand	508	0.3-0.9			
		- saturated, soft, brown/grey					
		- organics to 0.2m					
.2	da	Sand, some silt to silty	509	2.1-2.7			
		- saturated, medium dense, brown/grey					
			510	3.7-4.3			
.2	da	Silt,	511	5.2-5.8			
		- saturated, soft, grey					
			512	6.7-7.3			
			513	7.9-8.5			
.8	da	Sand, some silt	514	9.7-10.4			
		- saturated, medium dense, brown/grey					
		- silt seam @ 10.7m ≈ 0.3m thick - soft, grey, low plastic					
0	da	Sandy Silt	515	11.0-11.6			
		- saturated, soft, brown/grey					
		- very fine grained sands					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6765406
Easting: 634728

Project No: 8002-318 Test Hole No: #: 30057 PG. 2 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 26 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

3"	5mm	0.74mm			.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
12.8	da	Sand, some silt to silty. (poor sample)	516	12.8-13.4			
		- saturated, medium dense, brown/grey					
			517	14.0-14.6			
			518	15.9-16.5			
					— END 08/26 (16.8m)		
					— BEGIN 08/27		
			519	17.1-17.7			
			520	18.9-19.5			
			521	20.0-20.7			
	se	Silt	522	21.9-22.6			
		- saturated, soft, grey					
		- non to low plastic	523	23.2-23.8			
	da	Silt	524	25-25.6			
		- saturated, soft to firm, grey					
		- low plastic	525	26.2-26.8			
			526	28.0-28.7			
			527	29.3-29.9			
		E.O.H. @ 30.3m					

TEST HOLE LOG

Northing: 6765413
Easting: 634679

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30058 PG.1 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 27/28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Silt, some sand	538	0.3-0.9			
		- wet, soft to firm, grey/brown					
		- organics to 0.6m depth					
1.2	SG	Silty Gravel, some sand	539	1.6-2.1			
		- saturated, soft, grey/brown					
		- grindy drilling					
1	da	Sand, trace silt	540	3.7-4.3			
		- saturated, medium dense, brown					
4.9	da	Silt, some clay	541	5.2-5.8			
		- saturated, soft to firm, grey					
		- low plastic to non plastic					
					END	08/27 (5.5m)	
6.1	da	Sand, trace silt	542	6.7-7.3	BEGIN	08/28	
		- saturated, medium dense, brown					
			543	7.9-8.5			
			544	9.8-10.4			
			545	11.0-11.6			

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6765412
Easting: 634679

Project No: 8002-318 Test Hole No: #: 30058 Pg 2 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 27/28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
	da	Silty Sand/Sandy Silt	546	12.8-13.4			
		- saturated, soft, brown/grey					
2	da	Silt, trace to some sand, trace to some clay	547	14.0-14.6			
		- saturated, soft, brown/grey					
		- non to low plastic					
5.4	da	Sand, some silt to silty	548	15.9-16.5			
		- saturated, medium dense, brown					
		- some silt seams ≈ 200mm thick between 15.4 : 16.5m					
7.4	da	Sand, trace to some silt	549	17.4-18.0			
		- saturated, medium dense, brown					
			550	18.9-19.5			
			551	20.0-20.7			
22.9	da	Silt,	552	23.8-24.1			
		- saturated, soft, grey					
		- non to low plastic					
4		Silt, trace to some clay	553	25.0-25.6			
		- saturated, soft to firm, grey					
		- low plastic					

TEST HOLE LOG

Northing: 6765412
Easting: 634679

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30058 PG.#3 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 27/28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

...th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
29.9	dc	Clayey Silt	554	26.2-26.8			
		- wet to saturated, soft to firm, grey					
		- low plastic	555	28.0-28.7			
			556	29.3-29.9			
		E.O.H.@ 30.5m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6765507
Easting: 634609

Project No: 8002-318 Test Hole No: #: 30059 PG#1 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

3"	5mm	0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Silt	557	0.3-0.9			V
		- dry to damp, medium dense, light brown					
		- boulder in fill					
		- organics throughout					
		- very grindy due to boulder fill					
	da	Silt, some sand	558	1.5-2.1			
		- wet to saturated, soft, brown/grey					
2.4	da	Sand, trace to some silt	559	3.4-4.0			
		- saturated, medium dense, brown/grey					
	da	Silt	560	4.9-5.5			
		- saturated, soft, grey					
	da	Sand	561	7.6-8.8			
		- saturated, medium dense, brown					
		- auger flights washed clean, minimal scrapie	562	9.8-10.4			
4	da	Silt, trace to some clay	563	11.0-11.6			
		- saturated, soft, grey					
		- non to low plastic					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6765507
Easting: 634609

Project No: 8002-318 Test Hole No: #: 30059 PG. #2 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
12.2	dg	SAND, trace to some silt	564	12.8-13.4			
		- saturated, medium dense, brown/grey					
		- sample slot minimal due to washed fines					
			565	14.0-14.6			
			566	15.9-16.5			
			567	17.1-17.7			
			568	18.9-19.5			
21	dg	SILTY SAND / SANDY SILT	569	20.1-20.7			
		- saturated, medium dense, brown/grey					
		- more silt w/ depth	570	21.9-22.6			
2.9	dg	SILT	571	23.2-23.8			
		- saturated, soft, grey					
4	dg	SILT	572	25.0-25.6			
		- saturated, soft to firm, grey					
			573	26.2-26.8			
			574	28.0-28.7			
			575	29.3-29.9			
		E.O.H @ 30.3					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6765562
Easting: 634610

Project No: 8002-318 Test Hole No: #: 300611 Pg. #1 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 27 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel / Gravelly Sand, trace to some silt	576	0.3-0.6			
		- damp to moist, medium dense, brown					
e	so	Silt, some sand to Sandy	577	0.6-1.2			
		- Moist to wet, soft, brown/grey					
-1	so	Sand, trace to some silt	578	2.4-2.9			
		- saturated, medium dense, brown					
			579	3.7-4.3			
			580	4.9-5.5			
.1	cb	Sand, some silt	581	6.7-7.3			
		- saturated, medium dense, brown					
		- fine grained sand;	582	7.9-8.5			
			583	9.5-10.1			
1	dc	Silt	584	11.0-11.6			
		- saturated, soft, grey					
		- non to low plastic					
	gg	Sand, some silt	585	12.8-13.4			
		- saturated, medium dense, brown					
		- fine grained sands	586	14.0-14.6			

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6765562
Easting: 634610

Project No: 8002-318 Test Hole No: #: 30061 PG.#2 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 25 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
			S87	15.6-16.5			
			S88	17.1-17.7			
			S89	18.9-19.5			
1.8	da	Silt, trace to some clay	S90	20.1-20.7			
		- wet to saturated, soft, grey					
			S91	21.9-22.6			
23.2	da	Sandy Silt / Silty Sand	S92	23.2-23.8			
		- saturated, soft, brown/grey					
		- various silt & sand seams intermixed					
0	da	Silt, trace to some clay					
		- wet to saturated, soft to firm, grey	S93	25.0-25.6			
			S94	26.2-26.8			
28.0	da	Sandy Silt	S95	28.0-28.7			
		- saturated, soft, grey/brown					
28.7	da	Silt, trace to some clay	S96	29.3-29.9			
		- wet to saturated, soft to firm, grey					

EOH @ 30.3

TEST HOLE LOG

Northing: 6765721
Easting: 634494

Project No: 8002-318 Test Hole No: #: 30062 (EG #1) Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 29 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sand, some silt to Silty	597	0.3-0.6			
		- damp to moist, medium dense, brown					
2	SO	Silt, some sand to Sandy					
		- damp, soft to firm, light brown					
	do	As Above	598	1.6-2.1			
		- wet to saturated					
		- sand seam = 200mm thick noted @ 2.1m					
	ds	Silt					
		- saturated, soft, grey					
3.0	dg	Sand, trace silt	599	3.7-4.3			
		- saturated, medium dense, brown					
		- silt seam = 300mm thick @ 5.3 - soft, grey					
			600	4.9-5.3			
6.1	ds	Silt	601	6.7-7.3			
		- saturated, soft grey					
	cg	Sand, trace silt	602	7.6-8.2			
		- saturated, medium dense, brown					

TEST HOLE LOG

Northing: 6765721
Easting: 634494

Project No: 8002-318 Test Hole No: #: 30062 PG42 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 29 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
9.2	da	Silty Sand / Sandy Silt	603	9.8-10.4			
		- saturated, soft, brown/grey					
		- Variable Silt : Sand Seams					
11.0	da	Sand, trace to some silt	604	11.0-11.6			
		- saturated, medium dense, brown					
12.2	da	Sand, some silt to Silty	605	12.8-13.4			
		- saturated, medium dense, brown					
			606	14.0-14.6			
		E.O.H. @ 15.1m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6765883
Easting: 634875

Project No: 8002-318 Test Hole No: #: 30063 PG.#1 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 29 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		SAND, some silt to silty					
		- damp, medium dense, brown					
5	SO	SILT, some sand	607	0.6-1.2			
		wet to saturated, soft to firm, brown					
.8	da	SAND, trace silt	608	1.0-2.4			
		- saturated, medium dense, brown					
			609	3.7-4.3			
			610	4.9-5.5			
	da	SILT	611	6.7-7.3			
		- saturated, soft, grey					
	da	SILTY SAND	612	7.9-8.5			
		- saturated, medium dense, brown/grey					
.8	da	SILT	613	9.8-10.4			
		- saturated, soft, grey					
	da	SILTY SAND	614	11.0-11.6			
		- saturated, medium dense, brown/grey					
			615	12.8-13.4			

TEST HOLE LOG

Northing: 6765883
Easting: 634375

Project No: 8002-318 Test Hole No: #: 30063 TH 02 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 29 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

3"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
17	ds	Silt w/ sand seams	616	14.0 - 14.6			
		- saturated, soft, grey w/ brown sand					
		- various seams of silts & sands intermixed					
		E.O.H. @ 15.1m					

Hoggan Engineering & Testing (1980) Ltd.

TEST HOLE LOG

Northing: 6766041
Easting: 634253

Project No: 8002-318 Test Hole No: #: 30064 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 29 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

oth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sand, some silt					
		- damp, medium dense, brown					
5	SO	Silt, some sand	617	0.85-1.2			
		- moist to wet, soft to firm, brown					
.1	SG	Sand, trace silt	618	2.1-2.7			
		- saturated, medium dense, brown					
		- decomposing organic seam @ 3.6m (≈ 200mm thick) dark grey					
		- fine sands @ 6.5m	619	4.0-4.4			
			620	4.9-5.5			
			621	6.7-7.3			
			622	7.9-8.5			
			623	9.9-10.4			
		E.O.H. @ 10.5m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6766211
Easting: 634121

Project No: 8002-318 Test Hole No: #: 30065 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 30 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy, some gravel, some silt to Silty					
		- damp, medium dense, brown					
4	SO	Silt, trace to some sand	624	0.6-1.2			
		- moist to wet, soft to firm, brown					
.6	da	Sand, trace silt	625	1.8-2.4			
		- moist, medium dense, brown					
			626	3.7-4.3			
6	da	Sand, trace to some silt	627	4.9-5.5			
		- saturated, medium dense, brown					
			628	6.7-7.3			
	da	Silty Sand / Sandy Silt	629	7.9-8.5			
		- saturated, medium dense, brown / grey					
		- variable seams of sand & silt					
	da	Silt	630	9.8-10.4			
		- saturated, soft, grey					
		E.O.H. @ 10.5m					

TEST HOLE LOG

Northing: 6766381
Easting: 633992

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30066 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 30 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm			.002mm
GRAVEL		SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		SAND, some gravel, some silt					
		- damp, medium dense, brown					
	so	SILT, trace to some sand	631	0.6-1.2			
		- damp to moist, soft to firm, brown					
	da	SILT	632	1.5-2.1			
		- moist to wet, soft to firm, grey					
	da	SAND, trace silt	633	3.7-4.3			
		- saturated, medium dense, brown/grey					
	su	SILT, some sand	634	6.5-7.2			
		- saturated, soft, grey					
	da	SAND, trace silt	635	6.7-7.3			
		- saturated, medium dense, brown/grey					
	da	SILT, trace to some clay	636	7.9-8.5			
		- saturated, soft, grey					
			637	9.8-10.4			
		E.O.H. @ 10.5m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6766554
Easting: 633887

Project No: 8002-318 Test Hole No: #: 30067 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 30 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Silt, trace to some sand	638	0.6-1.2			
		- moist, firm, brown					
2	so	Silty Sand					
		- damp, medium dense, brown					
	so	Silt, trace clay					
		- moist to wet, soft to firm, grey					
2.1	sp	Sand, trace silt	639	2.4-2.9			
		- moist to wet, medium dense, brown					
	da	Sand, some silt to silty	640	3.7-4.3			
		- saturated, medium dense, brown/grey					
		- fine grained sands.					
			641	4.9-5.5			
		E.O.H.E. 5.9m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6766749
Easting: 633841

Project No: 8002-318 Test Hole No: #: 30068 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG 30 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		SILT, trace to some sand	642	0.6-1.2			
		- damp to moist, soft to firm, brown					
	SD	SANDY SILT					
		- damp to moist, medium dense, brown					
		- fine grained sands					
	SD	SAND, trace silt	643	2.4-3.0			
		- moist to wet, medium dense, brown					
	SG	SAND, some silt	644	3.4-4.0			
		- saturated, medium dense, brown/grey					
		- fine grained sands					
	CL	SILT,	645	5.0-5.5			
		- saturated, soft, grey					
		E.O.H. @ 5.9m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6766937
Easting: 633865

Project No: 8002-318 Test Hole No: #: 30069 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 20 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
5		SILT					
		- damp to moist, firm, grey					
1	SO	Sand, trace silt	646	0.4-1.2			
		- damp to moist, medium dense, brown					
.6	SO	SILT					
		- moist, soft to firm, grey					
.7	SO	Sand, trace to some silt	647	1.8-2.4			
		- saturated, medium dense, brown					
			648	3.7-4.3			
			649	4.9-5.5			
		E.O.H. @ 5.9m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6767128
Easting: 633921

Project No: 8002-318 Test Hole No: #: 30070 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 30 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL	SAND	SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Silt, some sand	650	0.6-1.2			
		- damp to moist, soft to firm, brown					
		- organics noted to 0.3m					
2	SG	Gravel, some sand, trace to some silt	651	2.1-2.7			
		- saturated, medium dense, brown					
		- grindy drilling					
		- silt contamination from side walls in sample #651					
		- broken rock, angular pieces to 90mm dia.					
	SG	Sandy Silty Gravel	652	3.7-4.3			
		- saturated, medium dense, brown/grey					
			653	4.9-5.5			
		E.O.H. @ 5.9m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6768923
Easting: 635159

Project No: 8002-318 Test Hole No: #: 30082 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Silty Sandy,					
		- damp, medium dense, brown w/ orange hue					
		- organics to 0.2m					
.3	SG	Sandy Gravel, trace silt	348 ✓	0.6-1.2		Very Grindy Drilling @ 0.3m	
		- dry to damp, dense, brown/grey					
.0	GS	Gravelly Sand, some silt to Silty	349 ✓	1.8-2.4		Slow Grindy Drilling @ 1.8m	
		- damp to moist, dense, brown					
			350 ✓	3.4-4.0			
			351 ✓	4.9-5.5			
		E.O.H. @ 5.9m					
		REFUSAL @ 0.6m - MOVE 2m EAST					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6769180
Easting: 635169

Project No: 8002-318 Test Hole No: #: 30083 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Organic Silts					
0.3	sg	Silty Sandy Gravel	344 ✓	0.6-1.2		Grinding Refusal @ 0.3m - 3.2	
		- damp, medium dense, brown w/ some black organics					
		- organic silts intermixed					
	dg	Sandy Gravel, some silt	345 ✓	1.8-2.4			
		- moist, dense, brown					
2	dg	Silt, some sand to Sandy	346 ✓	3.1-4.0			
		- wet, soft, brown					
	dg	Silty Gravelly Sands to Silty Sandy Gravel	347 ✓	4.9-5.5			
		- saturated, dense, brown					
		- possible silt contamination in sample from above					
		E.O.H. @ 7.0 - REFUSAL					
		REFUSAL @ 7.0 - E.O.H. No Second Attempt (No Indication)					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

Northing: 6769233
Easting: 635162

Project No: 8002-318 Test Hole No: #: 30084 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ıth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Silty Sand,					
		- damp, medium dense, brown w/ orange hue					
		- organics to 0.3m					
2.6	so	Sandy Gravel/Gravelly Sand, some silt to Silty	338 ✓	0.6-1.2			
		- damp, medium dense, brown					
			339 ✓	1.8-2.4			
0	so	Sandy Silt/Silty Sand, some gravel to Gravelly.	340 ✓	3.4-4.0		Sand, some silt, trace gravel	
		- damp, dense, brown					
			341 ✓	4.9-5.5			
	dc	Gravelly Silty Sand	342 ✓	6.4-7.0		Gravelly Sand, some silt	
		- damp, dense, brown					
			343 ✓	7.6-8.1			
		E.o.h. @ 8.2 - Refusal					
		Refusal @ 8.2 - E.o.h. - no 2nd Attempt.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6769371
Easting: 635155

Project No: 8002-318 Test Hole No: #: 30085 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

h	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Silt / Silty Sand					
		- damp, medium dense, brown w/ orange hue					
		- organics noted throughout					
.6	SD	Sandy Gravel / Gravelly Sand, some silt to Silty	334 ✓	0.6-1.2			
		- damp, medium dense, brown					
			335 ✓	1.8-2.4			
			336 ✓	3.4-4.0			
.1	GG	Silty Sand, trace gravel	337 ✓	4.9-5.5		Very Grindy @ 4.9	Slow Drilling
		- dry, dense, light grey w/ green hue					
		- significant rock powder in sample.					
		E.O.H. @ 5.5 - REFUSAL					
		NO - 2nd ATTEMPT					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6769425
Easting: 635131

Project No: 8002-318 Test Hole No: #: 30086 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		ORGANIC SILTS					
.3	SO	SILTY SAND, SOME GRAVEL to GRAVELLY	329 ✓	0.6-1.2			
		-DROP, MEDIUM DENSE, BROWN					
	do	GRAVELLY SAND, SOME SILT to SILTY	330 ✓	1.8-2.4		SLOW GRINDY DRILLING @ 1.8M	
		-FROZEN, NO VISIBLE ICE					
		- BROWN					
.0	do	SANDY GRAVEL/GRAVELLY SAND, SOME SILT to SILTY	331 ✓	3.4-4.0			
		-FROZEN, NO VISIBLE ICE					
	do	AS ABOVE	332 ✓	4.9-5.5		VERY SLOW GRINDY DRILLING @ 4.5M	
		- VERY DENSE					
		- ALMOST REFUSAL 2 TIMES BETWEEN 6.6-7.6					
		* POOR SAMPLE - MINIMAL RECOV'Y ON FLIGHTS.	333 ✓	6.7-7.3			
		E.O.H. @ 11.0 - REFUSAL (NO INDICATION)					
		REFUSAL @ 11.0 - E.O.H.					
		* NO 2ND ATTEMPT - TO DENSE					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6769468
Easting: 635121

Project No: 8002-318 Test Hole No: #: 30087 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG.15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Silt / Silty Sand					
		- damp to moist, medium dense, brown/grey					
6	SO	Sand, some silt to silty trace to some gravel	325 ✓	0.6-1.2			
		- damp, medium dense, brown					
			326 ✓	1.8-2.4			
3.0	GO	Gravelly Sand, some silt to Silty	327 ✓	3.4-4.0		Very Slow Grinding @ 3.0m	
		damp, dense, brown					
			328 ✓	4.9-5.5			
		E.O.H. @ 6.4 - Refusal					
		Refusal @ 6.2 - - move 2m South					
		Refusal @ 6.4 - E.O.H.					

TEST HOLE LOG

Northing: 6769516
Easting: 635104

Project No: 8002-318 Test Hole No: #: 30088 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 15 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
~		Silty Sand / Sandy Silt					
		- damp, loose, brown w/ orange hue					
		- organics to 0.2m					
.9	SO	Gravelly Sand, trace to some silt	322 ✓	0.9-1.2		Grindy Drilling @ 0.9m	
		- damp, medium dense, brown					
			323 ✓	1.8-2.1			
			324 ✓	3.1-4.0		Slow Grinding Drilling @ 4.0	
		E.O.H. @ 5.2 - REFUSAL					
		REFUSAL @ 5.0 - more 2m Sandy					
		REFUSAL @ 8.2 - E.O.H.					
		(No indication)					

TEST HOLE LOG

Northing: 6769606
Easting: 635078

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30089 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm		.002mm
GRAVEL	SAND	SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Silt / Silty Sand	321 ✓	0.-0.6			
		- dry to damp, loose, brown w/ orange hue					
		- organics noted to 0.2m					
		E.O.H. @ 0.6m - Refusal					
		Refusal @ 0.6m - move South 3m					
		Refusal @ 0.6m - E.O.H					
		Probed twice at each location = .3m Apart (No indication)					

TEST HOLE LOG

Northing: 6769660
Easting: 635060

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30090 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

)th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		ORGANIC SILTS					
1.2	SM	SILTY SAND					
		- damp, medium dense, brown					
	SP	GRAVELLY SAND, some silt to silty	319	0.5-1.6		GRINDY DRILLING @ 0.4m	
		- damp, medium dense, brown					
2	SP	GRAVELLY SAND, trace to some silt (ROCK)	320	1.2-1.5		VERY GRINDY @ 1.2m	SLOW DRILLING
		- dry, dense, brown/grey					
		- some rock powder in sample					
		E.O.H. @ 1.5m - REFUSAL					
		REFUSAL @ 1.5m - MOVE 2m SOUTH					
		REFUSAL @ 0.9m - E.O.H.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6769701
Easting: 635044'

Project No: 8002-318 Test Hole No: #: 30091 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ıth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
?		Organic Silts					
2.3	SG	Gravelly Silty Sand	318	0.5-0.9		Gravelly to some silt	Sand, trace
		-damp, medium dense, brown					
		E.O.H. @ 1.4' - Refusal					
		Refusal @ 1.4m - Move South 2m					
		Refusal @ 1.2m - E.O.H.					

TEST HOLE LOG

Northing: 6769764
Easting: 635000

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30092 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		ORGANIC SILTS					
.4	so	GRAVELLY SILTY SAND	315 x	0.4-1.0			SILTY SAND
		- damp, medium dense, dark brown					
	so	SANDY SILT, trace gravel	316 x	1.8-2.4		GRADUAL DRILLING @ 1.8m	
		- frozen, no visible ice				SILTY SAND, some gravel	
		- brown/grey					
7	do	SANDY SILT, some gravel	317	3.7-4.3		SLOW GRADUAL DRILLING @ 3.7	
		- frozen, no visible ice				SAND, some gravel, some silt to silty	
		- brown					
		E.O.H. @ 5.0 - REFUSAL					
		REFUSAL @ 4.7 - MOVE SOUTH 2m					
		REFUSAL @ 5.0 - EOH					
		(NO SIGNIFICANT INDICATION)					

TEST HOLE LOG

Northing: 6769809
Easting: 634966

Project No: 8002-318 Test Hole No: #: 30093 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug 15 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		GRAVELLY SANDY SILT TO GRAVELLY SILTY SAND	310 ✓	.3-.9			
		- moist, medium dense, brown w/ black organic seams					
		- organic silt seams throughout to 5mm thickness					
.8	da	SILTY SAND, some gravel to GRAVELLY	311 ✓	1.8-2.4		GRINDY DRILLING @ 1.8m	
		- FROZEN, no visible ice					
		- brown/grey					
			312 ✓	3.4-4.0			
			313 ✓	4.9-5.5			
			314 ✓	6.7-7.0			
		F.O.H. @ 7.0. REFUSAL					
		REFUSAL @ 7.0 - MOVE SOUTH 2m					
		REFUSAL @ 2.1m MOVE SOUTH 2m } NO SIGNIFICANT INDICATION					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6769845
Easting: 634942

Project No: 8002-318 Test Hole No: #: 30094 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		PAD FILL					
1.4	SO	ORGANIC SILTS					
.8	SO	SANDY GRAVEL / GRAVELLY SAND, trace silt	306 ✓	0.8 - 1.3			
		- damp, medium dense, brown					
	SO	SILTY SANDY GRAVEL	307 ✓	1.8 - 2.4			
		- damp, medium dense, brown w/ black organic seams					
		- some organic silts throughout (seams to 75mm)					
0	da	SILTY / SANDY / GRAVEL TO SILTY GRAVELLY SAND	308 ✓	3.4 - 4.0			
		- damp to moist, dense, brown					
	da	AS ABOVE	309 ✓	5.3 - 5.8			
		- increase moisture / increase silt					
		E.O.H. @ 5.8					

TEST HOLE LOG

Northing: 6769885
Easting: 634904

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30095 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 15 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Organic Silts					
0.3	so	Sandy Silt, some gravel	302 ✓	0.3-0.9			
		- damp to moist, firm, brown					
	da	Gravelly Sand/Sandy Gravel, trace to some silt	303 ✓	2.1-2.4			
		- damp, medium dense, brown					
	da	Gravelly Sand/Sandy Gravel, trace silt	304 ✓	3.4-4.0			
		- moist to wet, dense, brown					
			305 ✓	4.9-5.5			
		E.O.H. @ 5.9					

TEST HOLE LOG

Northing: 6769974
Easting: 634848

Project No: 8002-318 Test Hole No: #: 30096 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 14 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
ONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Organic Silts					
	SO	Gravelly Silty Sand					
		- moist to wet, medium dense, brown					
1.0	do	As Above	295 ✓	1.0-1.3			
		- Frozen					
		- brown					
	do	Gravelly Sand, some silt to Silty	296 ✓	1.0-2.4			
		- Frozen					
		- brown					
			–				
			297 ✓	3.7-4.3			
			298 ✓	4.9-5.5			
			299 ✓	7.0-7.6			
			300 ✓	9.1-9.8			
		E.O.H. @ 11.3m - REFUSAL	301 ✓	10.1-11.0			
		Refusal @ 8.7 - Move South 2m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6770135
Easting: 634800

Project No: 8002-318 Test Hole No: #: 30097 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 17 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		ORGANIC SILTS					
	2a	SANDY GRAVEL, some silt	293 ✓	0.6-1.2			
		- moist to wet, medium dense, brown					
	2a	SILTY SANDY GRAVEL / SILTY GRAVELLY SAND	294 ✓	1.8-2.4		DIFFICULT DRILLING @ 1.8m	
		- FROZEN, NO VISIBLE ICE					
		- brown					
		E.O.H. @ 3.4					
		REFUSAL @ 3.4 - MOVE 2m SOUTH					
		REFUSAL @ 3.2' - = 0.4.					

TEST HOLE LOG

Northing: 6770280
Easting: 634696

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30098 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 14 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

...epth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
)		Sandy Gravel, trace to some silt	290 ✓	0.3-0.9			
		- damp, medium dense, brown					
)	da	Gravelly Sand, trace silt	291 ✓	1.8-2.4			
		- damp, medium dense, brown					
3.0	da	Sandy Gravel, trace silt	292 ✓	3.4-4.0			
		- saturated, medium dense, brown					
		E.O.H. @ 4.3					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6770392
Easting: 634666

Project No: 8002-318 Test Hole No: #: 30099 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 14 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		SANDY GRAVEL, some silt	286 ✓	0.3-0.9			
		- damp, medium dense, brown					
		- organics noted to 0.3					
0.9	do	As Above					
		moist to wet					
	do	GRAVELLY SAND, trace silt	287 ✓	1.8-2.4			
		- saturated, medium dense, brown					
	so	ORGANIC SILTS	288 ✓	3.0-3.7			
		- saturated, soft, black/brown					
5.7	do	SILTY SANDY GRAVEL * poor sample	289 ✓	4.1-4.4			
		- saturated, medium dense, brown					
		E.O.H. @ 4.4m					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6770537
Easting: 634635

Project No: 8002-318 Test Hole No: #: 30100 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 14 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		SANDY GRAVEL, trace to some silt	279 ✓	0.6-1.2			
		- damp, dense, brown					
		- boulders to 0.5m dia noted on surface nearby					
		-					
	da	SANDY GRAVEL, some silt	280 ✓	1.8-2.4			
		- damp to moist, dense, brown					
	so	ORGANIC SILTS					
		- damp, firm, dark brown					
	so	SANDY GRAVEL, trace to some silt	281 ✓	3.4-4.3			
		- damp, dense, brown					
9	da	SLIGHTLY SANDY GRAVEL TO SLIGHTLY GRAVELLY SAND	282 ✓	4.9-5.5			
		- wet, dense, brown					
		* poor sample	283 ✓	6.1-7.3			
	da	SANDY SILT, some gravel	284 ✓	8.2-8.8			
		- moist to wet, dense, grey w/ blueish hue					
	da	SLIGHTLY SANDY, trace gravel	285 ✓	9.4-10.1			
		- moist, dense, purple					

E.O.H. @ 10.1 - REFUSAL

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6770650
Easting: 634650

Project No: 8002-318 Test Hole No: #: 30101 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug 17 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Silty Sand					
		- damp, medium dense, brown					
		- organics to 0.3m					
1.4	da	Gravelly Silty Sand	277 x	0.4-1.0		Gravelly Sand, trace to some silt	
		- damp, medium dense, brown					
1.8	da	Gravelly Silty Sand	278 x	1.8-2.4		Grindy Drilling @ 1.8m	
		- damp, dense, brown				Gravelly Sand, some silt to silty	
		E.O.H. @ 3.2 - Refusal					
		Refusal @ 3.0m - Made 2m first (No indication)					
		Refusal @ 3.2 - E.O.H.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6770753
Easting: 634670

Project No: 8002-318 Test Hole No: #: 30102 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 14 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Silt / Silty Sand					
		- damp, medium dense, brown w/ organics inc.					
		- organics to 0.3m noted					
.6	da	Sandy Silt, trace gravel	275	0.6-1.2		Silty Sand, trace gravel	
		- damp, medium dense, brown					
	da	Silty Sand, trace gravel	276 ✓	2.1-3.0m		Very Grindy Drilling @ 1.5m	
		- dry, dense, light grey					
		- significant rock powder in sample					
		E.O.H. @ 3.0m - Refusal					
		Refusal @ 3.0m - move hole 2m					
		Refusal @ 3.0m - E.O.H.					

TEST HOLE LOG

Northing: 6770855
Easting: 634651

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30103 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG 14 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Silty Sand/Sandy Silt					
		- damp, medium dense, brown					
		- organics noted to 0.2m depth					
0.6	da	Gravelly Sandy, some silt to Silty	272 ✓	0.6-1.2			0
		- damp, medium dense, brown					
	da	Gravelly Sand, some silt to Silty	273 ✓	2.1-2.9		Very Grinding Drilling @ 2.0m	0
		- dry to damp, dense, light brown					
	da	Silty Sand, trace to some gravel	274 ✓	3.7-4.3			
		- dry, dense, light grey					
		- significant rock powder in sample					
		E.O.H. @ 4.3 - REFUSAL					
		REFUSAL @ 4.3 - MOVE SOUTH 2 METERS					
		REFUSAL @ 2.4m - E.O.H.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6770965
Easting: 634613

Project No: 8002-318 Test Hole No: #: 30104 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 13 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
5		SAND, some silt to silty	268 ✓	0.3-0.9			
		- damp, loose, brown					
	dg	GRAVELLY SANDY SILT	269 ✓	1.8-2.4		Silty Sandy, trace to some gravel	
		- damp, medium dense, brown					
		SILTY SAND, trace to some gravel (ATTEMPT #1) ROCK	270 ✓	3.4-3.7		DIFFICULT DRILLING @ 3.0m	
		- dry, dense, light grey					
		- significant rock powder on sample					
		GRAVELLY SAND, trace to some silt (ATTEMPT #2)	271 ✓	3.7-4.3			
		- damp, dense, brown					
		E.O.H. @ 4.9m					
		REFUSAL @ 3.7 - MOVE SOUTH 2m					
		REFUSAL @ 4.9m = E.O.H (rock powder on bit... no sample)					

TEST HOLE LOG

Northing: 6771005
Easting: 604671

Project No: 8002-318 Test Hole No: #: 30105 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG 13 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
~		Silty Sandy / Sandy Silt					
		- damp, medium dense brown		•			
1	da	Gravelly Silty Sand	262 ↗	0.9-1.2		Gravelly Sandy, trace to some silt	
		- damp, medium dense, brown					
.0	da	Sandy Silt, trace to some gravel	263 ✓	1.8-2.4			
		- damp to moist, medium dense, brown					
5.0	da	Sandy Gravel / Gravelly Sand, some silt	264 ✓	3.4-4.0			
		- damp, dense, brown					
		E.O.H. @ 4.6m Refusal					
		Refusal @ 4.6m - Move South 2m					
		Refusal @ 4.3m - E.O.H.					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6771078
Easting: 634574

Project No: 8002-318 Test Hole No: #: 30106 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 13 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Silty Gravelly Sand	266	0-0.6			
		- dry to damp, loose, brown w/ orange hue					
		- organics to 0.2m					
.6	SA	Silty Sand	267	0.9-1.2		Very difficult drilling @ 0.9m	
		- dry to damp, dense, light grey				Gravelly Sand, some silt	
		- significant rock powder in sample					
		E.O.H. @ 0.9m - REFUSAL					
		REFUSAL @ 0.9m - MOVE 2m SOUTH					
		REFUSAL @ 0.9m - E.O.H.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6771149
Easting: 634528

Project No: 8002-318 Test Hole No: #: 30107 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 3 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Organic Silt					
0.3	SO	Silty Sand / Sandy Silt					
		- damp, medium dense, brown					
	SO	Sandy Gravel, some silt to silty	265 ✓	0.9-1.2		DIFFICULT DRILLING @ 0.9m	
		- dry to damp, dense, light brown/grey					
		- rock powder in sample					
		End @ 1.5m					
		Refusal @ 1.5m - Move South 2m					
		Refusal @ 1.5m - End					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing:
Easting:

Project No: 8002-318 Test Hole No: #: 30108 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 13 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Silt / Silty Sand, trace gravel	258 ✓	.6 - 1.2			
		- damp to moist, medium dense, brown					
	do	Gravelly Sand, some silt to Silty	259 ✓	1.5 - 2.1			
		- damp, medium dense, brown					
	so	Silty Sand, some gravel (Possible Rock)	260 ✓	3.0 - 3.7		Difficult	Practically 2.4
		- dry, dense, light brown / grey					
		- significant rock powder in sample					
			261 ✓	4.9 - 5.5			
		E.O.H. @ 5.5m Very Slow Drilling					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6771427
Easting: 634465

Project No: 8002-318 Test Hole No: #: 30109 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 13 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Silt / Silty Sand	255 ✓	0.6-1.2			
		- damp, medium dense, brown					
	da	Gravelly Sand, some silt to Silty	256 ✓	1.8-2.4			
		- damp, dense, brown					
2	co	Silty Sand, some gravel	257 ✓	3.4-4.0		Very Difficult Drilling @ 3.0m	
		- dry to damp, dense, light brown/grey					
		- rock powder in sample					
		E.O.H. @ 4.0					
		Refusal @ 3.0m - Have 2m Sand					
		Refusal @ 4.0 - E.O.H.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6771567
Easting: 634456

Project No: 8002-318 Test Hole No: #: 30110 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 13 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm
GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Organic Silts					
.3	SO	Gravelly Sandy Silts Gravelly Silty Sand	251 ✓	0.4-1.0			
		-Frozen					
		-brown					
			252 ✓	1.8-2.4			
			253 ✓	3.4-4.0			
	SO	Sand, some silt, trace gravel (Decomposed Granite?)	254 ✓	4.9-5.5		Very Difficult Drilling Slow	
		- dry to damp, dense, brown w/ orange tint					
		- more rock powder w/ depth (more intact w/ depth)					
		E.O.H. @ 5.6m Very Slow					
		Refusal @ 2.1m - Move West 2m (No indication/Powder)					

TEST HOLE LOG

Northing: 6776127
Easting: 634474

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30111 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 13 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sand, some silt to silty, trace to some gravel	249	0.2-0.6			
		- damp, medium dense, brown					
		- light organics to 0.3m					
	SD	Gravelly Sand, some silt to silty	250	1.5-1.8		Very Difficult Drilling @ 1.2m	
		- dry, dense, light brown/grey					
		- rock powder in sample					
		E.O.H. @ 1.8m - REFUSAL					
		REFUSAL @ 1.8m - MOVE EAST 1.5m					
		REFUSAL @ 1.8m - E.O.H.					

TEST HOLE LOG

Northing: 6771772
Easting: 634467

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30112 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG 13 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		ORGANIC SILTS					
0.3	30	SANDY SILT / SILTY SAND, trace to some gravel	246 ✓	0.5-0.8			
		- damp, medium dense, brown					
	da	GRAVELLY SAND, some silt to SILTY	247 ✓	1.8-2.4			
		- damp, medium dense, brown					
		SILTY SAND, trace gravel	248 ✓	3.0-3.4		DIFFICULT DRILLING @ 2.7m	
		- dry to damp, dense, light brown/grey					
		- rock powder in sample					
		E.O.H. @ 3.4m - REFUSAL					
		REFUSAL @ 3.4m - MOVE 1.5M NORTH					
		REFUSAL @ 3.1m - E.O.H.					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6771879
Easting: 634435

Project No: 8002-318 Test Hole No: #: 30113 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 12 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
)		Organic Silts					
.6	30	Gravelly Sandy Silt	244 ✓	.6-1.2			
		- Frozen					
		- brown					
	50	Sand, some gravel to Gravelly, trace to some silt	245 ✓	1.5-2.1		Difficult Dri	Limit @ 1.5m
		- dry to damp, dense, brown					
		E.O.H @ 2.4m - Refusal					
		Refusal @ 2.1m - Move South 2m					
		Refusal @ 2.4m - E.O.H.					
		Poor Powder on Bit (Both Attempts)					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

Northing: 6772019
Easting: 634385

Project No: 8002-318 Test Hole No: #: 30114 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 12 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Organic Silts					
.3	30	Gravelly Sand, trace to some silt	242 ✓	0.6-1.2			
		- dry to damp, medium dense, brown					
			243 ✓	1.8-2.4			
		E.O.H. @ 2.9m - Refusal					
		Refusal @ 1.8m Move 2m South					
		Refusal @ 2.9m - E.O.H.					

TEST HOLE LOG

Northing: 6772105
Easting: 634338

Project No: 8002-318 Test Hole No: #: 30115 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 12 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Gravel / Gravelly Sand, trace silt	238 ✓	.3-.9			
		- damp to moist, medium dense, light brown					
		- increase moisture w/ depth to wet @ 1.2m					
.8	SO	Silty Sand, trace gravel	239 ✓	1.8-2.4		Difficult Drilling @ 1.8m	
		- dry to damp, dense, light brown					
		- some Rock Powder in Sample					
			240 ✓	3.7-4.3			
		E.O.H @ 4.3					
		Refusal @ 3.7 - move 2m South					
		Refusal @ 4.3 - E.O.H					

TEST HOLE LOG

Northing: 6772111
Easting: 634312

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30116 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 12 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		ORGANIC SILTS					
1.3	SO	SANDY GRAVEL, some silt	234 ✓	0.6 - 1.2			
		- damp, medium dense, brown					
	SO	GRAVELLY SAND, some silt	235 ✓	2.1 - 2.7		DIFFICULT DRILLING @ 1.8m	
		- dry to damp, dense, light brown					
		- SOME ROCK POWDER IN SAMPLE					
			236 ✓	3.4 - 4.0			
		ROCK POWDER SAMPLE	237 ✓	4.6 - 5.2			
		E.O.H. @ 5.2 - REFUSAL					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

Northing: 6772256
Easting: 634222

Project No: 8002-318 Test Hole No: #: 30117 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 12 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Silt, trace gravel	232 ✓	0-0.6			
		- damp to moist, medium dense, brown					
e	SO	Organic Silts					
		- damp to moist, firm, dark brown/black					
	SG	Silty Sandy Gravel	233 ✓	1.8-2.4			
		- damp to moist, medium dense, brown					
	do	As Above	No Sample				
		- wet					
		E.O.H @ 3.7					
		Refusal 3.7 Move South 2m					
		Refusal @ 2.1 - E.O.H.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6772272
Easting: 634185

Project No: 8002-318 Test Hole No: #: 30118 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 12 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Organic Silts					
.3	SO	Silty Sand / Sandy Silt					
		- damp, medium dense, light brown					
.2	SO	Silty Sand / Sandy Silt, trace to some gravel	229 ✓	0.6 - 1.2			
		- damp, medium dense, brown					
	GO	Sandy Gravel, some silt to silty	230	1.8 - 2.4			
		- damp, dense, brown					
		Silty Sand	231 ✓	3.0 - 3.4		Very Difficult Drilling @ 2.7m	
		- very very dense, light brown					
		- Rock Powder in Sample					
		E.O.H. @ 3.7m					
		Refusal @ 3.7 move South 1.5m					
		Refusal @ 3.7 - E.O.H.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6772380
Easting: 634108

Project No: 8002-318 Test Hole No: #: 30119 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 12 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Sandy Silty Gravel	226 ✓	0.1-0.6			
		- saturated, medium dense, brown					
	SO	Organic Silts					
		- wet, soft to firm, black/dark brown					
		Gravelly Sand/Sandy Gravel, trace to some silt	227 ✓	2.1-2.7			
		- damp, medium dense, light brown					
5'	SO	Sand, trace to some silt, trace gravel (Possible Rock)	228 ✓	3.7-4.3		Difficult Drilling @ 3.0	
		- moist to wet, dense, light brown					
		- increase moisture from seepage					
		E.O.H. @ 4.6					
		Refusal @ 3.7 Move 2m North					
		Refusal @ 4.6 - E.O.H.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6772396
Easting: 634076

Project No: 8002-318 Test Hole No: #: 30128 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 12 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		ORGANIC SILTS					
.3	SO	SILTY SAND, some gravel to GRAVELLY	222 ✓	.3-.9			
		- damp, medium dense, brown					
	SO	SAND, trace to some silt (POSSIBLE ROCK)	223 ✓	2.1-2.4		VERY DIFFICULT DRILLING @ 2.1m	
		- damp, very dense, brown					
	do	AS ABOVE	224 ✓	3.7-4.3			
		- light brown (lighter w/ depth)					
		SOME ROCK POWDER IN SAMPLE	225 ✓	4.9-5.3			
		E.O.H. @ 5.3					
		REFUSAL @ 2.4m - MOVE NORTH 2m					
		E.O.H. @ 5.3m - VERY SLOW DRILLING					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
NSULTING & TESTING ENGINEERS

Northing: 6772578
Easting: 633974

Project No: 8002-318 Test Hole No: #: 30121 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG 12 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ıth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
)		ORGANIC SILTS					
3	SO	GRAVELLY SAND / SANDY GRAVEL, SOME SILT TO SILTY	219 ✓	0.6-1.2			
		- COMP, MEDIUM DENSE, BROWN					
	do	AS ABOVE	220 ✓	1.5-2.1			
		- DENSE					
	SO	POSSIBLE ROCK (ROCK POWDER SAMPLE)	221 ✓	2.7-3.0		VERY DIFFICULT DRILLING 2.7m	
		- DRY, VERY DENSE, LIGHT BROWN					
		E.O.H. @ 3.2 - REFUSAL					
		REFUSAL @ 3.0m MOVE 2m EAST					
		REFUSAL @ 3.2m - E.O.H.					

TEST HOLE LOG

Northing: 6772688
Easting: 633916

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30122 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug. 12 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		ORGANIC SILTS					
0.6	SG	SILTY GRAVELLY SOME SAND TO SANDY	215 ✓	0.6-1.2			
		- WET, MEDIUM DENSE, DARK BROWN					
	GS	SILTY SANDY GRAVEL to SANDY SILTY GRAVEL	216 ✓	1.6-2.4			
		- SATURATED, MEDIUM DENSE, DARK BROWN					
		AS ABOVE	217 ✓	3.4-4.0			
		- POOR SAMPLE RECOVERY DUE TO H_2O					
			218 ✓	4.6-5.2			
		E.O.H. @ 5.2 REFUSAL					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6772714
Easting: 633862

Project No: 8002-318 Test Hole No: #: 30123 Rev 1 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 11 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		SURFICIAL ORGANICS					
2,3	su	SAND, some silt to silty, some gravel	205 ✓	.6-1.2			
		- damp, medium dense, brown					
	da	GRAVELLY SAND, trace to some silt	206 ✓	1.8-2.4			
		- frozen, no visible ice					
		- brown					
.0	da	SAND, some gravel to GRAVELLY, trace silt	207 ✓	3.4-4.0		DIFFICULT DRILLING @ 3.0m	
		- frozen, no visible ice					
		- brown					
			208 ✓	5.2-5.8			
			209 ✓	6.4-7.0			
			210 ✓	7.9-8.5			
4	da	GRAVELLY, SANDY, some silt	211 ✓	9.4-10.1			
		wet/saturated, [illegible], brown					
			212 ✓	11.0-11.6			

TEST HOLE LOG

Northing: 6772714
Easting: 633862

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 3023 PEACE Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG-1 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
			213 ✓	13.1-13.7			
			214 ✓	14.3-14.6			
		E.O.H. @ 15.1m					
		Refusal 4.9m - move hole 1.5m					
		E.O.H. @ 15.1m - Auger x 2					

TEST HOLE LOG

Northing: 6772908
Easting: 633827

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 3012-4 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 11 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

)th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		ORGANIC SILTS					
.6	sa	SILTY SANDY GRAVEL	200 ✓	0.6-1.2			
		- moist, medium dense, brown					
	da	SANDY SILT, some gravel	201 ✓	1.8-2.4		GRAVELLY	SILTY SAND
		- FROZEN					
		- brown					
	da	SILTY SAND (DECOMPOSED BEDROCK - GRANITE)	202 ✓	3.4-4.0		DIFFICULT DRILLING @ 3.6m	
		- FROZEN					
		- brown w/ orange tint					
.9	da	SILTY SAND (BEDROCK MORE INTACT)	203 ✓	5.2-5.8			
		- dry to damp, dense, light brown w/ orange tint					
	da	SILTY SAND (ROCK MORE INTACT)	204 ✓	6.7-7.3			
		- light brown, very dense					
		E.O.H. @ 7.5m - REFUSAL					

TEST HOLE LOG

Northing: 6773058
Easting: 633772

Project No: 8002-318 Test Hole No: #: 30125 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 11 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND	SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Surficial Organics					
0.1	SG	Sandy Gravel, trace silt - dry to damp, medium dense, light brown	193 ✓	0.3-0.9			
	dg	Sandy Gravel/Gravelly Sand, some silt to Silty - damp, medium dense, brown	194 ✓	1.8-2.4			
0.4	dg	Sandy Gravel/Gravelly Sand, some silt - moist, medium dense, brown	195 ✓	3.4-4.0			
0.3	dg	Silty Sandy Gravel - moist to wet, medium dense, brown	196 ✓	4.9-5.5			
	dg	Gravelly Silty Sand - saturated, medium dense, brown	197 ✓	6.4-7.0			
	dg	Silty Sand (Possible Decomposed Bedrock) - moist, medium dense, grey	198 ✓	7.9-8.5			
			199 ✓	10.4-10.7		Very Difficult Drilling @ 9.1m	
		E.O.H. @ 10.7					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6773199
Easting: 633699

Project No: 8002-318 Test Hole No: #: 30126 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG. 10 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

GRAVEL (5mm)	SAND (0.74mm)		SILT		CLAY (.002mm)

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ıth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
^		Organic Silt					
2.4	SM	Sandy Silt, trace to some gravel	191 ✓	0.5-0.8			
		- damp to moist, medium dense, brown					
—		Silty Sand, trace to some gravel	192 ✓	1.5-1.8			
		- dry to damp, dense, light brown					
		- rock powder in sample					
		E 0.4, @ 1.8m - REFUSAL					
		REFUSAL @ 1.8m - MOVE SOUTH 2m					
		REFUSAL @ 1.8m - E 0.4					

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing: 6773331
Easting: 633618

Project No: 8002-318 Test Hole No: #: 30127 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: AUG 10 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

)th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		ORGANIC SILTS					
.3	SO	GRAVELLY SAND, some silt to SILTY	188 ✓	0.6-1.2			
		- FROZEN, no visible ice					
		- brown					
			189 ✓	2.1-2.9			
.0	da	SILTY SAND, trace gravel	190 ✓	4.0-4.6		DIFFICULT DRILLING @ 4.0m	
		- dry to damp, dense, light brown					
		- powder in sample					
		E.O.H. @ 4.6m REFUSAL					
		REFUSAL @ 4.6 - MOVE EAST 2m					
		REFUSAL @ 4.4 - E.O.H.					
		ROCK POWDER ON BIT (BOTH ATTEMPTS)					

TEST HOLE LOG

Northing: 6773445
Easting: 633550

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30128 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 10 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		ORGANIC SILTS					
0.3	SO	SAND, some gravel to GRAVELLY, some silt - dry to damp, medium dense, light brown	184 ✓	0.4-0.9			
m	SO	SAND, some silt to SILTY - moist, dense, light brown w/ occ yellowish green mx - H2O SEEPAGE AT 1.5m (APPROX.)	185 ✓ 186 ✓	2.1-2.9 3.7-4.3		DIFFICULT	DRILLING @ 1.5m
-4	do	SANDY SILT / SILTY SAND - moist, dense, light brown w/ occ yellowish green mx	187 ✓	5.2-5.8			
		E.O.H. @ 5.9					
		NOTE: STANDING WATER IN TH = 100mm BELOW SURFACE DURING DRILLING @ 4.4 TO 4.7					

TEST HOLE LOG

Northing: 6773473
Easting: 633531

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30129 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 10 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

›th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		ORGANIC SILTS					
2'	SO	SANDY SILT	181 ✓	0.6 - 1.2			
		- moist, soft to firm, brown w/ some black organic silts					
	SO	SILTY GRAVELLY SAND to SILTY SANDY GRAVEL	182 ✓	1.8 - 2.4			
		- moist to wet, medium dense, brown					
		GRAVELLY SAND, some silt	183 ✓	3.4 - 3.7		DIFFICULT DRIVING @ 3.0m	
		- damp, dense, brown					
		E.O.H. @ 4.0m - REFUSAL					
		REFUSAL @ 3.7 - MOVE SOUTH 1.5m					
		REFUSAL @ 4.0 - E.O.H					

TEST HOLE LOG

Northing: 6773537
Easting: 633472

Project No: 8002-318 Test Hole No: #: 30130 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 16 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
~		ORGANIC SILTS					
2.6	SO	SANDY GRAVELLY SILT TO GRAVELLY SANDY SILT	176 ✓	.6-1.2			
		- FROZEN					
		- brown					
		- possible seepage zone 9-13'					
			177 ✓	1.8-2.4			
-	dg	GRAVELLY SILTY SAND	178 ✗	3.7-4.3		DIFFICULT DRILLING @ 3.7	
		- damp to moist, dense, brown				SANDY SILTY GRAVEL	
4.9	dg	SILTY SAND, trace gravel	179 ✓	4.9-5.5			
		- damp, dense, brown					
		SILTY SAND	180 ✓	7.0-7.6		VERY DIFFICULT DRILLING @ 5.8m	
		- dry to damp, dense, light brown					
		- powdery sample					
		E.O.H. @ 8.2 - REFUSAL					
		REFUSAL @ 4.9 - MOVE NORTH 2m					
		REFUSAL @ 8.2 - E.O.H					
		NOTE: VISIBLE H2O IN HOLE UPON AUGER WITHDRAWAL					
		NO H2O NOTED IN ATTEMPT #2					

TEST HOLE LOG

Northing: 6773651
Easting: 633422

Project No: 8002-318 Test Hole No: #: 30131 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug. 10 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
)		Organic Silts					
3m	sa	Sandy Silt, trace gravel	173 ✗	.3 - .9		Silty Sand, trace gravel	
		- Frozen					
		- brown					
5	da	Silty Sand, some gravel to Gravelly	174 ✓	1.8 - 2.4		Difficult Drilling @ 2.4m	
		- Frozen					
		- brown					
1m	da	Silty Sand, trace gravel	175 ✓	3.4 - 3.7			
		- dry to damp, dense, light brown					
		- rock powder in sample					
		E.O.H @ 4.0m - Refusal					
		Refusal @ 4.0m - move dozer 2.5m					
		Refusal @ 4.0m - E.O.H.					
		- Rock Powder on Bit @ Refusal - (Both Attempts)					
		Visible Rock Outcropping Approx. 10m West of TH					

TEST HOLE LOG

Northing: 6773786
Easting: 633337

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30132 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 9 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		ORGANIC SILTS					
9	SO	SAND, some silt to silty, trace to some gravel	170 ✓	.9-1.2			
		- FINE					
		- BROWN					
			171 ✓	2.1-2.7			
2	SO	AS ABOVE	172 ✓	3.4-4.0			
		- UNFROZEN					
		- DAMP, MEDIUM DENSE, BROWN					
		E.O.H. @ 4.0 - REFUSAL					
		REFUSAL @ 0.9m - MOVE 5m SOUTH					
		REFUSAL @ 4.0 - E.O.H.					
		- ROCK POWDER ON BIT (3 WITH ATTEMPTS)					

TEST HOLE LOG

Northing: 6773901
Easting: 633261

Project No: 8002-318 Test Hole No: #: 30133 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG 9 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		ORGANIC SILTS					
.6	SG	Sandy GRAVEL, some silt to Silty	168 ✓	0.9-1.2		GRINDY DRILLING @ 0.9m	
		- FROZEN					
		- brown					
3	SG	Sand, some silt to Silty, trace gravel	169 ✓	1.8-2.4		DIFFICULT DRILLING @ 1.8m	
		- damp, brown dense					
		E.O.H. @ 2.7m					
		REFUSAL @ 2.7m - MOVE SOUTH 3m (ROCK POWDER ON BIT)					
		REFUSAL @ 2.6 - E.O.H. (ROCK POWDER ON BIT)					

TEST HOLE LOG

Northing: 6774008
Easting: 633158

Project No: 8002-318 Test Hole No: #: 30134 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG 9 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Surficial Organics / Silt					
9	da	Sandy Gravel, some silt to Silty - damp, medium dense, brown	166 ✓	.9-1.2		Grinding Drilling @ 0.9m	
.6	da	Silty Sand, trace gravel - dry to damp, dense, light brown - powder noted	167 ✓	1.8-2.4		Difficult Drilling @ 1.8m	
		E.O.H. @ 2.7m					
		Refusal @ 2.7m - Move West 2m					
		Refusal @ 1.5m - E.O.H.					
		Note: Some Powder on Bit (Dry Auger)					

TEST HOLE LOG

Northing: 6774137
Easting: 633067

Project No: 8002-318 Test Hole No: #: 30135 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: AUG 9 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		SURFICIAL ORGANICS/SILTS					
		- FROZEN					
9	SO	SILTY, SAND, SOME GRAVEL TO GRAVELLY	164 ✓	.9-1.5		VERY DIFFICULT DRILLING @ 0.9m	
		- FROZEN					
		- BROWN					
2	SO	SILTY SAND	165 ✓	2.1-3.0		SLOW STEADY	DRILLING
		- DAMP					
		- LIGHT BROWN					
		E.O.H. @ 3.0m - SOME ROCK FOUND ON BIT.					
		REFUSAL @ 1.5m - MOVE 2m SOUTH					
		REFUSAL @ 3.0m - E.O.H.					

TEST HOLE LOG

Northing: 6774206
Easting: 633003

Project No: 8002-318 Test Hole No: #: 30136 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug 9 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
)		Surficial Organics					
.6	SG	Sand, some gravel, some silt	162 X	.6-1.2		Difficult Drilling @ 1.5m	
		- Frozen				Gravelly Sand, some silt	
		- brown					
.5	CLG	Silty Sand, trace gravel	163 ✓	1.5-2.1		Poor Sample @ 163	
		- Frozen					
		- brown					
		E.O.H. @ 2.1m					
		Refusal @ 2.1m - move South 2m					
		Refusal @ 2.1m - E.O.H.					
		- No indication					

TEST HOLE LOG

Northing: 6775613
Easting: 632037

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30148 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 3 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

›th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Organic Silts					
9	So	Silty Sand / Sandy Silt	158 ✓	0.9-1.5			
		- frozen					
		- dark brown					
		- some organic silts					
	So	Silty Sand, trace to some gravel	159 ✓	2.1-2.7			
		- Frozen					
		- brown					
			160 ✓	3.7-4.3			
		Rock Powder Sample @ Refusal	161	4.9-5.2			
		E.O.H. @ 5.2m - Refusal					
		Refusal @ 5.2m move North 2m					
		Refusal @ 5.2m - E.O.H.					

TEST HOLE LOG

Northing: 6775666
Easting: 631983

Project No: 8002-318 Test Hole No: #: 30149 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug 3 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Organic Silts (Cleared Access)					
.9	SG	Sandy Gravel, some silt to Silty	154 ✓	0.9-1.4			
		- Frozen					
		- brown					
3	dg	Sandy Gravel / Gravelly Sand, some silt to Silty	155 ✓	2.1-2.7		Difficult Drilling @ 6'	
		- Frozen					
		- brown					
	dg	Silty Sand, trace gravel	156 ✓	4.0-4.6		Very Difficult Drilling @ 12'	
		- Frozen					
		- brown					
		Rock Powder Sample @ Refusal	157	5.3-5.5			
		E.O.H @ 5.5m - Try #2					
		Refusal @ 4.7m - Move Hoist 2m					
		Refusal @ 5.5m - E.O.H.					

HOGGAN ENGINEERING & TESTING (1980) LTD.
ONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6775739
Easting: 631923

Project No: 8002-318 Test Hole No: #: 30150 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 3 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		ORGANIC SILTS (ACCESS TRAIL)					
6	SO	SILTY SAND, trace to some gravel	147 ✓	0.9-1.2			
		- frozen					
		- brown/grey					
8	SO	SILTY SAND, trace gravel	148 ✓	1.8-2.4		DIFFICULT DRILLING @ 1.8m	
		- frozen				SILTY GRAVELLY SAND	
		- brown					
4	SO	SILTY SAND	149 ✓	3.7-4.3		VERY SLOW DRILLING @ 3.7m	
		- frozen				SAND, some silt, some gravel	
		- brown					
		ROCK POWDER SAMPLE & REVISAL	150	5.3-5.5			
		- dry to damp, light brown					
		SILTY SAND	151 ✓	6.4-7.3			
		- damp, brown/grey					
		- abt of fractured gravels ≤5mm	152 ✓	7.9-8.5		HOLE @ 2 ATTEMPT	
		@ 10.4 @ 10.7m	153 ✓	9.4-10.1			
		1 PHOTO OVERLOOKING LAKE & DRILL					

TEST HOLE LOG

Northing: 6775939
Easting: 631868

Project No: 8002-318 Test Hole No: #: 30151 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug 3 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Organic Silts (on access Trail)					
		- Frozen					
	SO	Silty Sand, possible trace gravels	144 ✓	0.9-1.2			
		- Frozen					
		- brown					
			145 ✓	1.5-2.1		Difficult Drilling @ 2.1m	
		Rock Powder Sample @ Refusal	146	3.0-3.2			
		- damp, light brown					
		E.O.H. @ 4.0					
		Refusal @ 3.2m - Move South 2m -					
		Refusal @ 4.0 - E.O.H.					
		1 Photo Overlooking Lake : Drill					

TEST HOLE LOG

Northing: 6775939
Easting: 631805

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30152 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: Aug 3 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Gravelly Sand, some silt (existing ditch)	140 ✓	0.3-0.9			
		-damp, medium dense, brown/grey					
		Silty Sand,	141 ✓	2.1-2.7			
		-damp, medium dense, brown w/ some dark organic silts					
		Silty Sand, trace gravel	142 ✓	3.4-4.0			
		-damp, medium dense, brown					
		Rock Powder Sample @ Refusal	143 ✓	4.9-5.2			
		-dry to damp, light grey					
		E.O.H @ 5.2m					

TEST HOLE LOG

Northing: 6776010
Easting: 631728

Project No: 8002-318 Test Hole No: #: 30153 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: Aug 3 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Superficial Organics (Previously Cleared)					
	SO	Sandy Silt / Silty Sand, some gravel - moist, loose, brown - organics to 0.6	135 ✓	0.60-1.2			
1.2	SO	Silty Sand, some gravel to Gravelly - Frozen - brown	136 ✓	1.5-2.4			
	SO	Silty Sand, some gravel - damp, dense, brown	137	3.4-4.0		Difficult Drilling 3.0	
	SO	Silty Sand, possible trace gravel - damp, medium dense, brown / dark grey - easier Drilling Action @ 5'	138 ✓	5.2-5.8			
		Rock Powder Sample @ Refusal - crystalline / light grey	139	7.3-7.6			
		E.O.H. @ 7.6m					
		Refusal @ 7.6m - Move 1m East					

TEST HOLE LOG

Northing: 6776060
Easting: 631698

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30154 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 31 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Surficial Organics					
3	SG	Gravelly Silty Sand	132 ✓	0.3-0.9			
		- Frozen					
		- brown/grey					
.5	SG	Sandy Silt, some gravel	133 ✓	1.5-2.4			
		- Frozen					
		- brown					
	dg	Gravelly Silty Sand	134 ✓	3.4-4.0			
		- Frozen					
		- brown					
		E.O.H. @ 5.3m - Refusal					
		Refusal @ 5.3m - Move 1 m east					
		Refusal @ 2.4m - E.O.H.					

TEST HOLE LOG

Northing: 6776117
Easting: 631693

Project No: 8002-318 Test Hole No: #: 30155 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: July 31 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION PG #1

5mm	0.74mm	.002mm
GRAVEL	SAND	SILT / CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		SUPERFICIAL ORGANICS (PREVIOUSLY CLEARED)					
1	so	ORGANIC SILTS					
		- damp, firm, dark brown					
1.3	so	SILTY SANDY GRAVEL	127 ✓	0.8-1.2m			
		- damp to moist, medium dense, brown					
1.5	sh	SAND, some silt to silty, some gravel to gravelly	128 ✓	1.5-2.0		VERY GRAVELLY TILL @ 1.5m	
		- FROZEN					
		- brown				SILTY SANDY GRAVEL	
			129 ✓	2.4-2.9			
			130 ✓	3.4-4.0			
4.6	sc	SILTY GRAVELLY SAND	131 ✓	5.2-5.8		LESS GRAVELLY	
		- FROZEN				SANDY GRAVEL, some silt.	
		- brown					
		E.O.H @ 7.0m - REFUSAL					
		Refusal @ 3.0m - move 1 m EAST					
		Refusal @ 7.0m - move 2 m EAST					

TEST HOLE LOG

Northing: 6776185
Easting: 631600

Project No: 8002-318 Test Hole No: #: 30156 PG.1 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: July 31 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Fill - Access River Pad					
.5	SO	Surficial Organics					
	SO	Silty Gravelly Sand	116	0.9-1.5		Sandy Silt, some gravel	
		- damp, loose, brown w/ dark brown organics					
		- some organic silt.					
2	GG	Sandy Gravel / Gravelly Sand, some silt to silty	117 ✓	1.5-2.4		Very Grindy Drilling	
		- damp to moist, medium dense, brown				Below 1.5m	
		- minimal recvl on flights 5-10'					
		- minimal recvl on flight 10-15'	118 ✓	3.0-4.0			
		Silty Gravelly Sand/Silty Sandy Gravel	119 ✓	4.9-5.5			
		- moist, medium dense, brown					
6	SG	Silty Sand, trace to some gravel	120 ✓	6.4-7.0			
		- damp, medium dense, brown/grey					
			121 ✓	7.9-8.5			

TEST HOLE LOG

Northing: 6776185
Easting: 631600

Project No: 8002-318 Test Hole No: #: 30156 PG.2 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: July 31 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
	da	Silty Sand, trace gravel	122 ✓	9.4-10.1			
		- clamp, medium dense, grey					
		- some gravels noted between 10.4-11.0m					
			123 ✓	10.4-11.0			
			124 ✓	11.3-11.9			
			125 ✓	12.5-13.4			
			126 ✓	13.7-14.6			
		EOH. @ 15.1m					
		REFUSAL @ 5.2m - MOVE 2m NORTH					

TEST HOLE LOG

Northing: 6776190
Easting: 631655

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30157 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 31 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Surficial Organics (Previously Cleared Access Prep)					
2.1	SG	Sandy Gravel, some silt to Silty - damp, medium dense, brown	111 ✓	0.3-0.9			
			113 ✓	1.5-2.1		Very Grindy Drilling Beyond 1.5m	
			113 ✓	2.1-2.7			
		Poor Sample # 114 - Minimal Mat'l and Fluctuations	114 ✓	3.0-4.3			
		Poor Sample #115 - Minimal Mat'l and Fluctuations	115 ✓	4.9-5.5			
		E.O.H. @ 5.8m					
		Note: Testhole Not Done In Area As Fully Was Too Significant Drilling Clearing					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6776272
Easting: 631563

Project No: 8002-318 Test Hole No: #: 30158 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 30 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm
GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ɔth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		FILL MATERIALS (POR CONSTRUCTION)					
2.8	SO	ORGANIC SILTS	106 ✓	0.9-1.2			
		- FROZEN, NO VISIBLE ICE					
		- black / dark brown					
	SO	SILTY GRAVELLY SAND	107 ✓	1.5-2.1		VERY DIFFICULT DRILLING	
		- FROZEN				1.5 TO 2.1	
		- brown				SANDY GRAVEL, SOME SILT	
	GS	GRAVELLY SANDS, SOME SILT	108 ✓	2.7-3.4			
		- FROZEN					
		- brown	109 ✓	3.7-4.3			
			110 ✓	4.6-5.2			
		REFUSAL @ 6.2 - MOVE NORTH 2m					
		REFUSAL @ 1.8 - MOVE NORTH 1m					
		REFUSAL @ 1.5 - MOVE SOUTH 6m -					
		REFUSAL @ 4.0 - E.O.H					

TEST HOLE LOG

Northing: 6776361
Easting: 631517

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30159 PGM 1 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 30 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel, trace to some silt	93 ✓	0.3-0.9			
		- dry to damp, loose, light brown					
		- organics noted to 0.6					
		- some white coin inclusions					
	da	Sandy Gravel / Gravelly Sand, trace silt	94 ✓	1.5-2.1			
		- damp, medium dense, brown					
			95 ✓	3.0-3.7			
		some gravel loss on sample, 95+ due to auger action	96 ✓	4.6-5.2			
			97 ✓	5.2-5.8			
			98 ✓	6.7-7.3			
			99 ✓	7.9-8.5			
			100 ✓	9.4-10.1			
			101 ✓	10.1-11.0			
			102 ✓	11.3-11.9			

TEST HOLE LOG

Northing: 6776361
Easting: 631517

Project No: 8002-318 Test Hole No: #: 30159 PG# 2 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: July 30 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
13	GG	Silty Sandy, Some gravel	103	12.8-13.4			
		- moist, medium dense, brown					
					Not Accurate		
7	GG	Sandy Gravel / Gravelly Sand, trace to some silt.	104	13.7-14.0		- Drilling Action	
		- damp, medium dense, brown				changed at 14.0 to a	
			105	14.3-14.9		faster advance.	
						Silt Gravel possibly	
						due to sidewall mat'l.	
		E.O.H. @ 14.9m				13.7+ may not be	
						representative due to	
						reverse action on	
						withdrawal. Last 3.0m	
						were reamed as	
						required. Caving	
						sample lost.	

TEST HOLE LOG

Northing: 6776506
Easting: 631499

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30160 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 29 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel / Gravelly Sand, trace silt	88 ✓	0.3-0.9			
		- damp, loose, brown/grey					
	da	Silty Sand, some gravel	89 ✓	1.8-2.1			
		- wet, medium dense, brown/grey					
2.4	da	Organic Silt	90 ✓	2.4-2.9			
		- moist, soft to firm, dark brown w/ black inclusions					
		- increase moisture to wet/saturated @ 10'					
	da	Gravelly Sand, trace to some silt	91 ✓	3.4-4.0			
		- saturated, medium dense, brown/grey					
			92 ✓	4.9-5.5			
		E.O.H @ 6.1m					

TEST HOLE LOG

Northing: 6776711
Easting: 631512

Project No: 8002-318 Test Hole No: #: 3016 1 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: June 29 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
)		Surficial Organics					
2	30	Sandy Gravel, trace to some silt	83 ✓	0.3-0.9			
		- damp to moist, loose, brown					
2	do	As Above	84 ✓	1.5-2.1			
		- medium dense					
			85 ✓	3.0-3.7			
2	do	Silty Sandy Gravel	86 ✓	4.0-4.3			
		- moist, medium dense, brown					
14	do	Sandy Gravel, some silt	87 ✓	4.9-5.5			
		- moist, medium dense, brown					
		E.O.H. @ 5.8					

TEST HOLE LOG

Northing: 6776914
Easting: 631538

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30162 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 29 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel, trace to some silt	77 ✓	0.3-0.6			
		- damp to moist, loose, brown					
	dg	Gravelly Silty Sand	78 ✓	1.5-2.1			
		- moist to wet, medium dense, brown					
4	so	Sandy Gravel, trace to some silt	79 ✓	2.4-2.7			
		- moist, medium dense, brown					
			80 ✓	3.0-4.6			
6	dg	Silty Sandy Gravel	81 ✓	4.6-5.2			
		- moist, medium dense, brown					
2	so	Sandy Gravel, trace to some silt	82 ✓	5.2-5.8			
		- moist, medium dense, brown					
		- possible some gravel loss on sample # 82					
		E.O.H. @ 5.8m					

TEST HOLE LOG

Northing: 6776900
Easting: 631563

Project No: 8002-318 Test Hole No: #: 30163 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: July 29 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND	SI	LT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
)		Sandy Gravel, some silt to Silty	72 ✓	0.3-0.9			
		- damp to moist, loose, brown					
		- silt seam between 0.6-0.8m					
15	SO	Gravelly Silty Sand	73 ✓	1.5-2.1			
		- moist, soft, brown					
		- some organics noted (rootlets)					
2.0	SO	Sandy Gravel, trace silt	74 ✓	2.1-2.7			
		- moist, medium dense, brown					
		- some oxidation on gravels					
			75 ✓	3.4-4.3			
	SO	Sandy Gravel, trace to some silt	76 ✓	5.2-5.6			
		- saturated, medium dense, brown					
		E.O.H. @ 5.8					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6777631
Easting: 631579

Project No: 8002-318 Test Hole No: #: 30164 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 29 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel	66 ✓	0.2-0.6			
		- damp to moist, loose, brown					
	so	Organic Silts	67 ✓	0.8-1.2			
		- moist, soft, brown					
4	so	Sandy Gravel, trace to some silt	68 ✓	1.5-2.1			
		- damp to moist, medium dense, brown					
1	da	Sandy Silt, trace gravel	69 ✓	2.4-2.7			
		- damp to moist, soft to firm, brown w/ some black organic					
		inclusions					
.0	da	Sandy Gravel, trace to some silt	70 ✓	3.4-4.0			
		- damp, medium dense, brown					
	da	Silty Sandy Gravel	71 ✓	4.6-5.5			
		- moist, medium dense, brown w/ black organics					
		- some organic silts					
		- some organic intrusions (rootlets etc.)					
		E.O.H. @ 5.9m					

TEST HOLE LOG

Northing: 6777136
Easting: 631607

Project No: 8002-318 Test Hole No: #: 30165 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: July 29 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND		SILT	CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel, trace silt (Previously Grubbed Driveway Access Pit) - damp, brown,	61 ✓	0.3-0.9			
	da	Sandy Gravel / Gravelly Sand, trace silt - dry to damp, medium dense, light brown - possibly some gravel loss on sample 62	62 ✓	1.5-2.1			
	da	Sandy Silt - damp, medium dense, brown	63 x	3.4-4.0		Silty Sand	
	da	Gravelly Silty Sand to Silty Sandy Gravel - damp, medium dense, brown	64 ✓	4.1-4.4			
16'	da	Sandy Silt, trace gravel - moist to wet, medium dense, brown - increase moisture to wet @ 5.5m	65 x	4.9-5.5		Silty Sandy Gravel	
		EOH @ 5.8m					

1045

TEST HOLE LOG

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Northing:
Easting:

Project No: 8002-318 Test Hole No: #: 30166 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: July 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Superficial Organics					
0.1	SG	Sandy Gravel, trace silt	56 ✓	0.3-0.9			
		- damp, medium dense, brown					
i	SG	Sandy Silt, trace gravel	57 ✓	1.5-1.8		Silty Sand	
		- damp, medium dense, brown					
2	SG	Sandy Gravel, some silt to Silty	58 ✓	2.1-2.7			
		- damp to moist, medium dense, brown					
3.0	SG	Silty Sandy Gravel	59 ✓	3.4-4.0			
		- moist, medium dense, brown					
		- Silty Seams Throughout					
2	SG	Sandy Gravel, some silt to Silty	60 ✓	4.9-5.5			
		- moist, medium dense, brown					
		E.O.H @ 5.5					

TEST HOLE LOG

Northing: _____
Easting: _____

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30167 Elev. _____
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location: _____
Log By: R.W. Date: July 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
~		Superficial Organics					
25	so	Silty Sand, some gravel					
		- damp, loose, brown					
		- some organics noted					
	so	Sandy Gravel, trace silt	51 ✓	0.6-1.2			
		- damp, medium dense, brown					
5	da	Sandy Silty Gravel	52 ×	1.5-2.1		Silty Gravelly Sand	
		- moist, medium dense, brown					
	da	Sandy Gravel, trace to some silt	53 ✓	2.3-2.7			
		- damp, medium dense, brown					
	da	Sandy Gravel, some silt to Silty	54 ✓	3.4-4.3			
		- damp to moist, medium dense, brown					
		- some oxidation noted					
			55 ✓	4.9-5.5			
		E.O.H. @ 5.8					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6777587
Easting: 631509

Project No: 8002-318 Test Hole No: #: 30168 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm
GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
0		Surficial Organics (Probably Gravel)					
2	so	Silty Gravelly Sand - damp, loose, brown	45 x	0.2-0.6		Silty Sand some gravel to Gravelly	
	so	Sandy Gravel, trace silt - damp, medium dense, brown	46 ✓	0.6-1.2			
	da	Silty Gravelly Sand - moist, medium dense, brown	47 ✓	1.8-2.1			
2	da	Sandy Gravel, some silt to Silty - damp, medium dense, brown	48 ✓	3.4-4.3			
			49 ✓	4.6-5.2			
5	so	Silty Gravelly Silt - moist, firm, light brown w/ some black organics - some gravel in sample from above e.o.h. @ 5.8	50 x	5.5-5.8		Sandy Silt	some gravel

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing:
Easting:

Project No: 8002-318 Test Hole No: #: 30169 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

ıth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration,TSF
3		Surficial Organics (Cleared During Access Prep)					
2.2	SG	Sandy Gravel, trace to some silt	39 ✓	0.3-0.9			
		- Frozen					
		- brown					
			40 ✓	1.5-2.1			
			41 ✓	2.1-2.7			
			42 ✓	3.4-4.0			
4.0	dg	Sandy Silt, some gravel (mixture of materials)	43 ✓	4.3-4.9			
		- Frozen					
		- brown / light brown, some black organics					
	dg	Silty Sand, some gravel	44	4.9-5.5		Sandy Gravel, some silt	
		- Frozen					
		- brown					
		E.O.H. @ 5.8m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6777845
Easting: 631413

Project No: 8002-318 Test Hole No: #: 30170 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Surficial Organics					
.2	SG	Gravelly Sand, some silt to Silty	34	0.3-0.9		Sandy Gravel	trace silt
		- frozen					
		- brown					
		- some oxidation on gravels noted					
			35	1.5-2.1			
			36	2.9-3.4			
			37	3.7-4.3			
			38	4.9-5.5			
		E.O.H. @ 5.8					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 677798
Easting: 631913

Project No: 8002-318 Test Hole No: #: 30171 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm
GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

th	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
^		Surficial Organics					
		-					
.2	SG	Silty Gravelly Sand to Gravelly Silty Sand ✓	29 ✓	0.2-0.5			
		- Frozen					
		- medium dense, brown					
			30 ✓	0.6-1.2			
-	dg	Silty Sand	31 X	1.8-2.4		Gravelly Silty Sand	
		- Frozen					
		- medium dense, brown					
		- some organic silts noted					
	dg	Sandy Silt, some gravel	32 ✓	3.0-3.7			
		- Frozen, visible ice crystals to 1cm in clusters (ice rich)					
		-					
.2	dg	Sandy Silt, trace gravel	33 ✓	4.6-5.2			
		- frozen, no visible ice					
		- brown & grey					
		- some wood pieces noted					
		E.O.H. @ 5.8m					
		* Real Mixture of Various Soils (Possible Old Slide Area)					

TEST HOLE LOG

Northing: 6778136
Easting: 631432

Project No: 8002-318 Test Hole No: #: 30172 Elev.

Client: YTG - Highways & Public Works

Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1

Location:

Log By: R.W. Date: July 28 2004

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm		0.74mm		.002mm
GRAVEL	SAND	SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Superficial Organics					
0.2	SS	Silty Gravelly Sand - moist to wet, loose, brown - organics noted throughout	23 ✓	0.3-0.9			
1.5	da	Sandy Silt - saturated, medium dense, brown	24 ×	1.5-1.8		Silty Sand	
			25 ×	2.1-2.7			
3.0	da	Silty Sand to Sand, some silt - saturated, medium dense, brown	26 ✓	3.4-4.3			
	da	Gravelly Silty Sand - saturated, dense, grey w/ blue hue	27 ✓	4.9-5.2			
5	da	Sandy Silt to Silt, some sand, - moist, firm to stiff, grey w/ blue hue	28 ✓	5.5-5.9			
		E.O.H. @ 5.9m					

TEST HOLE LOG

Northing: _____
Easting: _____

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30173 Elev. _____
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location: _____
Log By: R.W. Date: July 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

"	5mm		0.74mm		.002mm
GRAVEL & COBBLES	SAND		SILT		CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Surficial Organics					
0.2	SO	Silt	18 ✓	0.2-0.6			
		- saturated, soft, grey/brown					
		- moderate organics					
2.8	SO	Silt, some sand	19 ✓	0.8-1.2			
		- Frozen, visible ice crystals to 3mm in clusters					
		- soft, grey/brown w/ some black organic silts					
2	SO	Sandy Silt	20 x	1.8-2.4		Sandy Gravelly Silt	
		- Frozen, no visible ice					
		- medium dense, grey/brown					
	do	Sandy Silt	21 ✓	3.7-4.3			
		- Frozen					
		- medium dense, light brown					
6	do	As above	22 ✓	4.9-5.5			
		- grey/brown					
		E.O.H @ 5.9m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: _____
Easting: _____

Project No: 8002-318 Test Hole No: #: 30174 Elev. _____
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location: _____
Log By: R.W. Date: July 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm
GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		SILT, some sand	12 ✓	0-0.6			
		- damp, firm, non plastic, grey					
		- some oxidation					
		- some organics throughout					
	so	ORGANIC SILTS	13 ✓	0.6-1.2			
		- saturated, soft, black/dark brown					
	da	SILTY GRAVELLY SAND TO GRAVELLY SILTY SAND	14 ✓	1.8-2.7	Hot mud sample on augers		
		- saturated, medium dense, brown					
		- some silt in sample 14 could be from top of hole					
	da	SILTY SAND	15 ✓	3.7-4.0			
		- saturated, medium dense, grey					
	so	SILT, trace to some sand	16 ✓	4.0-4.4			
		- wet, firm, dark brown					
	da	SILT, some sand to SANDY SILT	17 ✓	4.9-5.5			
		- wet, firm, grey					
		- odd interbedded gravels to 20mm					
		- some organics noted					
		- EOH @ 5.9m					
		TESTHOLE 12m FROM DIESEL INTERCEPTOR (STANDING WATER)					

TEST HOLE LOG

Northing: 6778568
Easting: 631597

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

Project No: 8002-318 Test Hole No: #: 30175 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

pth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel, trace silt (Existing Road Shoulder)	7 ✓	0.3-0.9			
		- damp, loose, brown					
2	do	Sandy Gravel, trace to some silt	8 ✓	2.0-2.9			
		- saturated, medium dense, brown					
3.0	do	Gravelly Sand, trace to some silt.	9 ✓	3.0-3.7			
		- Frozen					
		- Some decomposed organics noted between 3.0-4.6 (wood pieces)					
			10 ✓	3.7-4.3			
			11 ✓	4.9-5.5			
		E.O.H.e 5.9m					

HOGGAN ENGINEERING & TESTING (1980) LTD.
CONSULTING & TESTING ENGINEERS

TEST HOLE LOG

Northing: 6778670
Easting: 631642

Project No: 8002-318 Test Hole No: #: 30176 Elev.
Client: YTG - Highways & Public Works
Project: Geotechnical Services Km 1691.7 to 1717.3 Alaska Highway #1
Location:
Log By: R.W. Date: July 28 2004

MINIMUM REQUIREMENTS FOR A TEST HOLE LOG CLASSIFICATION

5mm 0.74mm .002mm

GRAVEL | SAND | SILT | CLAY

MOISTURE CONTENT - dry, damp, moist, wet
DENSITY - loose, medium dense, dense
GRADATION - poorly or well graded
SIZE RANGE - coarse, medium, fine
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

MOISTURE CONTENT - dry, damp, moist, wet
CONSISTENCY - soft, firm, stiff, hard
PLASTICITY - low, medium, high
COLOR -
INTRUSIONS - oxides, coal lumps, etc.

TILL - heterogeneous mixture of gravel, sand, silt, and clay COBBLE - 3" - 8" BOULDER - 8" and larger

Depth	Line Code	Classification	Sample No.	Sample Depth	Sample Type	Standard Penetration	Pocket Penetration, TSF
		Sandy Gravel, some silt (existing Road shoulder)	1 ✓	.2 - .5'			
		- damp to moist, loose, brown					
	SO	Organic Silts (original Grade)	2 ✓	.6-1.2			
		- damp, soft, dark brown					
	SO	Gravelly Sand, trace silt	3 ✓	1.5-2.1			
		- moist to wet, medium dense, brown					
	do	Silty Sand, some gravel	4 ✓	2.4-2.9			
		- wet, medium dense, brown					
		- some sample contamination from above					
	do	Silty Gravelly Sand to Gravelly Silty Sand	5 ✓	3.7-4.3			
		- Frozen					
		- medium dense, brown					
			6 ✓	4.9-5.5			
		E.O.H @ 5.8m					

HOGGAN ENGINEERING & TESTING (1980) LTD.

MOISTURE CONTENT RESULTS

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: August 4, 2004

SAMPLE #	1	2	3	4	5	6
TEST HOLE #	30176	30176	30176	30176	30176	30176
DEPTH (metres)	0.2-0.5	0.6-1.2	1.5-2.1	2.4-2.9	3.7-4.3	4.9-5.5
MOISTURE CONTENT %	8.4	27.2	8.2	15.8	14.4	14.8
SAMPLE #	7	8	9	10	11	12
TEST HOLE #	30175	30175	30175	30175	30175	30174
DEPTH (metres)	0.3-0.9	2.0-2.9	3.0-3.7	3.7-4.3	4.9-5.5	0.0-0.6
MOISTURE CONTENT %	5.7	7.0	16.3	10.7	9.0	31.4
SAMPLE #	13	14	15	16	17	18
TEST HOLE #	30174	30174	30174	30174	30174	30173
DEPTH (metres)	0.6-1.2	1.8-2.7	3.7-4.0	4.0-4.4	4.9-5.5	0.2-0.6
MOISTURE CONTENT %	50.0	11.8	16.8	44.5	20.1	27.5
SAMPLE #	19	20	21	22	23	24
TEST HOLE #	30173	30173	30173	30173	30172	30172
DEPTH (metres)	0.8-1.2	1.8-2.4	3.7-4.3	4.9-5.5	0.3-0.9	1.5-1.8
MOISTURE CONTENT %	39.6	15.5	17.8	19.2	15.3	16.9
SAMPLE #	25	26	27	28	29	30
TEST HOLE #	30172	30172	30172	30172	30171	30171
DEPTH (metres)	2.1-2.7	3.4-4.3	4.9-5.2	5.5-5.9	0.2-0.5	0.6-1.2
MOISTURE CONTENT %	16.3	10.7	8.2	19.2	18.1	27.6
SAMPLE #	31	32	33	34	35	36
TEST HOLE #	30171	30171	30171	30170	30170	30170
DEPTH (metres)	1.8-2.4	3.0-3.7	4.6-5.2	0.3-0.9	1.5-2.1	2.9-3.4
MOISTURE CONTENT %	34.7	30.8	27.5	8.6	10.1	11.1
SAMPLE #	37	38	39	40	41	42
TEST HOLE #	30170	30170	30169	30169	30169	30169
DEPTH (metres)	3.7-4.3	4.9-5.5	0.3-0.9	1.5-2.1	2.1-2.7	3.4-4.0
MOISTURE CONTENT %	10.2	7.8	7.8	6.4	9.0	6.2
SAMPLE #	43	44	45	46	47	48
TEST HOLE #	30169	30169	30168	30168	30168	30168
DEPTH (metres)	4.3-4.9	4.9-5.5	0.2-0.6	0.6-1.2	1.8-2.1	3.4-4.3
MOISTURE CONTENT %	21.2	13.3	6.4	3.7	7.7	4.9
SAMPLE #	49	50	51	52	53	54
TEST HOLE #	30168	30168	30167	30167	30167	30167
DEPTH (metres)	4.6-5.2	5.5-5.8	0.6-1.2	1.5-2.1	2.3-2.7	3.4-4.3
MOISTURE CONTENT %	3.2	23.3	2.9	14.5	3.9	5.7
SAMPLE #	55	56	57	58	59	60
TEST HOLE #	30167	30166	30166	30166	30166	30166
DEPTH (metres)	4.9-5.5	0.3-0.9	1.5-1.8	2.1-2.7	3.4-4.0	4.9-5.5
MOISTURE CONTENT %	4.6	2.7	23.5	5.3	9.7	6.5

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak
Client: YTG - Highways & Public Works, Transportation & Engineering
Made By: MD
Job No: 8002-318
Location: KM 1691-7-1717.3
Ck'd By:
Date: August 4, 2004

SAMPLE #	61	62	63	64	65	66
TEST HOLE #	30165	30165	30165	30165	30165	30164
DEPTH (metres)	0.3-0.9	1.5-2.1	3.4-4.0	4.1-4.4	4.9-5.5	0.2-0.6
MOISTURE CONTENT %	2.5	2.0	13.3	4.9	19.9	2.7
SAMPLE #	67	68	69	70	71	72
TEST HOLE #	30164	30164	30164	30164	30164	30163
DEPTH (metres)	0.8-1.2	1.5-2.1	2.4-2.7	3.4-4.0	4.6-5.5	0.3-0.9
MOISTURE CONTENT %	42.9	3.2	19.4	3.3	9.4	5.5
SAMPLE #	73	74	75	76	77	78
TEST HOLE #	30163	30163	30163	30163	30162	30162
DEPTH (metres)	1.5-2.1	2.1-2.7	3.4-4.3	5.2-5.6	0.3-0.6	1.5-2.1
MOISTURE CONTENT %	24.0	3.7	3.9	6.8	2.5	17.5
SAMPLE #	79	80	81	82	83	84
TEST HOLE #	30162	30162	30162	30162	30161	30161
DEPTH (metres)	2.4-2.7	3.0-4.0	4.6-5.2	5.2-5.8	0.3-0.9	1.5-2.1
MOISTURE CONTENT %	4.9	3.7	10.3	3.8	4.5	4.9
SAMPLE #	85	86	87	88	89	90
TEST HOLE #	30161	30161	30161	30160	30160	30160
DEPTH (metres)	3.0-3.7	4.0-4.3	4.9-5.5	0.3-0.9	1.8-2.1	2.4-2.9
MOISTURE CONTENT %	3.7	12.1	6.1	2.8	17.1	60.7
SAMPLE #	91	92	93	94	95	96
TEST HOLE #	30160	30160	30159	30159	30159	30159
DEPTH (metres)	3.4-4.0	4.9-5.5	0.3-0.9	1.5-2.1	3.0-3.7	4.6-5.2
MOISTURE CONTENT %	10.7	10.7	1.0	1.4	1.6	4.2
SAMPLE #	97	98	99	100	101	102
TEST HOLE #	30159	30159	30159	30159	30159	30159
DEPTH (metres)	5.2-5.8	6.7-7.3	7.9-8.5	9.4-10.1	10.4	11.0
MOISTURE CONTENT %	1.5	1.6	2.0	1.7	1.7	2.0
SAMPLE #	103	104	105	106	107	108
TEST HOLE #	30159	30159	30159	30158	30158	30158
DEPTH (metres)	12.8-13.4	13.7-14.0	14.3-14.9	0.9-1.2	1.5-2.4	2.7-3.4
MOISTURE CONTENT %	6.9	2.8	2.8	92.7	11.3	8.6
SAMPLE #	109	110	111	112	113	114
TEST HOLE #	30158	30158	30157	30157	30157	30157
DEPTH (metres)	3.7-4.3	4.6-5.2	0.3-0.9	1.5-2.1	2.1-2.7	3.0-4.3
MOISTURE CONTENT %	8.2	8.2	4.1	6.0	4.8	3.8
SAMPLE #	115	116	117	118	119	120
TEST HOLE #	30157	30156	30156	30156	30156	30156
DEPTH (metres)	4.9-5.5	0.9-1.5	1.5-2.4	3.0-4.0	4.9-5.5	6.4-7.0
MOISTURE CONTENT %	5.5	23.8	7.1	6.6	6.9	6.2

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: August 4, 2004

SAMPLE #	121	122	123	124	125	126
TEST HOLE #	30156	30156	30156	30156	30156	30156
DEPTH (metres)	7.9-8.5	9.4-10.1	10.4-11.0	11.3-11.9	12.5-13.4	13.7-14.6
MOISTURE CONTENT %	5.8	5.1	4.1	4.9	6.0	5.1
SAMPLE #	127	128	129	130	131	132
TEST HOLE #	30155	30155	30155	30155	30155	30154
DEPTH (metres)	0.8-1.2	1.5-2.0	2.4-2.9	3.4-4.0	5.2-5.8	0.3-0.9
MOISTURE CONTENT %	8.5	8.3	8.2	9.0	10.0	29.9
SAMPLE #	133	134	135	136	137	138
TEST HOLE #	30154	30154	30153	30153	30153	30153
DEPTH (metres)	1.5-2.4	3.4-4.0	0.6-1.2	1.5-2.4	3.4-4.0	5.2-5.8
MOISTURE CONTENT %	19.4	13.4	11.4	12.0	6.9	10.0
SAMPLE #	139	140	141	142	143	144
TEST HOLE #	30153	30152	30152	30152	30152	30151
DEPTH (metres)	7.3-7.6	0.3-0.9	2.1-2.7	3.4-4.0	4.9-5.2	0.9-1.2
MOISTURE CONTENT %	4.7	3.1	8.7	9.0	6.0	22.2
SAMPLE #	145	146	147	148	149	150
TEST HOLE #	30151	30151	30150	30150	30150	30150
DEPTH (metres)	1.5-2.1	3.0-3.2	0.9-1.2	1.8-2.4	3.7-4.3	5.3-5.5
MOISTURE CONTENT %	10.6	6.6	15.1	2.9	13.5	6.6
SAMPLE #	151	152	153	154	155	156
TEST HOLE #	30150	30150	30150	30149	30149	30149
DEPTH (metres)	6.4-7.3	7.9-8.5	9.4-10.1	0.9-1.4	2.1-2.7	4.0-4.6
MOISTURE CONTENT %	4.5	7.1	5.3	10.2	11.6	14.7
SAMPLE #	157	158	159	160	161	162
TEST HOLE #	30149	30148	30148	30148	30148	30136
DEPTH (metres)	5.3-5.5	0.9-1.5	2.1-2.7	3.7-4.3	4.9-5.2	0.6-1.2
MOISTURE CONTENT %	5.4	24.8	10.7	16.2	5.0	11.0
SAMPLE #	163	164	165	166	167	168
TEST HOLE #	30136	30135	30135	30134	30134	30133
DEPTH (metres)	1.5-2.1	0.9-1.5	2.1-3.0	0.9-1.2	1.8-2.4	0.9-1.2
MOISTURE CONTENT %	14.2	10.0	8.6	8.0	0.9	7.3
SAMPLE #	169	170	171	172	173	174
TEST HOLE #	30133	30132	30132	30132	30131	30131
DEPTH (metres)	1.8-2.4	0.9-1.2	2.1-2.7	3.4-4.0	0.3-0.9	1.8-2.4
MOISTURE CONTENT %	7.8	9.6	9.3	6.0	30.8	7.3
SAMPLE #	175	176	177	178	179	180
TEST HOLE #	30131	30130	30130	30130	30130	30130
DEPTH (metres)	3.4-3.7	0.6-1.2	1.8-2.4	3.7-4.3	4.9-5.5	7.0-7.6
MOISTURE CONTENT %	3.1	13.3	10.3	9.1	5.0	4.3

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: August 4, 2004

SAMPLE #	181	182	183	184	185	186
TEST HOLE #	30129	30129	30129	30128	30128	30128
DEPTH (metres)	0.6-1.2	1.8-2.4	3.4-3.7	0.4-0.9	2.1-2.9	3.7-4.3
MOISTURE CONTENT %	34.0	9.2	4.9	2.3	9.3	8.6
SAMPLE #	187	188	189	190	191	192
TEST HOLE #	30128	30127	30127	30127	30126	30126
DEPTH (metres)	5.2-5.8	0.6-1.2	2.1-2.9	4.0-4.6	0.5-0.8	1.5-1.8
MOISTURE CONTENT %	10.4	15.9	12.1	3.4	12.9	4.1
SAMPLE #	193	194	195	196	197	198
TEST HOLE #	30125	30125	30125	30125	30125	30125
DEPTH (metres)	0.3-0.9	1.8-2.4	3.4-4.0	4.9-5.5	6.4-7.0	7.9-8.5
MOISTURE CONTENT %	1.5	8.0	9.8	8.3	11.0	11.2
SAMPLE #	199	200	201	202	203	204
TEST HOLE #	30125	30124	30124	30124	30124	30124
DEPTH (metres)	10.4-10.7	0.6-1.2	1.8-2.4	3.4-4.0	5.2-5.8	6.7-7.3
MOISTURE CONTENT %	12.3	9.2	16.8	14.2	4.0	2.0
SAMPLE #	205	206	207	208	209	210
TEST HOLE #	30123	30123	30123	30123	30123	30123
DEPTH (metres)	0.6-1.2	1.8-2.4	3.4-4.0	5.2-5.8	6.4-7.0	7.9-8.5
MOISTURE CONTENT %	5.8	6.1	4.5	5.2	6.8	6.9
SAMPLE #	211	212	213	214	215	216
TEST HOLE #	30123	30123	30123	30123	30122	30122
DEPTH (metres)	9.4-10.1	11.0-11.6	13.1-13.7	14.3-14.6	0.6-1.2	1.6-2.4
MOISTURE CONTENT %	9.7	9.1	9.5	9.9	15.0	8.7
SAMPLE #	217	218	219	220	221	222
TEST HOLE #	30122	30122	30121	30121	30121	30120
DEPTH (metres)	3.4-4.0	4.6-5.2	0.6-1.2	1.5-2.1	2.7-3.0	0.3-0.9
MOISTURE CONTENT %	9.3	8.0	6.6	3.6	1.6	9.6
SAMPLE #	223	224	225	226	227	228
TEST HOLE #	30120	30120	30120	30119	30119	30119
DEPTH (metres)	2.1-2.4	3.7-4.3	4.9-5.3	0.1-0.6	2.1-2.7	3.7-4.3
MOISTURE CONTENT %	6.8	5.1	2.9	16.1	3.1	11.6
SAMPLE #	229	230	231	232	233	234
TEST HOLE #	30118	30118	30118	30117	30117	30116
DEPTH (metres)	0.6-1.2	1.8-2.4	3.0-3.4	0.0-0.6	1.8-2.4	0.6-1.2
MOISTURE CONTENT %	15.5	4.8	3.2	13.8	8.7	4.3
SAMPLE #	235	236	237	238	239	240
TEST HOLE #	30116	30116	30116	30115	30115	30115
DEPTH (metres)	2.1-2.7	3.4-4.0	4.6-5.2	0.3-0.9	1.8-2.4	3.7-4.3
MOISTURE CONTENT %	2.5	2.2	1.6	3.8	3.2	6.0

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: August 4, 2004

SAMPLE #	241	242	243	244	245	246
TEST HOLE #		30114	30114	30113	30113	30112
DEPTH (metres)		0.6-1.2	1.8-2.4	0.6-1.2	1.5-2.1	0.5-0.8
MOISTURE CONTENT %		3.1	1.9	16.9	4.8	13.2
SAMPLE #	247	248	249	250	251	252
TEST HOLE #	30112	30112	30111	30111	30110	30110
DEPTH (metres)	1.8-2.4	3.0-3.4	0.2-0.6	1.5-1.8	0.4-1.0	1.8-2.4
MOISTURE CONTENT %	6.7	2.6	4.7	1.6	21.8	11.6
SAMPLE #	253	254	255	256	257	258
TEST HOLE #	30110	30110	30109	30109	30109	30108
DEPTH (metres)	3.4-4.0	4.8-5.5	0.6-1.2	1.8-2.4	3.4-4.0	0.6-1.2
MOISTURE CONTENT %	10.5	4.9	13.3	5.2	2.7	11.6
SAMPLE #	259	260	261	262	263	264
TEST HOLE #	30108	30108	30108	30105	30105	30105
DEPTH (metres)	1.5-2.1	3.0-3.7	4.9-5.5	0.9-1.2	1.8-2.4	3.4-4.0
MOISTURE CONTENT %	6.4	1.3	2.3	7.3	10.7	3.6
SAMPLE #	265	266	267	268	269	270
TEST HOLE #	30107	30106	30106	30104	30104	30104
DEPTH (metres)	0.9-1.2	0.0-0.6	0.9-1.2	0.3-0.9	1.8-2.4	3.4-3.7
MOISTURE CONTENT %	1.7	4.9	3.1	3.4	8.0	1.9
SAMPLE #	271	272	273	274	275	276
TEST HOLE #	30104	30103	30103	30103	30102	30102
DEPTH (metres)	3.7-4.3	0.6-1.2	2.1-2.9	3.7-4.3	0.6-1.2	2.4-3.0
MOISTURE CONTENT %	3.1	4.1	5.2	1.6	11.7	0.8
SAMPLE #	277	278	279	280	281	282
TEST HOLE #	30101	30101	30100	30100	30100	30100
DEPTH (metres)	0.4-1.0	1.8-2.4	0.6-1.2	1.8-2.4	3.4-4.3	4.9-5.5
MOISTURE CONTENT %	4.4	6.2	6.5	6.9	5.7	10.4
SAMPLE #	283	284	285	286	287	288
TEST HOLE #	30100	30100	30100	30099	30099	30099
DEPTH (metres)	6.4-7.3	8.2-8.8	9.4-10.1	0.3-0.9	1.8-2.4	3.0-3.7
MOISTURE CONTENT %	11.8	12.6	9.6	7.4	10.9	60.0
SAMPLE #	289	290	291	292	293	294
TEST HOLE #	30099	30098	30098	30098	30097	30097
DEPTH (metres)	4.1-4.4	0.3-0.9	1.8-2.4	3.4-4.0	0.6-1.2	1.8-2.4
MOISTURE CONTENT %	12.9	3.3	4.7	6.4	7.2	14.4
SAMPLE #	295	296	297	298	299	300
TEST HOLE #	30096	30096	30096	30096	30096	30096
DEPTH (metres)	1.0-1.3	1.8-2.4	3.7-4.3	4.9-5.5	7.0-7.6	9.1-9.8
MOISTURE CONTENT %	19.5	10.7	7.7	9.7	35.1	17.4

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: August 4, 2004

SAMPLE #	301	302	303	304	305	306
TEST HOLE #	30096	30095	30095	30095	30095	30094
DEPTH (metres)	10.4-11.0	0.3-0.9	2.1-2.4	3.4-4.0	4.9-5.5	0.8-1.3
MOISTURE CONTENT %	18.2	17.9	5.0	6.9	6.4	4.8
SAMPLE #	307	308	309	310	311	312
TEST HOLE #	30094	30094	30094	30093	30093	30093
DEPTH (metres)	1.8-2.4	3.4-4.0	5.3-5.8	0.3-0.9	1.8-2.4	3.4-4.0
MOISTURE CONTENT %	7.9	10.7	12.8	20.0	14.8	15.6
SAMPLE #	313	314	315	316	317	318
TEST HOLE #	30093	30093	30092	30092	30092	30091
DEPTH (metres)	4.9-5.5	6.7-7.0	0.4-1.0	1.8-2.4	3.7-4.3	0.5-0.9
MOISTURE CONTENT %	13.1	8.6	12.6	18.1	11.2	5.4
SAMPLE #	319	320	321	322	323	324
TEST HOLE #	30090	30090	30089	30088	30088	30088
DEPTH (metres)	0.5-1.0	1.2-1.5	0.0-0.6	0.9-1.2	1.8-2.4	3.4-4.0
MOISTURE CONTENT %	6.4	2.8	12.7	3.9	2.6	2.4
SAMPLE #	325	326	327	328	329	330
TEST HOLE #	30087	30087	30087	30087	30086	30086
DEPTH (metres)	0.6-1.2	1.8-2.4	3.4-4.0	4.9-5.5	0.6-1.2	1.8-2.4
MOISTURE CONTENT %	6.2	5.5	4.1	4.5	15.0	9.7
SAMPLE #	331	332	333	334	335	336
TEST HOLE #	30086	30086	30086	30085	30085	30085
DEPTH (metres)	3.4-4.0	4.9-5.5	6.7-7.3	0.6-1.2	1.8-2.4	3.4-4.0
MOISTURE CONTENT %	10.3	8.5	8.5	5.1	3.9	2.5
SAMPLE #	337	338	339	340	341	342
TEST HOLE #	30085	30084	30084	30084	30084	30084
DEPTH (metres)	4.9-5.5	0.6-1.2	1.8-2.4	3.4-4.0	4.9-5.5	6.7-7.0
MOISTURE CONTENT %	3.2	3.2	2.5	5.8	6.3	5.2
SAMPLE #	343	344	345	346	347	348
TEST HOLE #	30084	30083	30083	30083	30083	30082
DEPTH (metres)	7.6-8.1	0.6-1.2	1.8-2.4	3.4-4.0	4.9-5.5	0.6-1.2
MOISTURE CONTENT %	5.6	7.2	6.9	21.0	9.6	2.8
SAMPLE #	349	350	351	352	353	354
TEST HOLE #	30082	30082	30082	30000	30000	30001
DEPTH (metres)	1.8-2.4	3.4-4.0	4.9-5.5	0.3-0.9	1.8-2.4	0.6-1.2
MOISTURE CONTENT %	8.3	3.8	7.1	1.9	2.3	27.7
SAMPLE #	355	356	357	358	359	360
TEST HOLE #	30001	30002	30002	30003	30003	30003
DEPTH (metres)	1.8-2.4	0.4-0.7	2.1-2.7	0.3-0.9	1.8-2.4	3.4-4.0
MOISTURE CONTENT %	2.5	10.5	3.2	1.8	2.7	3.4

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

oject: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

cation: KM 1691-7-1717.3

Ck'd By:

Date: August 4, 2004

AMPLE #	361	362	363	364	365	366
EST HOLE #	30004	30004	30004	30005	30005	30005
EPTH (metres)	0.6-1.2	1.8-2.4	3.4-4.0	0.3-0.9	1.8-2.4	3.4-4.0
OISTURE CONTENT %	2.6	3.5	3.0	0.6	2.4	2.6
AMPLE #	367	368	369	370	371	372
EST HOLE #	30005B	30005B	30006	30006	30007	30007
EPTH (metres)	0.3-0.9	1.8-2.4	0.3-0.9	1.8-2.4	0.3-0.9	1.8-2.4
OISTURE CONTENT %	2.1	2.3	2.5	3.3	2.2	2.5
AMPLE #	373	374	375	376	377	378
EST HOLE #	30008	30008	30009	30009	30010	30010
EPTH (metres)	0.3-0.9	1.8-2.4	0.3-0.9	1.8-2.4	0.3-0.9	2.1-2.7
OISTURE CONTENT %	1.8	2.2	2.7	3.8	2.8	2.1
AMPLE #	379	380	381	382	383	384
EST HOLE #	30011	30011	30012	30012	30013	30013
EPTH (metres)	0.3-0.9	2.1-2.7	0.3-0.9	1.8-2.4	0.5-1.0	2.1-2.7
OISTURE CONTENT %	3.2	2.5	1.6	2.8	2.4	2.5
AMPLE #	385	386	387	388	389	390
EST HOLE #	30014	30014	30015	30015	30016	30016
EPTH (metres)	0.3-0.9	1.8-2.4	0.3-0.8	1.8-2.4	0.0-0.4	2.1-2.4
OISTURE CONTENT %	2.3	3.1	42.9	2.7	3.3	4.6
AMPLE #	391	392	393	394	395	396
EST HOLE #	30017	30017	30018	30018	30019	30019
EPTH (metres)	0.3-0.9	1.8-2.4	0.3-0.9	2.1-2.7	0.3-0.9	2.1-2.7
OISTURE CONTENT %	1.9	2.6	1.2	3.2	4.7	8.1
AMPLE #	397	398	399	400	401	402
EST HOLE #	30020	30020	30021	30021	30022	30022
EPTH (metres)	0.3-0.9	1.8-2.4	0.3-0.9	2.1-2.7	0.5-1.0	1.5-2.1
OISTURE CONTENT %	6.5	38.4	35.4	37.9	29.5	14.1
AMPLE #	403	404	405	406	407	408
EST HOLE #	30022	30023	30023	30024	30024	30024
EPTH (metres)	2.6-2.9	0.3-0.9	1.2-1.8	0.3-0.9	1.5-2.1	2.1-2.7
OISTURE CONTENT %	40.3	28.6	34.7	37.1	13.3	28.3
AMPLE #	409	410	411	412	413	414
EST HOLE #	30025	30025	30026	30026	30027	30027
EPTH (metres)	0.3-0.9	1.8-2.4	0.3-0.9	2.1-2.7	0.1-0.6	1.8-2.4
OISTURE CONTENT %	2.4	26.2	2.3	4.0	9.3	39.1
AMPLE #	415	416	417	418	419	420
EST HOLE #	30028	30028	30029	30029	30030	30030
EPTH (metres)	0.3-0.9	2.4-3.0	0.3-0.9	2.4-2.9	0.3-0.9	1.8-2.4
OISTURE CONTENT %	9.4	17.9	3.7	3.4	3.8	7.8

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: August 4, 2004

SAMPLE #	421	422	423	424	425	426
TEST HOLE #	30031	30031	30031	30032	30032	30033
DEPTH (metres)	0.3-0.9	1.2-1.5	2.4-2.9	0.3-0.9	2.4-3.0	0.3-0.9
MOISTURE CONTENT %	4.0	25.1	5.2	1.6	23.0	2.5
SAMPLE #	427	428	429	430	431	432
TEST HOLE #	30033	30033	30034	30034	30035	30035
DEPTH (metres)	1.5-2.1	2.1-2.7	0.3-0.9	1.8-2.4	0.3-0.9	2.1-2.7
MOISTURE CONTENT %	22.5	9.2	2.3	8.1	2.2	2.8
SAMPLE #	433	434	435	436	437	438
TEST HOLE #	30036	30036	30037	30037	30037	30038
DEPTH (metres)	0.3-0.9	2.1-2.7	0.3-0.9	2.1-2.7	3.4-4.0	0.3-0.9
MOISTURE CONTENT %	1.6	6.6	26.1	8.8	8.9	6.3
SAMPLE #	439	440	441	442	443	444
TEST HOLE #	30038	30038	30039	30039	30040	30040
DEPTH (metres)	1.8-2.4	3.2-3.6	0.3-0.9	1.8-2.4	0.0-0.6	0.6-1.2
MOISTURE CONTENT %	4.8	8.4	9.0	6.9	8.4	22.8
SAMPLE #	445	446	447	448	449	450
TEST HOLE #	30040	30040	30041	30042	30042	30042
DEPTH (metres)	1.8-2.4	3.0-3.6	1.4	1.4	2.9	4.4
MOISTURE CONTENT %	25.5	90.9	7.5	7.1	22.1	21.3
SAMPLE #	451	452	453	454	455	456
TEST HOLE #	30042	30042	30042	30043	30043	30043
DEPTH (metres)	5.9	7.5	9	1.4	2.9	4.4
MOISTURE CONTENT %	12.5	12.1	9.4	6.1	19.0	23.1
SAMPLE #	457	458	459	460	461	462
TEST HOLE #	30043	30043	30043	30043	30044	30044
DEPTH (metres)	5.9	7.5	9	10.5	0.3-0.9	1.5-2.1
MOISTURE CONTENT %	25.0	21.0	31.6	36.1	17.9	10.0
SAMPLE #	463	464	465	466	467	468
TEST HOLE #	30044	30044	30045	30045	30045	30046
DEPTH (metres)	2.4-2.9	4.1-4.4	0.3-0.9	2.1-2.7	4.0-4.4	1.4
MOISTURE CONTENT %	20.2	13.9	10.1	14.4	15.4	8.5
SAMPLE #	469	470	471	472	473	474
TEST HOLE #	30046	30046	30046	30047	30047	30047
DEPTH (metres)	2.9	4.4	5.9	0.3-0.9	2.1-2.7	3.7-4.3
MOISTURE CONTENT %	17.0	16.6	17.0	7.1	9.7	18.3
SAMPLE #	475	476	477	478	479	480
TEST HOLE #	30049	30049	30049	30049	30050	30050
DEPTH (metres)	0.6-1.2	1.8-2.4	2.6-2.9	4.0-4.4	0.6-1.2	2.1-2.9
MOISTURE CONTENT %	28.1	20.6	30.8	18.8	29.1	23.3

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: August 4, 2004

SAMPLE #	481	482	483	484	485	486
TEST HOLE #	30050	30050	30051	30051	30051	30051
DEPTH (metres)	3.2-3.6	4.0-4.4	1.4	2.9	4.4	5.9
MOISTURE CONTENT %	20.2	28.8	22.5	19.3	23.4	27.5
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: September 7, 2004

SAMPLE #	487	488	489	490	491	492
TEST HOLE #	30052	30053	30053	30054	30054	30054
DEPTH (metres)	1.4	1.4	2.9	1.4	0.2-0.8	1.8-2.4
MOISTURE CONTENT %	24.5	21.6	19.2	20.6	24.8	22.4
SAMPLE #	493	494	495	496	497	498
TEST HOLE #	30054	30054	30054	30054	30054	30055
DEPTH (metres)	3.7-4.3	4.8-5.5	6.7-7.1	7.9-8.5	9.5-10.0	0.3-0.9
MOISTURE CONTENT %	21.4	23.9	18.1	20.8	19.5	23.9
SAMPLE #	499	500	501	502	503	504
TEST HOLE #	30055	30055	30055	30055	30055	30055
DEPTH (metres)	2.1-2.7	3.7-4.3	4.9-5.5	6.7-7.3	7.9-8.5	10.0-10.5
MOISTURE CONTENT %	30.4	22	23.3	19.2	22.6	19.6
SAMPLE #	505					
TEST HOLE #	30055					
DEPTH (metres)	11.3-11.7					
MOISTURE CONTENT %	20.2					
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: September 7, 2004

SAMPLE #	506	507	508	509	510	511
TEST HOLE #	30055	30055	30057	30057	30057	30057
DEPTH (metres)	12.8-13.4	14.0-14.6	0.3-0.9	2.1-2.7	3.7-4.3	5.2-5.8
MOISTURE CONTENT %	18.9	19.2	24.2	21.8	23.5	25.2
SAMPLE #	512	513	514	515	516	517
TEST HOLE #	30057	30057	30057	30057	30057	30057
DEPTH (metres)	6.7-7.3	7.9-8.5	9.7-10.4	11.0-11.6	12.8-13.4	14.0-14.6
MOISTURE CONTENT %	27.4	24.9	22.7	19.4	19.6	20.9
SAMPLE #	518	519	520	521	522	523
TEST HOLE #	30057	30057	30057	30057	30057	30057
DEPTH (metres)	15.9-16.5	17.1-17.7	18.9-19.5	20.0-20.7	21.9-22.6	23.2-23.8
MOISTURE CONTENT %	20.7	15.9	16.8	18.7	24.3	25.1
SAMPLE #	524	525	526	527	528	529
TEST HOLE #	30057	30057	30057	30057	30056	30056
DEPTH (metres)	25.0-25.6	26.2-26.8	28.0-28.7	29.3-29.9	0.3-0.9	2.1-2.7
MOISTURE CONTENT %	25.7	24	24.1	21.9	13.2	21.6
SAMPLE #	530	531	532	533	534	535
TEST HOLE #	30056	30056	30056	30056	30056	30056
DEPTH (metres)	3.7-4.3	4.9-5.5	6.7-7.3	7.9-8.5	9.8-10.4	11.0-11.6
MOISTURE CONTENT %	23.6	20.4	23.0	17.1	20.2	25.8
SAMPLE #	536	537	538	539	540	541
TEST HOLE #	30056	30056	30058	30058	30058	30058
DEPTH (metres)	12.8-13.4	14.0-14.6	0.3-0.9	1.6-2.1	3.7-4.3	5.2-5.8
MOISTURE CONTENT %	18.1	21.5	29.7	19.4	25	28.7
SAMPLE #	542	543	544	545	546	547
TEST HOLE #	30058	30058	30058	30058	30058	30058
DEPTH (metres)	6.7-7.3	7.9-8.5	9.8-10.4	11.0-11.6	12.8-13.4	14.0-14.6
MOISTURE CONTENT %	21.8	19.7	23.3	20.9	19.9	25
SAMPLE #	548	549	550	551	552	553
TEST HOLE #	30058	30058	30058	30058	30058	30058
DEPTH (metres)	15.9-16.5	17.4-18.0	18.9-19.5	20.0-20.7	23.8-24.1	25.0-25.6
MOISTURE CONTENT %	17.1	18.2	18.8	20.1	27.2	26.9
SAMPLE #	554	555	556	557	558	559
TEST HOLE #	30058	30058	30058	30059	30059	30059
DEPTH (metres)	26.2-26.8	28.0-28.7	29.3-29.9	0.3-0.9	1.5-2.1	3.4-4.0
MOISTURE CONTENT %	26.8	26.8	25.1	11.5	21.1	18.9
SAMPLE #	560	561	562	563	564	565
TEST HOLE #	30059	30059	30059	30059	30059	30059
DEPTH (metres)	4.9-5.5	7.6-8.8	9.8-10.4	11.0-11.6	12.8-13.4	14.0-14.6
MOISTURE CONTENT %	24.2	24.8	21.8	28	17.9	19.5

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: September 7, 2004

SAMPLE #	566	567	568	569	570	571
TEST HOLE #	30059	30059	30059	30059	30059	30059
DEPTH (metres)	15.9-16.5	17.1-17.7	18.9-19.5	20.1-20.7	21.9-22.6	23.2-23.9
MOISTURE CONTENT %	21.5	21.6	25.5	19.9	20.2	29.8
SAMPLE #	572	573	574	575	576	577
TEST HOLE #	30059	30059	30059	30059	30061	30061
DEPTH (metres)	25.0-25.6	26.2-26.9	28.0-28.7	29.3-29.9	0.3-0.6	0.6-1.2
MOISTURE CONTENT %	24.9	25.5	25.3	27.7	6.2	20.2
SAMPLE #	578	579	580	581	582	583
TEST HOLE #	30061	30061	30061	30061	30061	30061
DEPTH (metres)	2.4-2.9	3.7-4.3	4.9-5.5	6.7-7.3	7.9-8.5	9.5-10.1
MOISTURE CONTENT %	18.6	20.2	23.1	18	19.4	18.6
SAMPLE #	584	585	586	587	588	589
TEST HOLE #	30061	30061	30061	30061	30061	30061
DEPTH (metres)	11.0-11.6	12.8-13.4	14.0-14.6	15.6-16.5	17.1-17.7	18.9-19.5
MOISTURE CONTENT %	27	19.8	17.4	18.4	19.3	18.7
SAMPLE #	590	591	592	593	594	595
TEST HOLE #	30061	30061	30061	30061	30061	30061
DEPTH (metres)	20.1-20.7	21.9-22.6	23.2-23.8	25.0-25.6	26.2-26.8	28.0-28.7
MOISTURE CONTENT %	26.3	22.2	19.4	26.8	24.6	20
SAMPLE #	596	597	598	599	600	601
TEST HOLE #	30061	30062	30062	30062	30062	30062
DEPTH (metres)	29.3-29.9	0.3-0.6	1.6-2.1	3.7-4.3	4.9-5.3	6.7-7.3
MOISTURE CONTENT %	24.6	18	22.4	20.8	21.4	28
SAMPLE #	602	603	604	605	606	607
TEST HOLE #	30062	30062	30062	30062	30062	30063
DEPTH (metres)	7.6-8.2	9.8-10.4	11.0-11.6	12.8-13.4	14.0-14.6	0.6-1.2
MOISTURE CONTENT %	20.9	19.9	25	20.9	17.3	22.3
SAMPLE #	608	609	610	611	612	613
TEST HOLE #	30063	30063	30063	30063	30063	30063
DEPTH (metres)	1.8-2.4	3.7-4.3	4.9-5.5	6.7-7.3	7.9-8.5	9.8-10.4
MOISTURE CONTENT %	21.6	23.8	26.1	22.7	19.6	26.3
SAMPLE #	614	615	616	617	618	619
TEST HOLE #	30063	30063	30063	30064	30064	30064
DEPTH (metres)	11.0-11.6	12.8-13.4	14.0-14.6	0.6-1.2	2.1-2.7	4.0-4.4
MOISTURE CONTENT %	19.5	19.4	25.9	26.4	23.3	21.6
SAMPLE #	620	621	622	623	624	625
TEST HOLE #	30064	30064	30064	30064	30065	30065
DEPTH (metres)	4.9-5.5	6.7-7.3	7.9-8.5	9.8-10.4	0.6-1.2	1.8-2.4
MOISTURE CONTENT %	22.7	20.9	20.3	20.9	26.7	12

J.R. Paine & Associates Ltd.

CONSULTING AND TESTING ENGINEERS

MOISTURE ANALYSIS

Project: Geotechnical Services-Shakwak

Client: YTG - Highways & Public Works, Transportation & Engineering

Made By: MD

Job No: 8002-318

Location: KM 1691-7-1717.3

Ck'd By:

Date: September 7, 2004

SAMPLE #	626	627	628	629	630	631
TEST HOLE #	30065	30065	30065	30065	30065	30066
DEPTH (metres)	3.7-4.3	4.9-5.5	6.7-7.3	7.9-8.5	9.8-10.4	0.6-1.2
MOISTURE CONTENT %	22.5	22	25.4	19.2	24.4	25.9
SAMPLE #	632	633	634	635	636	637
TEST HOLE #	30066	30066	30066	30066	30066	30066
DEPTH (metres)	1.5-2.1	3.7-4.3	4.6-5.2	6.7-7.3	7.9-8.5	9.8-10.4
MOISTURE CONTENT %	28.4	23.8	26.2	19.7	29.3	23.9
SAMPLE #	638	639	640	641	642	643
TEST HOLE #	30067	30067	30067	30067	30068	30068
DEPTH (metres)	0.6-1.2	2.4-2.9	3.7-4.3	4.9-5.5	0.6-1.2	2.4-3.0
MOISTURE CONTENT %	23.1	20.4	19.1	20.8	28.4	21.4
SAMPLE #	644	645	646	647	648	649
TEST HOLE #	30068	30068	30069	30069	30069	30069
DEPTH (metres)	3.4-4.0	5.0-5.5	0.4-1.2	1.8-2.4	3.7-4.3	4.9-5.5
MOISTURE CONTENT %	20.5	21.5	19.9	27.6	23.1	22.9
SAMPLE #	650	651	652	653		
TEST HOLE #	30070	30070	30070	30070		
DEPTH (metres)	0.6-1.2	2.1-2.7	3.7-4.3	4.9-5.5		
MOISTURE CONTENT %	22.8	9.2	11.7	10.4		
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						
SAMPLE #						
TEST HOLE #						
DEPTH (metres)						
MOISTURE CONTENT %						

LABORATORY SAMPLE PHOTOS


001


002


003


004


005


006


007


008


009


010


011


012


013


014


015


016


017


018


019


020


021


022


023


024


025


026


027


028


029


030


031


032


033


034


035



036



037



038


039


040



041


042


043


044



045


046


047


048


049



050



051



052


053


054


055


056



057


058


059


060



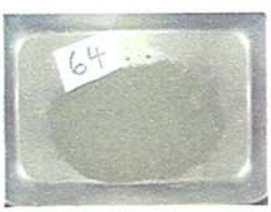
061



062



063



064



065



066



067



068



069



070



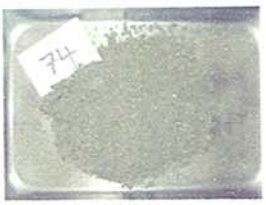
071



072



073



074



075



076



077



078



079



080



081



082



083



084



085



086



087



088



089



090



091



092



093



094



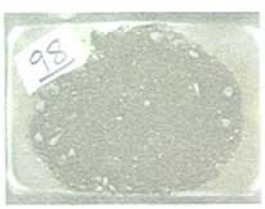
095



096



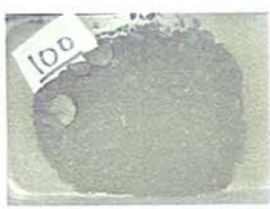
097



098



099



100



101



102



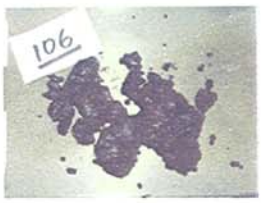
103



104



105



106



107



108



109



110



111



112



113



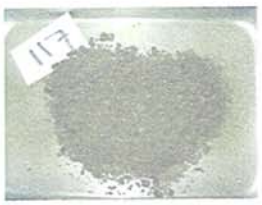
114



115



116



117



118



119



120



121



122



123



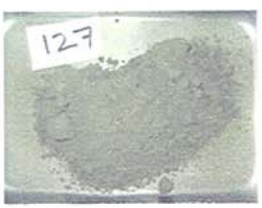
124



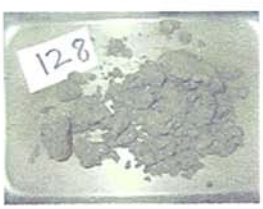
125



126



127



128



129



130



131



132



133



134



135



136



137



138



139



140



141



142



143



144



145



146



147



148



149



150



151



152



153



154



155



156



157



158



159



160



161



162



163



164



165



166



167



168



169



170



171



172



173



174



175


176


177


178


179


180


181


182


183


184


185


186


187


188


189


190


191


192


193


194


195


196


197


198


199


200


201


202


203


204


205


206


207


208


209


210



211



212



213



215



216



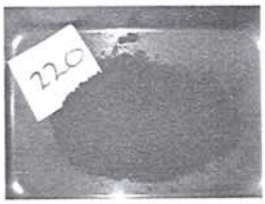
217



218



219



220



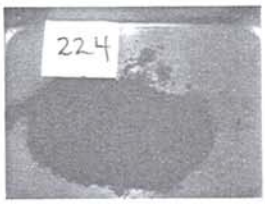
221



222



223



224



225



226



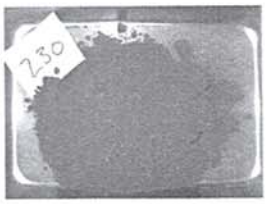
227



228



229



230



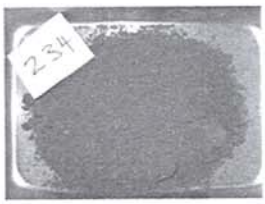
231



232



233



234



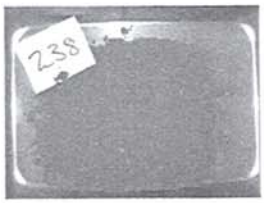
235



236



237



238



239



240



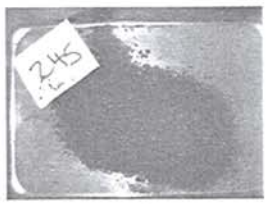
242



243



244



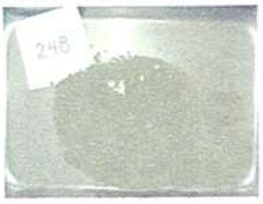
245



246



247


248


249


250


251


252


253


254


256


257

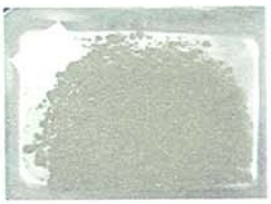

258


259


260


261


262


263


264

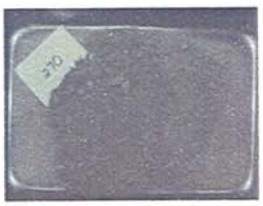

265

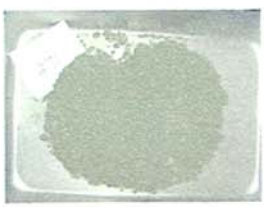

266


267


268


269


270


271


272


273


274


275


276


277


278


279


280


282


283



284



285


286



287


288


289


290


291


292

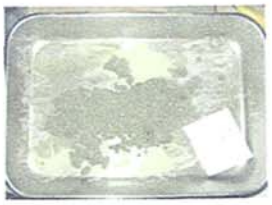

293


294


295


296


297


298


299


300


301


302


303


304


305


306


307


308

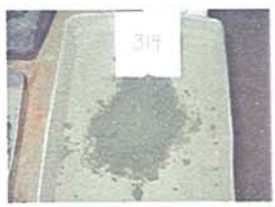

309


310


311


312


313


314


315


316


317


318


319



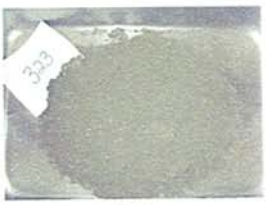
320



321



322



323



324



325



326



327



328



329



330



331



332



333



334



335



336



337



338



339



340



341



342



343



344



345



346



347



348



349



350



351



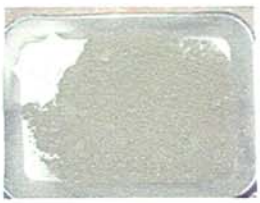
352



353



355


356


357


358

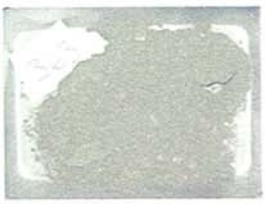

359



360


361


362


363


364


365


366


367


368


369


370


371


372


373


374


375


377


378


379


380


381


382


385


386


387


388


389


390


391


392


393



396


397



398



399



400


401


402


403


421


422


423



424


425


426


427


428


429


430


431


432


433


434


435



436



437



438



439

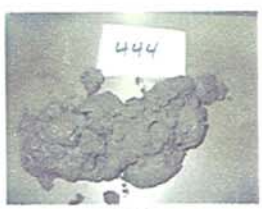


440


441


442


443



444



445



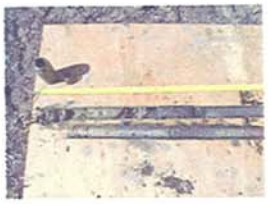
446


448


449


450

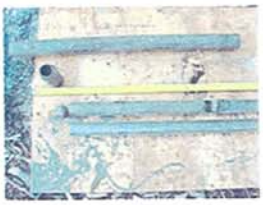

451

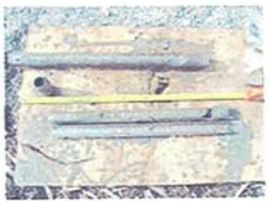

452


453


454


455


456


458


459


460


461


462


463


464

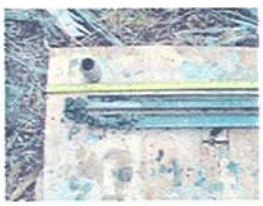

465


466


467


468


469


470


471


472


473


474


475


476


477


478


479


480


481


482


483


484


485


486


487


488


489


490


491


492


493


494


495


496


497


498


499


500


501


502


503


504


505


506


507


508


509


510


511


512


513


514


515


516


517


518


519


520


521


522


523


524


525


526


527


528


529


530


531


532


533


534


535


536


537


538


539


540


541


542


543


544


545


546


547


548


549


550


551


552


553


554



555



556



557



558



559



560



561



562



563



564



565



566



567



568



569



570



571



572



573



574



575



576



577



578



579



580



581



582



583



584



585



586



587



588



589



590



591



592



593



594



595



596



597



598



599



600



601



602



603



604



605



606



607



608



609



610



611



612



613



614



615



616



617



618



619



620



621



622



623



624



625



626



627



628



629


630


631



632



633


634


635


636


637



638


639


640


641



642


643


644


645


646


647


648


649


650



651



652



653

HOGGAN ENGINEERING & TESTING (1980) LTD.

GRAIN SIZE ANALYSES RESULTS

HOGGAN ENGINEERING & TESTING (1980) LTD.

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

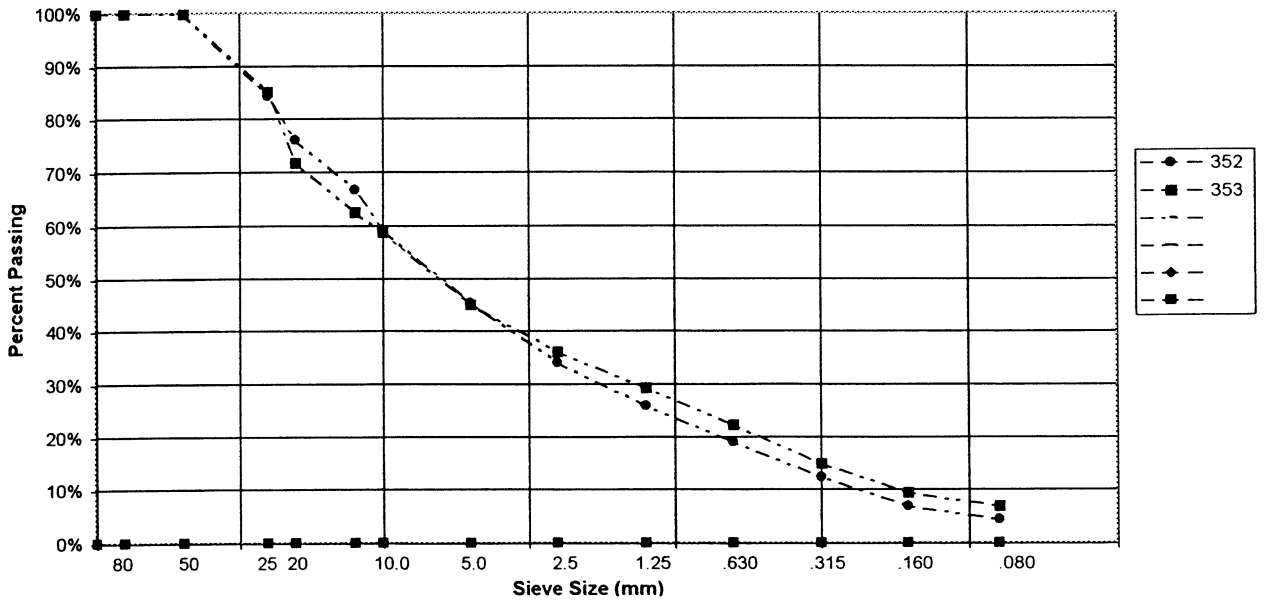
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 644064-6767988
LOGGED BY: RW

HOLE No.: 30000

DATE COMP: 08/16/2004

FIELD NO:	352	353				
LAB NO:	352	353				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	84%	85%				
20.0	76%	72%				
12.5	67%	63%				
10.0	59%	59%				
5.0	45%	45%				
2.5	34%	36%				
1.25	26%	29%				
0.630	19%	22%				
0.315	12%	15%				
0.160	7%	10%				
0.080	4%	7%				
M.C.(%):	2%	2%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	55	55				
% SAND:	41	38				
% FINES:	4	7				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

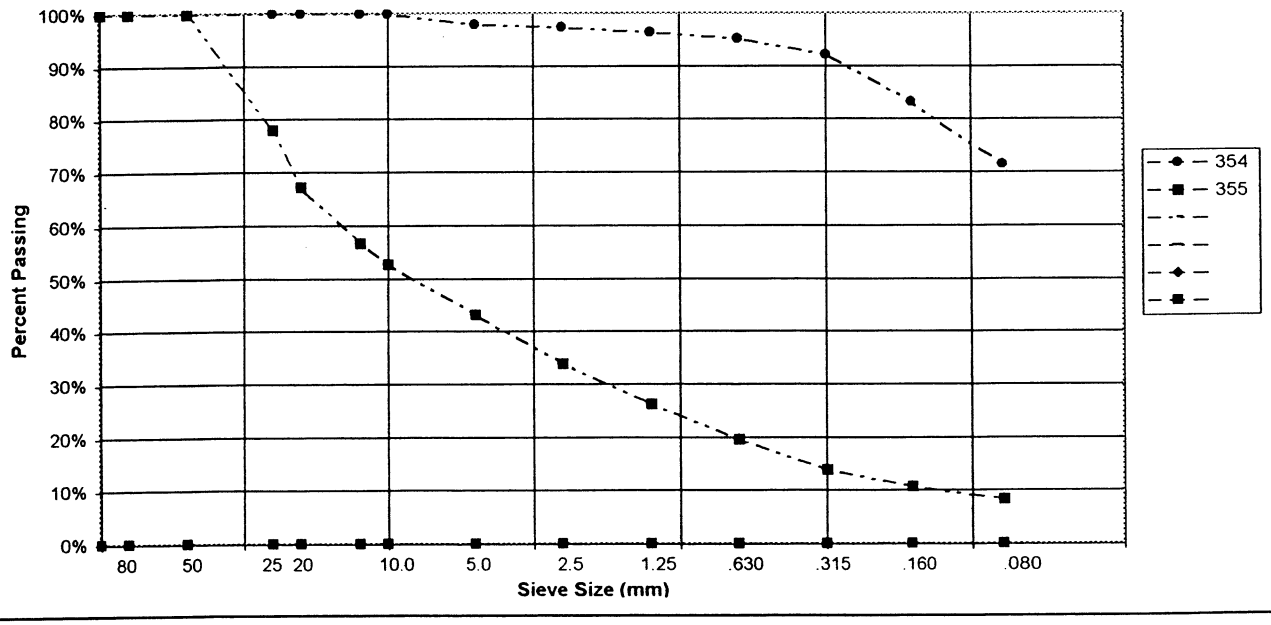
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 643863-6768004
LOGGED BY: RW

HOLE No.: 30001

DATE COMP: 08/16/2004

FIELD NO:	354	355				
LAB NO:	354	355				
DEPTH:	0.6-1.2	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	78%				
20.0	100%	67%				
12.5	100%	57%				
10.0	100%	53%				
5.0	98%	43%				
2.5	97%	34%				
1.25	97%	26%				
0.630	95%	20%				
0.315	92%	14%				
0.160	83%	11%				
0.080	72%	8%				
M.C.(%):	28%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	2	57				
% SAND:	26	35				
% FINES:	72	8				
CLASSIFICATION	SILT WITH SAND (ML)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)				

Grain Size Analysis (Percent Passing vs Grain Size)



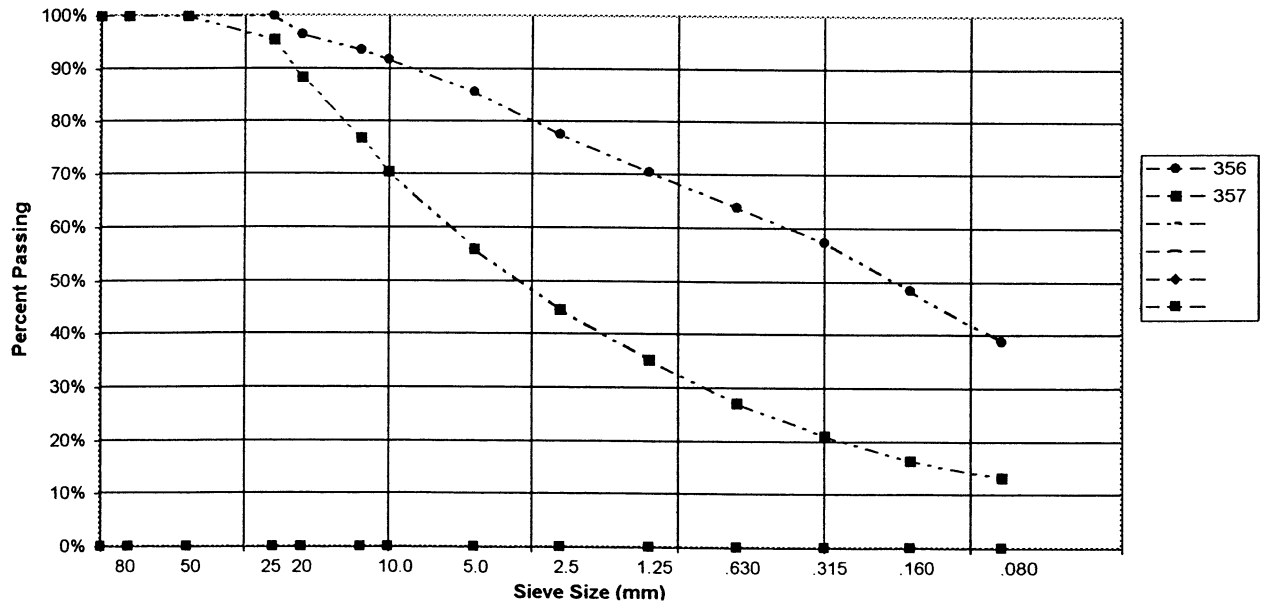
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.: 30002
CLIENT:	YTG, Transportation & Engineering	
PROJECT NAME:	Geotechnical Services	
PROJECT LOCATION:	Km 1691.7-1717.3	
DRILL UNIT:	CME75	
HOLE LOCATION:	643667-6768001	
LOGGED BY:	RW	DATE COMP: 08/16/2004

FIELD NO:	356	357				
LAB NO:	356	357				
DEPTH:	0.4-0.7	2.1-2.7				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	96%				
20.0	97%	88%				
12.5	94%	77%				
10.0	92%	70%				
5.0	86%	56%				
2.5	78%	45%				
1.25	71%	35%				
0.630	64%	27%				
0.315	57%	21%				
0.160	49%	16%				
0.080	39%	13%				
M.C.(%):	11%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	14	44				
% SAND:	47	43				
% FINES:	39	13				
CLASSIFICATION	SILTY SAND (SM)	SILTY GRAVEL WITH SAND (GM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

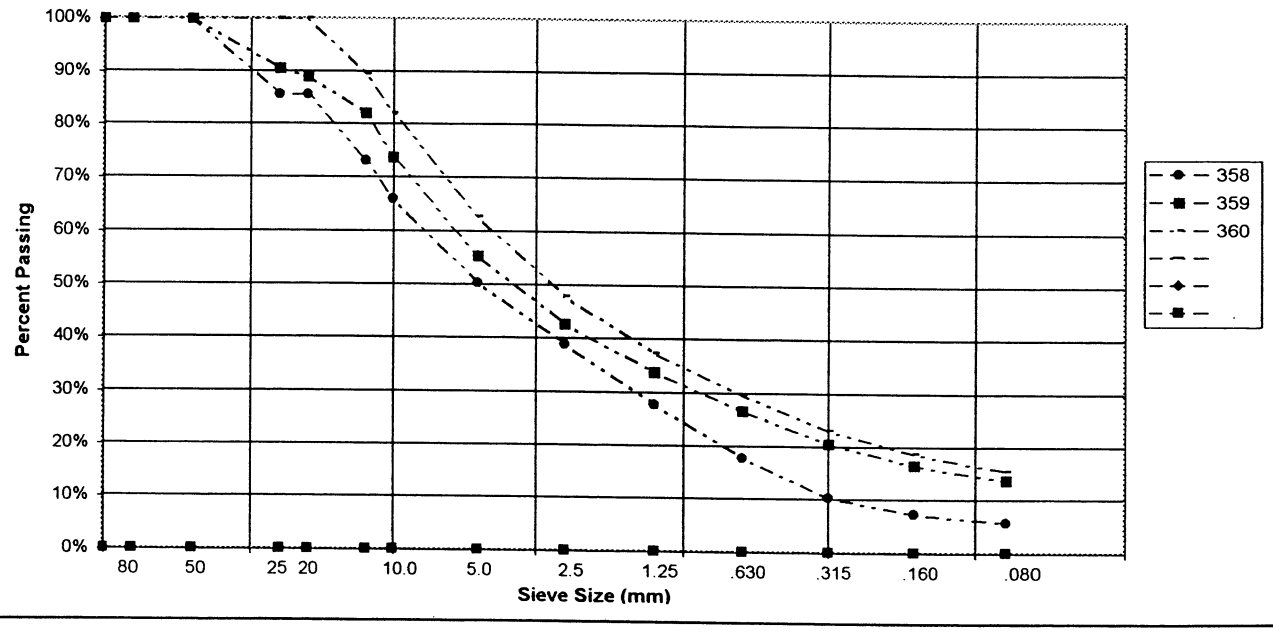
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 643448-6767987
LOGGED BY: RW

HOLE No.: 30003

DATE COMP: 08/16/2004

FIELD NO:	358	359	360			
LAB NO:	358	359	360			
DEPTH:	0.3-0.9	1.8-2.4	3.4-4.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	86%	91%	100%			
20.0	86%	89%	100%			
12.5	73%	82%	89%			
10.0	66%	74%	82%			
5.0	50%	55%	63%			
2.5	39%	43%	48%			
1.25	28%	34%	37%			
0.630	18%	27%	30%			
0.315	10%	21%	23%			
0.160	7%	17%	19%			
0.080	6%	14%	15%			
M.C.(%):	2%	3%	3%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	50	45	37			
% SAND:	44	42	47			
% FINES:	6	14	15			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)

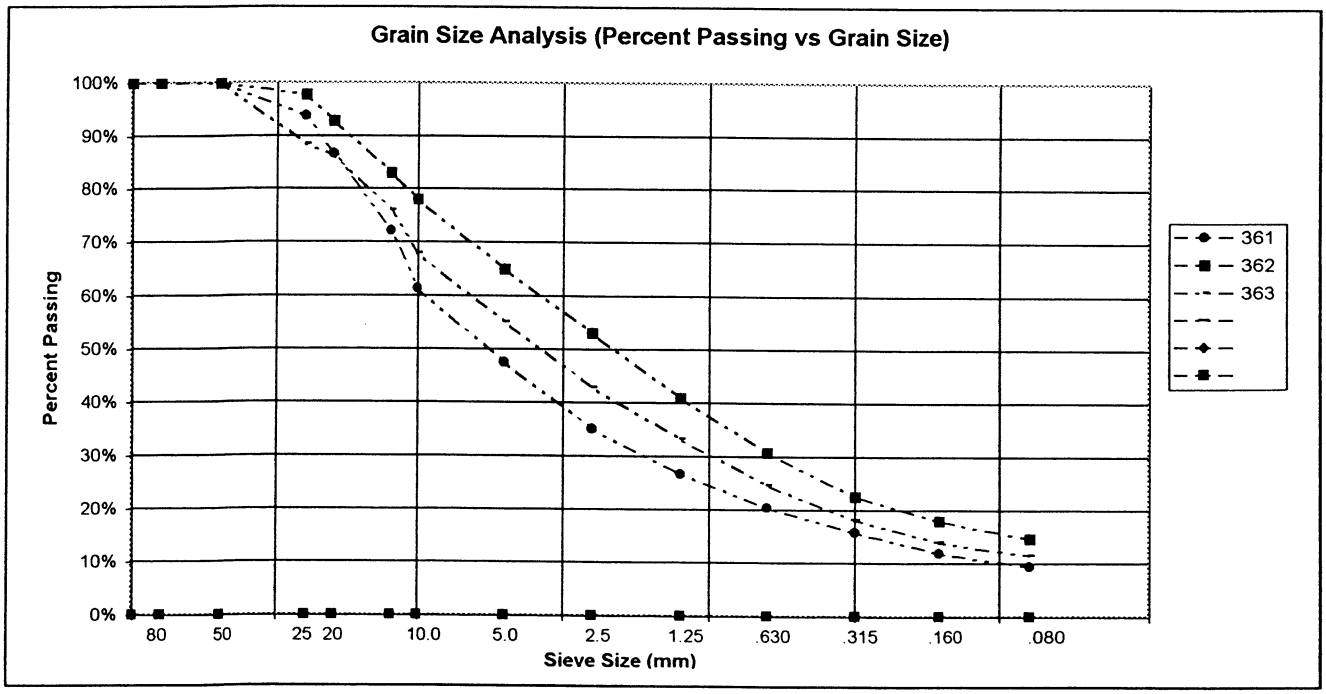


HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.: 30004
CLIENT:	YTG, Transportation & Engineering	
PROJECT NAME:	Geotechnical Services	
PROJECT LOCATION:	Km 1691.7-1717.3	
DRILL UNIT:	CME75	
HOLE LOCATION:	643430-6768053	
LOGGED BY:	RW	DATE COMP: 08/16/2004

FIELD NO:	361	362	363			
LAB NO:	361	362	363			
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	94%	98%	88%			
20.0	87%	93%	86%			
12.5	72%	83%	76%			
10.0	61%	78%	68%			
5.0	47%	65%	55%			
2.5	35%	53%	43%			
1.25	27%	41%	33%			
0.630	20%	31%	25%			
0.315	16%	23%	18%			
0.160	12%	18%	14%			
0.080	10%	15%	12%			
M.C.(%):	3%	4%	3%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	53	35	45			
% SAND:	38	50	44			
% FINES:	10	15	12			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY SAND WITH GRAVEL (SM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

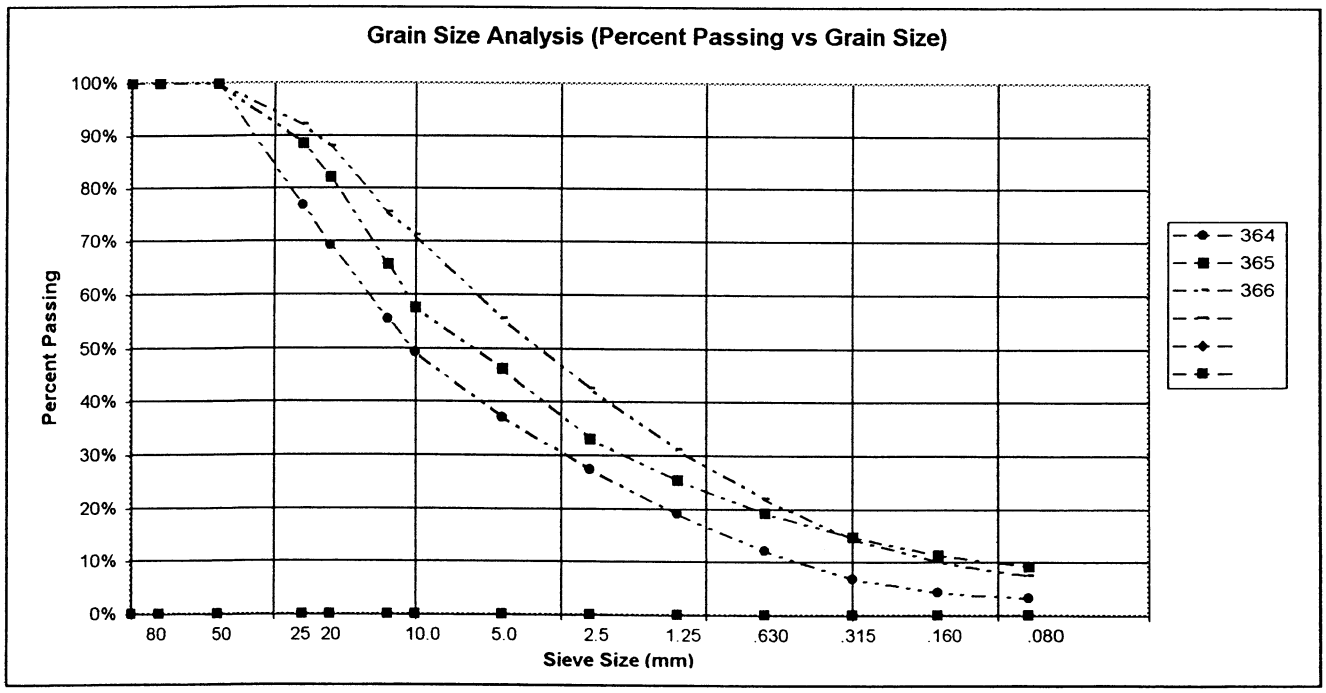


HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318		HOLE No.: 30005
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	643267-6768019		
LOGGED BY:	RW		DATE COMP: 08/18/2004

FIELD NO:	364	365	366			
LAB NO:	364	365	366			
DEPTH:	0.3-0.9	1.8-2.4	3.4-4.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	77%	89%	92%			
20.0	69%	82%	88%			
12.5	55%	66%	76%			
10.0	49%	58%	71%			
5.0	37%	46%	56%			
2.5	27%	33%	43%			
1.25	19%	26%	31%			
0.630	12%	19%	22%			
0.315	7%	15%	15%			
0.160	4%	11%	10%			
0.080	3%	9%	8%			
M.C.(%):	1%	2%	3%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	63	54	44			
% SAND:	34	37	48			
% FINES:	3	9	8			
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)			

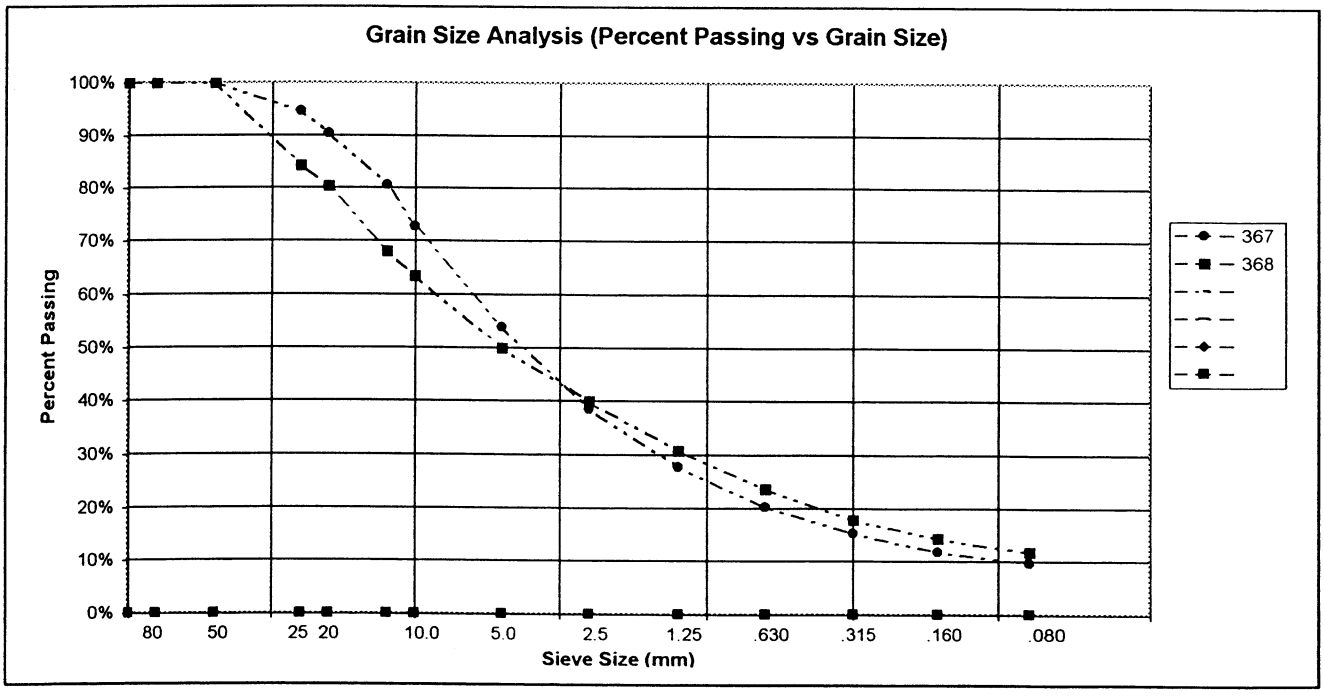


HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.: 30005B
CLIENT:	YTG, Transportation & Engineering	
PROJECT NAME:	Geotechnical Services	
PROJECT LOCATION:	Km 1691.7-1717.3	
DRILL UNIT:	CME75	
HOLE LOCATION:	643035-6768022	
LOGGED BY:	RW	DATE COMP: 08/18/2004

FIELD NO:	367	368				
LAB NO:	367	368				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	95%	84%				
20.0	90%	80%				
12.5	81%	68%				
10.0	73%	63%				
5.0	54%	50%				
2.5	39%	40%				
1.25	28%	31%				
0.630	20%	24%				
0.315	15%	18%				
0.160	12%	14%				
0.080	10%	12%				
M.C.(%):	2%	2%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	46	50				
% SAND:	44	38				
% FINES:	10	12				
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)				

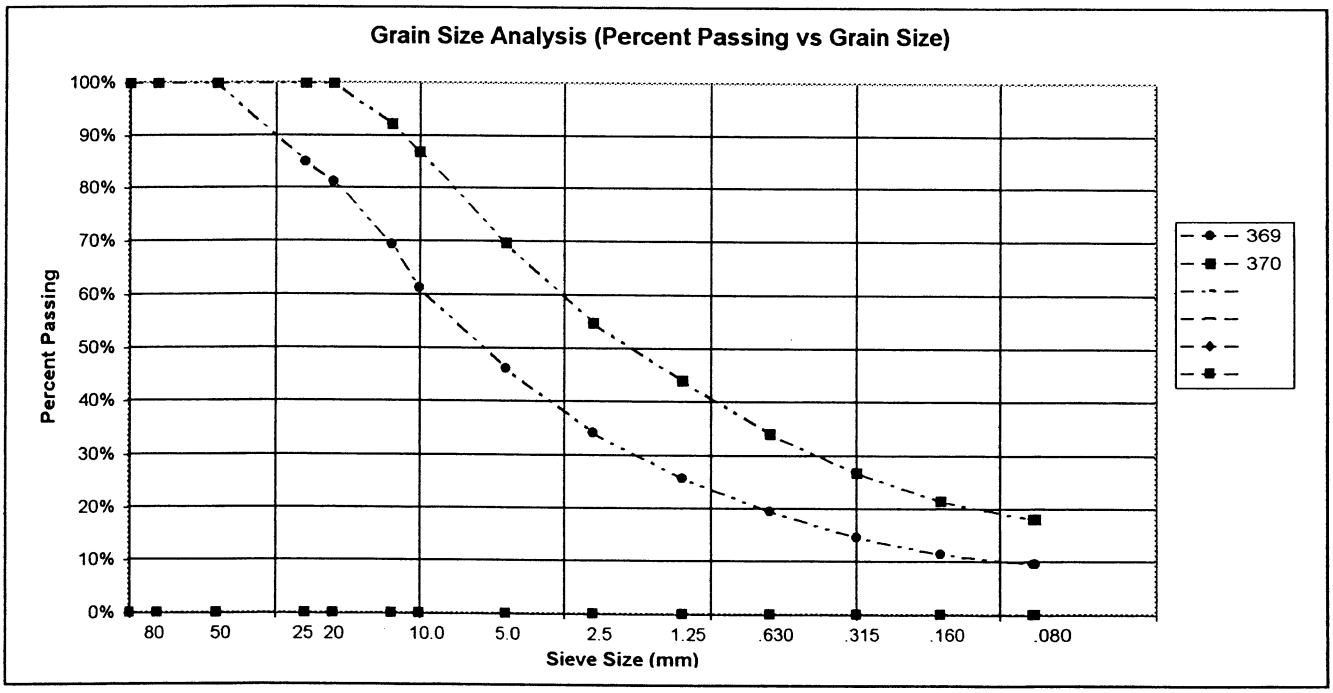


HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318		HOLE No.: 30006
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	642866-6768025		
LOGGED BY:	RW		DATE COMP: 08/18/2004

FIELD NO:	369	370
LAB NO:	369	370
DEPTH:	0.3-0.9	1.8-2.4
TYPE:	AUGER	AUGER
SIEVE SIZE	**PERCENT PASSING**	**PERCENT PASSING**
100.0	100%	100%
80.0	100%	100%
50.0	100%	100%
25.0	85%	100%
20.0	81%	100%
12.5	69%	92%
10.0	61%	87%
5.0	46%	70%
2.5	34%	55%
1.25	26%	44%
0.630	20%	34%
0.315	15%	27%
0.160	11%	22%
0.080	10%	18%
M.C.(%):	3%	3%
LIQUID LIMIT:	0.0	0.0
PLASTIC LIMIT:	0.0	0.0
PLASTIC INDEX.:	0.0	0.0
% GRAVEL:	54	30
% SAND:	37	52
% FINES:	10	18
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY SAND WITH GRAVEL (SM)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

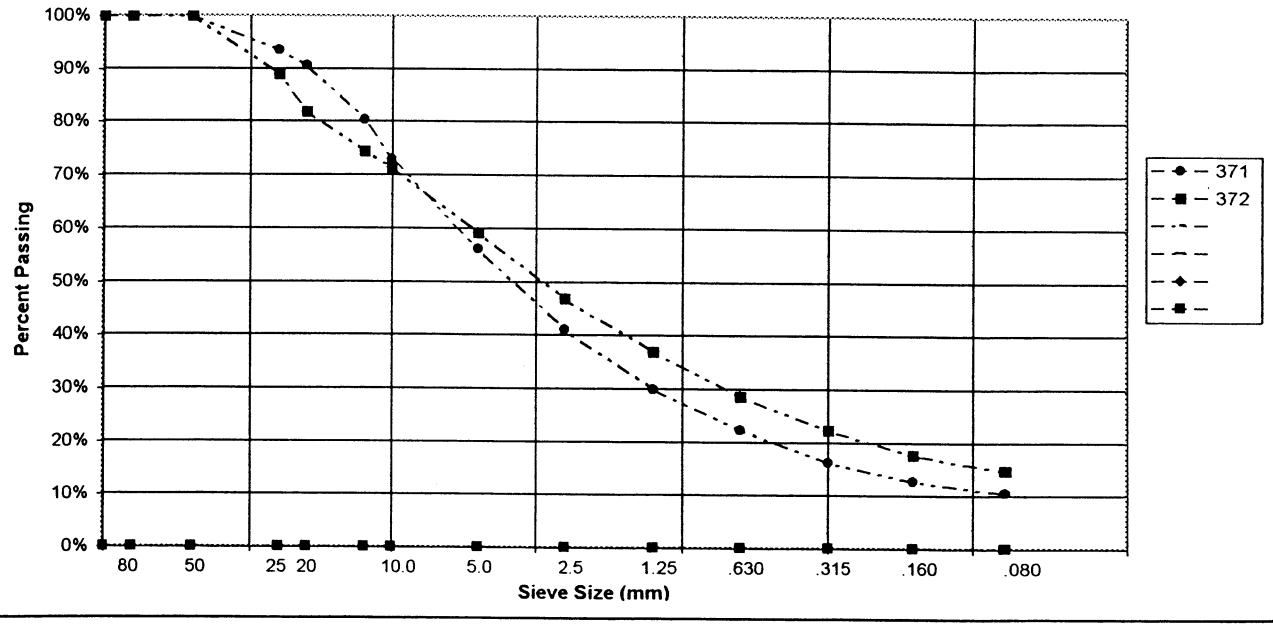
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 642664-6768030
LOGGED BY: RW

HOLE No.: 30007

DATE COMP: 08/18/2004

FIELD NO:	371	372				
LAB NO:	371	372				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	94%	89%				
20.0	91%	82%				
12.5	80%	74%				
10.0	73%	71%				
5.0	56%	59%				
2.5	41%	47%				
1.25	30%	37%				
0.630	22%	29%				
0.315	16%	22%				
0.160	13%	18%				
0.080	11%	15%				
M.C.(%):	2%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	44	41				
% SAND:	46	44				
% FINES:	11	15				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

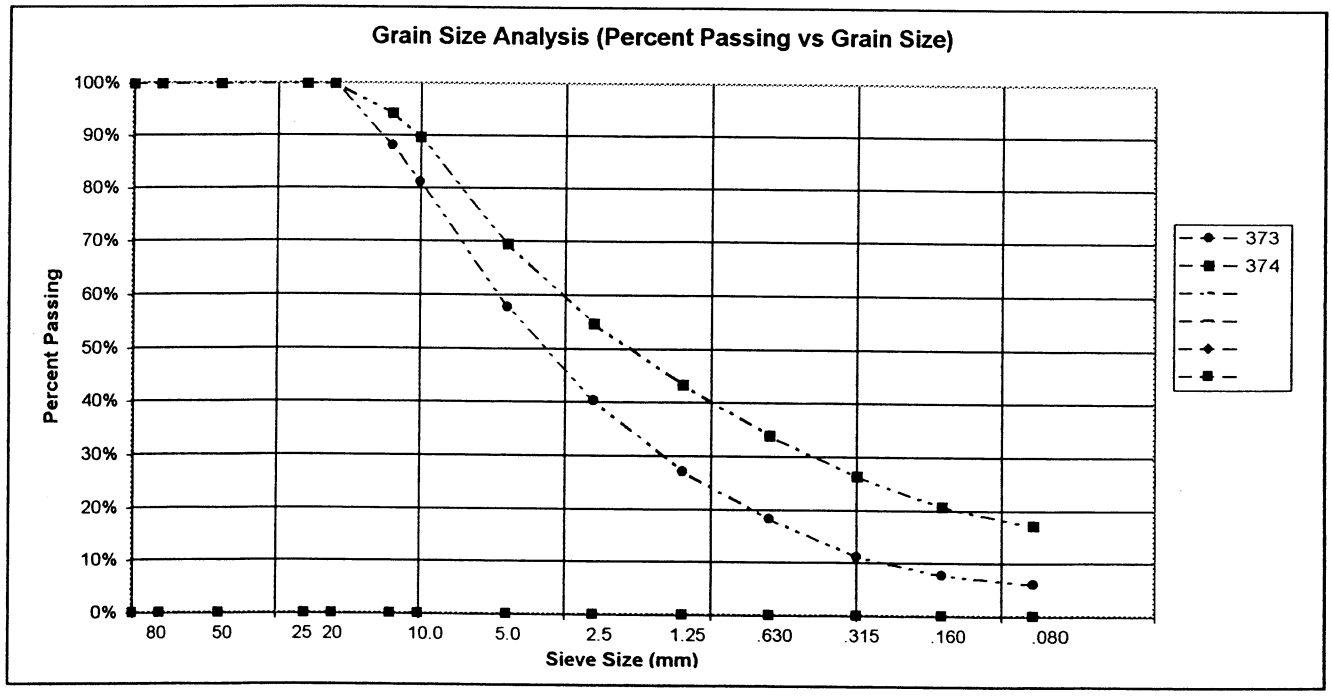
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 642463-6768033
LOGGED BY: RW

HOLE No.: 30008

DATE COMP: 08/18/2004

FIELD NO:	373	374				
LAB NO:	373	374				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	100%	100%				
12.5	88%	94%				
10.0	81%	90%				
5.0	58%	70%				
2.5	40%	55%				
1.25	27%	43%				
0.630	18%	34%				
0.315	11%	26%				
0.160	8%	21%				
0.080	6%	17%				
M.C.(%):	2%	2%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	42	30				
% SAND:	52	52				
% FINES:	6	17				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)				



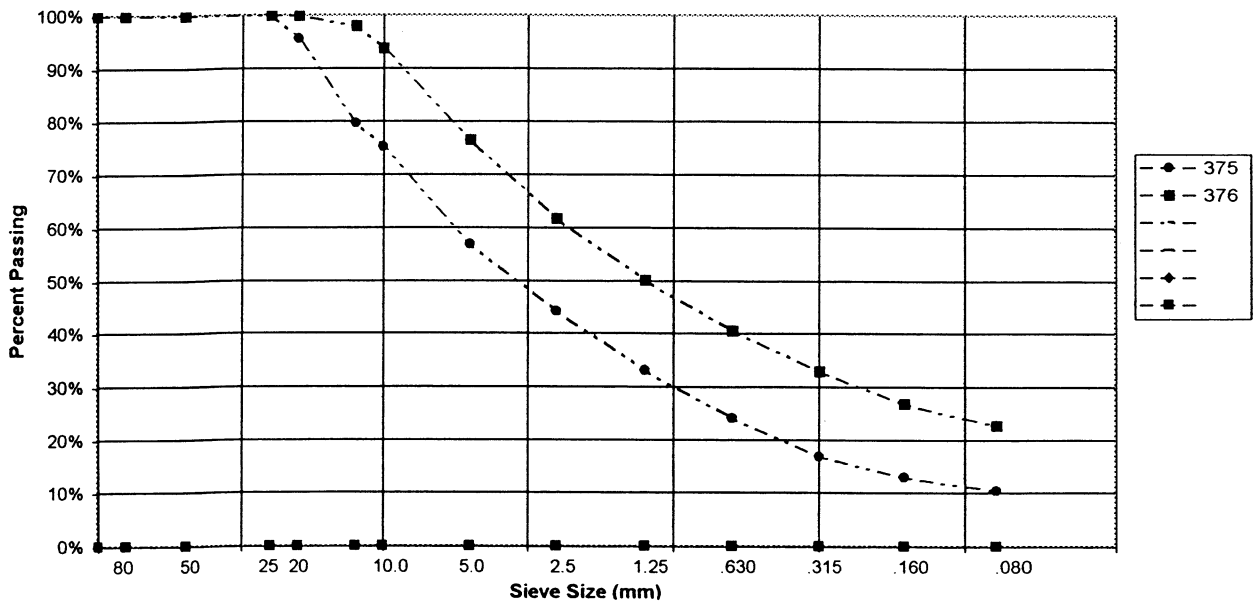
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.:	30009
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	642265-6768038		
LOGGED BY:	RW	DATE COMP:	08/18/2004

FIELD NO:	375	376				
LAB NO:	375	376				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	96%	100%				
12.5	80%	98%				
10.0	75%	94%				
5.0	57%	77%				
2.5	44%	62%				
1.25	33%	50%				
0.630	24%	41%				
0.315	17%	33%				
0.160	13%	27%				
0.080	11%	23%				
M.C.(%):	3%	4%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	43	23				
% SAND:	46	54				
% FINES:	11	23				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



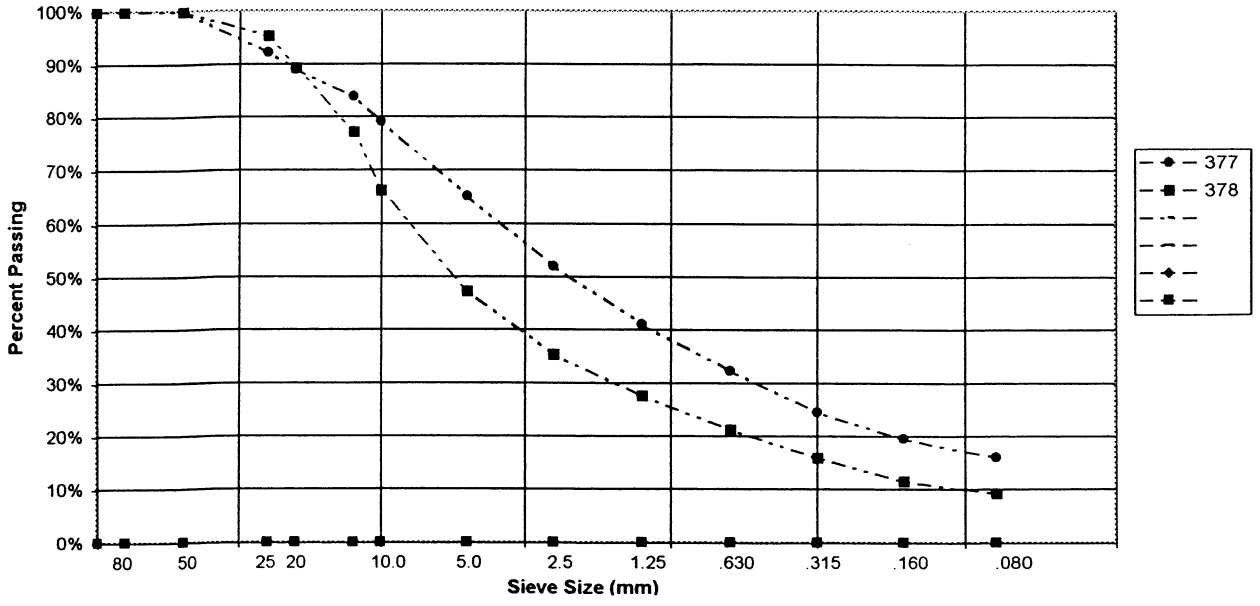
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.:	30010
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	642066-6768040		
LOGGED BY:	RW	DATE COMP:	08/18/2004

FIELD NO:	377	378				
LAB NO:	377	378				
DEPTH:	0.3-0.9	2.1-2.7				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	92%	95%				
20.0	89%	89%				
12.5	84%	77%				
10.0	79%	66%				
5.0	65%	47%				
2.5	52%	35%				
1.25	41%	28%				
0.630	32%	21%				
0.315	25%	16%				
0.160	20%	12%				
0.080	16%	9%				
M.C.(%):	3%	2%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	35	53				
% SAND:	49	38				
% FINES:	16	9				
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

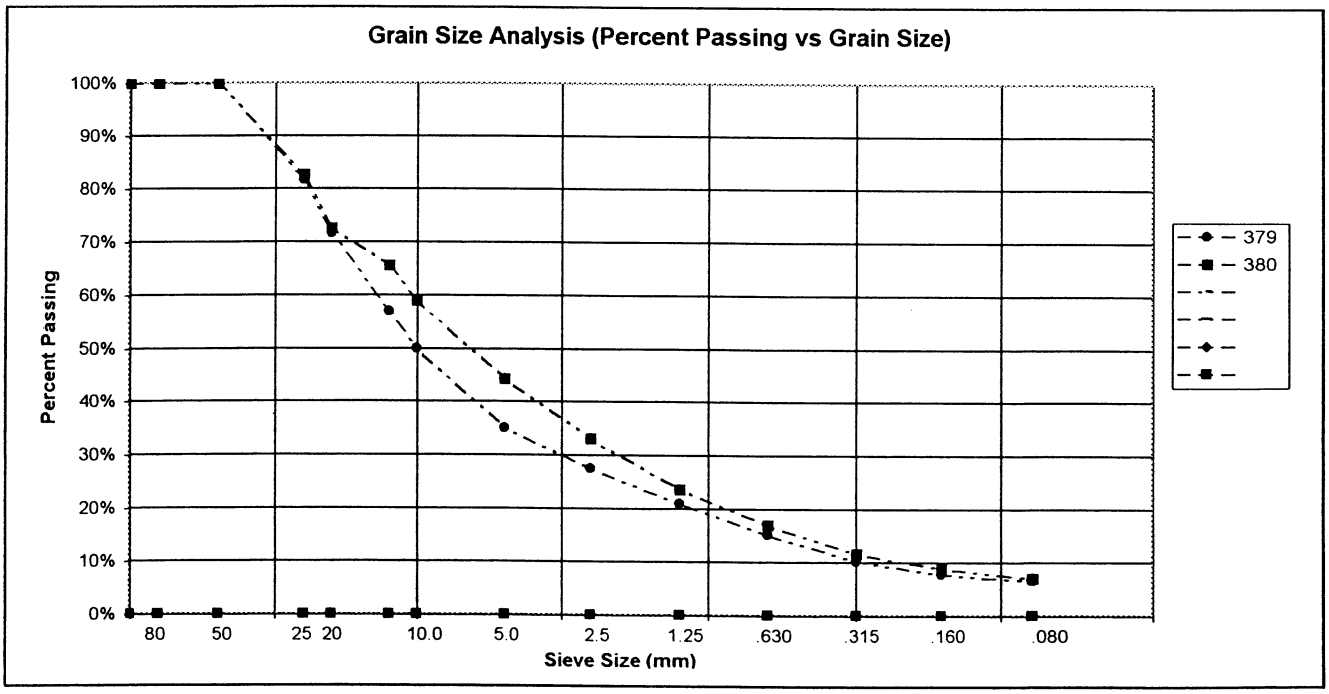
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 641865-6768044
LOGGED BY: RW

HOLE No.: 30011

DATE COMP: 08/18/2004

FIELD NO:	379	380				
LAB NO:	379	380				
DEPTH:	0.3-0.9	2.1-2.7				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	82%	83%				
20.0	72%	73%				
12.5	57%	66%				
10.0	50%	59%				
5.0	35%	44%				
2.5	28%	33%				
1.25	21%	24%				
0.630	15%	17%				
0.315	10%	12%				
0.160	8%	9%				
0.080	7%	7%				
M.C.(%):	3%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	65	56				
% SAND:	28	37				
% FINES:	7	7				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)				



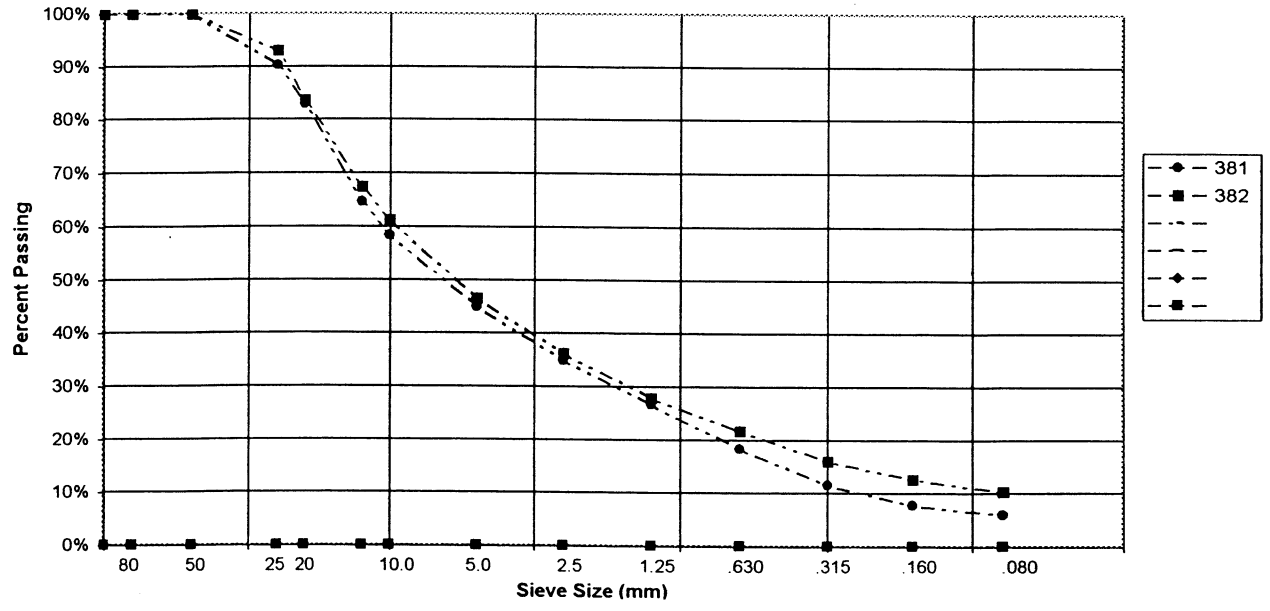
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.: 30012
CLIENT:	YTG, Transportation & Engineering	
PROJECT NAME:	Geotechnical Services	
PROJECT LOCATION:	Km 1691.7-1717.3	
DRILL UNIT:	CME75	
HOLE LOCATION:	641666-6768049	
LOGGED BY:	RW	DATE COMP: 08/18/2004

FIELD NO:	381	382
LAB NO:	381	382
DEPTH:	0.3-0.9	1.8-2.4
TYPE:	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%
80.0	100%	100%
50.0	100%	100%
25.0	90%	93%
20.0	83%	84%
12.5	65%	67%
10.0	58%	61%
5.0	45%	47%
2.5	35%	36%
1.25	27%	28%
0.630	18%	22%
0.315	12%	16%
0.160	8%	13%
0.080	6%	10%
M.C.(%):	2%	3%
LIQUID LIMIT:	0.0	0.0
PLASTIC LIMIT:	0.0	0.0
PLASTIC INDEX.:	0.0	0.0
% GRAVEL:	55	53
% SAND:	39	36
% FINES:	6	10
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)

Grain Size Analysis (Percent Passing vs Grain Size)



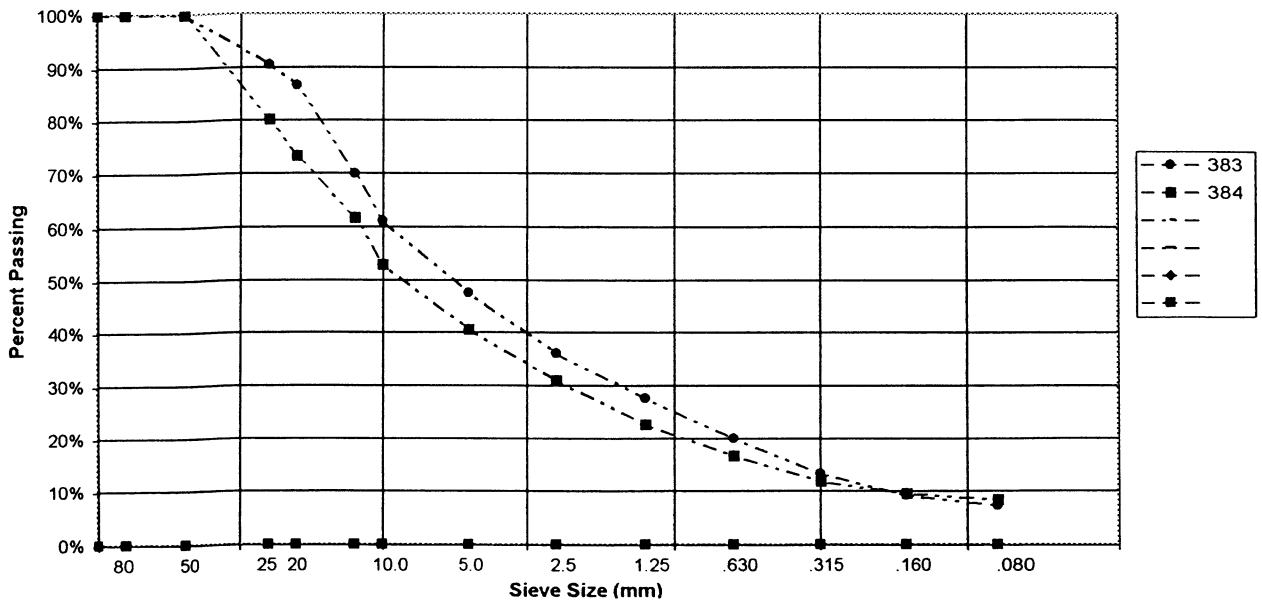
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.:	30013
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	641469-6768054		
LOGGED BY:	RW	DATE COMP:	08/18/2004

FIELD NO:	383	384				
LAB NO:	383	384				
DEPTH:	0.5-1.0	2.1-2.7				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	91%	80%				
20.0	87%	73%				
12.5	70%	62%				
10.0	61%	53%				
5.0	48%	41%				
2.5	36%	31%				
1.25	28%	23%				
0.630	20%	17%				
0.315	13%	12%				
0.160	9%	10%				
0.080	7%	8%				
M.C.(%):	2%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	52	59				
% SAND:	40	32				
% FINES:	7	8				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	641287-6768036
LOGGED BY:	RW

HOLE No.: 30014

DATE COMP: 08/18/2004

FIELD NO:	385	386				
LAB NO:	385	386				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	73%	80%				
20.0	64%	78%				
12.5	52%	67%				
10.0	48%	61%				
5.0	39%	48%				
2.5	31%	38%				
1.25	24%	29%				
0.630	17%	22%				
0.315	11%	16%				
0.160	7%	12%				
0.080	6%	10%				
M.C.(%):	2%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	61	52				
% SAND:	33	37				
% FINES:	6	10				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

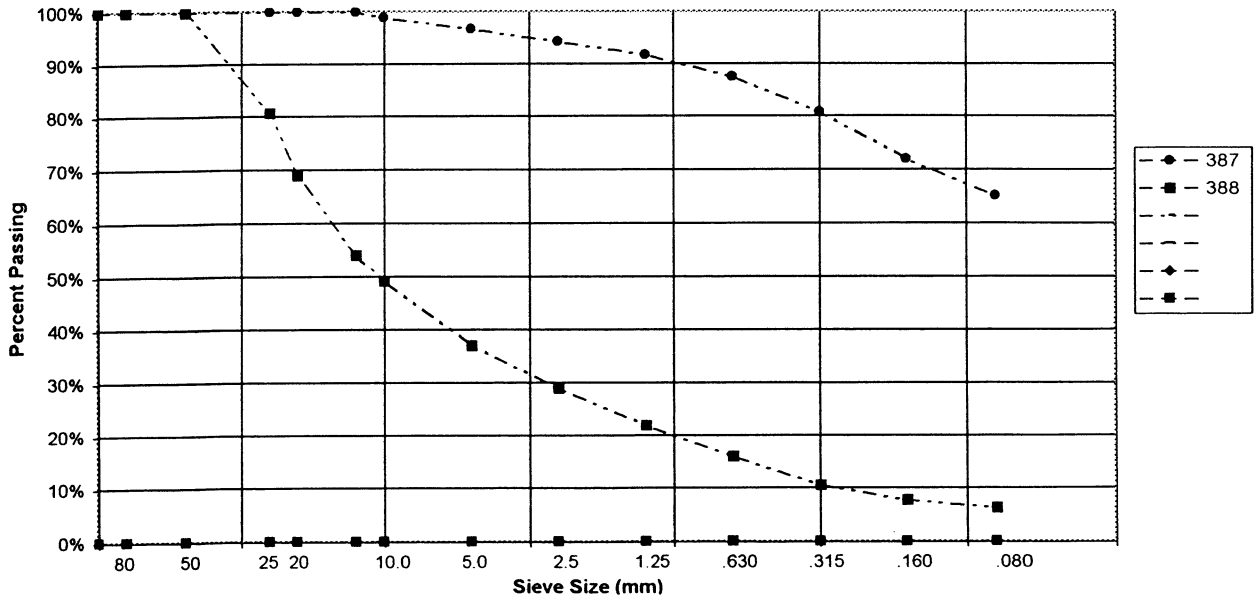
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 641051-6767939
LOGGED BY: RW

HOLE No.: 30015

DATE COMP: 08/18/2004

FIELD NO:	387	388				
LAB NO:	387	388				
DEPTH:	0.3-0.8	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	81%				
20.0	100%	69%				
12.5	100%	54%				
10.0	99%	49%				
5.0	97%	37%				
2.5	94%	29%				
1.25	92%	22%				
0.630	88%	16%				
0.315	81%	11%				
0.160	72%	8%				
0.080	65%	6%				
M.C.(%):	43%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	3	63				
% SAND:	32	31				
% FINES:	65	6				
CLASSIFICATION	SANDY SILT (ML)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)				

Grain Size Analysis (Percent Passing vs Grain Size)



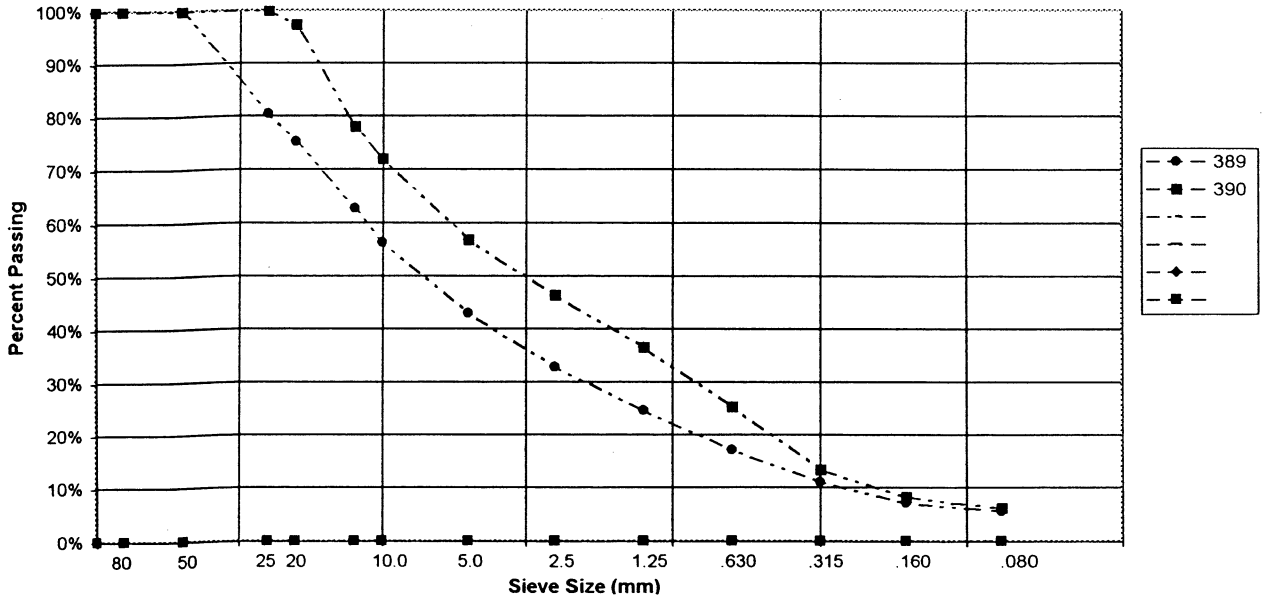
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.:	30016
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	641012-6767966		
LOGGED BY:	RW	DATE COMP:	08/18/2004

FIELD NO:	389	390				
LAB NO:	389	390				
DEPTH:	0.0-0.4	2.1-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	80%	100%				
20.0	75%	97%				
12.5	63%	78%				
10.0	56%	72%				
5.0	43%	57%				
2.5	33%	46%				
1.25	25%	37%				
0.630	17%	25%				
0.315	11%	13%				
0.160	7%	8%				
0.080	6%	6%				
M.C.(%):	3%	5%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	57	43				
% SAND:	37	50				
% FINES:	6	6				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)				

Grain Size Analysis (Percent Passing vs Grain Size)

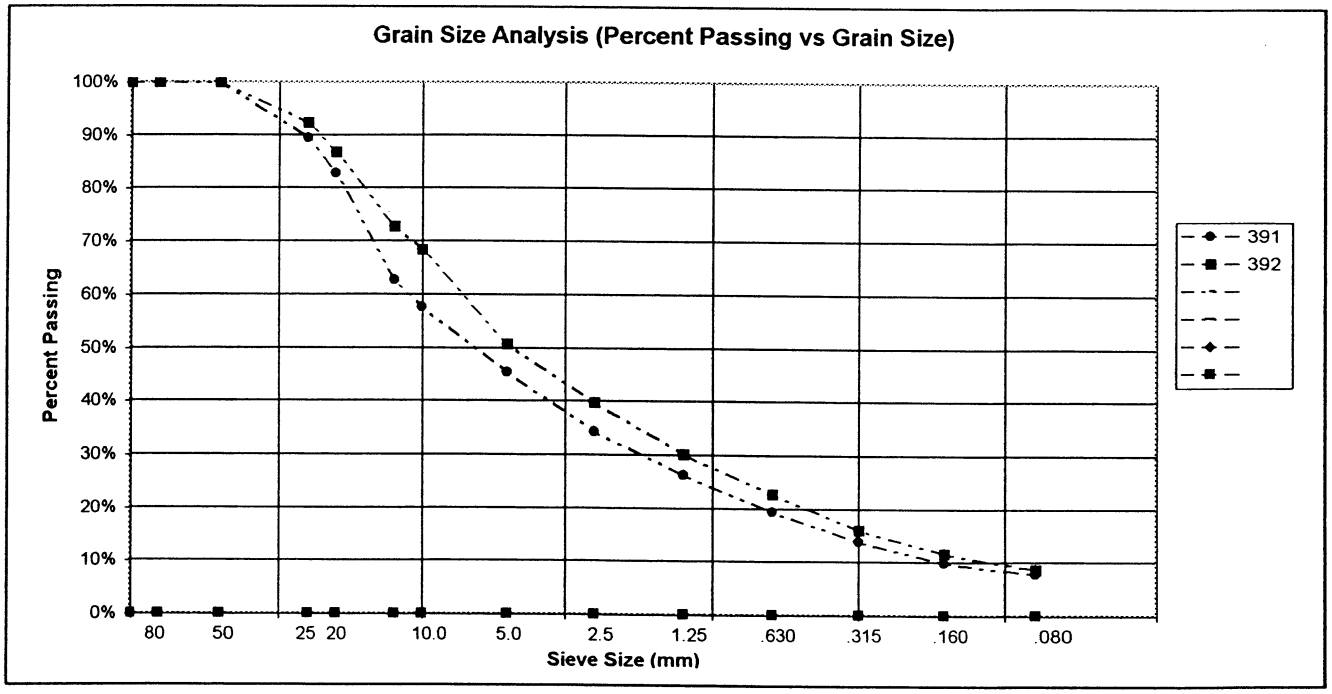


HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.: 30017
CLIENT:	YTG, Transportation & Engineering	
PROJECT NAME:	Geotechnical Services	
PROJECT LOCATION:	Km 1691.7-1717.3	
DRILL UNIT:	CME75	
HOLE LOCATION:	640871-6767834	
LOGGED BY:	RW	DATE COMP: 08/18/2004

FIELD NO:	391	392				
LAB NO:	391	392				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	89%	92%				
20.0	83%	87%				
12.5	63%	73%				
10.0	58%	69%				
5.0	45%	51%				
2.5	34%	40%				
1.25	26%	30%				
0.630	19%	23%				
0.315	14%	16%				
0.160	10%	12%				
0.080	8%	9%				
M.C.(%):	2%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	55	49				
% SAND:	38	42				
% FINES:	8	9				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)				



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

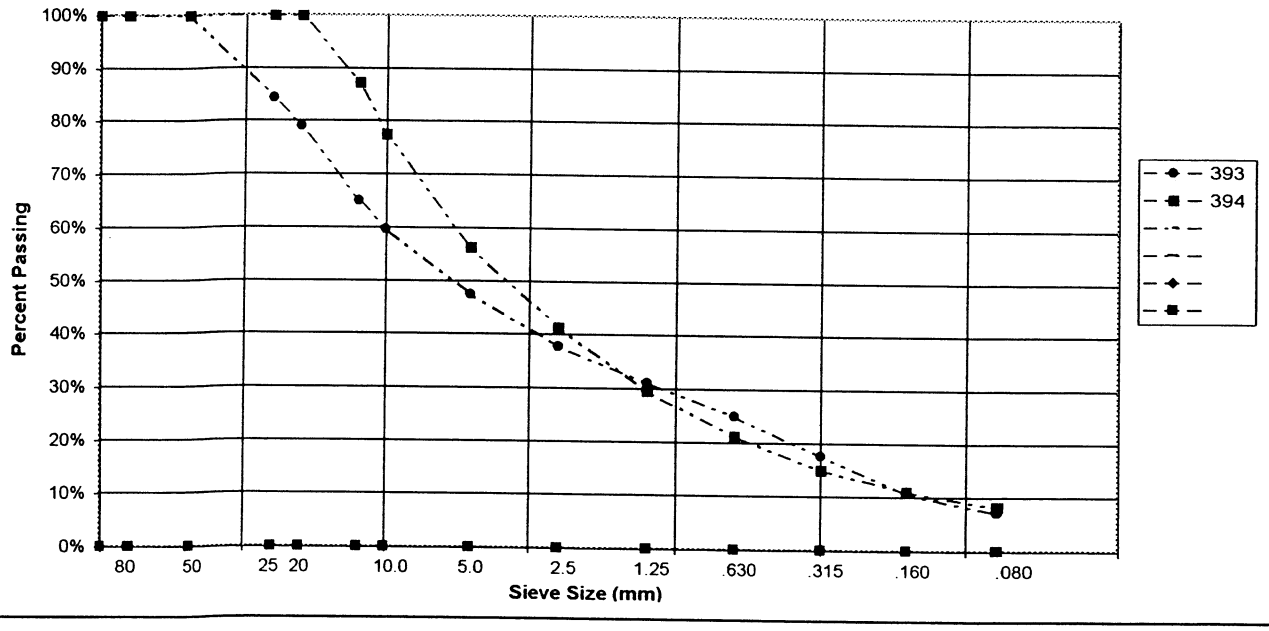
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 640691-6767697
LOGGED BY: RW

HOLE No.: 30018

DATE COMP: 08/18/2004

FIELD NO:	393	394				
LAB NO:	393	394				
DEPTH:	0.3-0.9	2.1-2.7				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	84%	100%				
20.0	79%	100%				
12.5	65%	87%				
10.0	60%	78%				
5.0	48%	56%				
2.5	38%	41%				
1.25	31%	30%				
0.630	25%	21%				
0.315	18%	15%				
0.160	11%	11%				
0.080	7%	8%				
M.C.(%):	1%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	52	44				
% SAND:	40	48				
% FINES:	7	8				
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. H. Kaine & Associates Ltd.

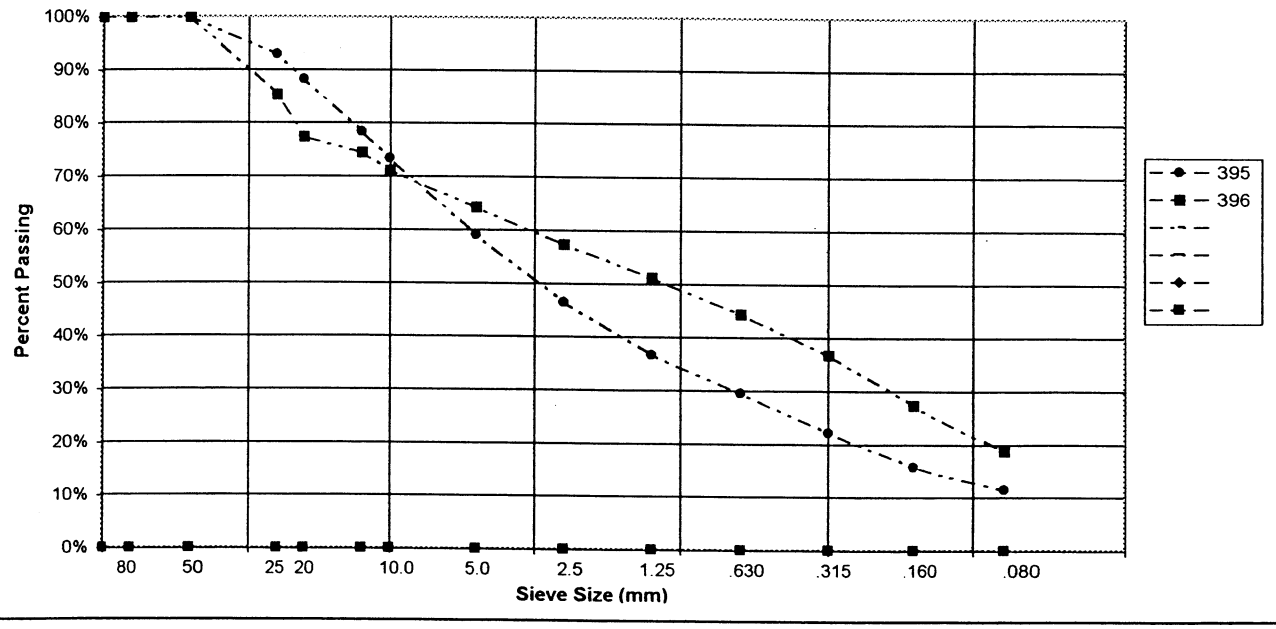
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 640524-6767579
LOGGED BY: RW

HOLE No.: 30019

DATE COMP: 08/18/2004

FIELD NO:	395	396				
LAB NO:	395	396				
DEPTH:	0.3-0.9	2.1-2.7				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	93%	85%				
20.0	88%	77%				
12.5	78%	75%				
10.0	74%	71%				
5.0	59%	64%				
2.5	47%	57%				
1.25	37%	51%				
0.630	30%	44%				
0.315	22%	37%				
0.160	16%	27%				
0.080	12%	19%				
M.C.(%):	5%	8%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	41	36				
% SAND:	48	45				
% FINES:	12	19				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

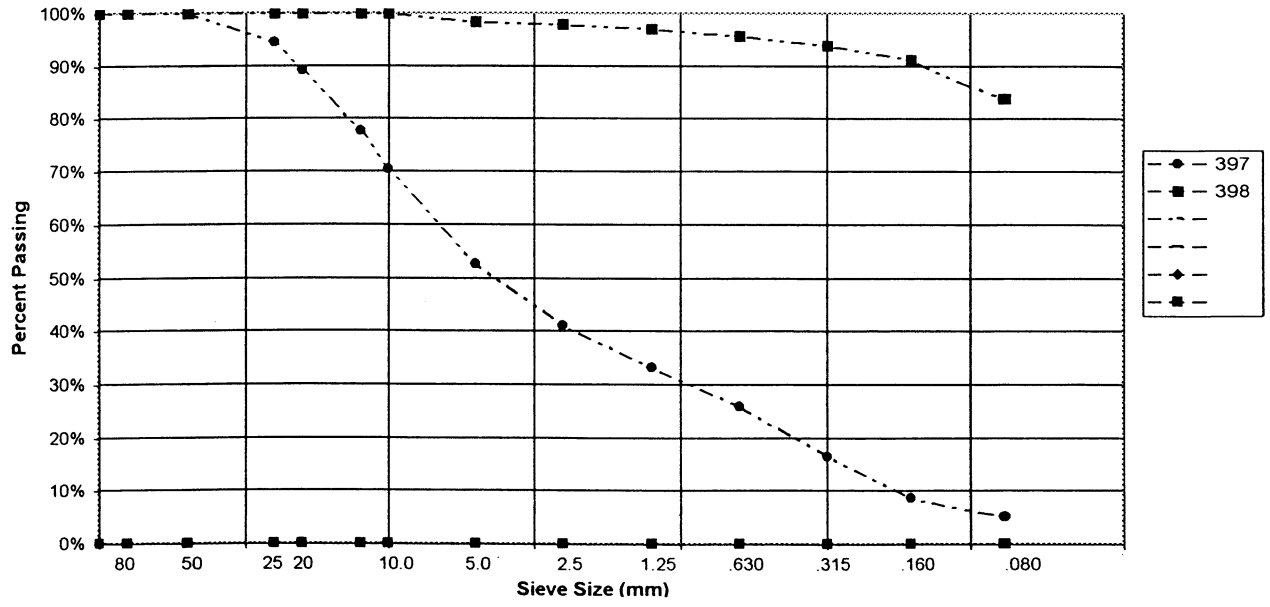
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 640351-6767452
LOGGED BY: RW

HOLE No.: 30020

DATE COMP: 08/18/2004

FIELD NO:	397	398				
LAB NO:	397	398				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	95%	100%				
20.0	89%	100%				
12.5	78%	100%				
10.0	70%	100%				
5.0	53%	98%				
2.5	41%	98%				
1.25	33%	97%				
0.630	26%	96%				
0.315	17%	94%				
0.160	9%	91%				
0.080	5%	84%				
M.C.(%):	7%	38%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	47	2				
% SAND:	48	14				
% FINES:	5	84				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILT WITH SAND (ML)				

Grain Size Analysis (Percent Passing vs Grain Size)

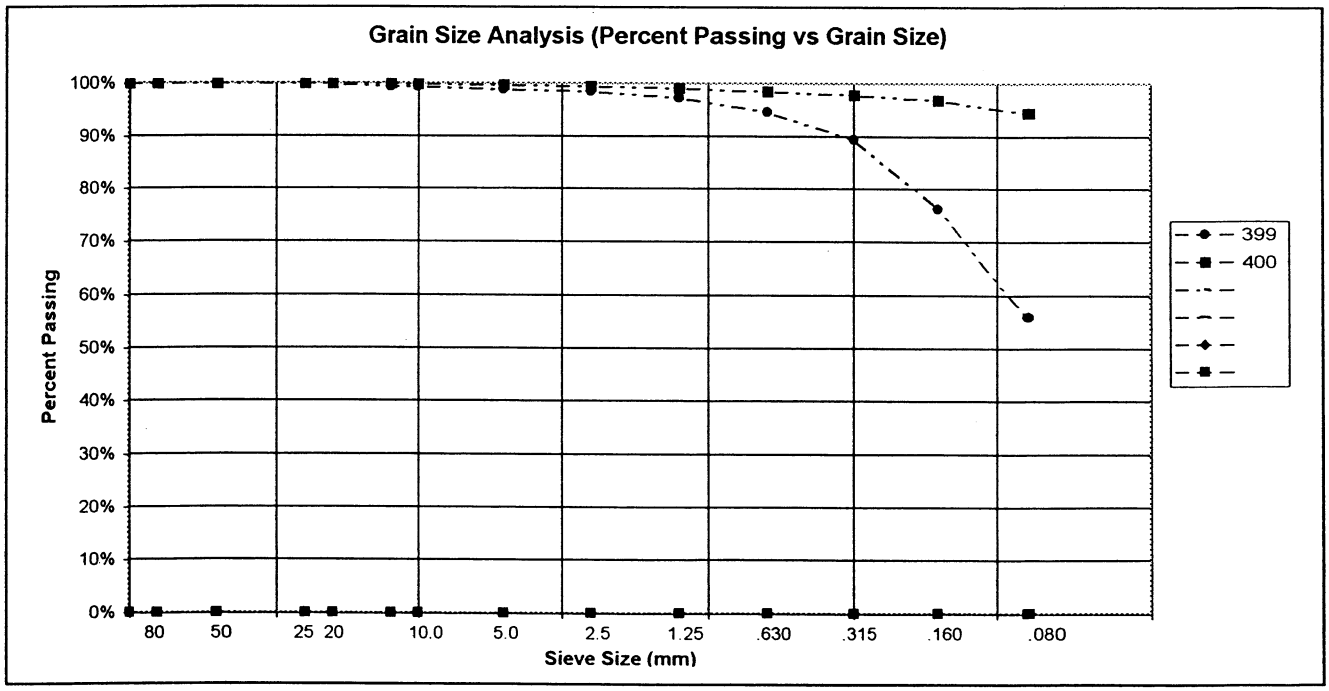


HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318		HOLE No.: 30021
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	640194-6767340		
LOGGED BY:	RW		DATE COMP: 08/18/2004

FIELD NO:	399	400				
LAB NO:	399	400				
DEPTH:	0.3-0.9	2.1-2.7				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	100%	100%				
12.5	99%	100%				
10.0	99%	100%				
5.0	99%	100%				
2.5	99%	100%				
1.25	97%	99%				
0.630	95%	99%				
0.315	89%	98%				
0.160	76%	97%				
0.080	56%	95%				
M.C.(%):	35%	38%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	1	0				
% SAND:	43	5				
% FINES:	56	95				
CLASSIFICATION	SANDY SILT (ML)	SILT (ML)				



HOGGAN ENGINEERING & TESTING (1980) LTD.

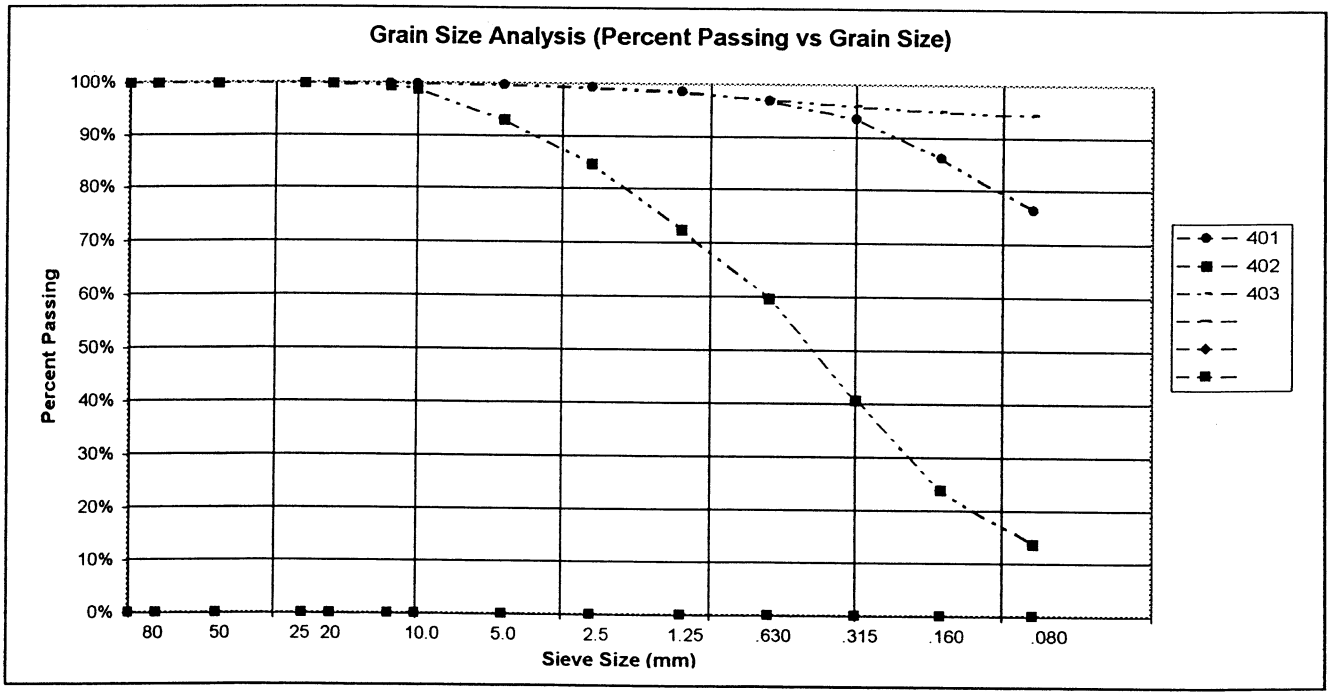
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 640041-6767232
LOGGED BY: RW

HOLE No.: 30022

DATE COMP: 08/18/2004

FIELD NO:	401	402	403			
LAB NO:	401	402	403			
DEPTH:	0.5-1.0	1.5-2.1	2.6-2.9			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	100%	100%	100%			
12.5	100%	100%	100%			
10.0	100%	99%	100%			
5.0	100%	93%	100%			
2.5	99%	85%	99%			
1.25	99%	72%	98%			
0.630	97%	60%	97%			
0.315	94%	41%	96%			
0.160	86%	24%	95%			
0.080	76%	14%	94%			
M.C.(%):	30%	14%	40%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	0	7	0			
% SAND:	23	79	5			
% FINES:	76	14	94			
CLASSIFICATION	SILT WITH SAND (ML)	SILTY SAND (SM)	SILT (ML)			



HOGGAN ENGINEERING & TESTING (1980) LTD.

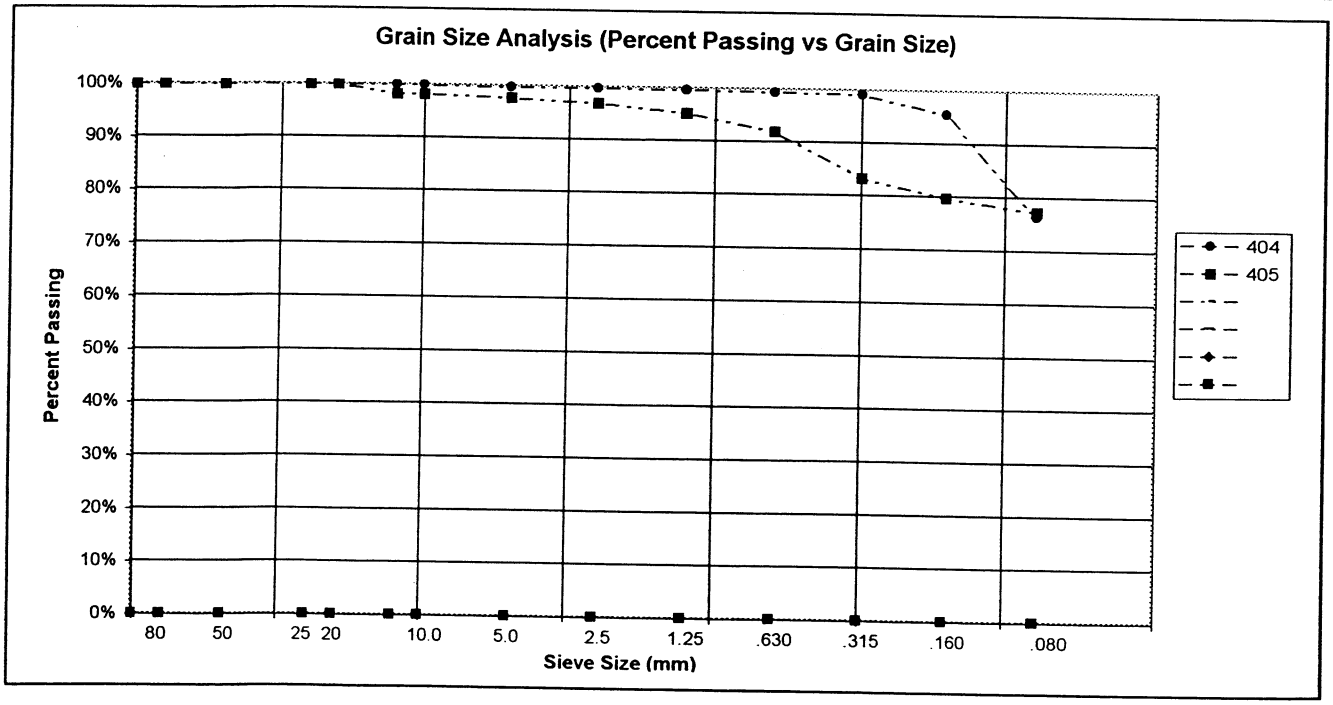
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 639890-6767125
LOGGED BY: RW

HOLE No.: 30023

DATE COMP: 08/18/2004

FIELD NO:	404	405				
LAB NO:	404	405				
DEPTH:	0.3-0.9	1.2-1.8				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	100%	100%				
12.5	100%	98%				
10.0	100%	98%				
5.0	100%	98%				
2.5	100%	97%				
1.25	100%	95%				
0.630	99%	92%				
0.315	99%	83%				
0.160	95%	80%				
0.080	76%	77%				
M.C.(%):	29%	35%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	0	2				
% SAND:	23	20				
% FINES:	76	77				
CLASSIFICATION	SILT WITH SAND (ML)	SILT WITH SAND (ML)				



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

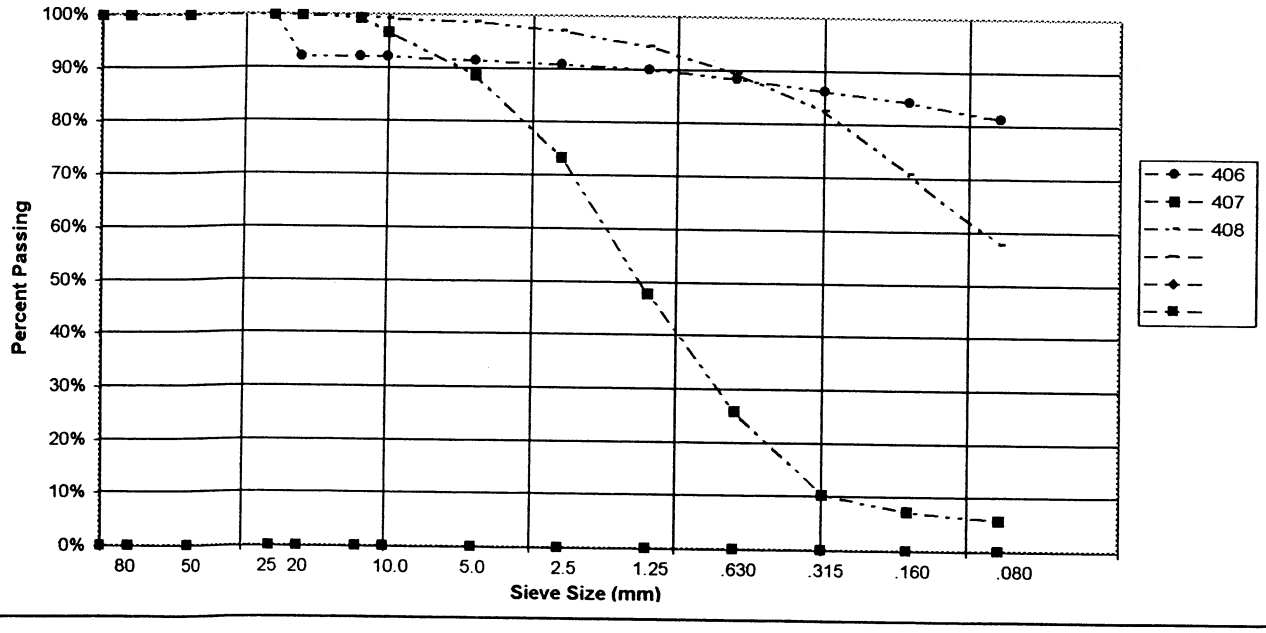
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 639688-6766983
LOGGED BY: RW

HOLE No.: 30024

DATE COMP: 08/18/2004

FIELD NO:	406	407	408			
LAB NO:	406	407	408			
DEPTH:	0.3-0.9	1.5-2.1	2.1-2.7			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	92%	100%	100%			
12.5	92%	99%	100%			
10.0	92%	97%	99%			
5.0	92%	89%	99%			
2.5	91%	73%	97%			
1.25	90%	48%	94%			
0.630	88%	26%	89%			
0.315	86%	10%	83%			
0.160	84%	7%	71%			
0.080	81%	6%	58%			
M.C.(%):	37%	13%	28%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	8	11	1			
% SAND:	10	83	41			
% FINES:	81	6	58			
CLASSIFICATION	SILT WITH SAND (ML)	WELL-GRADED SAND WITH SILT (SW-SM)	SANDY SILT (ML)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

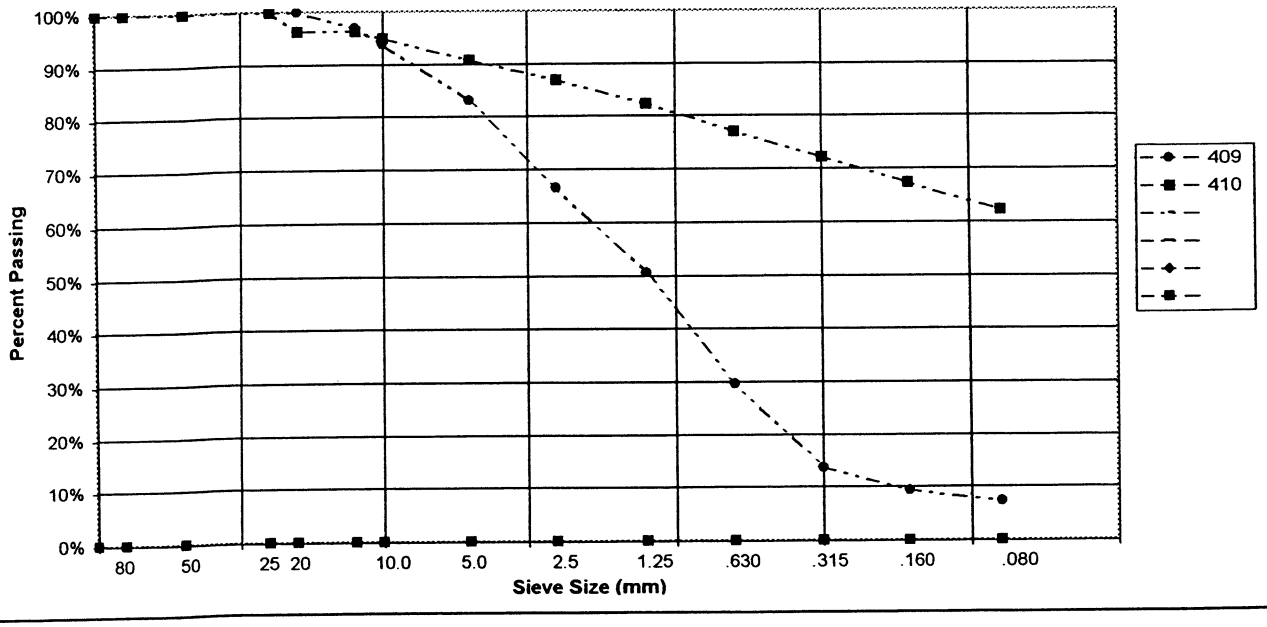
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 639558-6766885
LOGGED BY: RW

HOLE No.: 30025

DATE COMP: 08/18/2004

FIELD NO:	409	410				
LAB NO:	409	410				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	100%	96%				
12.5	97%	96%				
10.0	94%	95%				
5.0	83%	91%				
2.5	67%	87%				
1.25	51%	82%				
0.630	30%	77%				
0.315	14%	72%				
0.160	9%	68%				
0.080	7%	62%				
M.C.(%):	2%	26%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	17	9				
% SAND:	76	28				
% FINES:	7	62				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SANDY SILT (ML)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

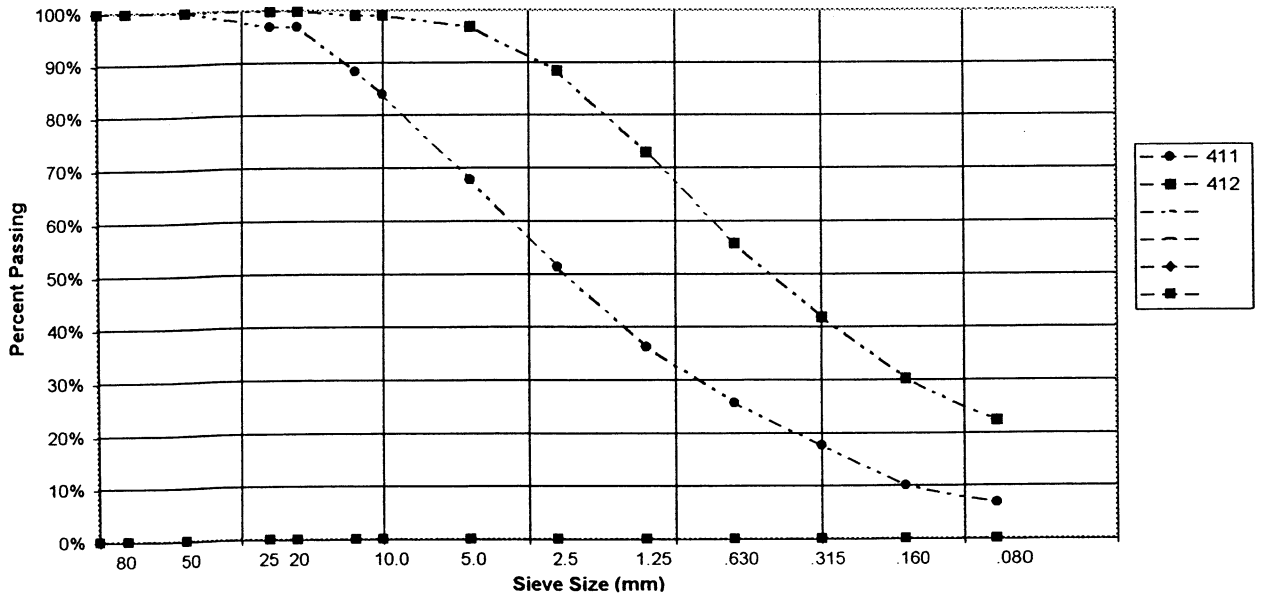
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 639356-6766769
LOGGED BY: RW

HOLE No.: 30026

DATE COMP: 08/18/2004

FIELD NO:	411	412				
LAB NO:	411	412				
DEPTH:	0.3-0.9	2.1-2.7				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	97%	100%				
20.0	97%	100%				
12.5	88%	99%				
10.0	84%	99%				
5.0	68%	97%				
2.5	51%	89%				
1.25	36%	73%				
0.630	26%	56%				
0.315	18%	42%				
0.160	10%	30%				
0.080	7%	23%				
M.C.(%):	2%	4%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	32	3				
% SAND:	61	74				
% FINES:	7	23				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

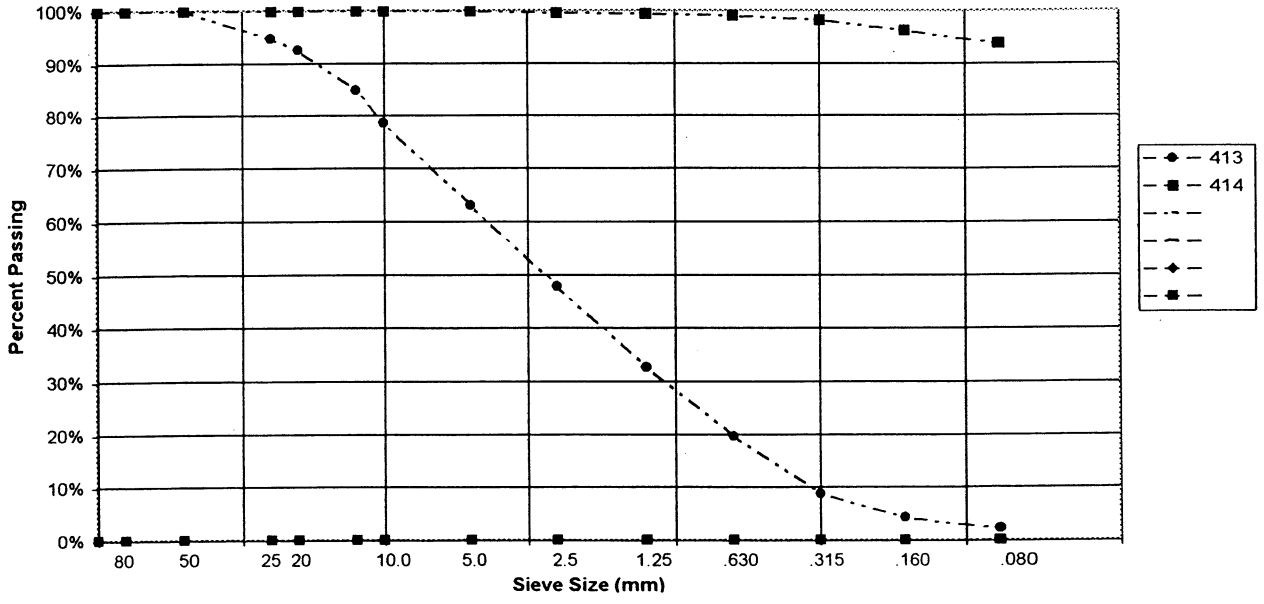
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 639213-6766735
LOGGED BY: RW

HOLE No.: 30027

DATE COMP: 08/19/2004

FIELD NO:	413	414				
LAB NO:	413	414				
DEPTH:	0.1-0.6	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	95%	100%				
20.0	93%	100%				
12.5	85%	100%				
10.0	79%	100%				
5.0	63%	100%				
2.5	48%	100%				
1.25	33%	99%				
0.630	20%	99%				
0.315	9%	98%				
0.160	4%	96%				
0.080	2%	94%				
M.C.(%):	9%	39%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	37	0				
% SAND:	61	6				
% FINES:	2	94				
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	SILT (ML)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

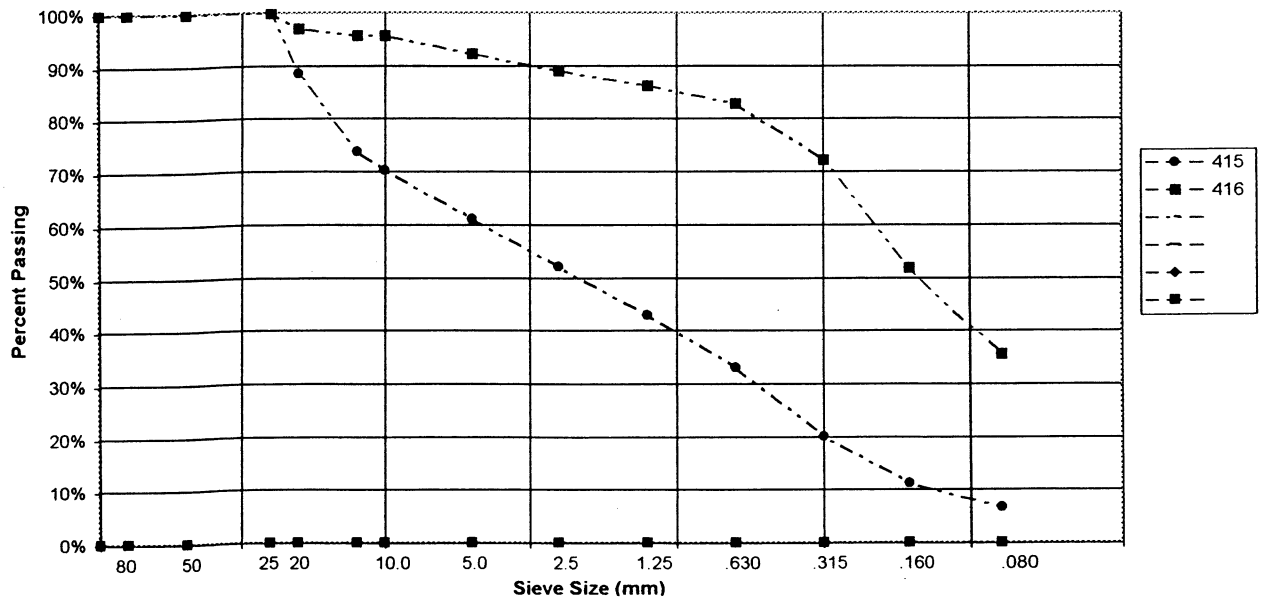
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 639229-6766708
LOGGED BY: RW

HOLE No.: 30028

DATE COMP: 08/19/2004

FIELD NO:	415	416				
LAB NO:	415	416				
DEPTH:	0.3-0.9	2.4-3.0				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	89%	97%				
12.5	74%	96%				
10.0	70%	96%				
5.0	61%	92%				
2.5	52%	89%				
1.25	43%	86%				
0.630	33%	83%				
0.315	20%	72%				
0.160	11%	52%				
0.080	7%	36%				
M.C.(%):	9%	18%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	39	8				
% SAND:	54	57				
% FINES:	7	36				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

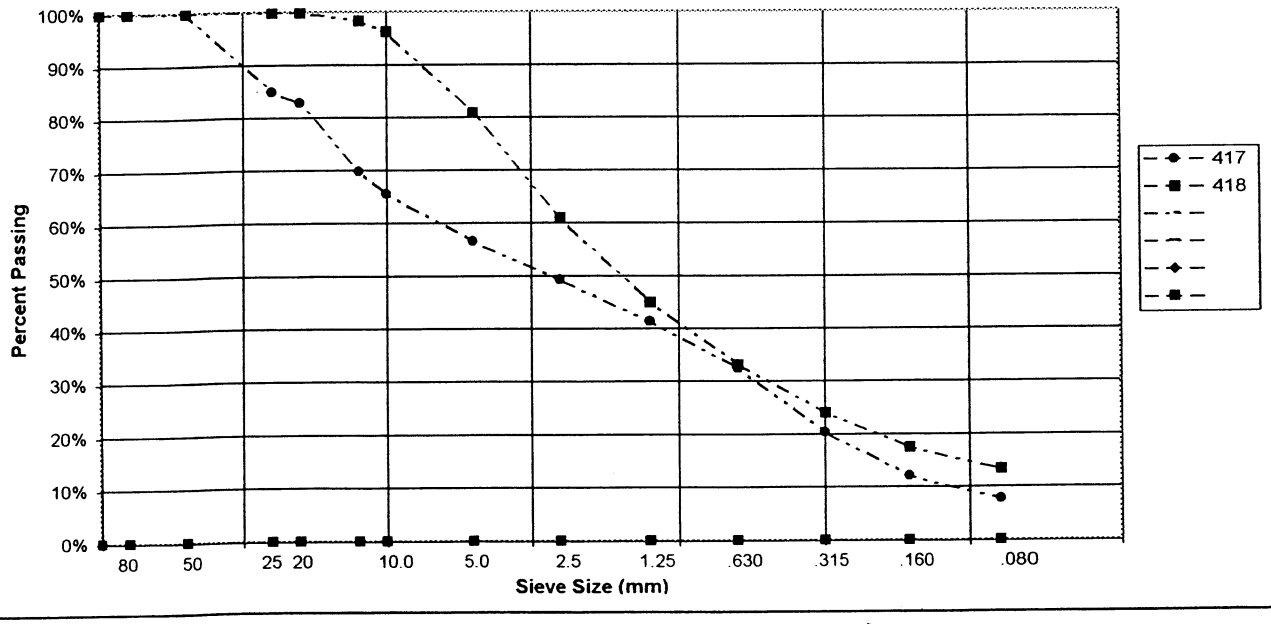
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 639106-6766653
LOGGED BY: RW

HOLE No.: 30029

DATE COMP: 08/19/2004

FIELD NO:	417	418				
LAB NO:	417	418				
DEPTH:	0.3-0.9	2.4-2.9				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	85%	100%				
20.0	83%	100%				
12.5	70%	98%				
10.0	66%	96%				
5.0	57%	81%				
2.5	49%	61%				
1.25	41%	45%				
0.630	32%	33%				
0.315	20%	24%				
0.160	12%	18%				
0.080	8%	14%				
M.C.(%):	4%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	43	19				
% SAND:	49	67				
% FINES:	8	14				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

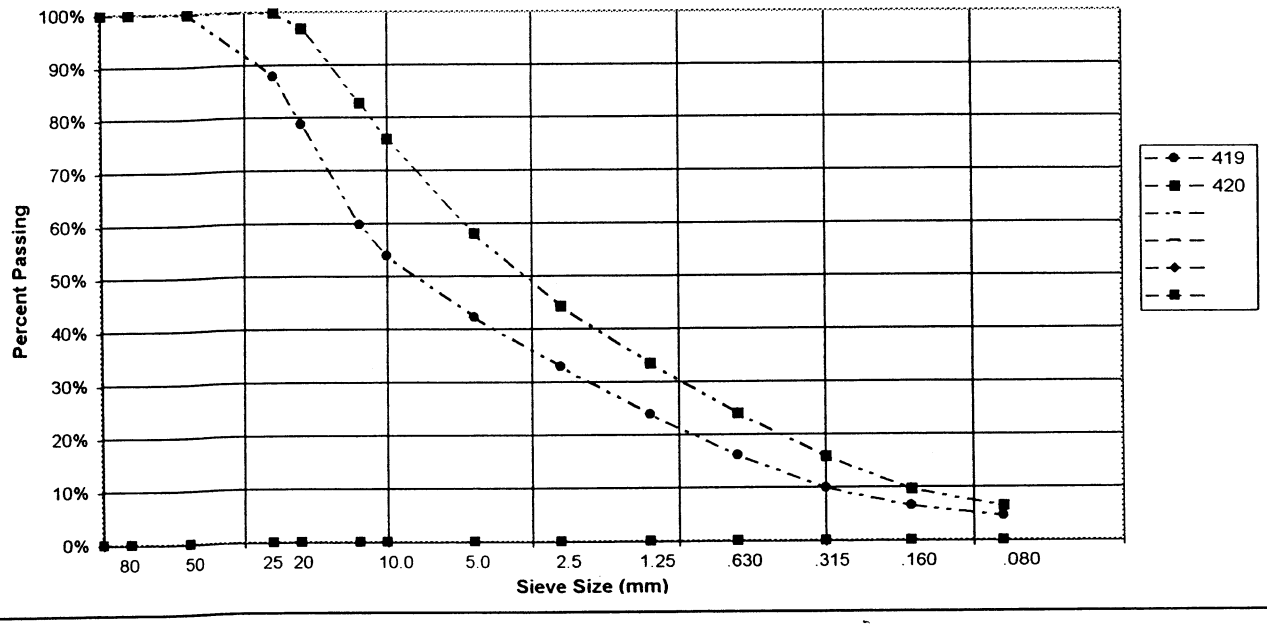
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 638909-6766547
LOGGED BY: RW

HOLE No.: 30030

DATE COMP: 08/19/2004

FIELD NO:	419	420				
LAB NO:	419	420				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	88%	100%				
20.0	79%	97%				
12.5	60%	83%				
10.0	54%	76%				
5.0	42%	58%				
2.5	33%	44%				
1.25	24%	34%				
0.630	16%	24%				
0.315	10%	16%				
0.160	7%	10%				
0.080	5%	7%				
M.C.(%):	4%	8%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	58	42				
% SAND:	38	52				
% FINES:	5	7				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

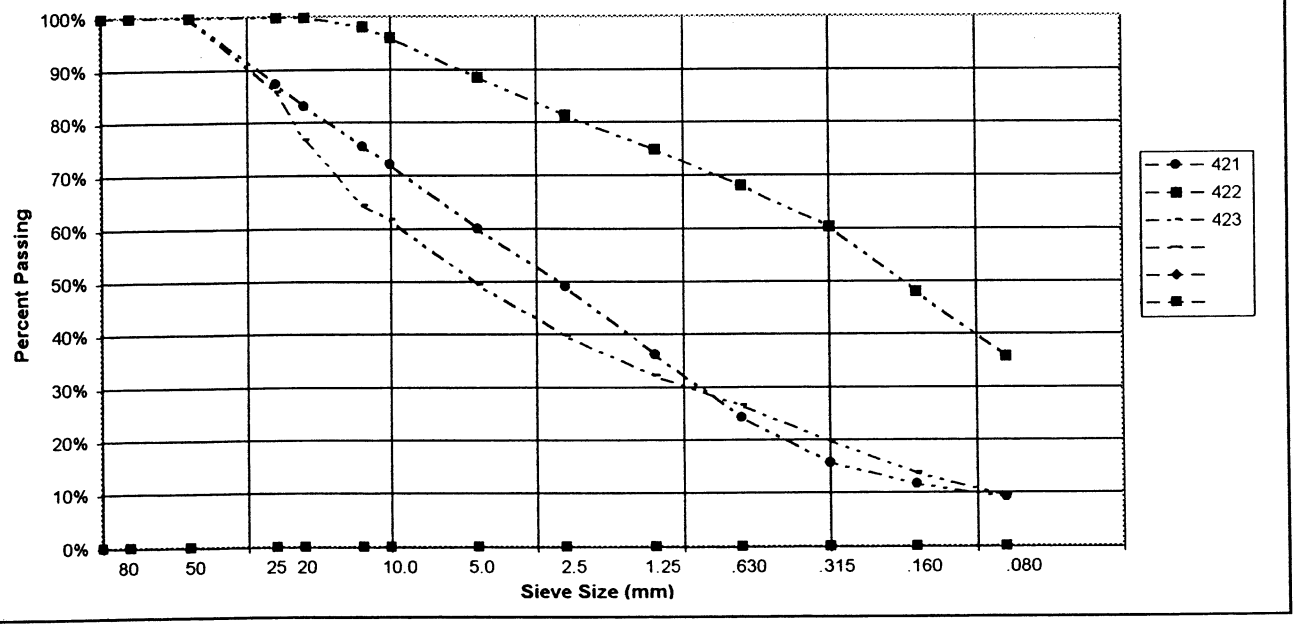
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 638926-6766525
LOGGED BY: RW

HOLE No.: 30031

DATE COMP: 08/19/2004

FIELD NO:	421	422	423			
LAB NO:	421	422	423			
DEPTH:	0.3-0.9	1.2-1.5	2.4-2.9			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	87%	100%	86%			
20.0	83%	100%	77%			
12.5	76%	98%	64%			
10.0	72%	96%	62%			
5.0	60%	89%	49%			
2.5	49%	81%	40%			
1.25	36%	75%	32%			
0.630	24%	68%	27%			
0.315	16%	60%	20%			
0.160	12%	48%	14%			
0.080	9%	36%	10%			
M.C.(%):	4%	25%	5%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	40	11	51			
% SAND:	51	53	40			
% FINES:	9	36	10			
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND (SM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

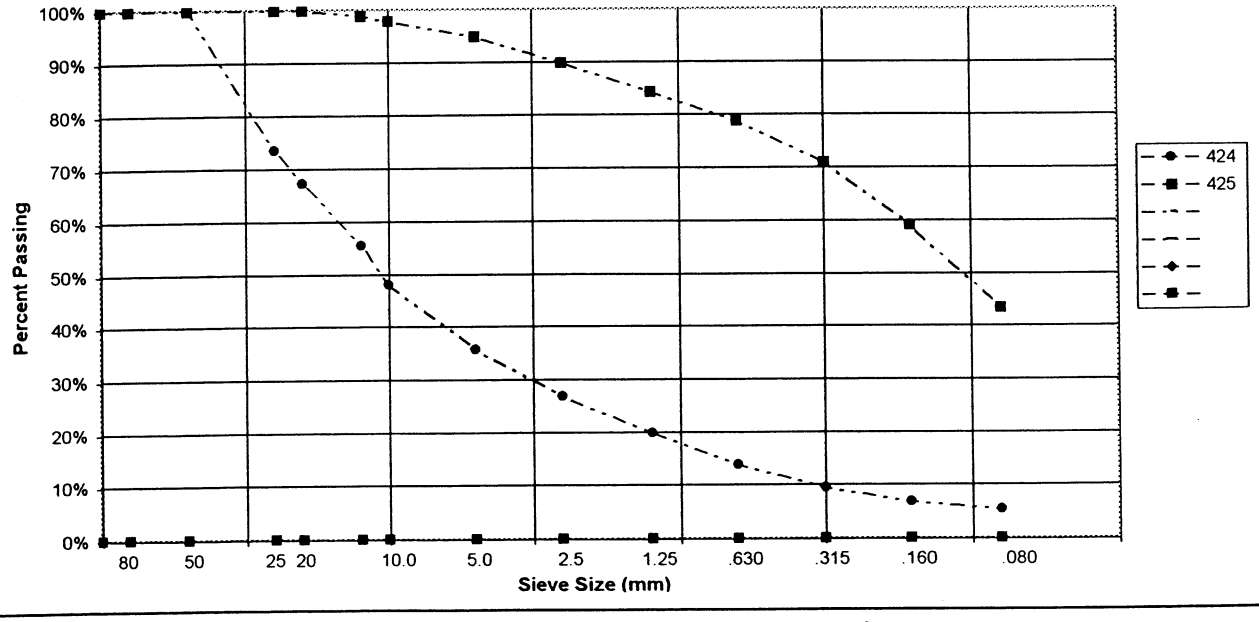
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 638808-6766403
LOGGED BY: RW

HOLE No.: 30032

DATE COMP: 08/19/2004

FIELD NO:	424	425				
LAB NO:	424	425				
DEPTH:	0.3-0.9	2.4-3.0				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	74%	100%				
20.0	67%	100%				
12.5	56%	99%				
10.0	48%	98%				
5.0	36%	95%				
2.5	27%	90%				
1.25	20%	84%				
0.630	14%	79%				
0.315	10%	71%				
0.160	7%	59%				
0.080	5%	44%				
M.C.(%):	2%	23%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	64	5				
% SAND:	30	51				
% FINES:	5	44				
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	SILTY SAND (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

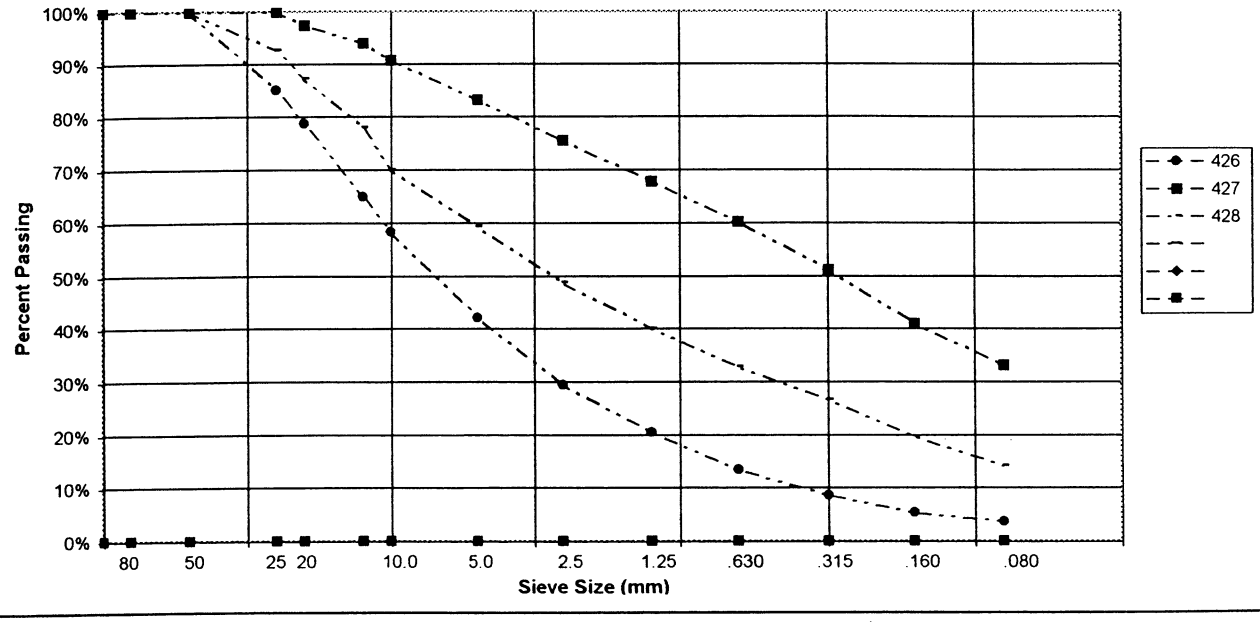
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 638653-6766235
LOGGED BY: RW

HOLE No.: 30033

DATE COMP: 08/19/2004

FIELD NO:	426	427	428			
LAB NO:	426	427	428			
DEPTH:	0.3-0.9	1.5-2.1	2.1-2.7			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	85%	100%	93%			
20.0	79%	97%	87%			
12.5	65%	94%	78%			
10.0	58%	91%	70%			
5.0	42%	83%	59%			
2.5	29%	76%	49%			
1.25	21%	68%	40%			
0.630	14%	60%	33%			
0.315	9%	51%	27%			
0.160	5%	41%	20%			
0.080	4%	33%	14%			
M.C.(%):	3%	23%	9%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	58	17	41			
% SAND:	39	50	45			
% FINES:	4	33	14			
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

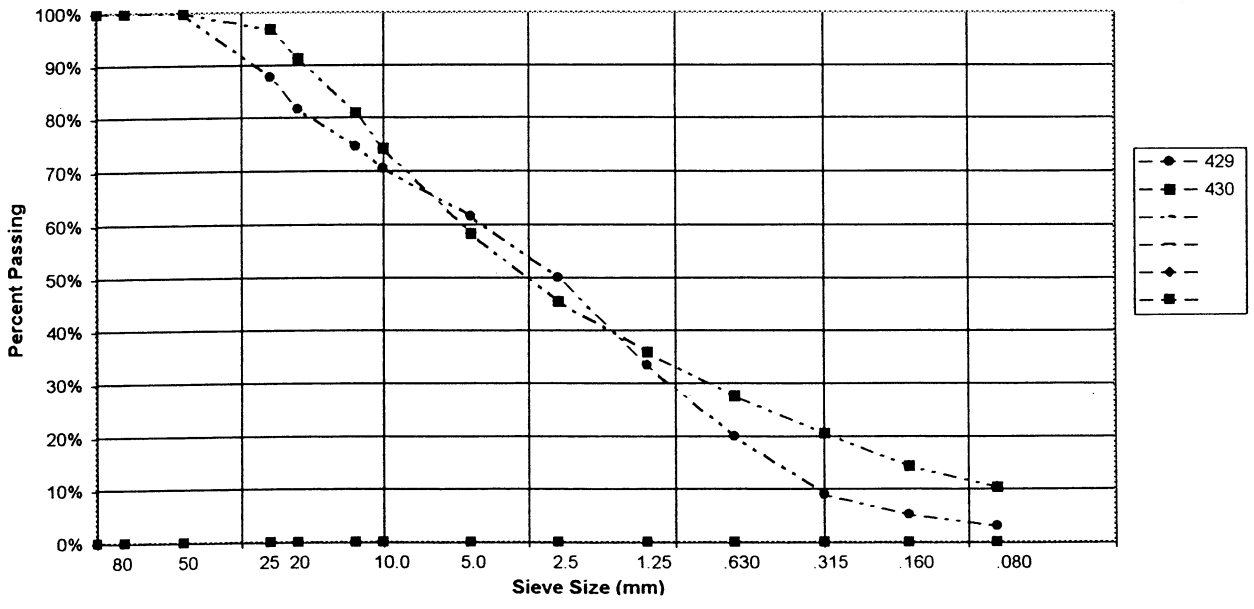
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 638452-6766172
LOGGED BY: RW

HOLE No.: 30034

DATE COMP: 08/19/2004

FIELD NO:	429	430				
LAB NO:	429	430				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	88%	97%				
20.0	82%	91%				
12.5	75%	81%				
10.0	71%	74%				
5.0	62%	58%				
2.5	50%	46%				
1.25	33%	36%				
0.630	20%	28%				
0.315	9%	21%				
0.160	5%	15%				
0.080	3%	11%				
M.C.(%):	2%	8%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	38	42				
% SAND:	59	48				
% FINES:	3	11				
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

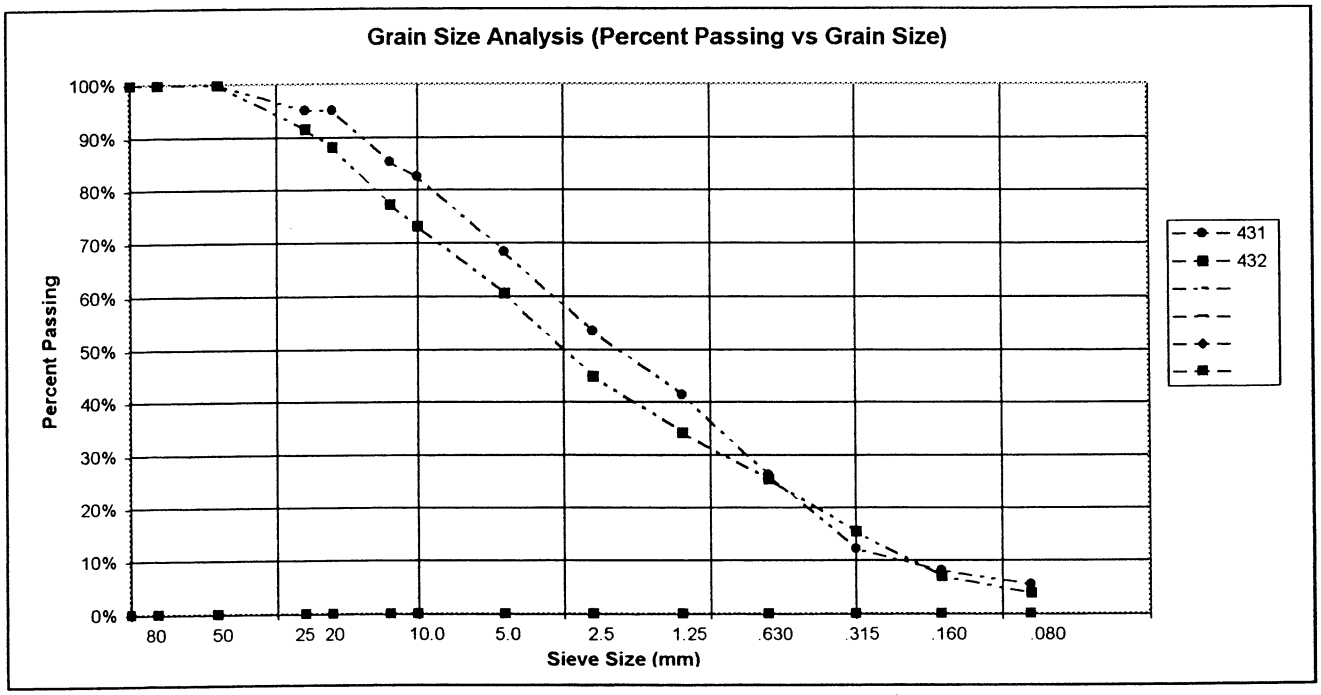
An Affiliate of J. H. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 638287-6766094
LOGGED BY: RW

HOLE No.: 30035

DATE COMP: 08/19/2004

FIELD NO:	431	432				
LAB NO:	431	432				
DEPTH:	0.3-0.9	2.1-2.7				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	95%	92%				
20.0	95%	88%				
12.5	85%	77%				
10.0	83%	73%				
5.0	68%	61%				
2.5	54%	45%				
1.25	41%	34%				
0.630	26%	25%				
0.315	12%	16%				
0.160	8%	7%				
0.080	6%	4%				
M.C.(%):	2%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	32	39				
% SAND:	63	57				
% FINES:	6	4				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH GRAVEL (SW)				



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

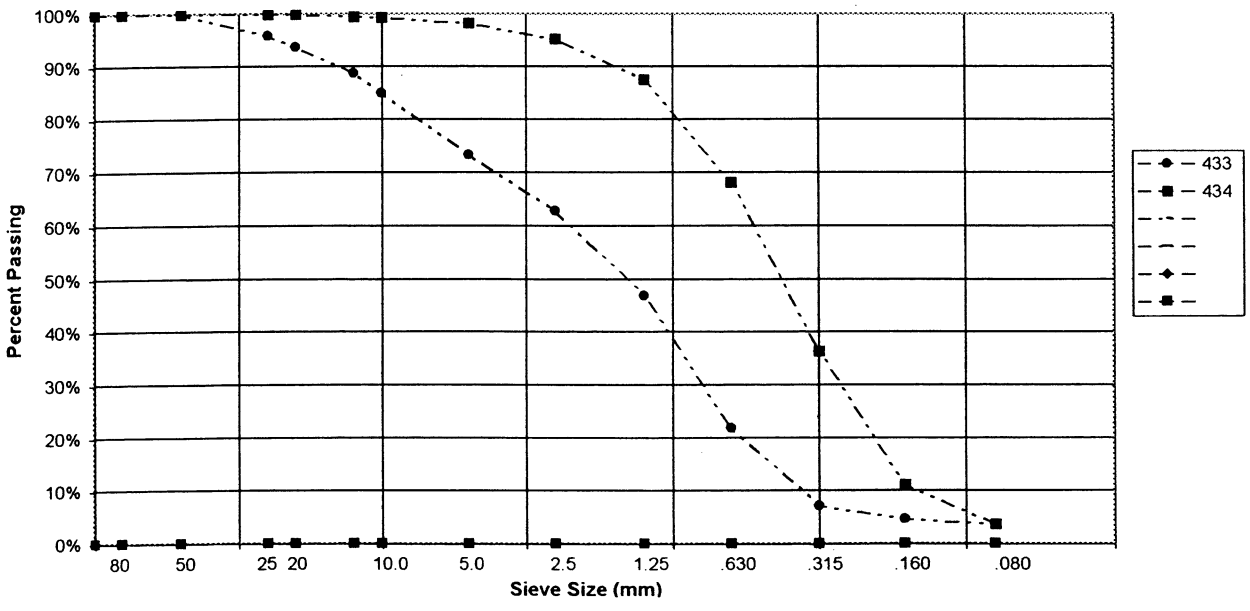
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 638094-6766043
LOGGED BY: RW

HOLE No.: 30036

DATE COMP: 08/19/2004

FIELD NO:	433	434				
LAB NO:	433	434				
DEPTH:	0.3-0.9	2.1-2.7				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	96%	100%				
20.0	94%	100%				
12.5	89%	100%				
10.0	85%	99%				
5.0	73%	98%				
2.5	63%	95%				
1.25	47%	88%				
0.630	22%	68%				
0.315	7%	36%				
0.160	5%	11%				
0.080	4%	4%				
M.C.(%):	2%	7%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	27	2				
% SAND:	70	95				
% FINES:	4	4				
CLASSIFICATION	POORLY GRADED SAND WITH GRAVEL (SP)	WELL-GRADED SAND (SW)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

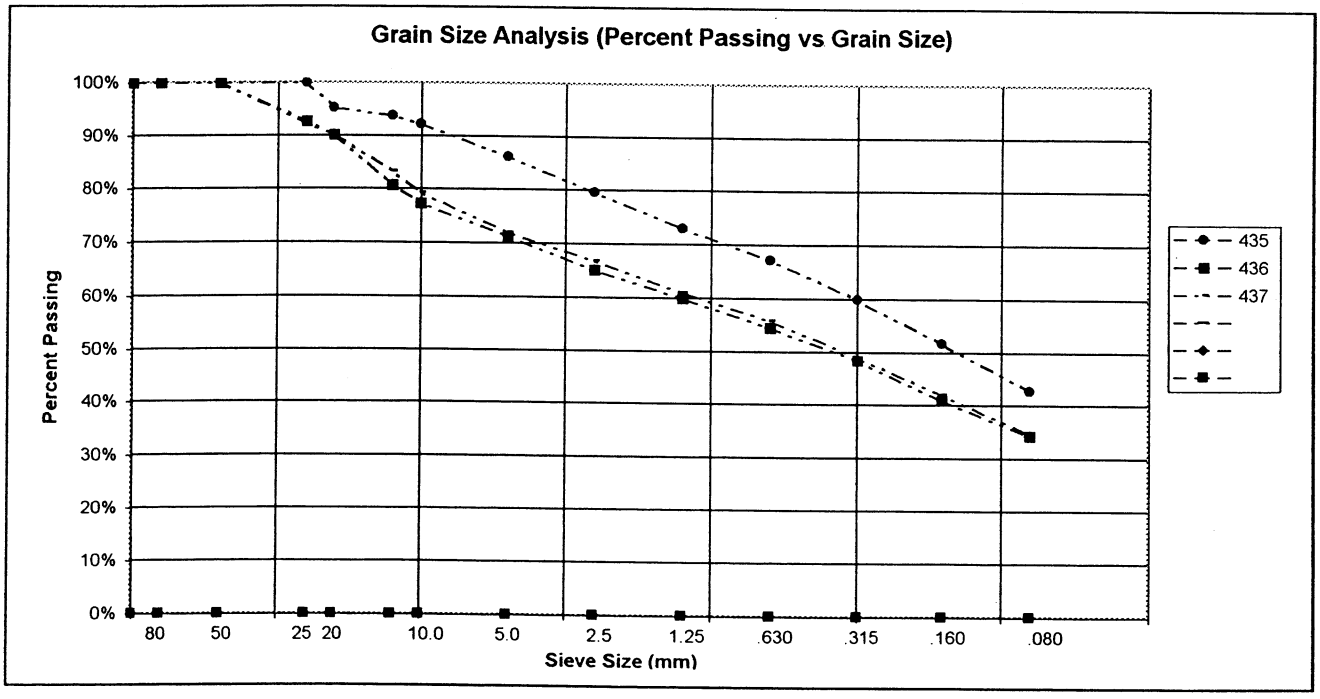
An Affiliate of J. H. Paine & Associates Ltd.

PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	637902-6765969
LOGGED BY:	RW

HOLE No.: 30037

DATE COMP: 08/19/2004

FIELD NO:	435	436	437			
LAB NO:	435	436	437			
DEPTH:	0.3-0.9	2.1-2.7	3.4-4.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	93%	92%			
20.0	95%	90%	90%			
12.5	94%	81%	83%			
10.0	92%	77%	79%			
5.0	86%	71%	72%			
2.5	80%	65%	67%			
1.25	73%	60%	61%			
0.630	67%	55%	56%			
0.315	60%	49%	49%			
0.160	52%	41%	42%			
0.080	43%	34%	35%			
M.C.(%):	26%	9%	9%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	14	29	28			
% SAND:	43	37	37			
% FINES:	43	34	35			
CLASSIFICATION	SILTY SAND (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)			



HOGGAN ENGINEERING & TESTING (1980) LTD.

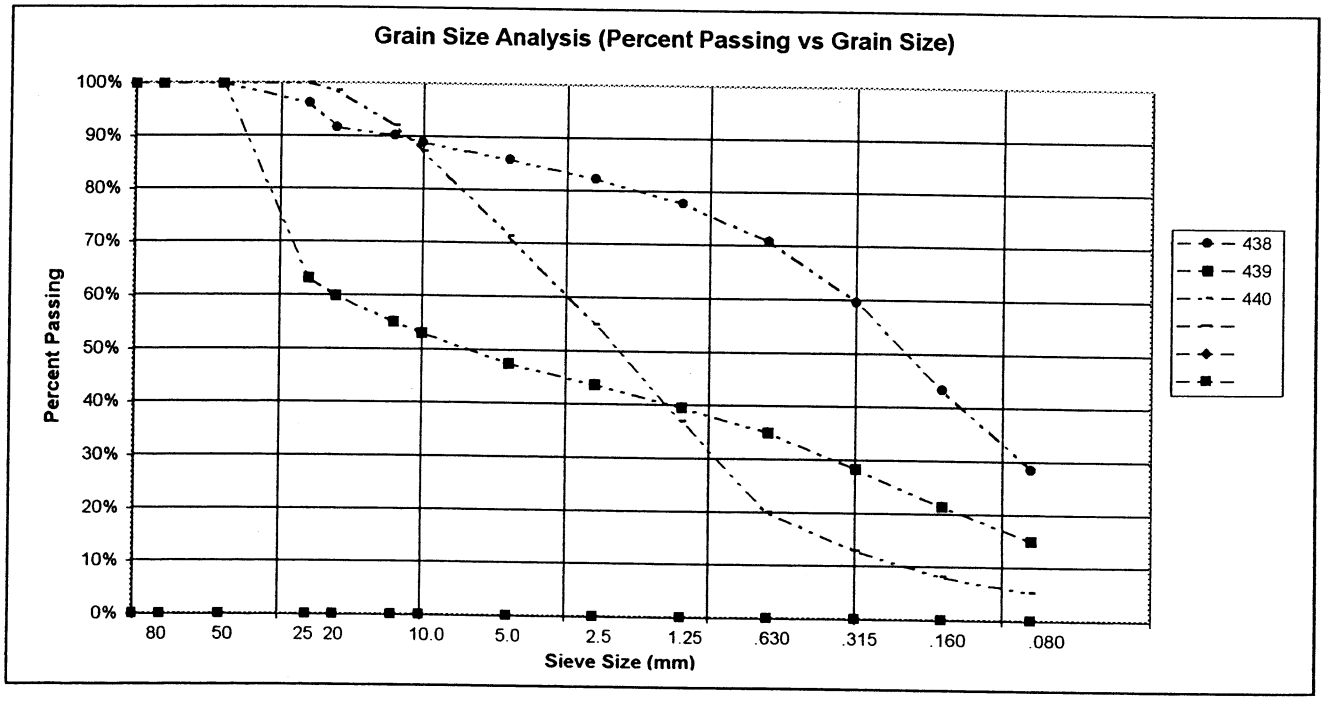
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	637704-6765920
LOGGED BY:	RW

HOLE No.: 30038

DATE COMP: 08/19/2004

FIELD NO:	438	439	440			
LAB NO:	438	439	440			
DEPTH:	0.3-0.9	1.8-2.4	3.2-3.6			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	96%	63%	100%			
20.0	92%	60%	99%			
12.5	90%	55%	92%			
10.0	89%	53%	87%			
5.0	86%	47%	71%			
2.5	82%	44%	55%			
1.25	78%	40%	37%			
0.630	71%	35%	20%			
0.315	60%	28%	13%			
0.160	43%	21%	8%			
0.080	29%	15%	5%			
M.C.(%):	6%	5%	8%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	14	53	29			
% SAND:	57	32	66			
% FINES:	29	15	5			
CLASSIFICATION	SILTY SAND (SM)	SILTY GRAVEL WITH SAND (GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)			



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

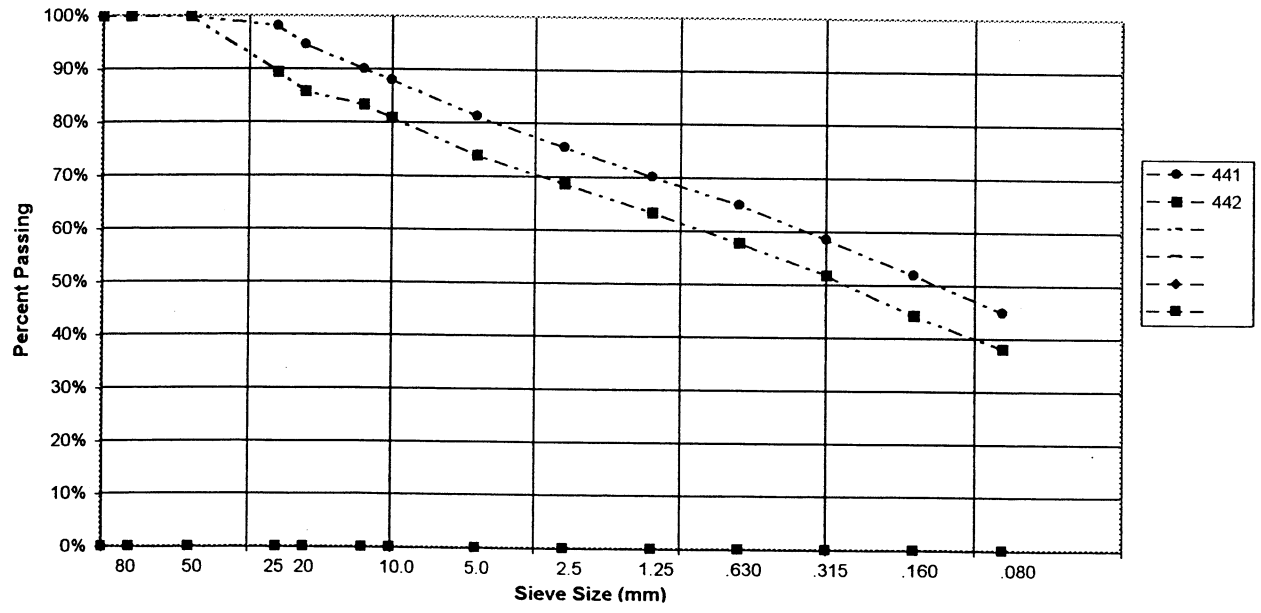
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 637563-6765818
LOGGED BY: RW

HOLE No.: 30039

DATE COMP: 08/19/2004

FIELD NO:	441	442				
LAB NO:	441	442				
DEPTH:	0.3-0.9	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	98%	89%				
20.0	95%	86%				
12.5	90%	83%				
10.0	88%	81%				
5.0	81%	74%				
2.5	76%	69%				
1.25	70%	64%				
0.630	65%	58%				
0.315	59%	52%				
0.160	52%	44%				
0.080	45%	38%				
M.C.(%):	9%	7%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	19	26				
% SAND:	36	36				
% FINES:	45	38				
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

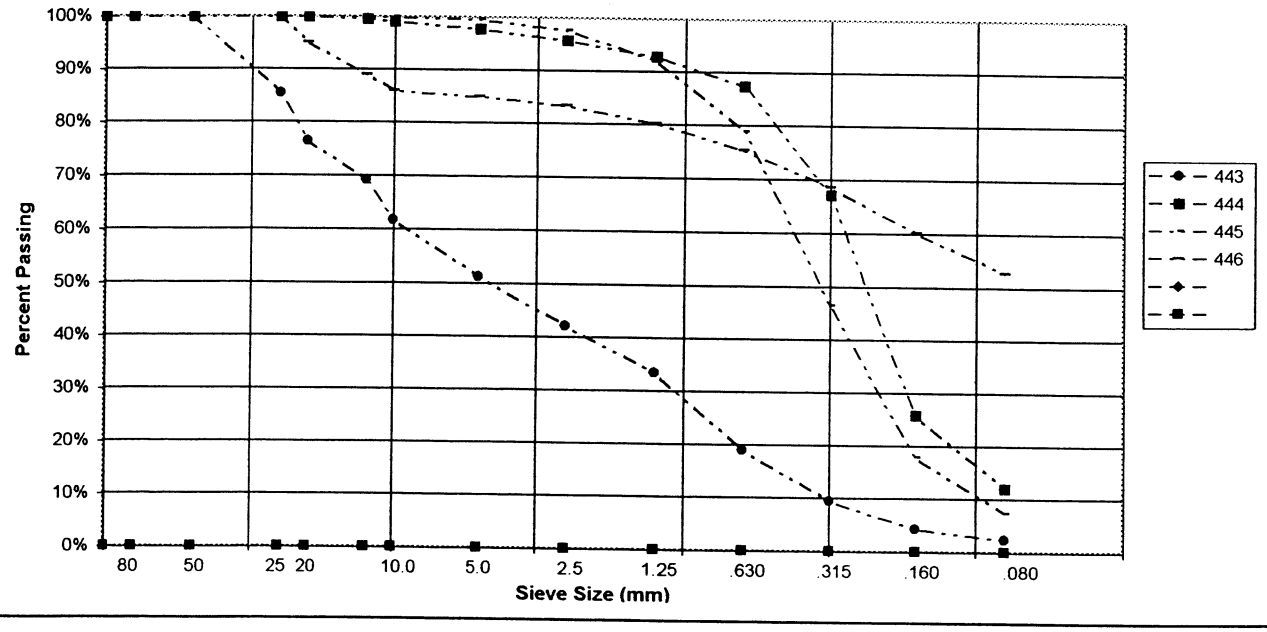
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 637444-6765598
LOGGED BY: RW

HOLE No.: 30040

DATE COMP: 08/19/2004

FIELD NO:	443	444	445	446		
LAB NO:	443	444	445	446		
DEPTH:	0.0-0.6	0.6-1.2	1.8-2.4	3.0-3.6		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	85%	100%	100%	100%		
20.0	76%	100%	100%	95%		
12.5	69%	100%	100%	89%		
10.0	62%	99%	100%	86%		
5.0	51%	98%	100%	85%		
2.5	42%	96%	98%	83%		
1.25	33%	93%	92%	80%		
0.630	19%	87%	79%	75%		
0.315	10%	67%	47%	69%		
0.160	4%	26%	18%	60%		
0.080	2%	12%	7%	53%		
M.C.(%):	8%	23%	26%	91%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	49	2	0	15		
% SAND:	49	86	92	32		
% FINES:	2	12	7	53		
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	SILTY SAND (SM)	WELL-GRADED SAND WITH SILT (SW-SM)	SANDY SILT (ML)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

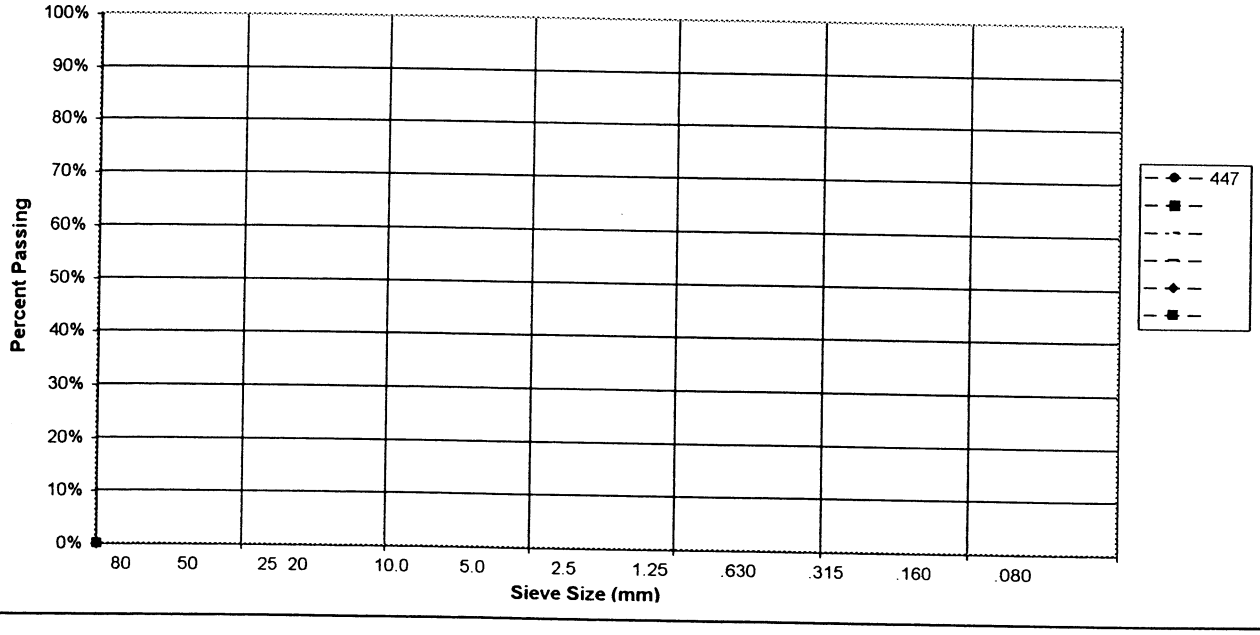
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 637429-6765452
LOGGED BY: RW

HOLE No.: 30041

DATE COMP: 08/20/2004

FIELD NO:	447
LAB NO:	447
DEPTH:	1.4
TYPE:	S.P.T.
SIEVE SIZE	**PERCENT PASSING**
100.0	
80.0	
50.0	
25.0	
20.0	
12.5	
10.0	
5.0	
2.5	
1.25	
0.630	
0.315	
0.160	
0.080	
M.C.(%):	8%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	#VALUE!
% SAND:	#VALUE!
% FINES:	#VALUE!
CLASSIFICATION	#VALUE!

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

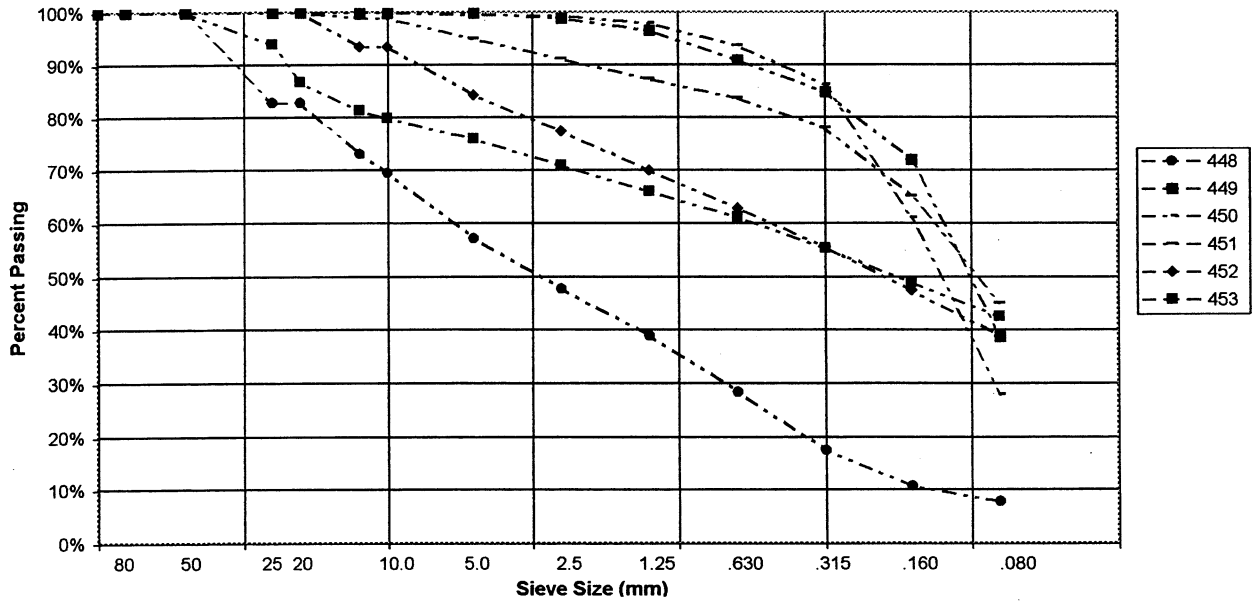
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 637411-6765198
LOGGED BY: RW

HOLE No.: 30042

DATE COMP: 08/20/2004

FIELD NO:	448	449	450	451	452	453
LAB NO:	448	449	450	451	452	453
DEPTH:	1.4	2.9	4.4	5.9	7.5	9
TYPE:	S.P.T.	S.P.T.	S.P.T.	S.P.T.	S.P.T.	S.P.T.
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	83%	100%	100%	100%	100%	94%
20.0	83%	100%	100%	100%	100%	87%
12.5	73%	100%	100%	99%	93%	81%
10.0	70%	100%	100%	99%	93%	80%
5.0	57%	100%	100%	95%	84%	76%
2.5	48%	99%	99%	91%	77%	71%
1.25	39%	97%	98%	87%	70%	66%
0.630	28%	91%	94%	84%	63%	61%
0.315	18%	85%	86%	78%	56%	55%
0.160	11%	72%	61%	65%	48%	49%
0.080	8%	39%	28%	45%	39%	43%
M.C.(%):	7%	22%	21%	13%	12%	9%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	43	0	0	5	16	24
% SAND:	49	61	72	50	45	34
% FINES:	8	39	28	45	39	43
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

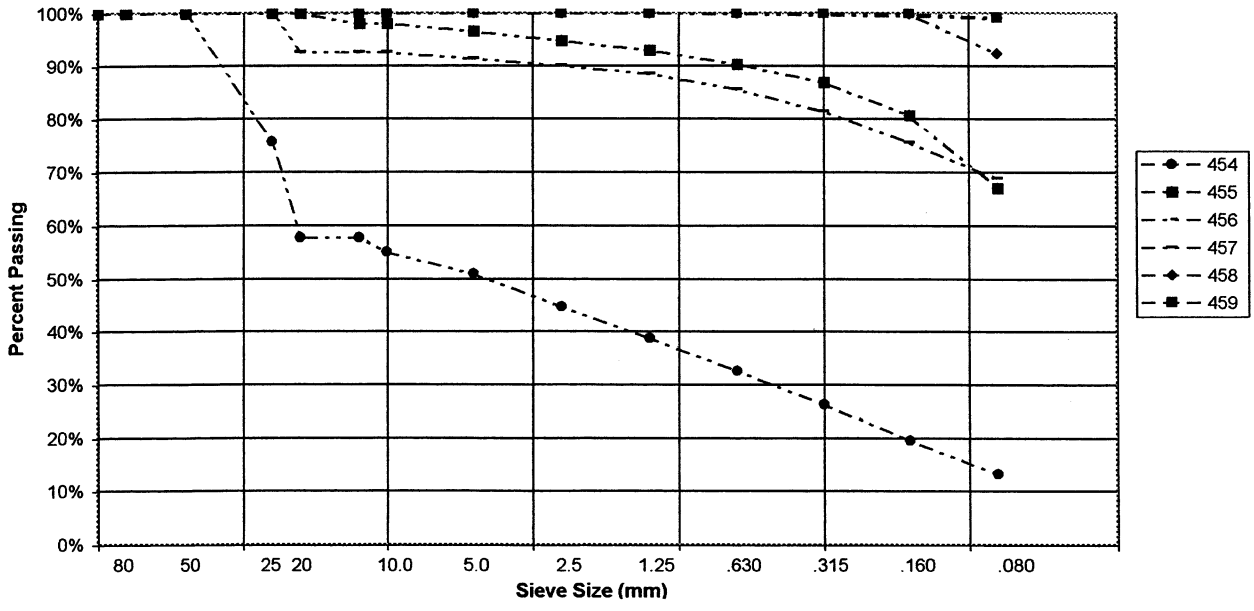
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 636827-6764763
LOGGED BY: RW

HOLE No.: 30043

DATE COMP: 08/20/2004

FIELD NO:	454	455	456	457	458	459
LAB NO:	454	455	456	457	458	459
DEPTH:	1.4	2.9	4.4	5.9	7.5	9
TYPE:	S.P.T.	S.P.T.	S.P.T.	S.P.T.	S.P.T.	S.P.T.
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	76%	100%	100%	100%	100%	100%
20.0	58%	100%	100%	93%	100%	100%
12.5	58%	98%	100%	93%	100%	100%
10.0	55%	98%	100%	93%	100%	100%
5.0	51%	97%	100%	91%	100%	100%
2.5	45%	95%	100%	90%	100%	100%
1.25	39%	93%	100%	89%	100%	100%
0.630	33%	90%	100%	86%	100%	100%
0.315	26%	87%	100%	81%	100%	100%
0.160	20%	81%	99%	76%	100%	100%
0.080	13%	67%	99%	69%	92%	99%
M.C.(%):	6%	19%	23%	25%	21%	32%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	49	3	0	9	0	0
% SAND:	38	29	1	23	8	1
% FINES:	13	67	99	69	92	99
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SANDY SILT (ML)	SILT (ML)	SANDY SILT (ML)	SILT (ML)	SILT (ML)

Grain Size Analysis (Percent Passing vs Grain Size)



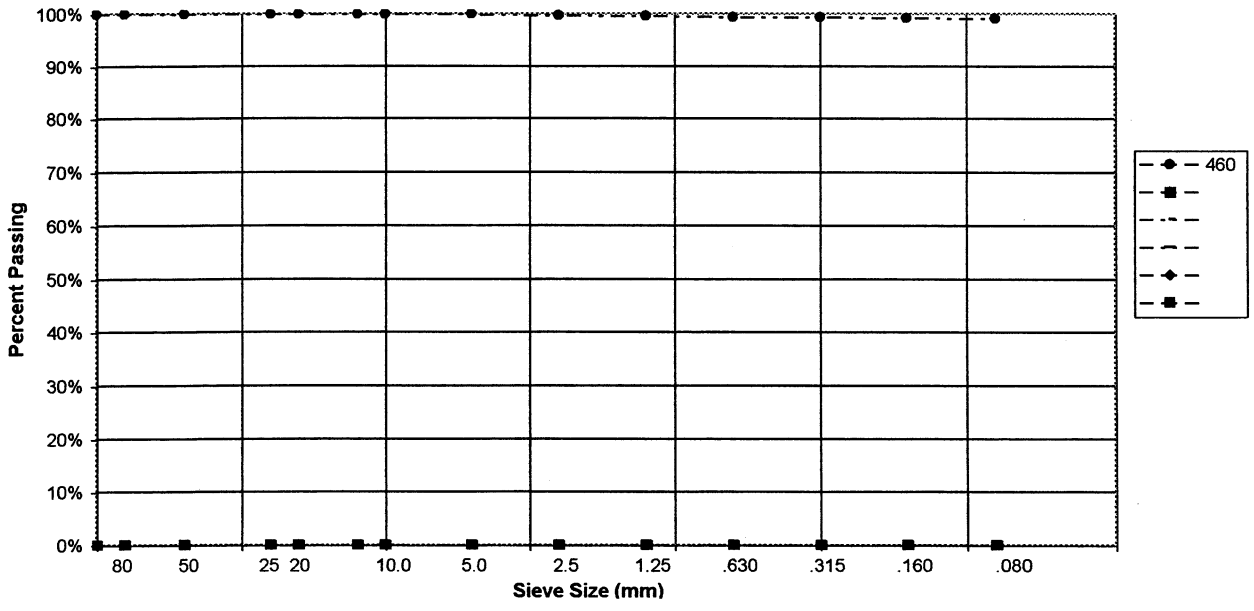
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318		HOLE No.: 30043B
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	636827-6764763		
LOGGED BY:	RW		DATE COMP: 08/20/2004

FIELD NO:	460
LAB NO:	460
DEPTH:	10.5
TYPE:	S.P.T.
SIEVE SIZE	**PERCENT PASSING**
100.0	100%
80.0	100%
50.0	100%
25.0	100%
20.0	100%
12.5	100%
10.0	100%
5.0	100%
2.5	100%
1.25	100%
0.630	99%
0.315	99%
0.160	99%
0.080	99%
M.C.(%):	36%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	0
% SAND:	1
% FINES:	99
CLASSIFICATION	SILT (ML)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

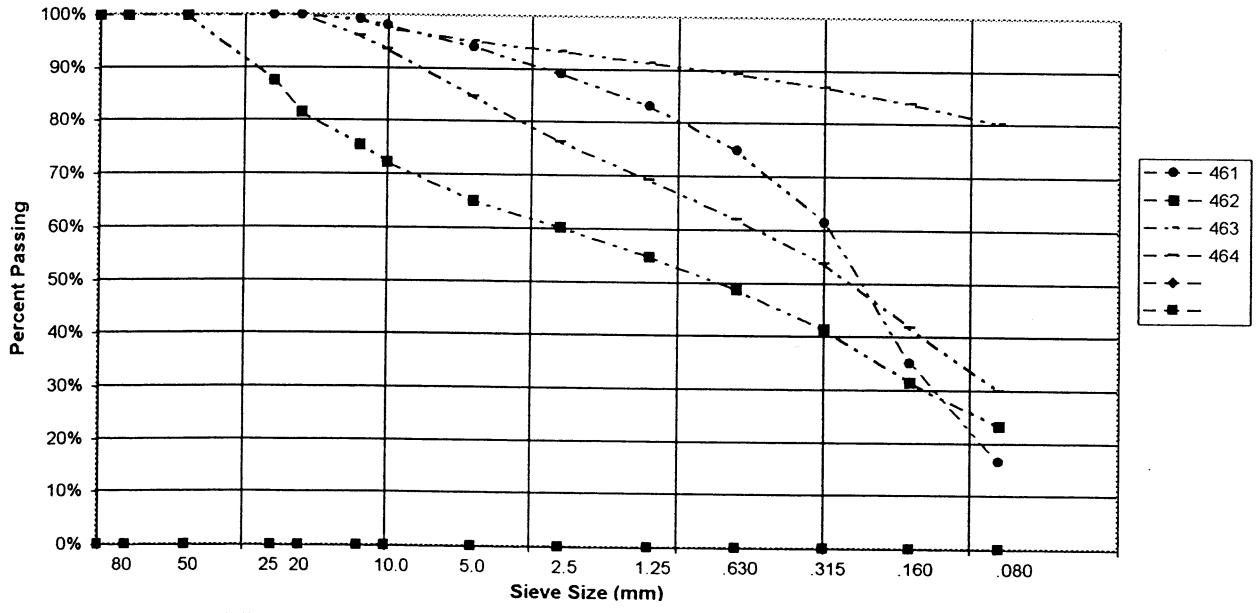
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 636668-6764727
LOGGED BY: RW

HOLE No.: 30044

DATE COMP: 08/21/2004

FIELD NO:	461	462	463	464		
LAB NO:	461	462	463	464		
DEPTH:	0.3-0.9	1.5-2.1	2.4-2.9	4.1-4.4		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	88%	100%	100%		
20.0	100%	82%	100%	100%		
12.5	99%	76%	99%	96%		
10.0	98%	72%	98%	94%		
5.0	94%	65%	95%	85%		
2.5	89%	60%	93%	76%		
1.25	83%	55%	91%	69%		
0.630	75%	49%	89%	62%		
0.315	62%	41%	87%	54%		
0.160	35%	32%	84%	42%		
0.080	17%	23%	80%	30%		
M.C.(%):	18%	10%	20%	14%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	6	35	5	15		
% SAND:	78	42	15	55		
% FINES:	17	23	80	30		
CLASSIFICATION	SILTY SAND (SM)	SILTY SAND WITH GRAVEL (SM)	SILT WITH SAND (ML)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

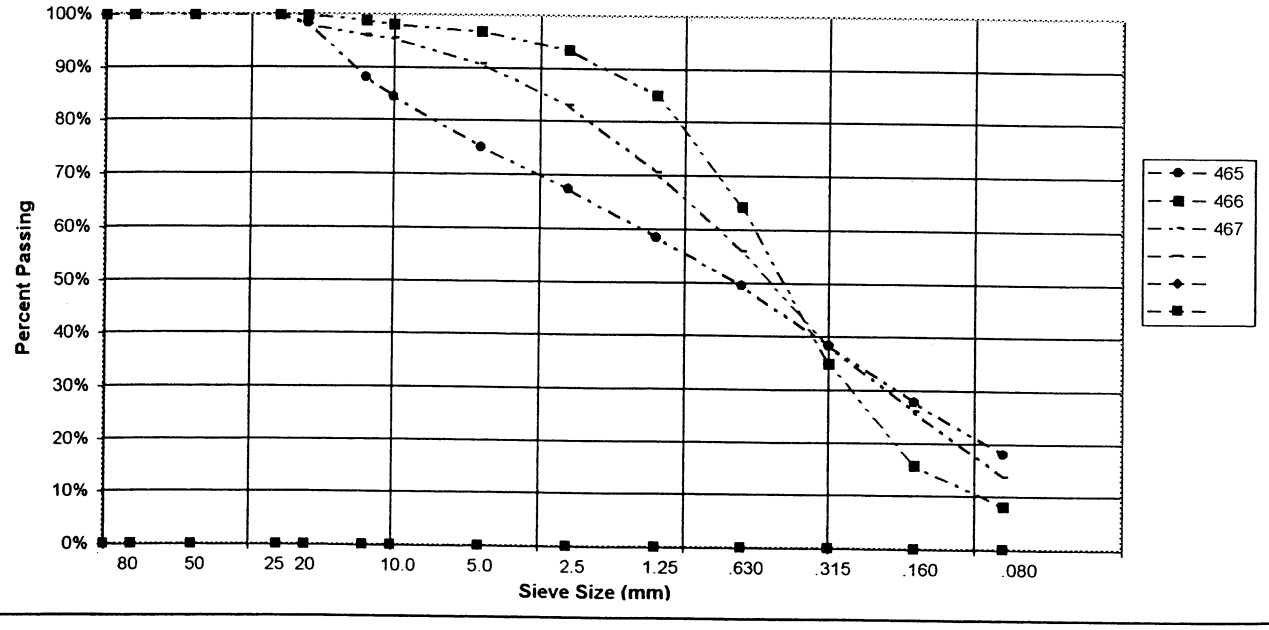
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 636398-6764640
LOGGED BY: RW

HOLE No.: 30045

DATE COMP: 08/21/2004

FIELD NO:	465	466	467			
LAB NO:	465	466	467			
DEPTH:	0.3-0.9	2.1-2.7	4.0-4.4			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	98%	100%	98%			
12.5	88%	99%	96%			
10.0	85%	98%	96%			
5.0	75%	97%	91%			
2.5	68%	94%	83%			
1.25	59%	85%	71%			
0.630	50%	64%	56%			
0.315	39%	35%	38%			
0.160	28%	16%	26%			
0.080	18%	8%	14%			
M.C.(%):	10%	14%	15%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	25	3	9			
% SAND:	57	89	77			
% FINES:	18	8	14			
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	WELL-GRADED SAND WITH SILT (SW-SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

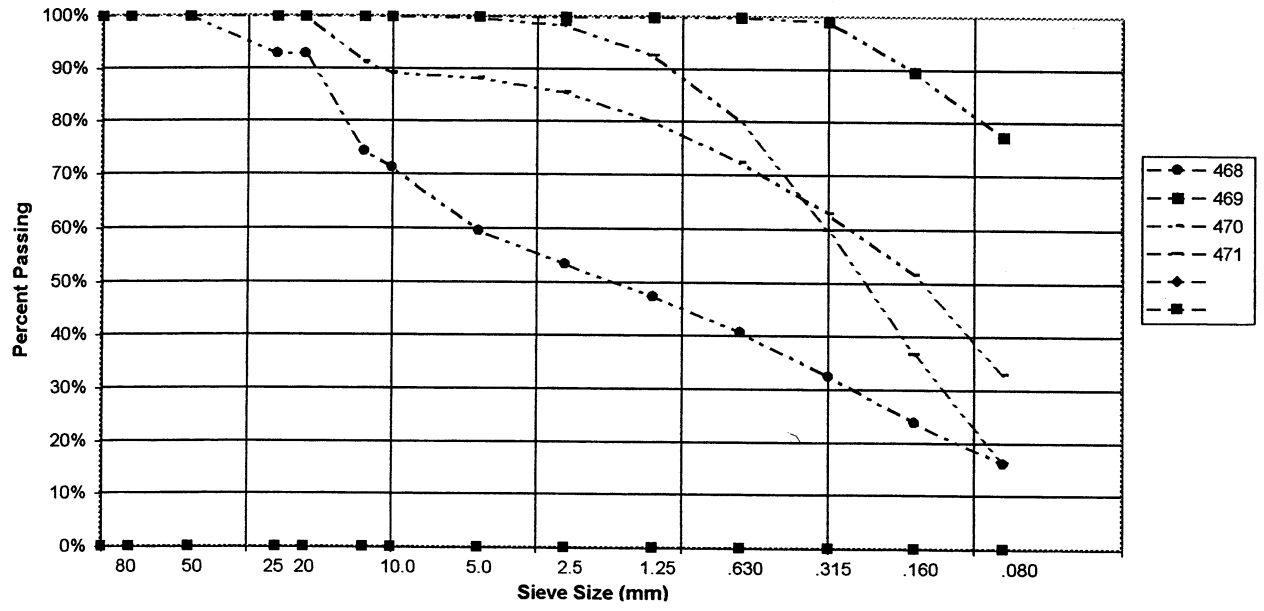
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 636230-6764571
LOGGED BY: RW

HOLE No.: 30046

DATE COMP: 08/21/2004

FIELD NO:	468	469	470	471		
LAB NO:	468	469	470	471		
DEPTH:	1.4	2.9	4.4	5.9		
TYPE:	S.P.T.	S.P.T.	S.P.T.	S.P.T.		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	93%	100%	100%	100%		
20.0	93%	100%	100%	100%		
12.5	74%	100%	91%	100%		
10.0	71%	100%	89%	100%		
5.0	60%	100%	88%	100%		
2.5	53%	100%	86%	98%		
1.25	47%	100%	80%	93%		
0.630	41%	100%	72%	80%		
0.315	33%	99%	63%	60%		
0.160	24%	90%	52%	37%		
0.080	16%	77%	33%	16%		
M.C.(%):	9%	17%	17%	17%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	40	0	12	0		
% SAND:	43	23	55	83		
% FINES:	16	77	33	16		
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILT WITH SAND (ML)	SILTY SAND (SM)	SILTY SAND (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

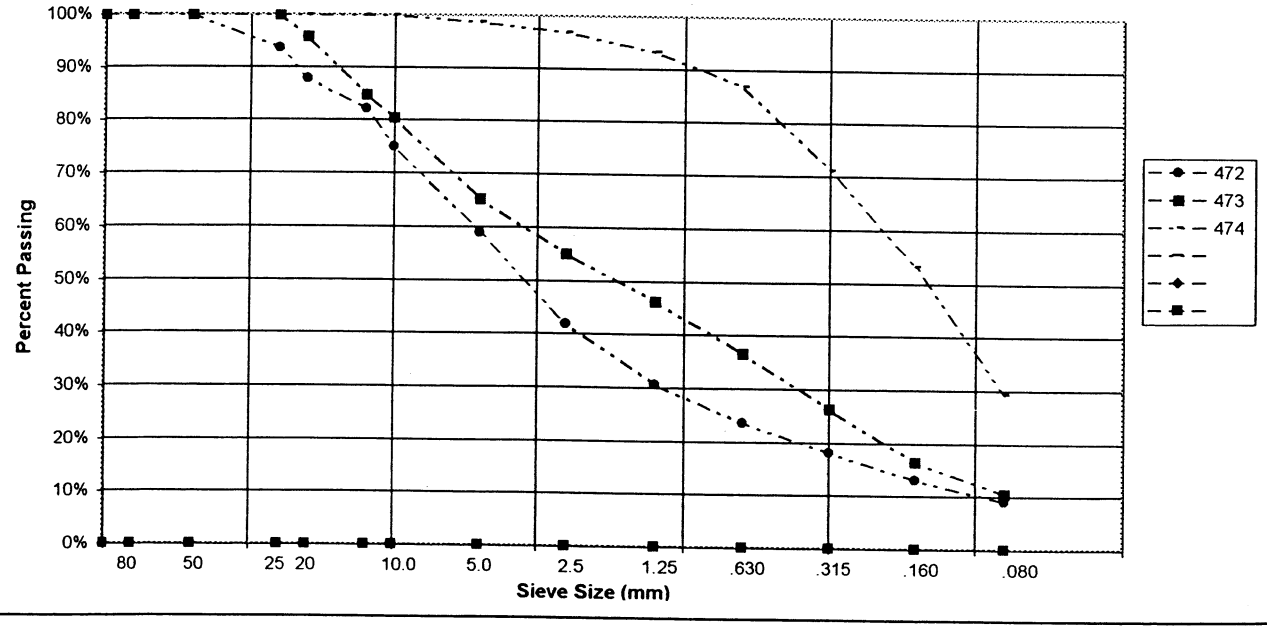
PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	636077-6764452
LOGGED BY:	RW

HOLE No.: 30047

DATE COMP: 08/21/2004

FIELD NO:	472	473	474			
LAB NO:	472	473	474			
DEPTH:	0.3-0.9	2.1-2.7	3.7-4.3			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	94%	100%	100%			
20.0	88%	96%	100%			
12.5	82%	85%	100%			
10.0	75%	80%	100%			
5.0	59%	65%	99%			
2.5	42%	55%	97%			
1.25	31%	46%	93%			
0.630	24%	37%	87%			
0.315	18%	27%	71%			
0.160	13%	17%	53%			
0.080	9%	11%	29%			
M.C.(%):	7%	10%	18%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	41	35	1			
% SAND:	50	55	69			
% FINES:	9	11	29			
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

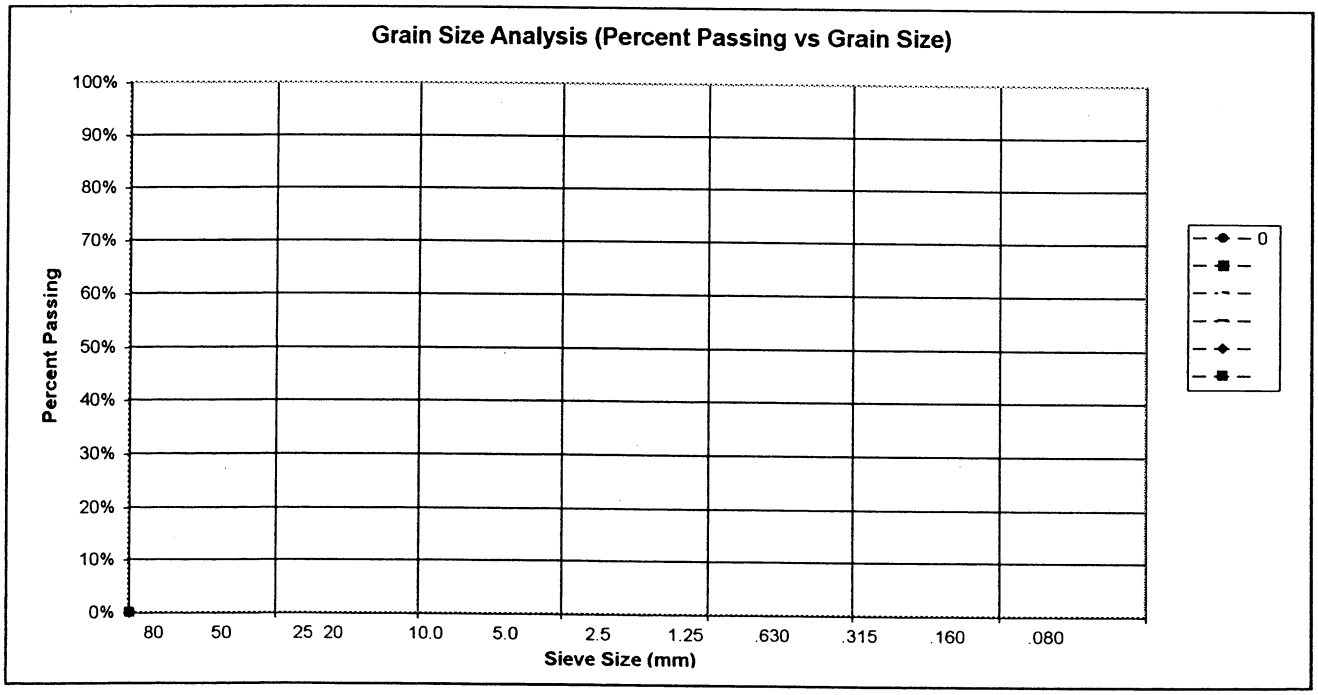
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: Not Accessible
LOGGED BY: RW

HOLE No.: 30048

DATE COMP: 08/21/2004

FIELD NO:	0					
LAB NO:	0					
DEPTH:	0					
TYPE:						
SIEVE SIZE	PERCENT PASSING					
100.0						
80.0						
50.0						
25.0						
20.0						
12.5						
10.0						
5.0						
2.5						
1.25						
0.630						
0.315						
0.160						
0.080						
M.C.(%):						
LIQUID LIMIT:						
PLASTIC LIMIT:						
PLASTIC INDEX.:						
% GRAVEL:	#VALUE!					
% SAND:	#VALUE!					
% FINES:	#VALUE!					
CLASSIFICATION	#VALUE!					



HOGGAN ENGINEERING & TESTING (1980) LTD.

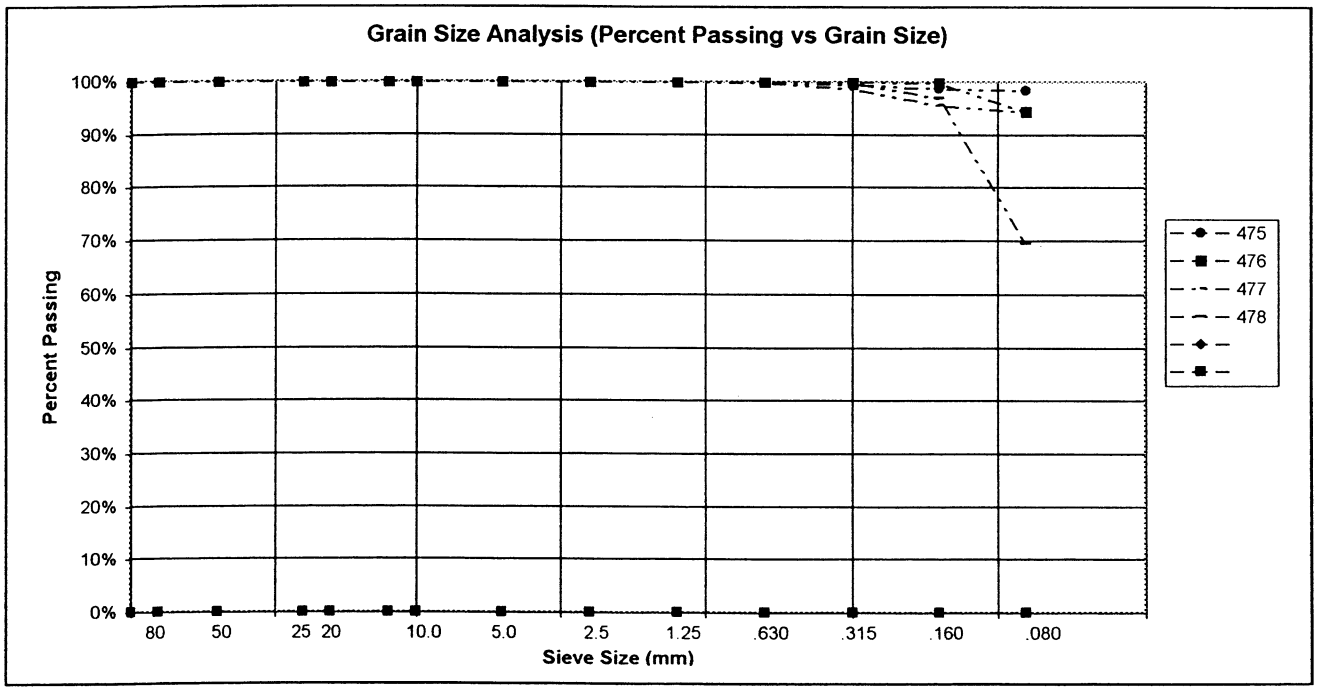
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 635653-6764453
LOGGED BY: RW

HOLE No.: 30049

DATE COMP: 08/21/2004

FIELD NO:	475	476	477	478		
LAB NO:	475	476	477	478		
DEPTH:	0.6-1.2	1.8-2.4	2.6-2.9	4.0-4.4		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	100%	100%	100%		
20.0	100%	100%	100%	100%		
12.5	100%	100%	100%	100%		
10.0	100%	100%	100%	100%		
5.0	100%	100%	100%	100%		
2.5	100%	100%	100%	100%		
1.25	100%	100%	100%	100%		
0.630	100%	100%	100%	100%		
0.315	99%	100%	99%	100%		
0.160	99%	100%	96%	97%		
0.080	98%	94%	94%	70%		
M.C.(%):	28%	21%	31%	19%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	0	0	0	0		
% SAND:	2	6	6	30		
% FINES:	98	94	94	70		
CLASSIFICATION	SILT (ML)	SILT (ML)	SILT (ML)	SANDY SILT (ML)		



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

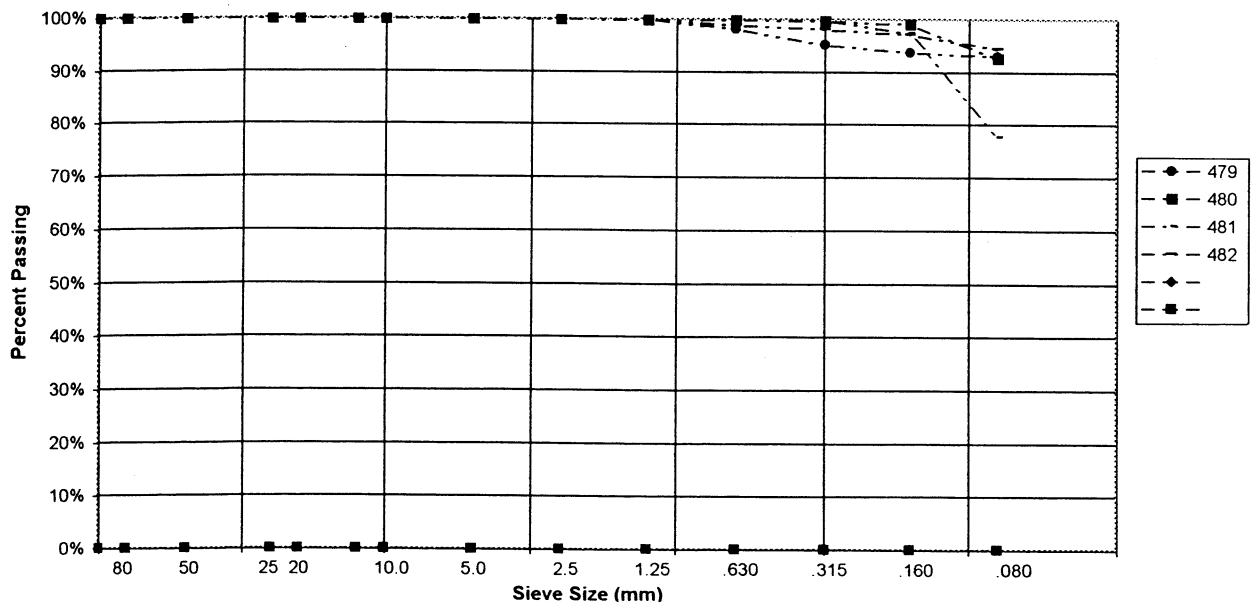
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 635462-6764514
LOGGED BY: RW

HOLE No.: 30050

DATE COMP: 08/21/2004

FIELD NO:	479	480	481	482		
LAB NO:	479	480	481	482		
DEPTH:	0.6-1.2	2.1-2.9	3.2-3.6	4.0-4.4		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	100%	100%	100%		
20.0	100%	100%	100%	100%		
12.5	100%	100%	100%	100%		
10.0	100%	100%	100%	100%		
5.0	100%	100%	100%	100%		
2.5	100%	100%	100%	100%		
1.25	100%	100%	100%	100%		
0.630	98%	100%	100%	99%		
0.315	95%	100%	100%	98%		
0.160	94%	99%	97%	97%		
0.080	93%	93%	78%	95%		
M.C.(%):	29%	23%	20%	29%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	0	0	0	0		
% SAND:	7	7	22	5		
% FINES:	93	93	78	95		
CLASSIFICATION	SILT (ML)	SILT (ML)	SILT WITH SAND (ML)	SILT (ML)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

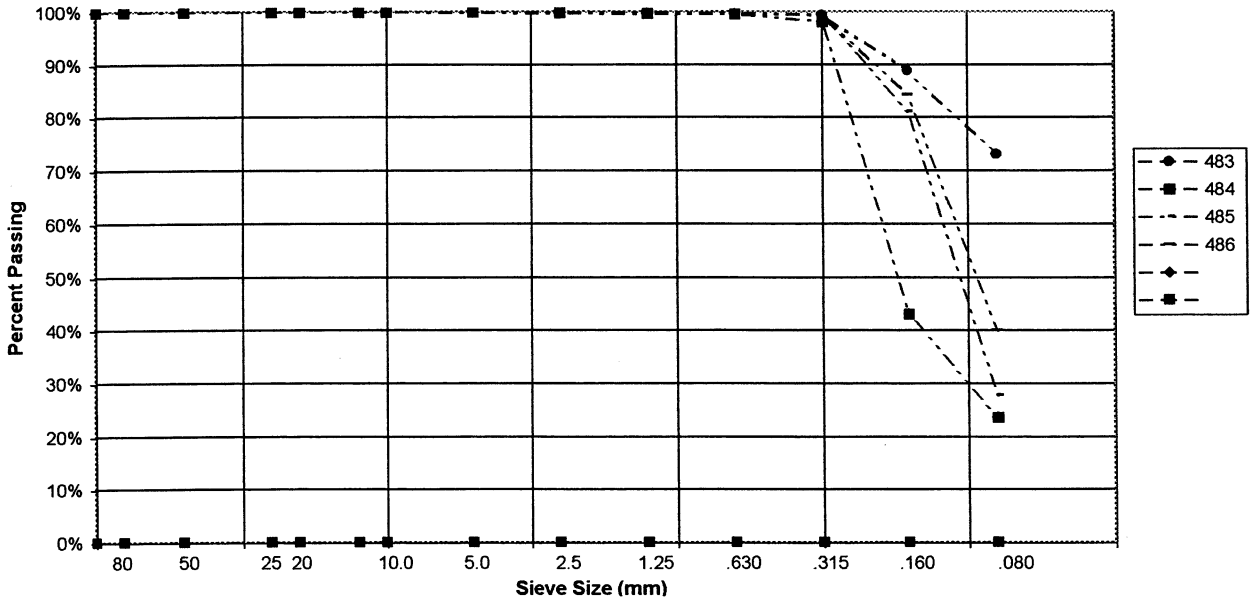
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 635301-6764643
LOGGED BY: RW

HOLE No.: 30051

DATE COMP: 08/22/2004

FIELD NO:	483	484	485	486		
LAB NO:	483	484	485	486		
DEPTH:	1.4	2.9	4.4	5.9		
TYPE:	S.P.T.	S.P.T.	S.P.T.	S.P.T.		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	100%	100%	100%		
20.0	100%	100%	100%	100%		
12.5	100%	100%	100%	100%		
10.0	100%	100%	100%	100%		
5.0	100%	100%	100%	100%		
2.5	100%	100%	100%	100%		
1.25	100%	100%	100%	100%		
0.630	100%	100%	100%	100%		
0.315	99%	98%	100%	99%		
0.160	89%	43%	81%	84%		
0.080	73%	24%	28%	40%		
M.C.(%):	23%	19%	23%	28%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	0	0	0	0		
% SAND:	27	76	72	60		
% FINES:	73	24	28	40		
CLASSIFICATION	SILT WITH SAND (ML)	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	635054-6768523
LOGGED BY:	RW

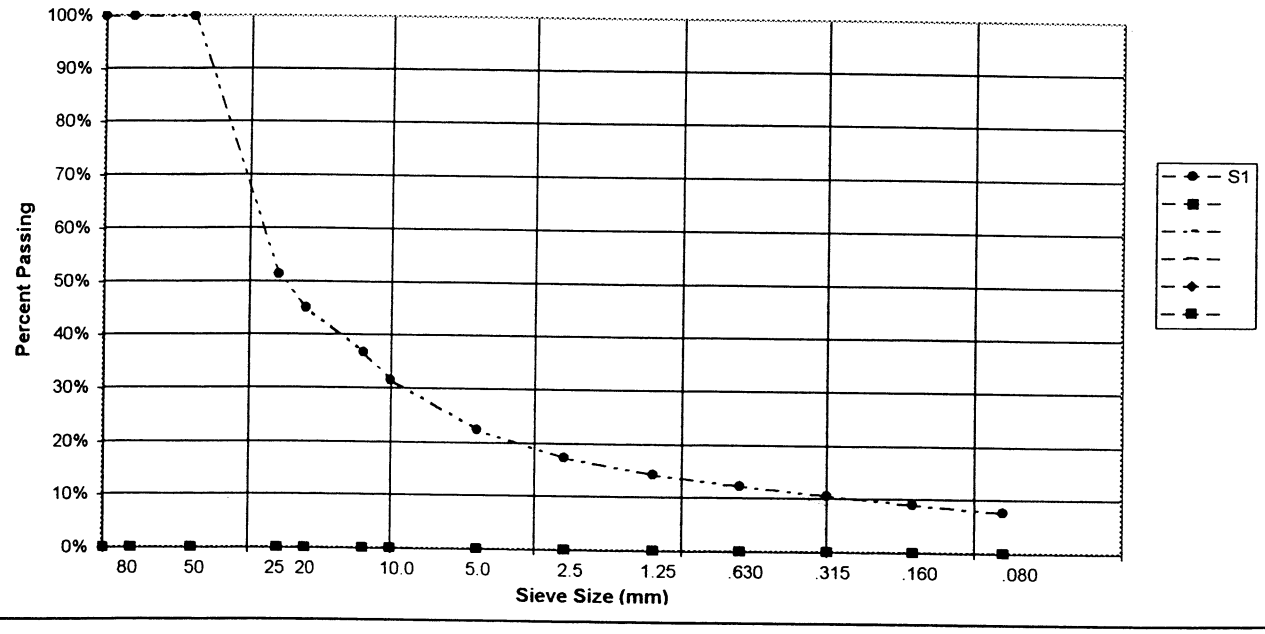
HOLE No.: 30076

DATE COMP: 07/29/2004

FIELD NO:	S1
LAB NO:	S1
DEPTH:	3.6-4.2
TYPE:	BULK

SIEVE SIZE	PERCENT PASSING
100.0	100%
80.0	100%
50.0	100%
25.0	51%
20.0	45%
12.5	37%
10.0	32%
5.0	23%
2.5	17%
1.25	14%
0.630	12%
0.315	11%
0.160	9%
0.080	8%
M.C.(%):	4%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	77
% SAND:	15
% FINES:	8
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT (GP-GM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

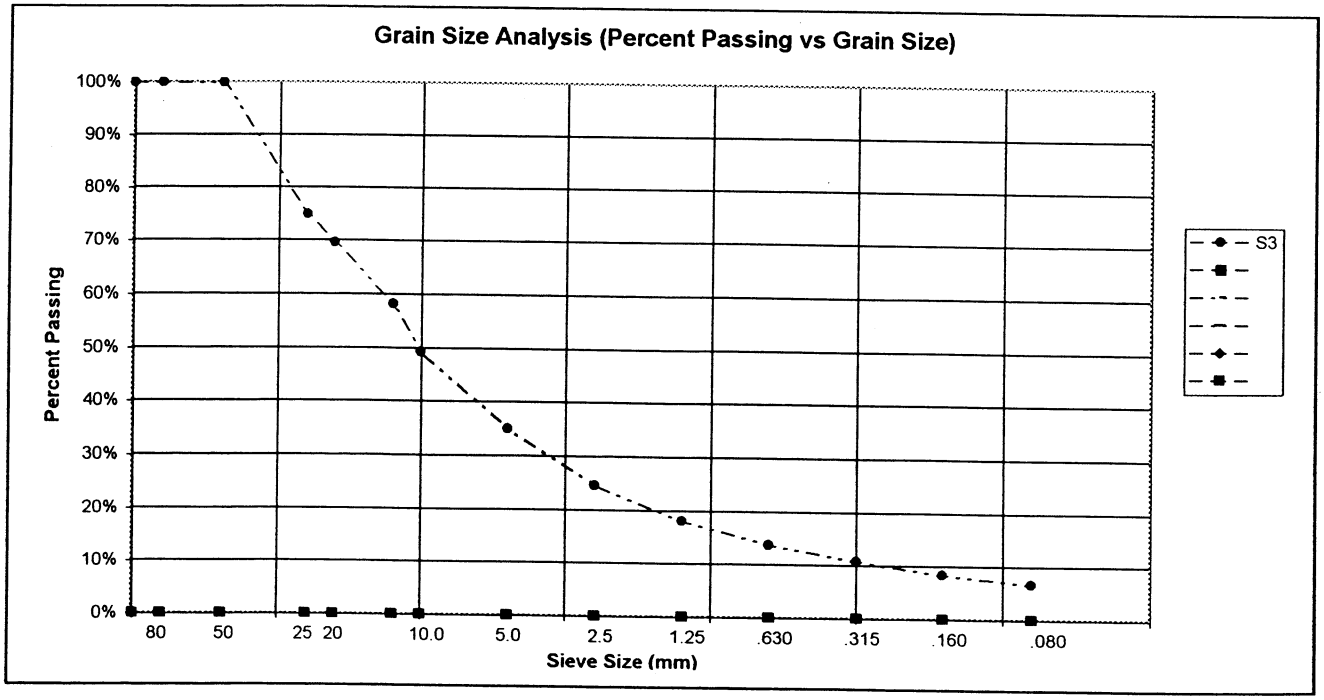
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 635160-6768752
LOGGED BY: RW

HOLE No.: 30081

DATE COMP: 07/31/2004

FIELD NO:	S3
LAB NO:	S3
DEPTH:	4.5-5.0
TYPE:	BULK
SIEVE SIZE	**PERCENT PASSING**
100.0	100%
80.0	100%
50.0	100%
25.0	75%
20.0	70%
12.5	58%
10.0	49%
5.0	35%
2.5	25%
1.25	18%
0.630	14%
0.315	11%
0.160	9%
0.080	7%
M.C.(%):	2%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	65
% SAND:	28
% FINES:	7
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)



HOGGAN ENGINEERING & TESTING (1980) LTD.

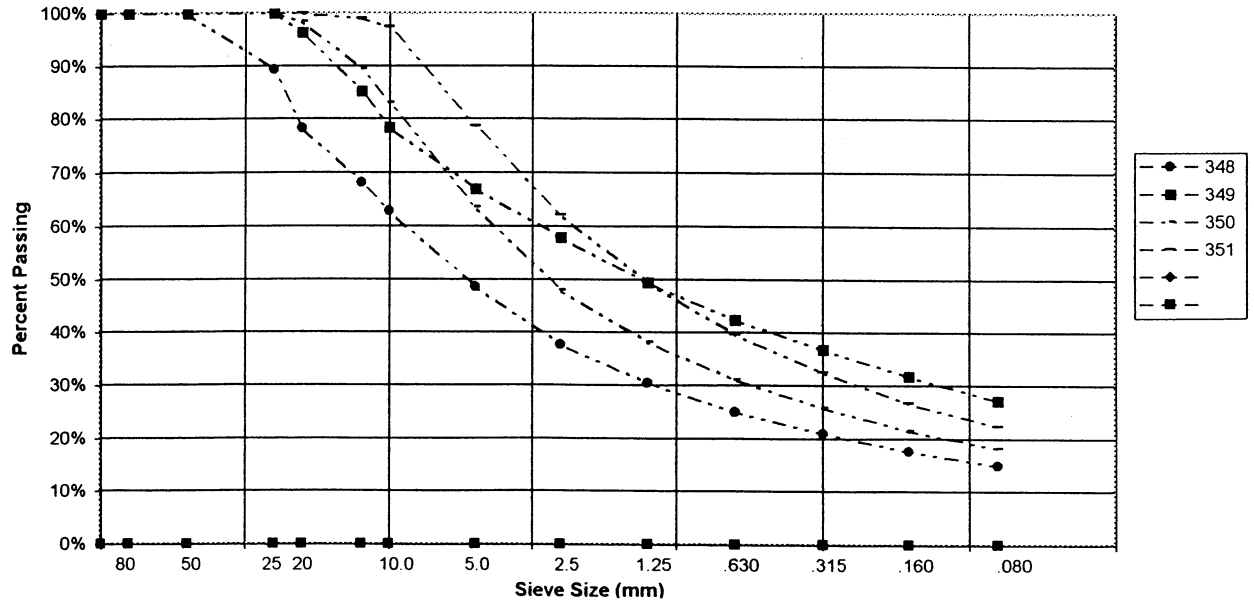
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633550-6773445
LOGGED BY: RW

HOLE No.: 30082
DATE COMP: 08/15/2004

FIELD NO:	348	349	350	351		
LAB NO:	348	349	350	351		
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.0	4.9-5.5		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	89%	100%	100%	100%		
20.0	78%	96%	98%	100%		
12.5	68%	85%	89%	99%		
10.0	63%	78%	83%	97%		
5.0	49%	67%	64%	79%		
2.5	38%	58%	48%	62%		
1.25	31%	49%	38%	49%		
0.630	25%	42%	31%	40%		
0.315	21%	37%	26%	33%		
0.160	18%	32%	22%	27%		
0.080	15%	27%	18%	22%		
M.C.(%):	3%	8%	4%	7%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	51	33	36	21		
% SAND:	34	40	45	56		
% FINES:	15	27	18	22		
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

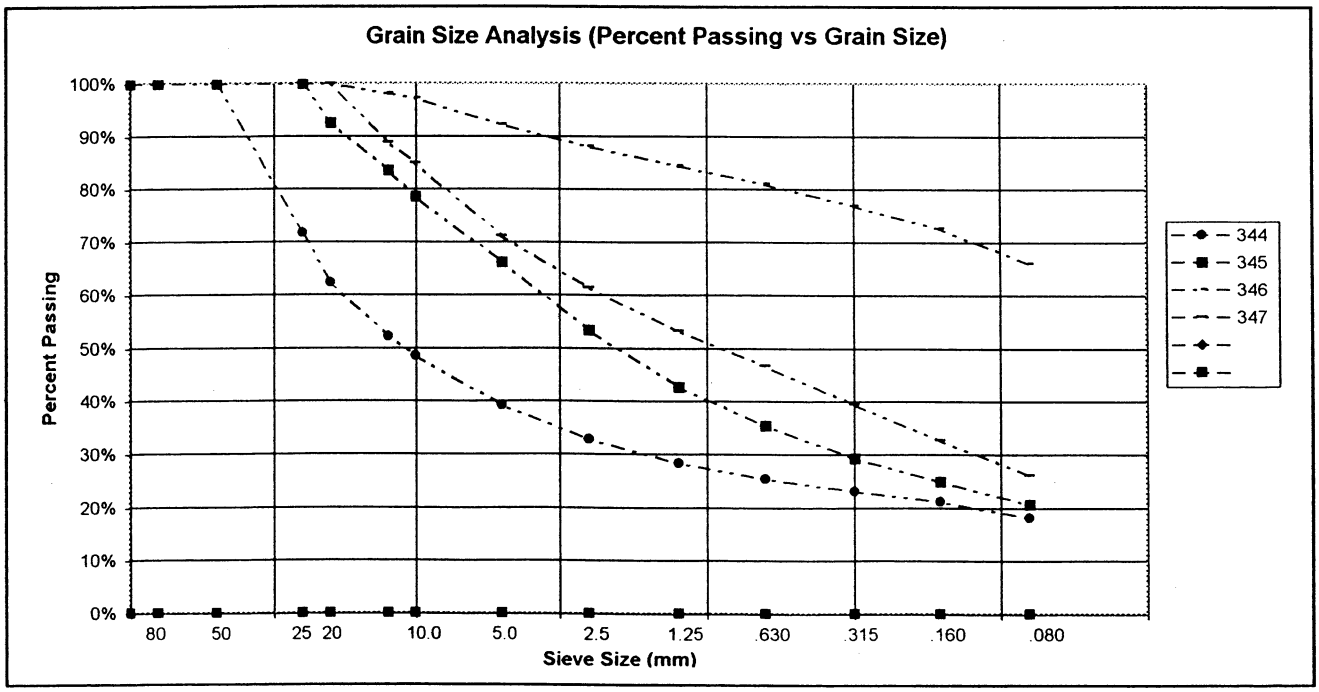
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633530-6773484
LOGGED BY: RW

HOLE No.: 30083

DATE COMP: 08/15/2004

FIELD NO:	344	345	346	347		
LAB NO:	344	345	346	347		
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.0	4.9-5.5		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	72%	100%	100%	100%		
20.0	62%	93%	100%	100%		
12.5	52%	84%	98%	89%		
10.0	49%	79%	97%	85%		
5.0	39%	66%	92%	71%		
2.5	33%	53%	88%	61%		
1.25	28%	43%	84%	53%		
0.630	26%	35%	81%	47%		
0.315	23%	29%	77%	40%		
0.160	21%	25%	73%	33%		
0.080	18%	21%	66%	26%		
M.C.(%):	7%	7%	21%	10%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	61	34	8	29		
% SAND:	21	45	26	45		
% FINES:	18	21	66	26		
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	SANDY SILT (ML)	SILTY SAND WITH GRAVEL (SM)		



HOGGAN ENGINEERING & TESTING (1980) LTD.

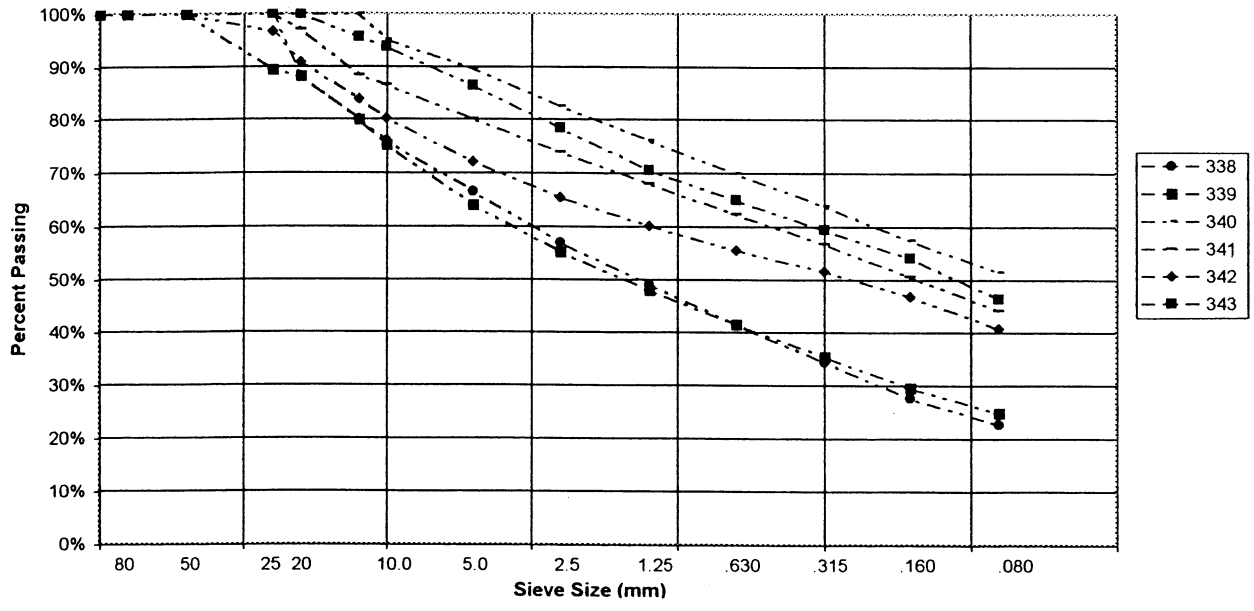
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633531-6773473
LOGGED BY: RW

HOLE No.: 30084
DATE COMP: 08/15/2004

FIELD NO:	338	339	340	341	342	343
LAB NO:	338	339	340	341	342	343
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.0	4.9-5.5	6.7-7.0	7.6-8.1
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	100%	89%	100%	100%	97%	100%
20.0	88%	88%	100%	97%	91%	100%
12.5	80%	80%	100%	88%	84%	96%
10.0	76%	75%	95%	87%	80%	94%
5.0	67%	64%	90%	80%	72%	86%
2.5	57%	55%	83%	74%	66%	78%
1.25	49%	48%	76%	68%	60%	71%
0.630	42%	42%	70%	62%	56%	65%
0.315	34%	36%	64%	57%	52%	59%
0.160	28%	30%	58%	51%	47%	54%
0.080	23%	25%	52%	44%	41%	46%
M.C.(%):	3%	3%	6%	6%	5%	6%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	33	36	10	20	28	14
% SAND:	44	39	38	36	31	40
% FINES:	23	25	52	44	41	46
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SANDY SILT (ML)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

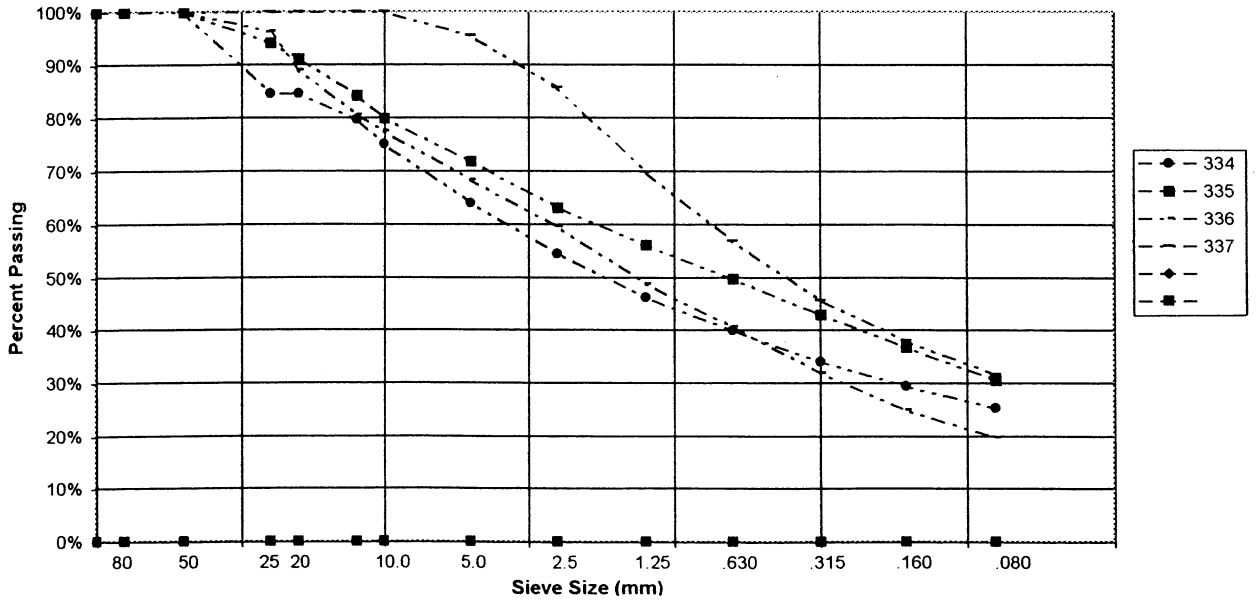
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633471-6773546
LOGGED BY: RW

HOLE No.: 30085

DATE COMP: 08/15/2004

FIELD NO:	334	335	336	337		
LAB NO:	334	335	336	337		
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.0	4.9-5.5		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	85%	94%	96%	100%		
20.0	85%	91%	89%	100%		
12.5	80%	84%	81%	100%		
10.0	75%	80%	78%	100%		
5.0	64%	72%	68%	95%		
2.5	55%	63%	60%	86%		
1.25	46%	56%	49%	70%		
0.630	40%	50%	41%	57%		
0.315	34%	43%	32%	46%		
0.160	30%	37%	25%	38%		
0.080	25%	31%	20%	32%		
M.C.(%):	5%	4%	3%	3%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	36	28	32	5		
% SAND:	39	41	49	64		
% FINES:	25	31	20	32		
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

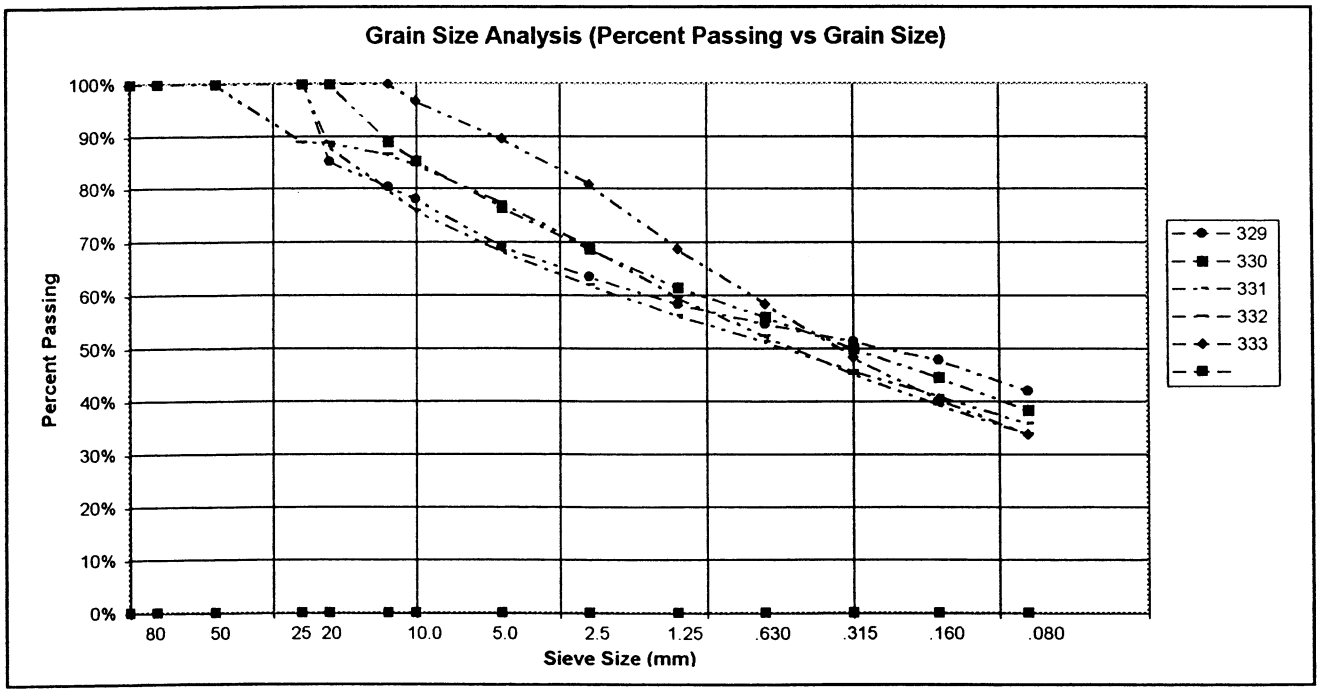
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633472-6773537
LOGGED BY: RW

HOLE No.: 30086

DATE COMP: 08/15/2004

FIELD NO:	329	330	331	332	333	
LAB NO:	329	330	331	332	333	
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.0	4.9-5.5	6.7-7.3	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	100%	100%	100%	89%	100%	
20.0	85%	100%	88%	89%	100%	
12.5	80%	89%	80%	87%	100%	
10.0	78%	85%	76%	85%	97%	
5.0	69%	77%	68%	78%	90%	
2.5	64%	69%	62%	69%	81%	
1.25	58%	62%	56%	60%	69%	
0.630	55%	56%	51%	52%	58%	
0.315	51%	50%	46%	45%	48%	
0.160	48%	45%	41%	39%	40%	
0.080	42%	38%	36%	34%	34%	
M.C.(%):	15%	10%	10%	9%	9%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	31	23	32	22	10	
% SAND:	27	38	32	44	56	
% FINES:	42	38	36	34	34	
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	



HOGGAN ENGINEERING & TESTING (1980) LTD.

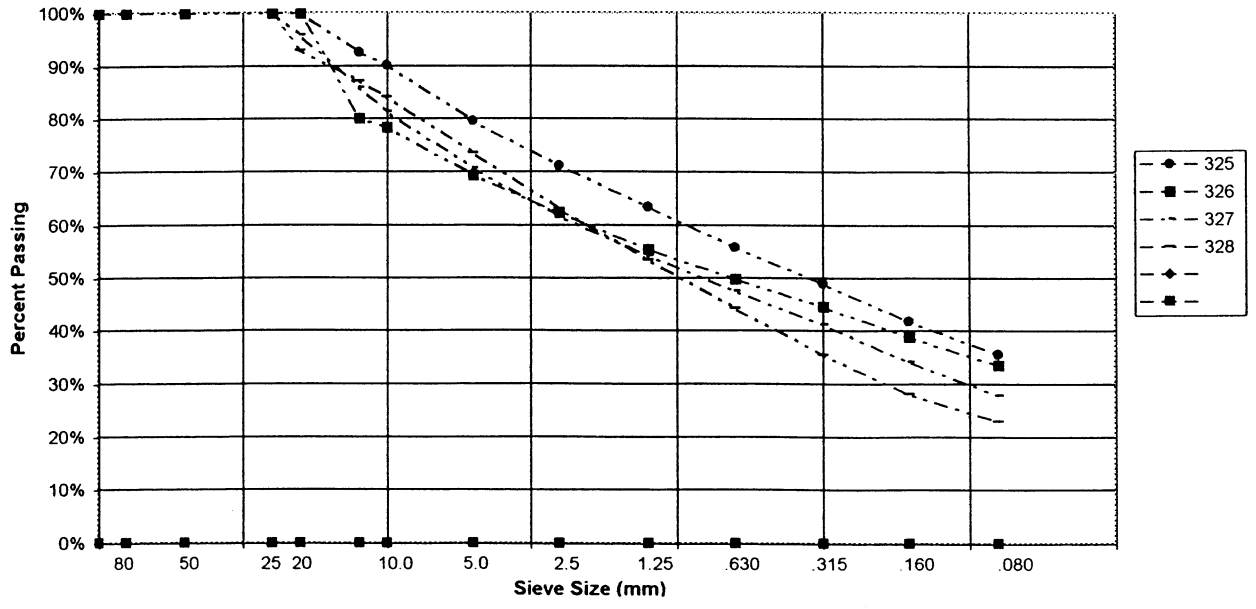
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633417-6773660
LOGGED BY: RW

HOLE No.: 30087
DATE COMP: 08/15/2004

FIELD NO:	325	326	327	328		
LAB NO:	325	326	327	328		
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.0	4.9-5.5		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	100%	100%	100%		
20.0	100%	100%	96%	93%		
12.5	93%	80%	86%	87%		
10.0	90%	78%	81%	84%		
5.0	80%	69%	71%	74%		
2.5	71%	62%	62%	63%		
1.25	64%	56%	54%	53%		
0.630	56%	50%	47%	44%		
0.315	49%	45%	41%	36%		
0.160	42%	39%	34%	28%		
0.080	36%	34%	28%	23%		
M.C.(%):	6%	6%	4%	5%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	20	31	29	26		
% SAND:	44	36	43	51		
% FINES:	36	34	28	23		
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

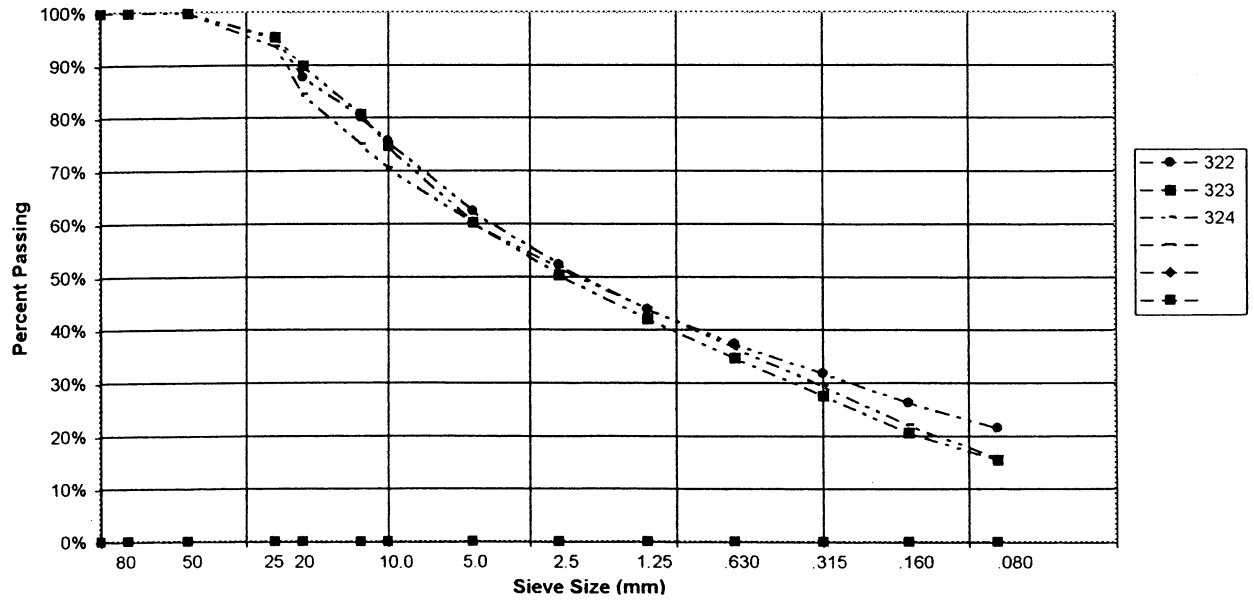
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633423-6773651
LOGGED BY: RW

HOLE No.: 30088

DATE COMP: 08/15/2004

FIELD NO:	322	323	324			
LAB NO:	322	323	324			
DEPTH:	0.9-1.2	1.8-2.4	3.4-4.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	95%	95%	94%			
20.0	88%	90%	84%			
12.5	80%	81%	75%			
10.0	76%	75%	71%			
5.0	62%	60%	60%			
2.5	52%	50%	52%			
1.25	44%	42%	44%			
0.630	37%	35%	37%			
0.315	32%	28%	30%			
0.160	26%	21%	22%			
0.080	22%	16%	16%			
M.C.(%):	4%	3%	2%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	38	40	40			
% SAND:	41	45	44			
% FINES:	22	16	16			
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



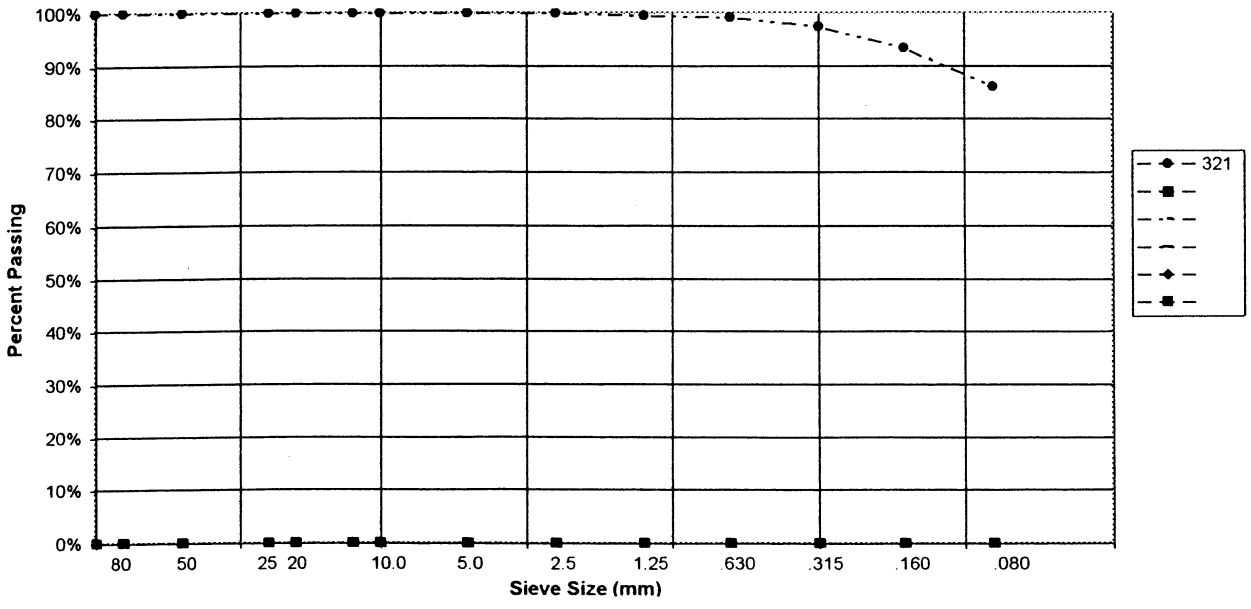
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.:	30089
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	633338-6773776		
LOGGED BY:	RW	DATE COMP:	08/15/2004

FIELD NO:	321
LAB NO:	321
DEPTH:	0.0-0.6
TYPE:	AUGER
SIEVE SIZE	**PERCENT PASSING**
100.0	100%
80.0	100%
50.0	100%
25.0	100%
20.0	100%
12.5	100%
10.0	100%
5.0	100%
2.5	100%
1.25	100%
0.630	99%
0.315	97%
0.160	93%
0.080	86%
M.C.(%):	13%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	0
% SAND:	14
% FINES:	86
CLASSIFICATION	SILT (ML)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

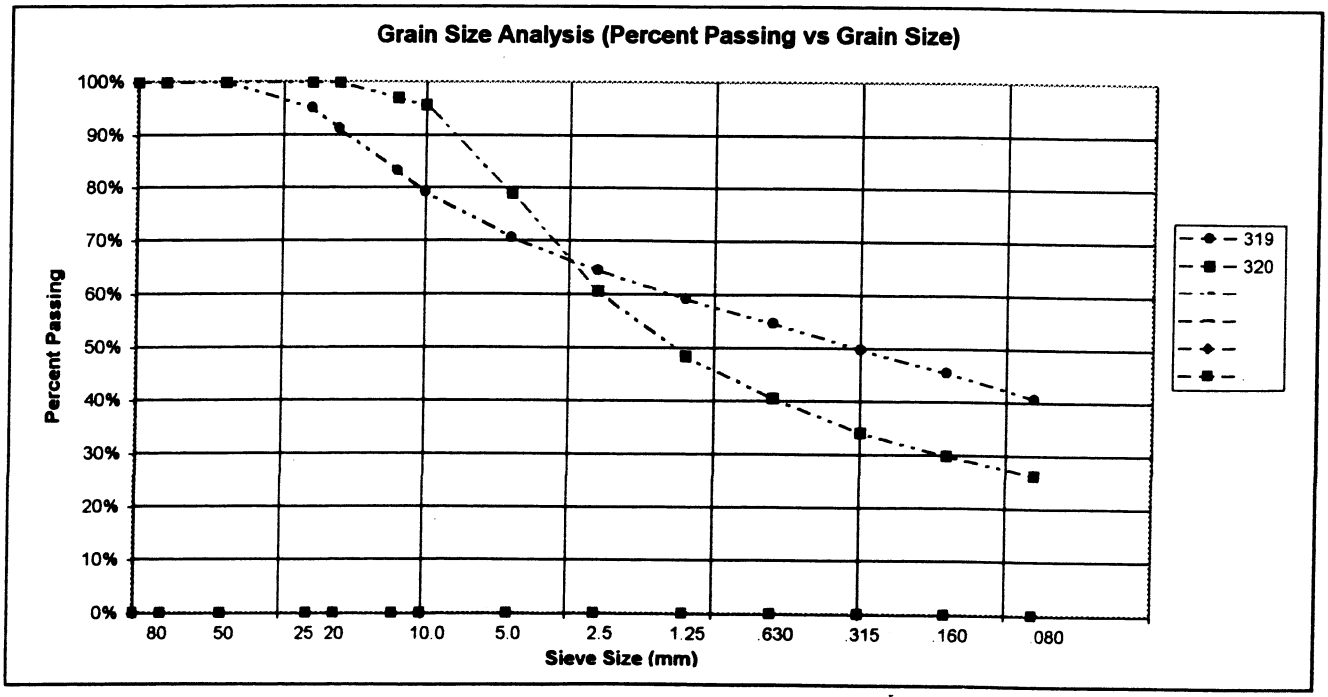
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 635061-6769660
LOGGED BY: RW

HOLE No.: 30090

DATE COMP: 08/15/2004

FIELD NO:	319	320				
LAB NO:	319	320				
DEPTH:	0.5-1.0	1.2-1.5				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	95%	100%				
20.0	91%	100%				
12.5	83%	97%				
10.0	79%	96%				
5.0	71%	79%				
2.5	65%	61%				
1.25	59%	48%				
0.630	55%	41%				
0.315	50%	34%				
0.160	46%	30%				
0.080	41%	26%				
M.C.(%):	6%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	29	21				
% SAND:	30	53				
% FINES:	41	26				
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)				



HOGGAN ENGINEERING & TESTING (1980) LTD.

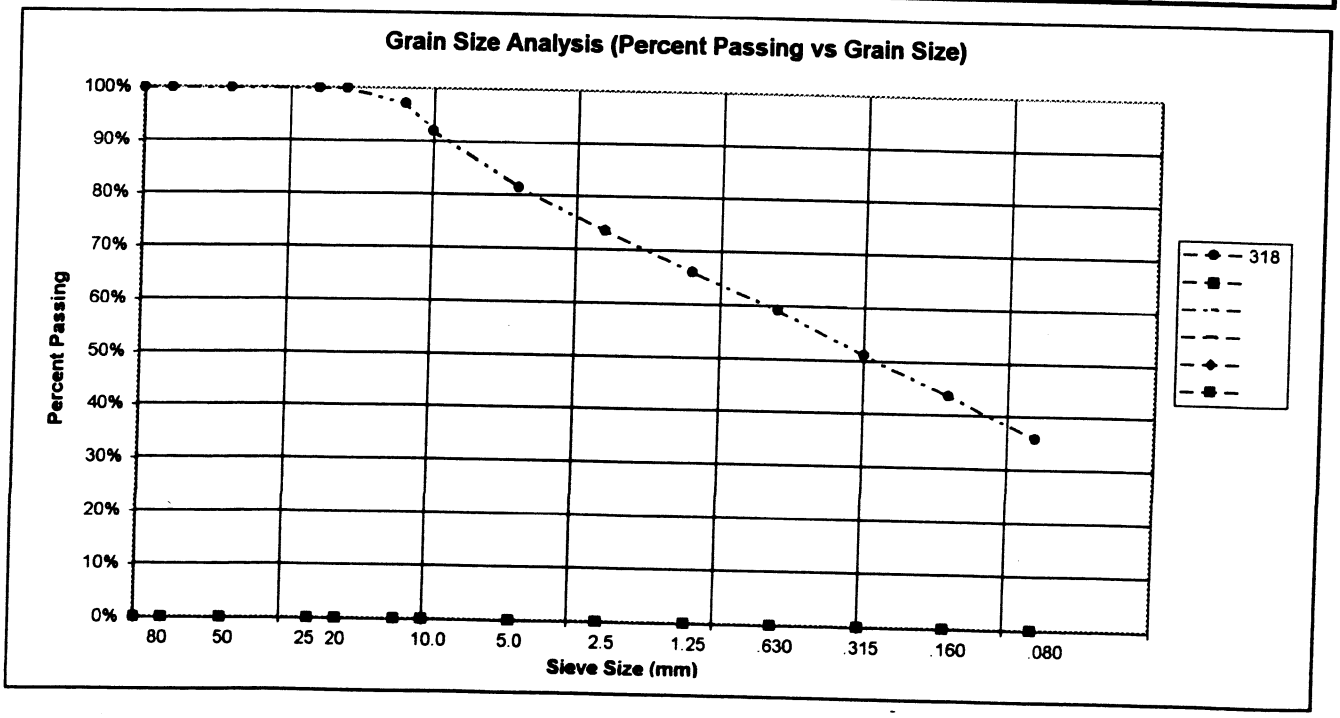
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	635044-6769701
LOGGED BY:	RW

HOLE No.: 30091

DATE COMP: 08/15/2004

FIELD NO:	318
LAB NO:	318
DEPTH:	0.5-0.9
TYPE:	AUGER
SIEVE SIZE	**PERCENT PASSING**
100.0	100%
80.0	100%
50.0	100%
25.0	100%
20.0	100%
12.5	97%
10.0	92%
5.0	82%
2.5	74%
1.25	66%
0.630	59%
0.315	51%
0.160	44%
0.080	36%
M.C.(%):	5%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	18
% SAND:	46
% FINES:	36
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)



HOGGAN ENGINEERING & TESTING (1980) LTD.

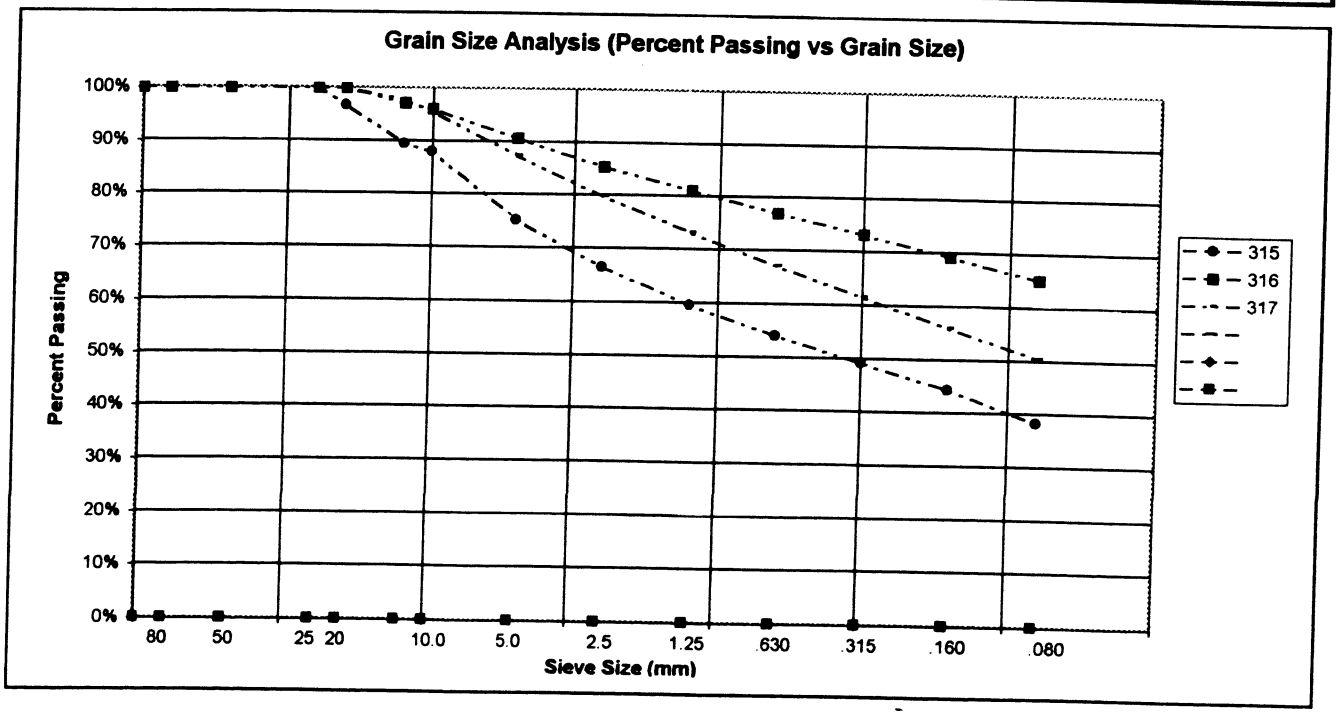
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 635000-6769764
LOGGED BY: RW

HOLE No.: 30092

DATE COMP: 08/15/2004

FIELD NO:	315	316	317			
LAB NO:	315	316	317			
DEPTH:	0.4-1.0	1.8-2.4	3.7-4.3			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	97%	100%	100%			
12.5	89%	97%	98%			
10.0	88%	96%	96%			
5.0	75%	91%	87%			
2.5	67%	85%	80%			
1.25	60%	81%	73%			
0.630	54%	77%	67%			
0.315	49%	73%	62%			
0.160	44%	69%	56%			
0.080	38%	65%	50%			
M.C.(%):	13%	18%	11%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	25	9	13			
% SAND:	37	25	37			
% FINES:	38	65	50			
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SANDY SILT (ML)	SANDY SILT (ML)			



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

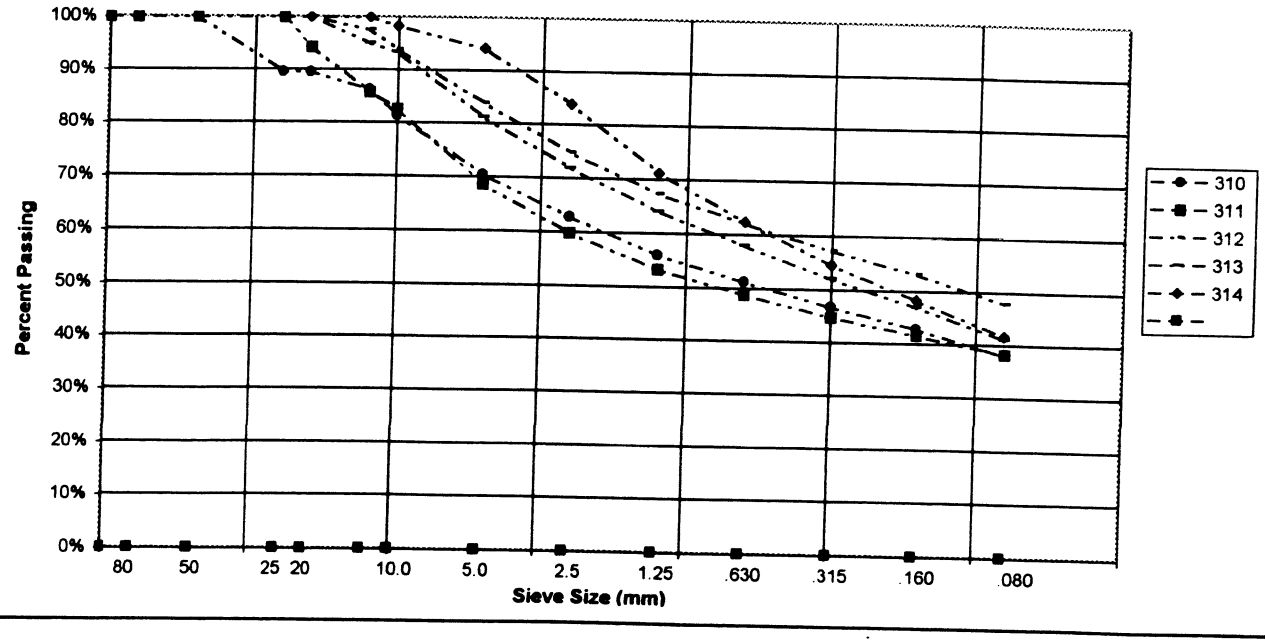
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634966-6769809
LOGGED BY: RW

HOLE No.: 30093

DATE COMP: 08/15/2004

FIELD NO:	310	311	312	313	314	
LAB NO:	310	311	312	313	314	
DEPTH:	0.3-0.9	1.8-2.4	3.4-4.0	4.9-5.5	6.7-7.0	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	90%	100%	100%	100%	100%	
20.0	90%	94%	100%	100%	100%	
12.5	86%	86%	98%	95%	100%	
10.0	81%	83%	94%	93%	98%	
5.0	71%	69%	84%	81%	94%	
2.5	63%	60%	75%	72%	84%	
1.25	56%	53%	67%	64%	71%	
0.630	51%	49%	62%	58%	62%	
0.315	47%	45%	57%	52%	55%	
0.160	43%	42%	53%	47%	48%	
0.080	38%	38%	48%	41%	42%	
M.C.(%):	20%	15%	16%	13%	9%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	29	31	16	19	6	
% SAND:	32	30	36	40	52	
% FINES:	38	38	48	41	42	
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

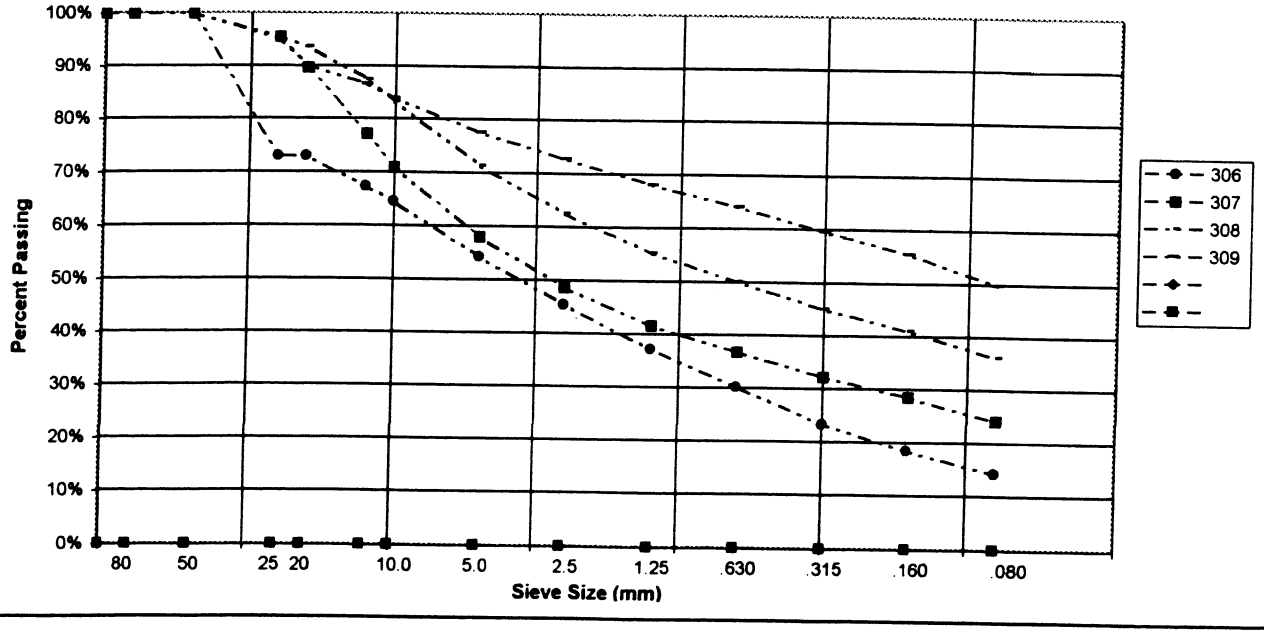
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634943-6769845
LOGGED BY: RW

HOLE No.: 30094

DATE COMP: 08/15/2004

FIELD NO:	306	307	308	309		
LAB NO:	306	307	308	309		
DEPTH:	0.8-1.3	1.8-2.4	3.4-4.0	5.3-5.8		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	73%	95%	96%	95%		
20.0	73%	90%	94%	90%		
12.5	67%	77%	87%	87%		
10.0	65%	71%	83%	84%		
5.0	54%	58%	71%	78%		
2.5	45%	49%	63%	73%		
1.25	37%	42%	55%	68%		
0.630	30%	37%	50%	64%		
0.315	23%	32%	45%	60%		
0.160	19%	29%	41%	56%		
0.080	14%	24%	36%	50%		
M.C.(%):	5%	8%	11%	13%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	46	42	29	22		
% SAND:	40	34	35	28		
% FINES:	14	24	36	50		
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

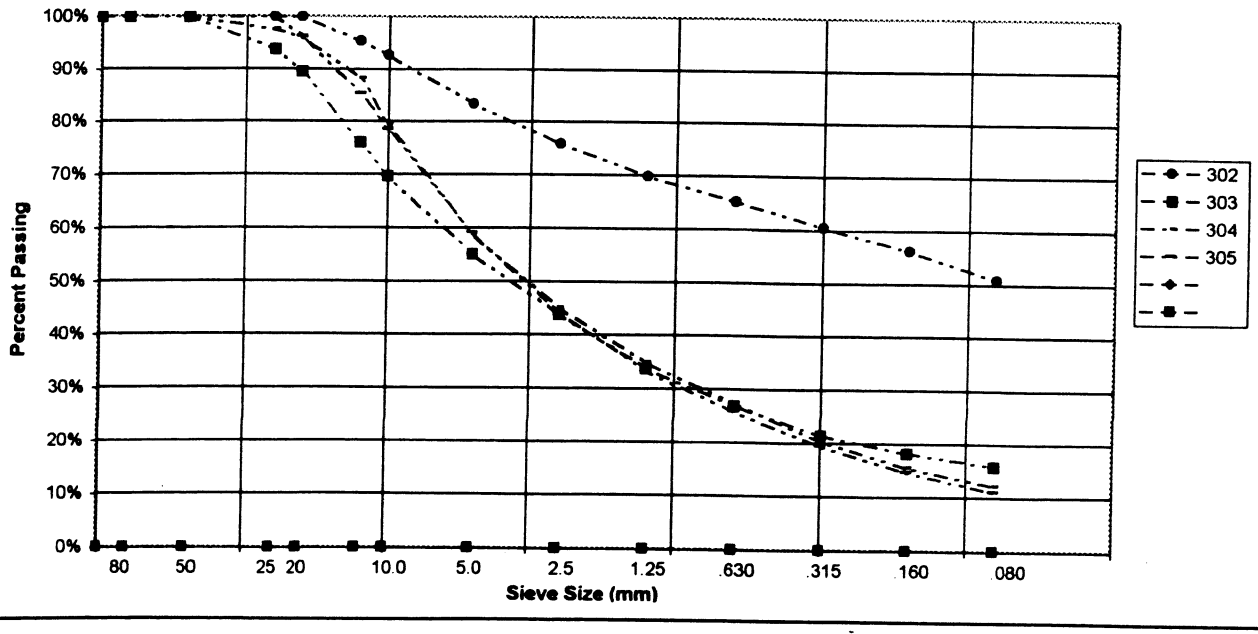
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634905-6769885
LOGGED BY: RW

HOLE No.: 30095

DATE COMP: 08/15/2004

FIELD NO:	302	303	304	305		
LAB NO:	302	303	304	305		
DEPTH:	0.3-0.9	2.1-2.4	3.4-4.0	4.9-5.5		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	94%	98%	100%		
20.0	100%	90%	96%	96%		
12.5	95%	76%	88%	85%		
10.0	93%	70%	80%	79%		
5.0	83%	55%	59%	59%		
2.5	76%	44%	45%	44%		
1.25	70%	34%	35%	33%		
0.630	65%	27%	27%	26%		
0.315	61%	22%	20%	19%		
0.160	56%	18%	16%	15%		
0.080	51%	16%	12%	11%		
M.C.(%):	18%	5%	7%	6%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	17	45	41	41		
% SAND:	32	39	47	48		
% FINES:	51	16	12	11		
CLASSIFICATION	SANDY SILT WITH GRAVEL (ML)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	634847-6769994
LOGGED BY:	RW

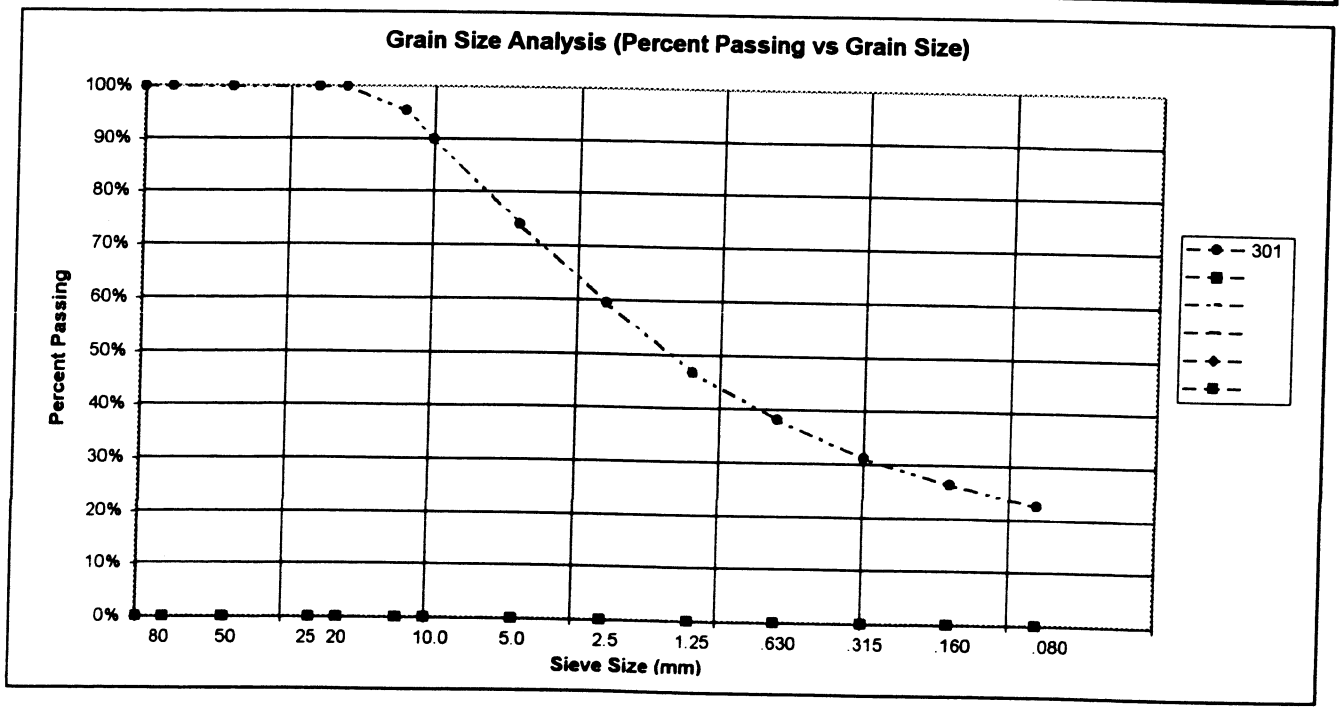
HOLE No.: 30096B

DATE COMP: 08/14/2004

FIELD NO:	301
LAB NO:	301
DEPTH:	10.4-11.0
TYPE:	AUGER

SIEVE SIZE	PERCENT PASSING
100.0	100%
80.0	100%
50.0	100%
25.0	100%
20.0	100%
12.5	95%
10.0	90%
5.0	74%
2.5	59%
1.25	47%
0.630	38%
0.315	31%
0.160	26%
0.080	23%

M.C.(%):	18%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	26
% SAND:	51
% FINES:	23
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)



HOGGAN ENGINEERING & TESTING (1980) LTD.

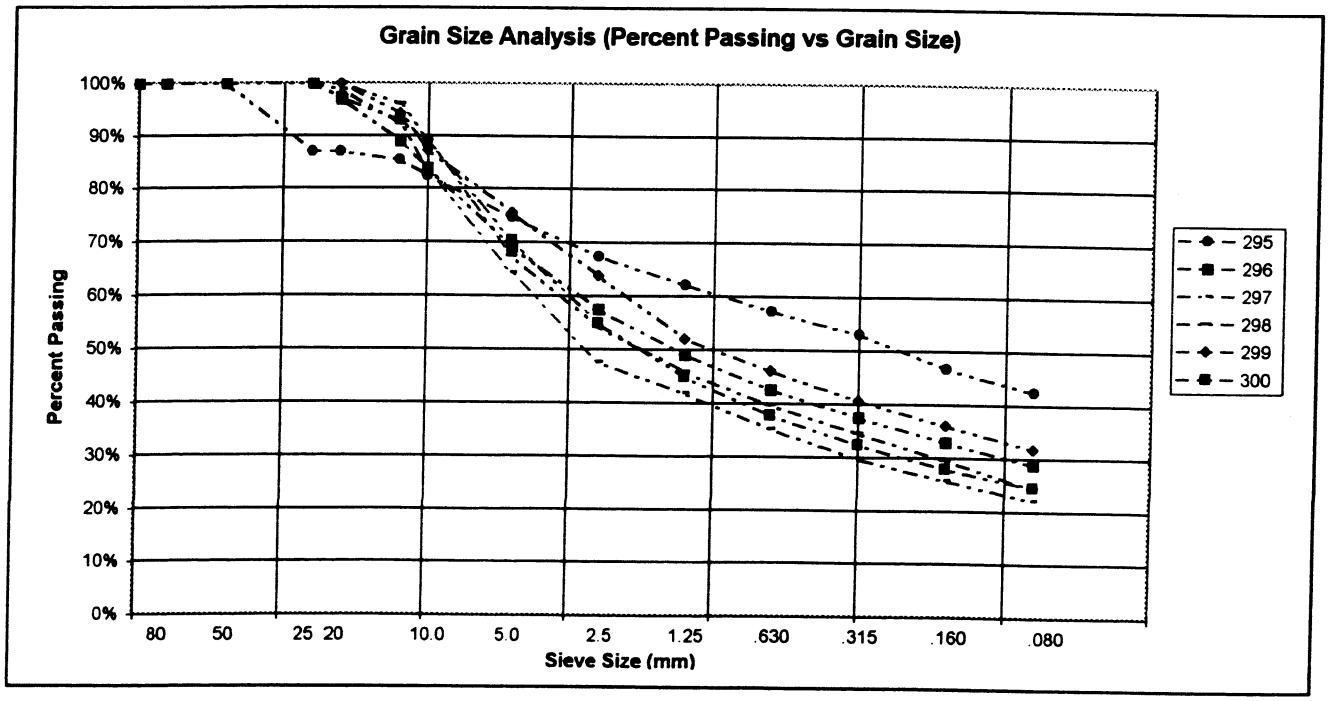
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634847-6769994
LOGGED BY: RW

HOLE No.: 30096

DATE COMP: 08/14/2004

FIELD NO:	295	296	297	298	299	300
LAB NO:	295	296	297	298	299	300
DEPTH:	1.0-1.3	1.8-2.4	3.7-4.3	4.9-5.5	7.0-7.6	9.1-9.8
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	87%	100%	100%	100%	100%	100%
20.0	87%	97%	99%	100%	100%	97%
12.5	85%	89%	92%	96%	94%	93%
10.0	83%	84%	83%	89%	87%	89%
5.0	75%	69%	64%	67%	76%	70%
2.5	67%	58%	48%	54%	64%	55%
1.25	62%	49%	42%	46%	52%	45%
0.630	57%	43%	35%	40%	46%	38%
0.315	53%	38%	30%	35%	41%	32%
0.160	47%	33%	26%	30%	36%	28%
0.080	43%	29%	22%	24%	32%	25%
M.C.(%):	20%	11%	8%	10%	35%	17%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	25	31	36	33	24	30
% SAND:	32	40	42	43	44	46
% FINES:	43	29	22	24	32	25
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)



HOGGAN ENGINEERING & TESTING (1980) LTD.

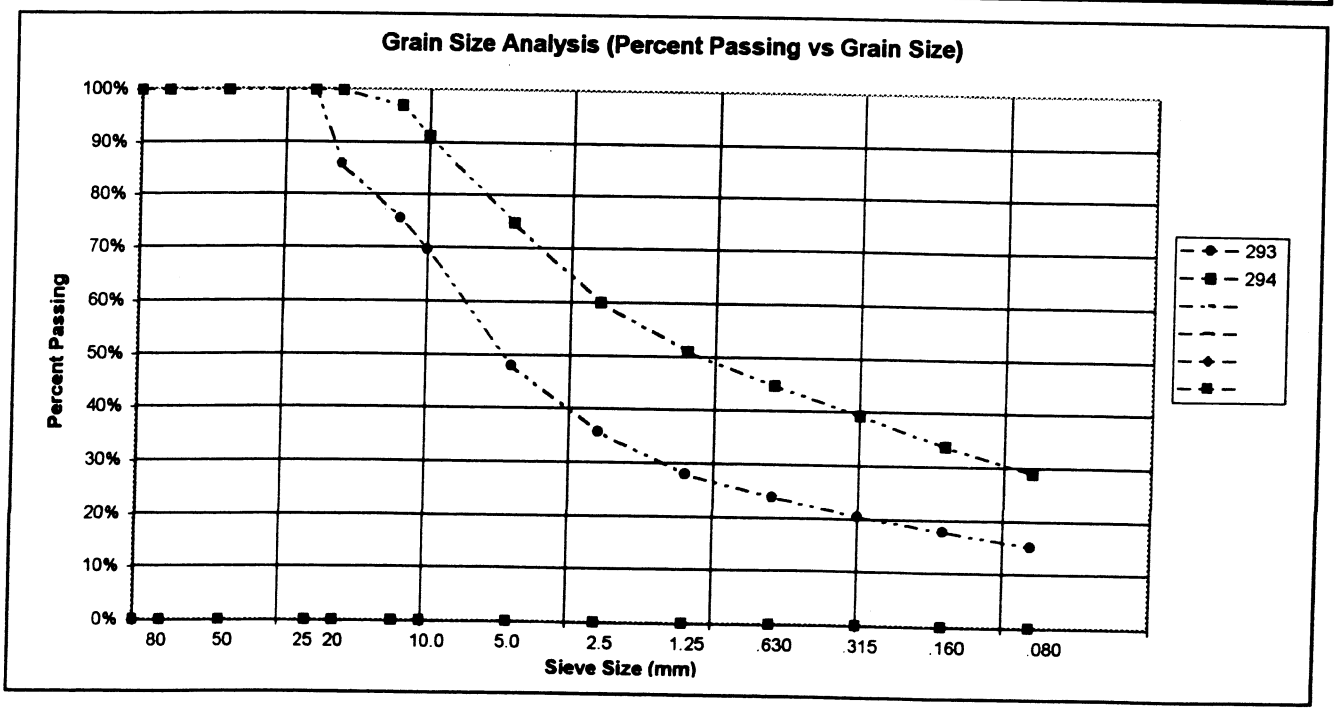
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634800-6770135
LOGGED BY: RW

HOLE No.: 30097

DATE COMP: 08/14/2004

FIELD NO:	293	294				
LAB NO:	293	294				
DEPTH:	0.6-1.2	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	86%	100%				
12.5	76%	97%				
10.0	70%	91%				
5.0	48%	75%				
2.5	36%	60%				
1.25	28%	51%				
0.630	24%	45%				
0.315	21%	39%				
0.160	18%	34%				
0.080	15%	29%				
M.C.(%):	7%	14%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	52	25				
% SAND:	33	46				
% FINES:	15	29				
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)				

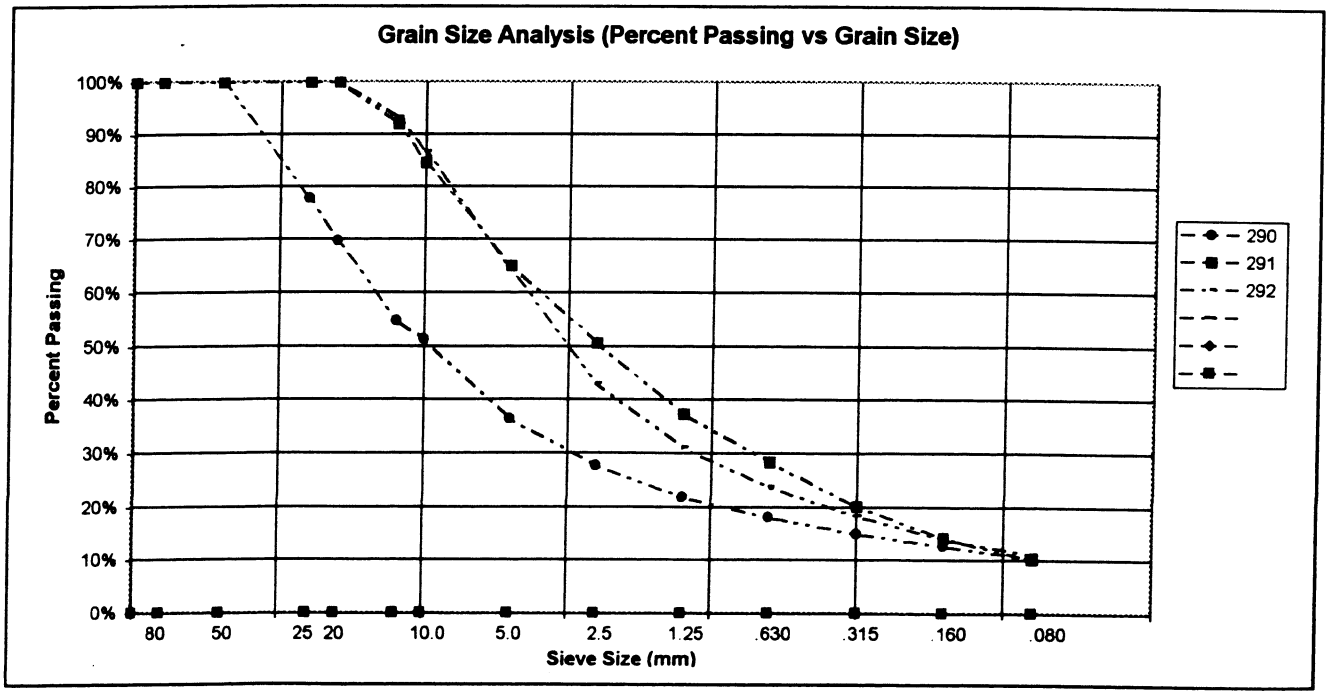


HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318		HOLE No.: 30098
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	634696-6770279		
LOGGED BY:	RW		DATE COMP: 08/14/2004

FIELD NO:	290	291	292			
LAB NO:	290	291	292			
DEPTH:	0.3-0.9	1.8-2.4	3.4-4.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	78%	100%	100%			
20.0	70%	100%	100%			
12.5	55%	92%	93%			
10.0	51%	85%	87%			
5.0	36%	65%	64%			
2.5	28%	51%	43%			
1.25	22%	37%	31%			
0.630	18%	28%	24%			
0.315	15%	20%	18%			
0.160	13%	14%	14%			
0.080	10%	10%	11%			
M.C.(%):	3%	5%	6%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	64	35	36			
% SAND:	26	55	53			
% FINES:	10	10	11			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)			



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

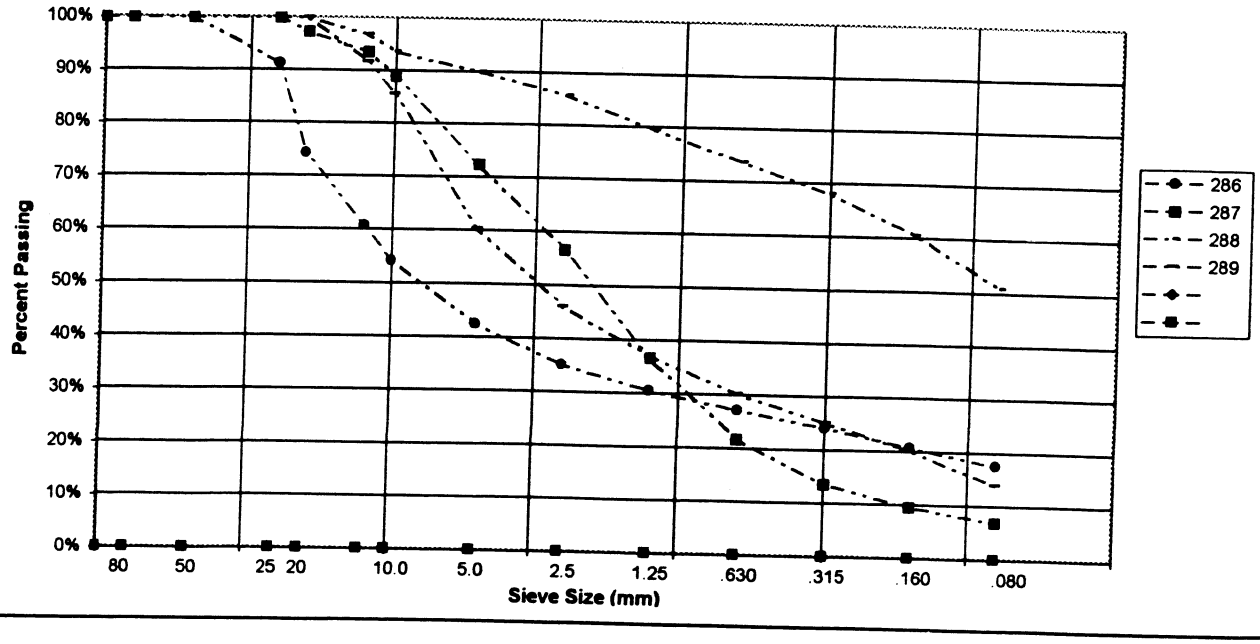
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634666-6770392
LOGGED BY: RW

HOLE No.: 30099

DATE COMP: 08/14/2004

FIELD NO:	286	287	288	289		
LAB NO:	286	287	288	289		
DEPTH:	0.3-0.9	1.8-2.4	3.0-3.7	4.1-4.4		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	91%	100%	100%	100%		
20.0	74%	97%	100%	100%		
12.5	61%	94%	97%	92%		
10.0	54%	89%	94%	86%		
5.0	43%	72%	90%	60%		
2.5	35%	57%	86%	46%		
1.25	31%	37%	80%	37%		
0.630	27%	22%	74%	30%		
0.315	24%	14%	68%	25%		
0.160	21%	10%	61%	20%		
0.080	18%	7%	51%	14%		
M.C.(%):	7%	11%	60%	13%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	57	28	10	40		
% SAND:	25	65	39	46		
% FINES:	18	7	51	14		
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SANDY SILT (ML)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

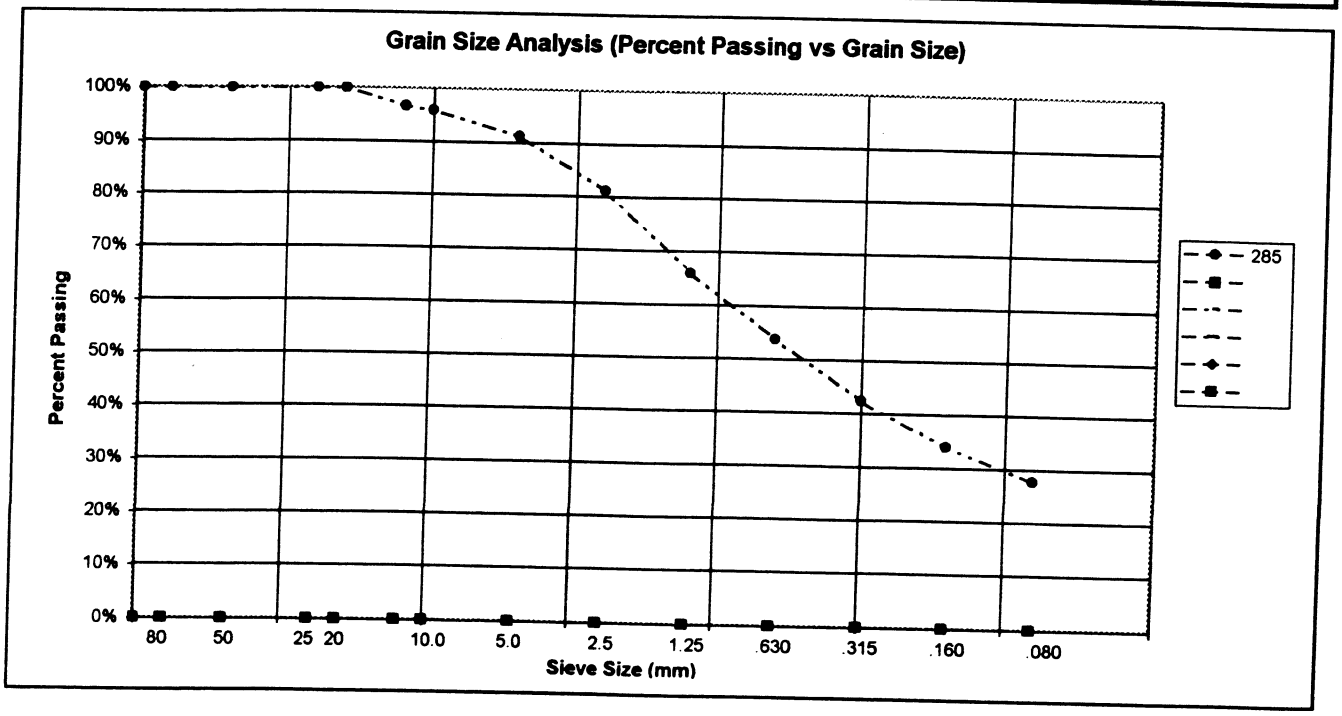
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	634636-6770537
LOGGED BY:	RW

HOLE No.: 30100B

DATE COMP: 08/14/2004

FIELD NO:	285
LAB NO:	285
DEPTH:	9.4-10.1
TYPE:	AUGER
SIEVE SIZE	PERCENT PASSING
100.0	100%
80.0	100%
50.0	100%
25.0	100%
20.0	100%
12.5	97%
10.0	96%
5.0	91%
2.5	81%
1.25	66%
0.630	54%
0.315	42%
0.160	34%
0.080	28%
M.C.(%):	10%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	9
% SAND:	63
% FINES:	28
CLASSIFICATION	SILTY SAND (SM)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

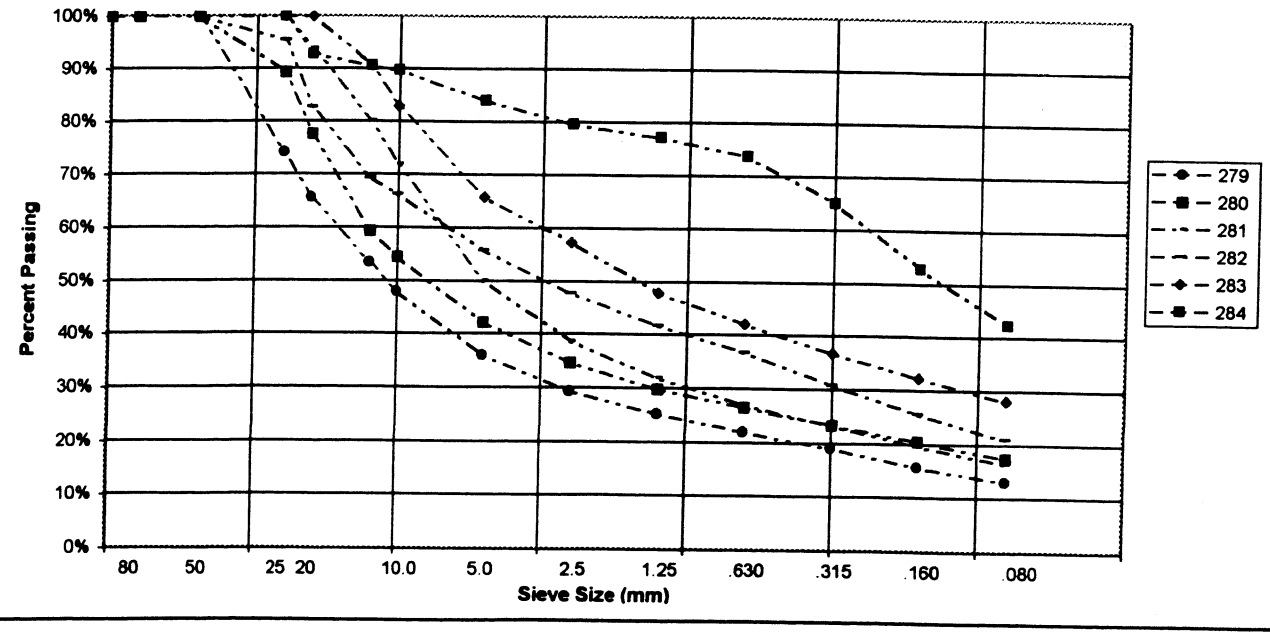
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634636-6770537
LOGGED BY: RW

HOLE No.: 30100

DATE COMP: 08/14/2004

FIELD NO:	279	280	281	282	283	284
LAB NO:	279	280	281	282	283	284
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.3	4.9-5.5	6.4-7.3	8.2-8.8
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	74%	89%	100%	95%	100%	100%
20.0	66%	78%	94%	83%	100%	93%
12.5	53%	59%	80%	69%	91%	91%
10.0	48%	55%	72%	66%	83%	90%
5.0	36%	42%	50%	56%	66%	84%
2.5	29%	35%	39%	48%	57%	80%
1.25	25%	30%	32%	42%	48%	77%
0.630	22%	27%	27%	37%	42%	74%
0.315	19%	23%	23%	31%	37%	65%
0.160	16%	21%	20%	26%	32%	53%
0.080	13%	18%	16%	21%	28%	42%
M.C.(%):	7%	7%	6%	10%	12%	13%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	64	58	50	44	34	16
% SAND:	23	25	34	35	38	42
% FINES:	13	18	16	21	28	42
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SILTY GRAVEL WITH SAND (GM)	SILTY GRAVEL WITH SAND (GM)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

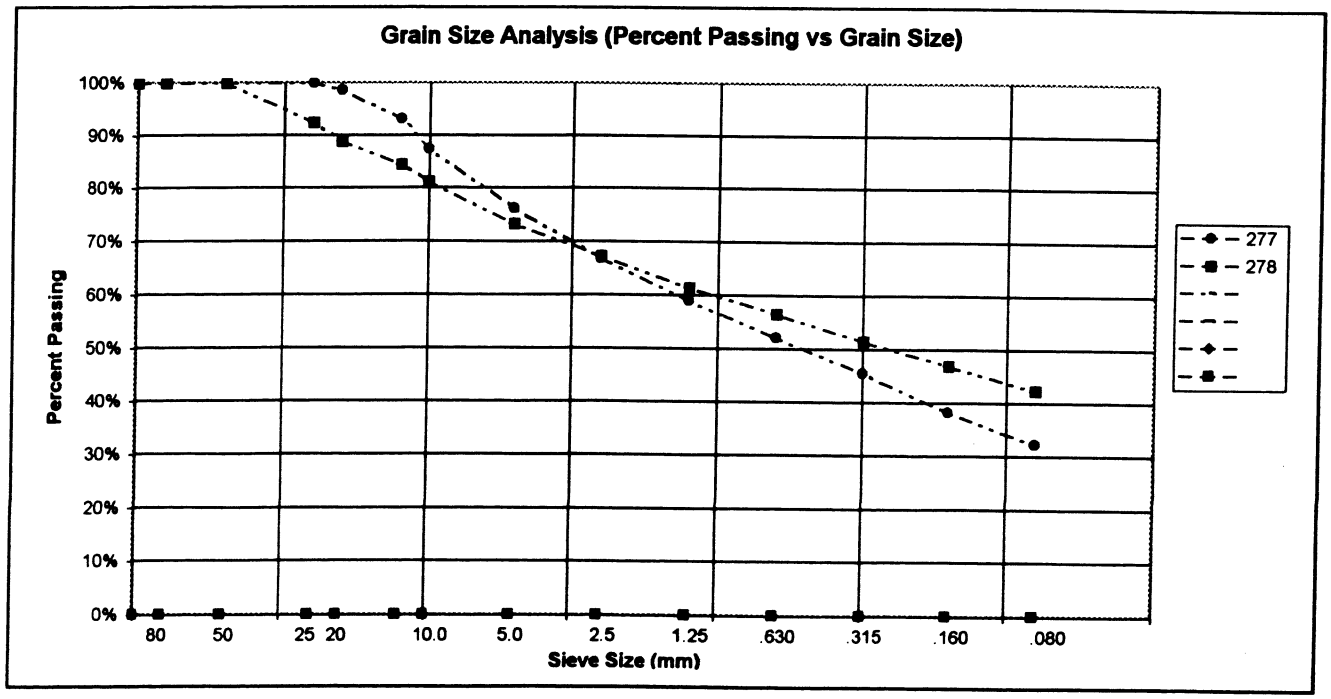
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634650-6770650
LOGGED BY: RW

HOLE No.: 30101

DATE COMP: 08/14/2004

FIELD NO:	277	278				
LAB NO:	277	278				
DEPTH:	0.4-1.0	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	93%				
20.0	99%	89%				
12.5	93%	85%				
10.0	87%	81%				
5.0	76%	73%				
2.5	67%	67%				
1.25	59%	61%				
0.630	52%	57%				
0.315	46%	51%				
0.160	38%	47%				
0.080	32%	42%				
M.C.(%):	4%	6%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	24	27				
% SAND:	44	31				
% FINES:	32	42				
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)				



HOGGAN ENGINEERING & TESTING (1980) LTD.

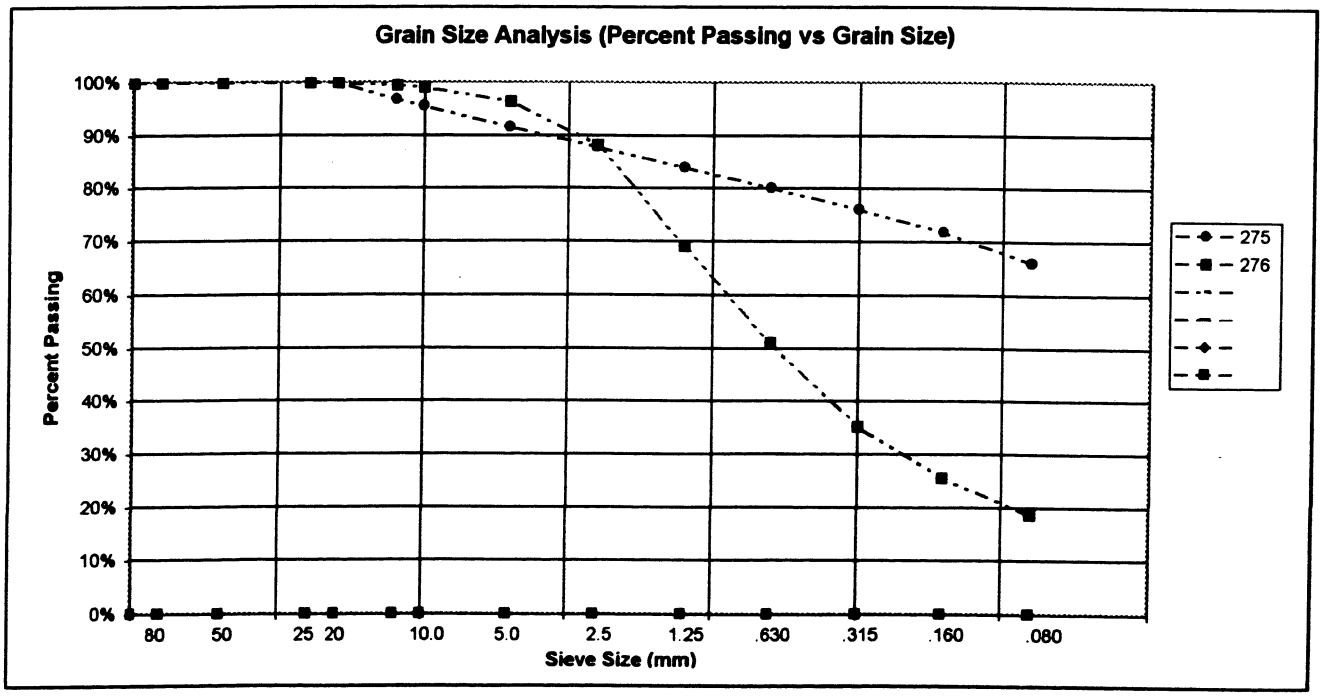
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634670-6770753
LOGGED BY: RW

HOLE No.: 30102

DATE COMP: 08/14/2004

FIELD NO:	275	276				
LAB NO:	275	276				
DEPTH:	0.6-1.2	2.4-3.0				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	100%	100%				
12.5	97%	100%				
10.0	96%	99%				
5.0	92%	97%				
2.5	88%	88%				
1.25	84%	69%				
0.630	80%	51%				
0.315	76%	35%				
0.160	72%	26%				
0.080	66%	19%				
M.C.(%):	12%	1%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	8	3				
% SAND:	26	78				
% FINES:	66	19				
CLASSIFICATION	SANDY SILT (ML)	SILTY SAND (SM)				



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

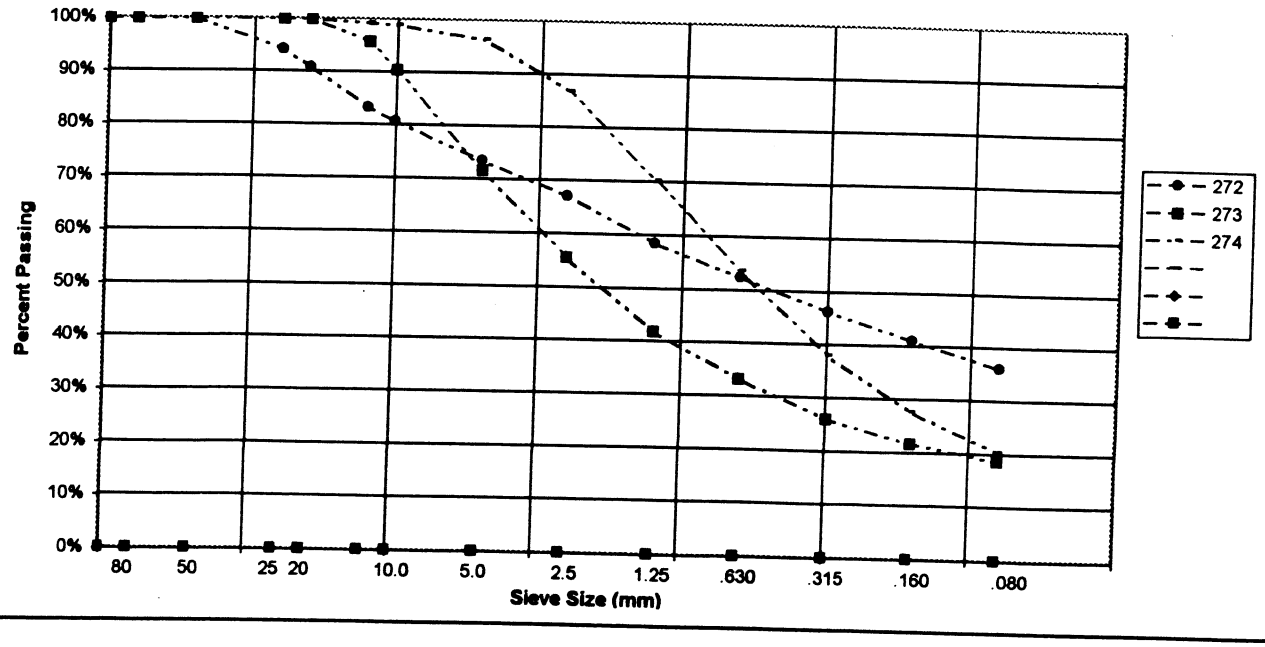
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634651-6770855
LOGGED BY: RW

HOLE No.: 30103 '

DATE COMP: 08/14/2004

FIELD NO:	272	273	274			
LAB NO:	272	273	274			
DEPTH:	0.6-1.2	2.1-2.9	3.7-4.3			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	94%	100%	100%			
20.0	91%	100%	100%			
12.5	83%	96%	99%			
10.0	81%	90%	99%			
5.0	73%	72%	96%			
2.5	67%	56%	87%			
1.25	59%	42%	70%			
0.630	52%	33%	54%			
0.315	46%	26%	38%			
0.160	41%	22%	28%			
0.080	36%	19%	20%			
M.C.(%):	4%	5%	2%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	27	28	4			
% SAND:	37	53	76			
% FINES:	36	19	20			
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

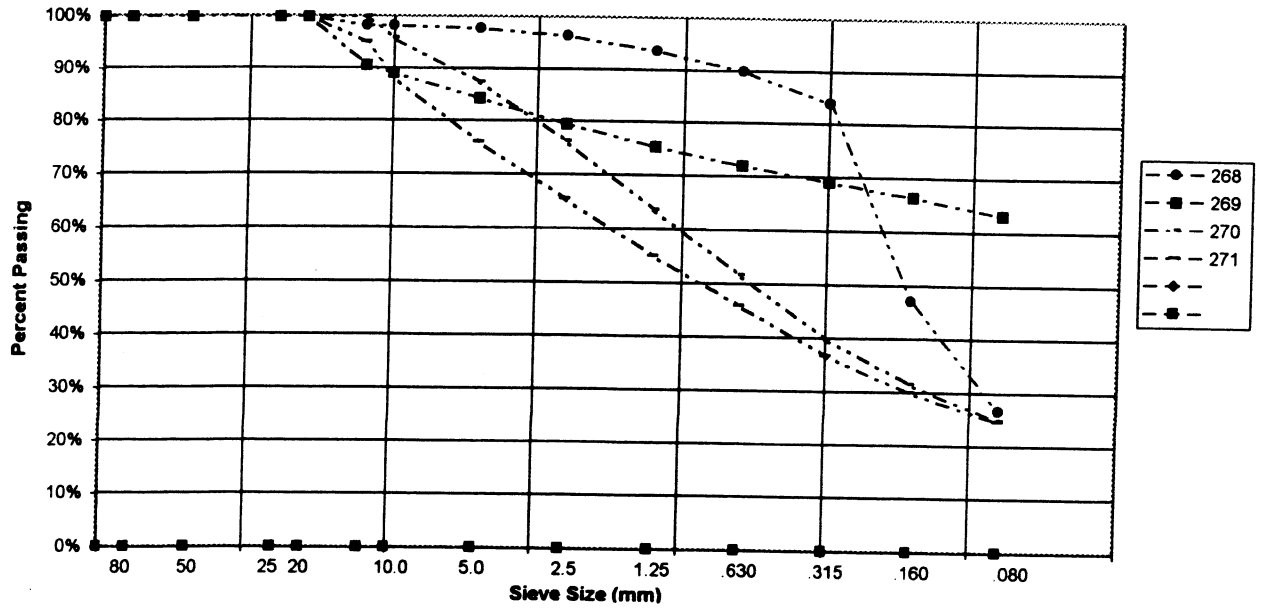
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634614-6770965
LOGGED BY: RW

HOLE No.: 30104

DATE COMP: 08/13/2004

FIELD NO:	268	269	270	271		
LAB NO:	268	269	270	271		
DEPTH:	0.3-0.9	1.8-2.4	3.4-3.7	3.7-4.3		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	100%	100%	100%		
20.0	100%	100%	100%	100%		
12.5	98%	91%	100%	95%		
10.0	98%	89%	96%	88%		
5.0	98%	84%	87%	76%		
2.5	96%	80%	76%	66%		
1.25	94%	75%	64%	55%		
0.630	90%	72%	52%	46%		
0.315	84%	69%	40%	37%		
0.160	47%	66%	32%	30%		
0.080	27%	63%	25%	25%		
M.C.(%):	3%	8%	2%	3%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	2	16	13	24		
% SAND:	71	21	63	51		
% FINES:	27	63	25	25		
CLASSIFICATION	SILTY SAND (SM)	SANDY SILT WITH GRAVEL (ML)	SILTY SAND (SM)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

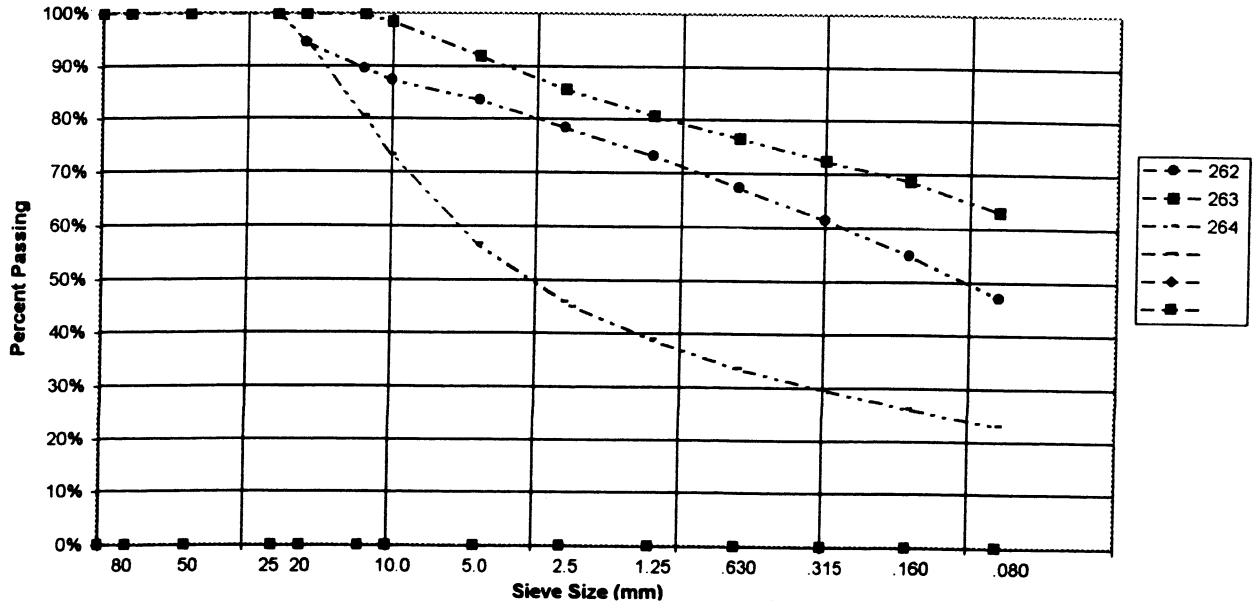
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634672-6771005
LOGGED BY: RW

HOLE No.: 30105

DATE COMP: 08/13/2004

FIELD NO:	262	263	264			
LAB NO:	262	263	264			
DEPTH:	0.9-1.2	1.8-2.4	3.4-4.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE:	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	95%	100%	95%			
12.5	90%	100%	80%			
10.0	87%	99%	73%			
5.0	84%	92%	57%			
2.5	78%	86%	46%			
1.25	73%	81%	39%			
0.630	67%	77%	34%			
0.315	62%	73%	30%			
0.160	55%	69%	26%			
0.080	47%	63%	23%			
M.C.(%):	7%	11%	4%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	16	8	43			
% SAND:	37	29	34			
% FINES:	47	63	23			
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SANDY SILT (ML)	SILTY GRAVEL WITH SAND (GM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

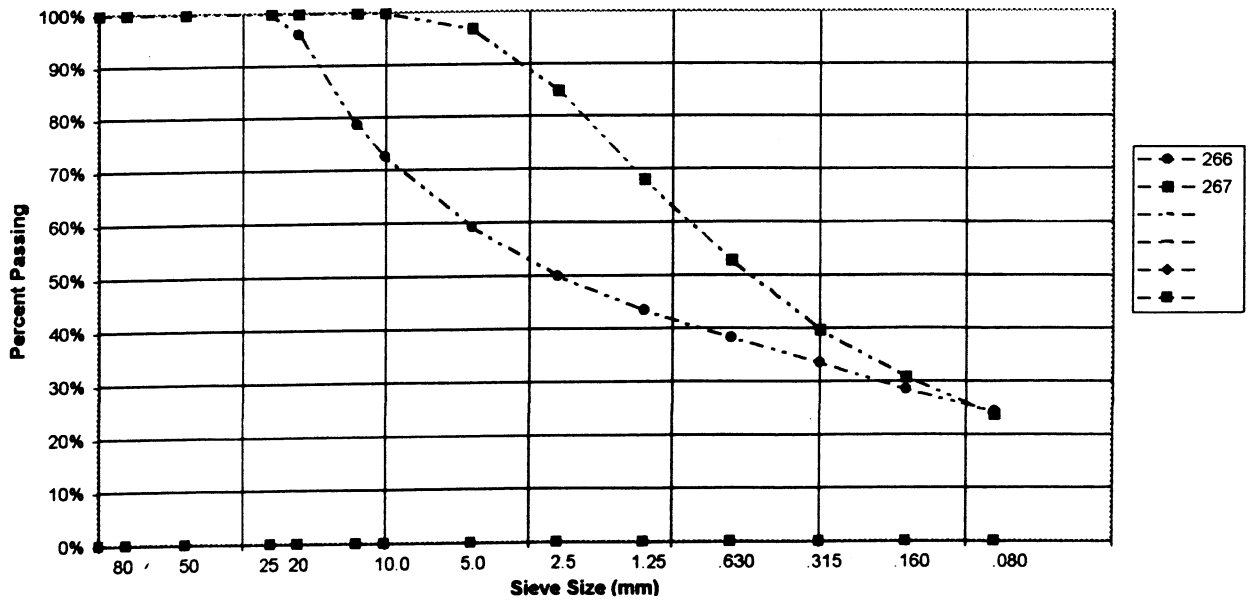
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634574-6771078
LOGGED BY: RW

HOLE No.: 30106

DATE COMP: 08/13/2004

FIELD NO:	266	267				
LAB NO:	266	267				
DEPTH:	0.0-0.6	0.9-1.2				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	96%	100%				
12.5	79%	100%				
10.0	73%	100%				
5.0	59%	97%				
2.5	50%	85%				
1.25	44%	68%				
0.630	38%	53%				
0.315	34%	40%				
0.160	29%	31%				
0.080	24%	24%				
M.C.(%):	5%	3%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	41	3				
% SAND:	35	73				
% FINES:	24	24				
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SILTY SAND (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



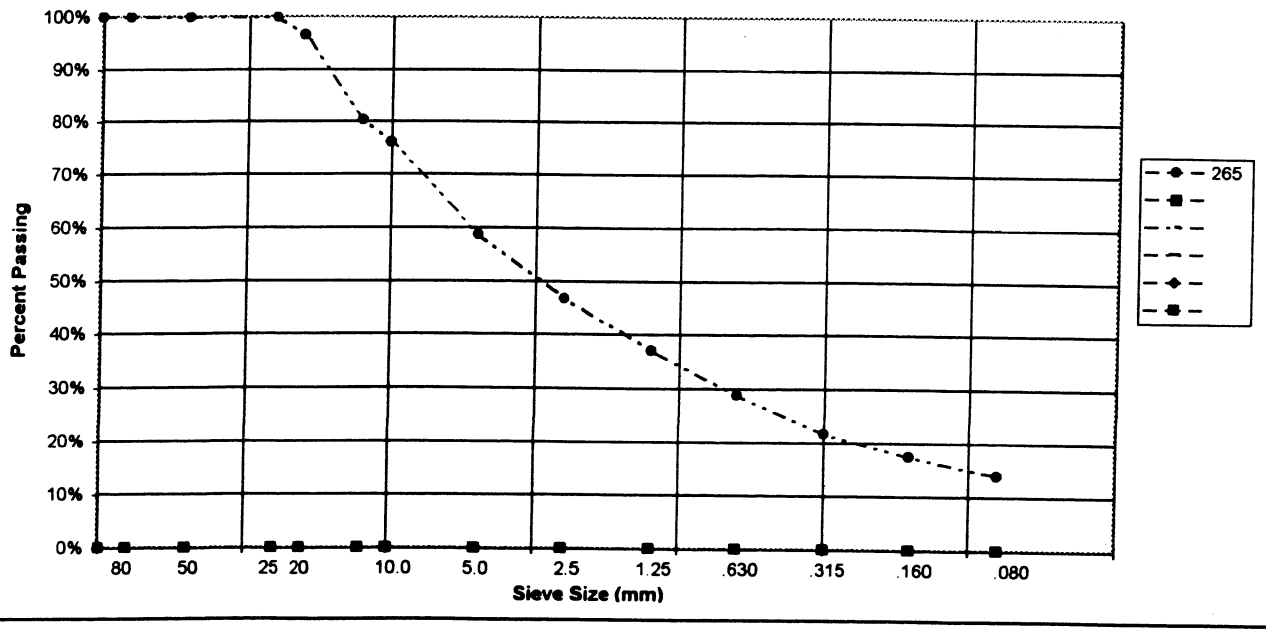
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.: 30107
CLIENT:	YTG, Transportation & Engineering	
PROJECT NAME:	Geotechnical Services	
PROJECT LOCATION:	Km 1691.7-1717.3	
DRILL UNIT:	CME75	
HOLE LOCATION:	634529-6771149	
LOGGED BY:	RW	DATE COMP: 08/13/2004

FIELD NO:	265
LAB NO:	265
DEPTH:	0.9-1.2
TYPE:	AUGER
SIEVE SIZE	**PERCENT PASSING**
100.0	100%
80.0	100%
50.0	100%
25.0	100%
20.0	97%
12.5	80%
10.0	76%
5.0	59%
2.5	47%
1.25	37%
0.630	29%
0.315	22%
0.160	17%
0.080	14%
M.C.(%):	2%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	41
% SAND:	45
% FINES:	14
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

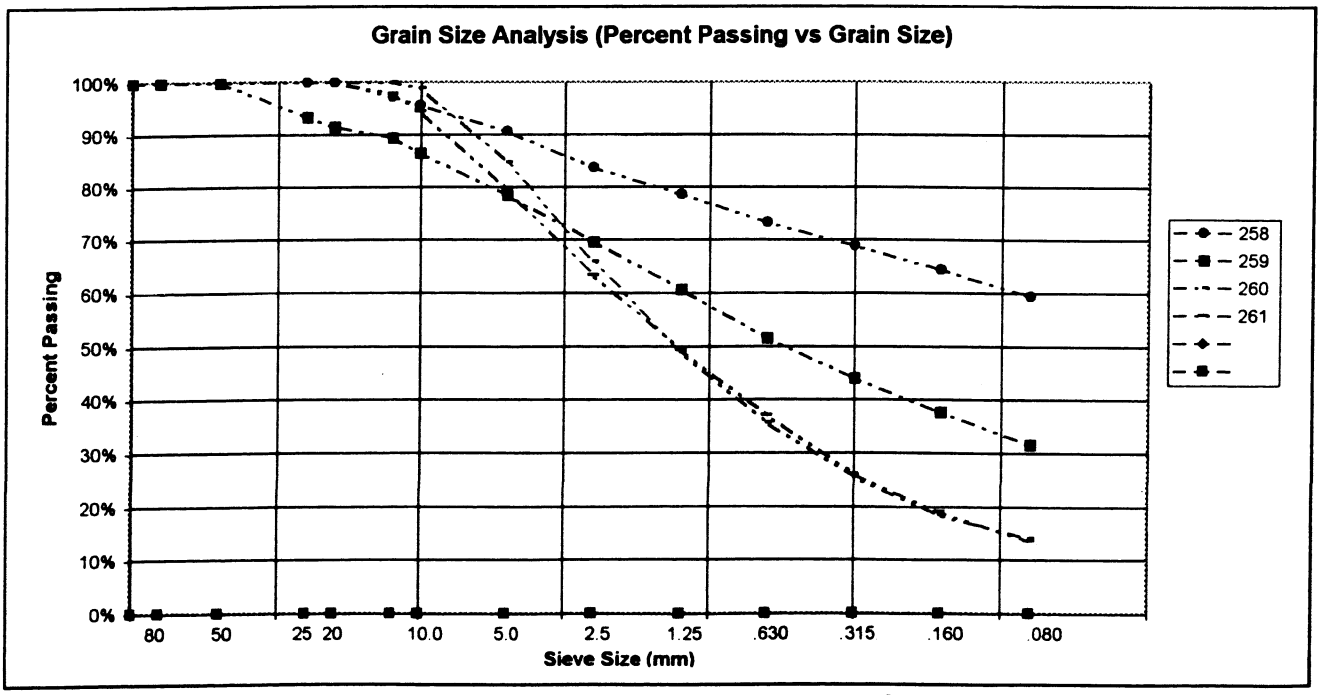
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634528-6771278
LOGGED BY: RW

HOLE No.: 30108

DATE COMP: 08/13/2004

FIELD NO:	258	259	260	261		
LAB NO:	258	259	260	261		
DEPTH:	0.6-1.2	1.5-2.1	3.0-3.7	4.9-5.5		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	93%	100%	100%		
20.0	100%	92%	100%	100%		
12.5	97%	89%	100%	98%		
10.0	96%	87%	99%	94%		
5.0	91%	79%	85%	80%		
2.5	84%	70%	66%	63%		
1.25	79%	61%	49%	49%		
0.630	73%	52%	36%	37%		
0.315	69%	44%	26%	26%		
0.160	64%	38%	19%	19%		
0.080	60%	32%	14%	14%		
M.C.(%):	12%	6%	1%	2%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	9	21	15	20		
% SAND:	31	47	71	66		
% FINES:	60	32	14	14		
CLASSIFICATION	SANDY SILT (ML)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)		



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

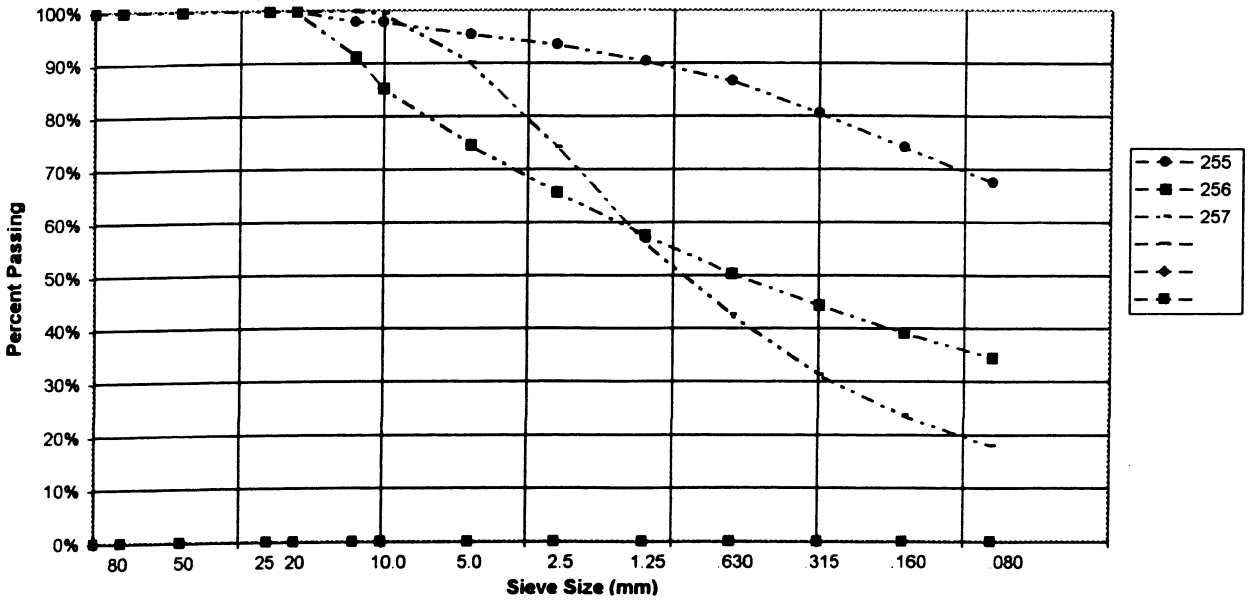
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634466-6771427
LOGGED BY: RW

HOLE No.: 30109

DATE COMP: 08/13/2004

FIELD NO:	255	256	257			
LAB NO:	255	256	257			
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	100%	100%	100%			
12.5	98%	91%	100%			
10.0	98%	85%	100%			
5.0	96%	75%	90%			
2.5	94%	66%	74%			
1.25	90%	58%	56%			
0.630	87%	50%	43%			
0.315	81%	44%	31%			
0.160	74%	39%	24%			
0.080	68%	35%	18%			
M.C.(%):	13%	5%	3%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	4	25	10			
% SAND:	28	40	72			
% FINES:	68	35	18			
CLASSIFICATION	SANDY SILT (ML)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

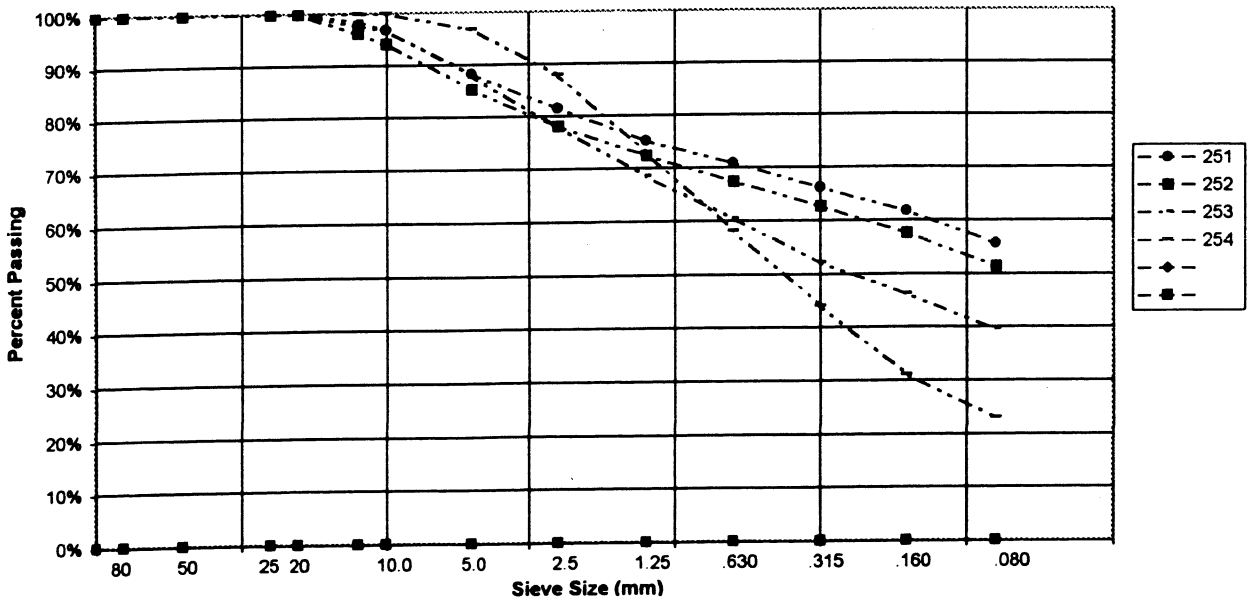
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634457-6771567
LOGGED BY: RW

HOLE No.: 30110

DATE COMP: 08/13/2004

FIELD NO:	251	252	253	254		
LAB NO:	251	252	253	254		
DEPTH:	0.4-1.0	1.8-2.4	3.4-4.0	4.8-5.5		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	100%	100%	100%		
20.0	100%	100%	100%	100%		
12.5	98%	96%	99%	100%		
10.0	97%	94%	97%	100%		
5.0	88%	85%	88%	97%		
2.5	82%	78%	78%	88%		
1.25	75%	73%	69%	73%		
0.630	71%	67%	60%	58%		
0.315	66%	63%	52%	44%		
0.160	62%	58%	46%	31%		
0.080	56%	51%	40%	23%		
M.C.(%):	22%	12%	11%	5%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	12	15	12	3		
% SAND:	32	34	48	74		
% FINES:	56	51	40	23		
CLASSIFICATION	SANDY SILT (ML)	SANDY SILT (ML)	SILTY SAND (SM)	SILTY SAND (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

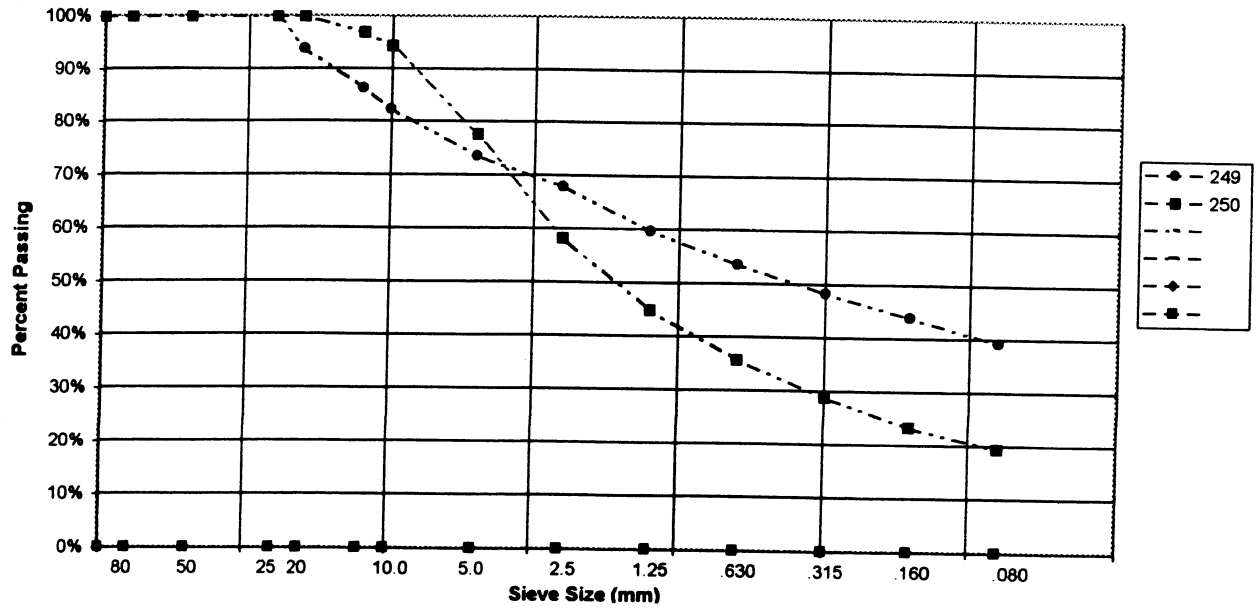
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634475-6771627
LOGGED BY: RW

HOLE No.: 30111

DATE COMP: 08/13/2004

FIELD NO:	249	250				
LAB NO:	249	250				
DEPTH:	0.2-0.6	1.5-1.8				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	94%	100%				
12.5	86%	97%				
10.0	82%	94%				
5.0	74%	78%				
2.5	68%	58%				
1.25	60%	45%				
0.630	54%	36%				
0.315	48%	29%				
0.160	44%	23%				
0.080	39%	19%				
M.C.(%):	5%	2%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	26	22				
% SAND:	34	58				
% FINES:	39	19				
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

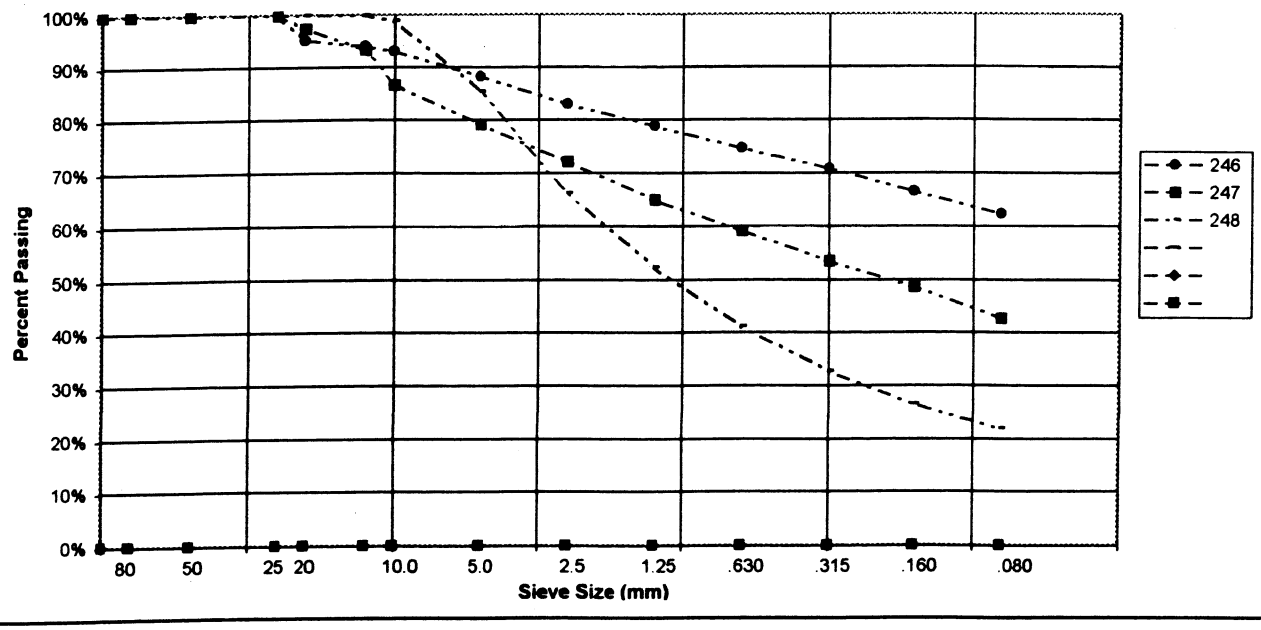
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634468-6771772
LOGGED BY: RW

HOLE No.: 30112

DATE COMP: 08/13/2004

FIELD NO:	246	247	248			
LAB NO:	246	247	248			
DEPTH:	0.5-0.8	1.8-2.4	3.0-3.4			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	95%	97%	100%			
12.5	94%	93%	100%			
10.0	93%	87%	99%			
5.0	88%	79%	85%			
2.5	83%	72%	66%			
1.25	79%	65%	52%			
0.630	75%	59%	41%			
0.315	71%	54%	33%			
0.160	67%	49%	27%			
0.080	62%	43%	22%			
M.C.(%):	13%	7%	3%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	12	21	15			
% SAND:	26	37	63			
% FINES:	62	43	22			
CLASSIFICATION	SANDY SILT (ML)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

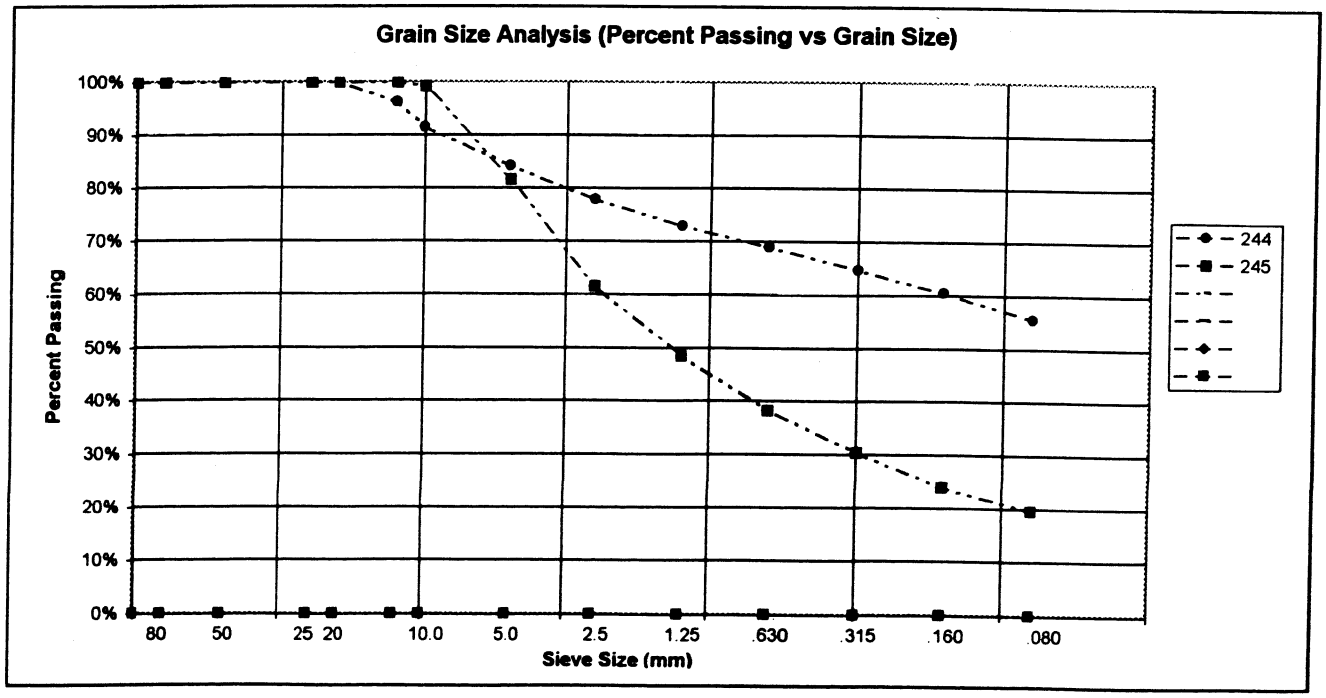
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634435-6771879
LOGGED BY: RW

HOLE No.: 30113

DATE COMP: 12/8/2004

FIELD NO:	244	245				
LAB NO:	244	245				
DEPTH:	0.6-1.2	1.5-2.1				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	100%	100%				
12.5	96%	100%				
10.0	92%	99%				
5.0	84%	82%				
2.5	78%	62%				
1.25	73%	49%				
0.630	69%	38%				
0.315	65%	30%				
0.160	61%	24%				
0.080	56%	20%				
M.C.(%):	17%	5%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	16	18				
% SAND:	29	62				
% FINES:	56	20				
CLASSIFICATION	SANDY SILT WITH GRAVEL (ML)	SILTY SAND WITH GRAVEL (SM)				



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

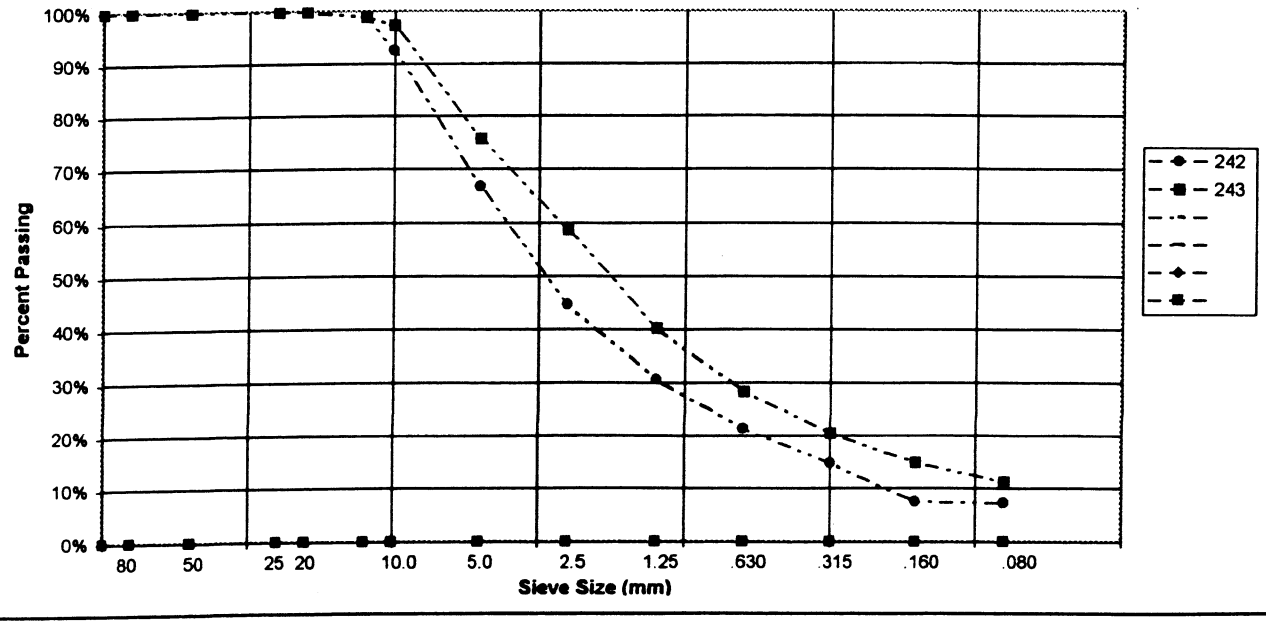
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634386-6772019
LOGGED BY: RW

HOLE No.: 30114

DATE COMP: 12/8/2004

FIELD NO:	242	243				
LAB NO:	242	243				
DEPTH:	0.6-1.2	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	100%	100%				
12.5	99%	99%				
10.0	93%	97%				
5.0	67%	76%				
2.5	45%	59%				
1.25	31%	40%				
0.630	21%	28%				
0.315	15%	21%				
0.160	8%	15%				
0.080	7%	11%				
M.C.(%):	3%	2%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	33	24				
% SAND:	60	65				
% FINES:	7	11				
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

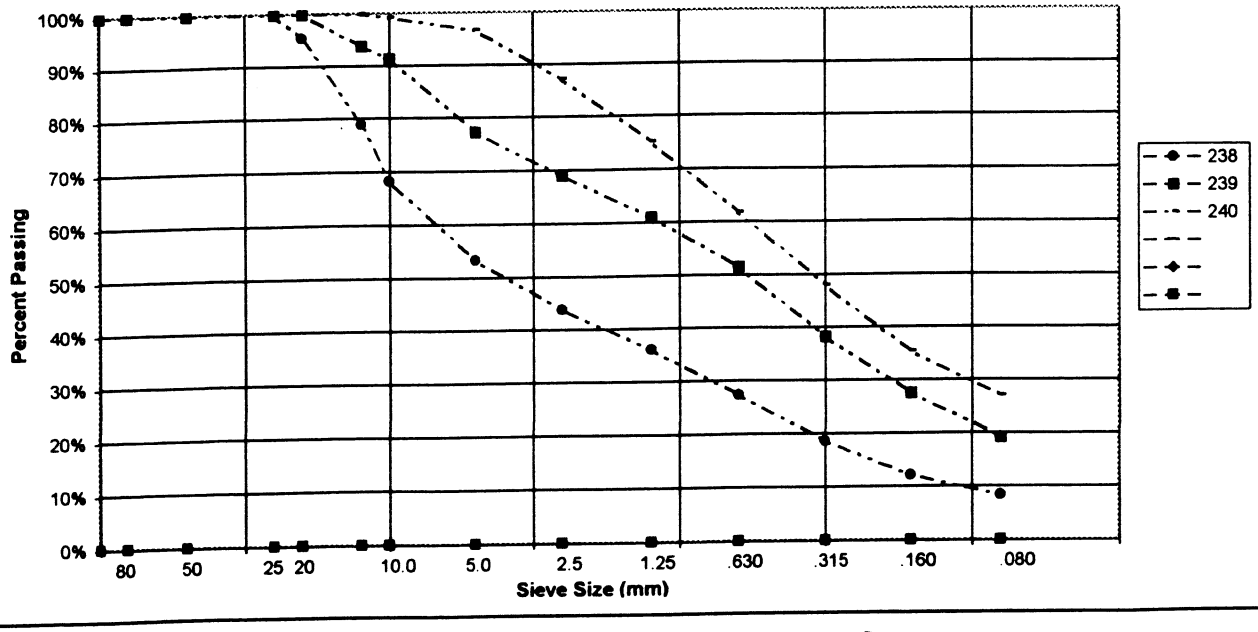
HOLE No.: 30115

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634339-6772105
LOGGED BY: RW

DATE COMP: 12/8/2004

FIELD NO:	238	239	240			
LAB NO:	238	239	240			
DEPTH:	0.3-0.9	1.8-2.4	3.7-4.3			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	95%	100%	100%			
12.5	79%	94%	100%			
10.0	68%	91%	99%			
5.0	53%	77%	97%			
2.5	44%	69%	87%			
1.25	36%	61%	75%			
0.630	27%	51%	62%			
0.315	19%	38%	48%			
0.160	12%	28%	35%			
0.080	9%	19%	27%			
M.C.(%):	4%	3%	6%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	47	23	3			
% SAND:	45	58	70			
% FINES:	9	19	27			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

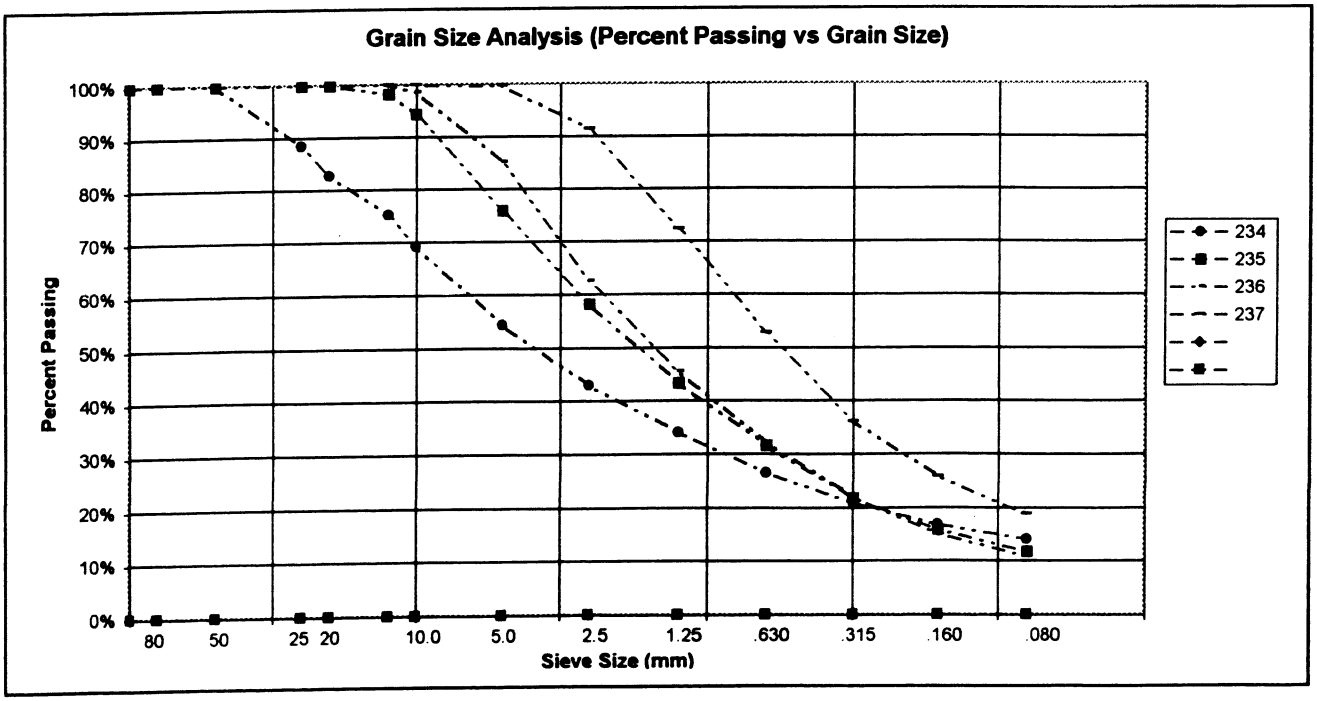
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634312-6772111
LOGGED BY: RW

HOLE No.: 30116

DATE COMP: 12/8/2004

FIELD NO:	234	235	236	237		
LAB NO:	234	235	236	237		
DEPTH:	0.6-1.2	2.1-2.7	3.4-4.0	4.6-5.2		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	89%	100%	100%	100%		
20.0	83%	100%	100%	100%		
12.5	75%	98%	100%	100%		
10.0	69%	94%	99%	100%		
5.0	54%	76%	85%	100%		
2.5	43%	58%	63%	91%		
1.25	34%	43%	46%	72%		
0.630	27%	32%	32%	53%		
0.315	21%	22%	22%	36%		
0.160	17%	16%	15%	26%		
0.080	14%	12%	11%	19%		
M.C.(%):	4%	3%	2%	2%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	46	24	15	0		
% SAND:	40	64	74	81		
% FINES:	14	12	11	19		
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT (SW-SM)	SILTY SAND (SM)		



HOGGAN ENGINEERING & TESTING (1980) LTD.

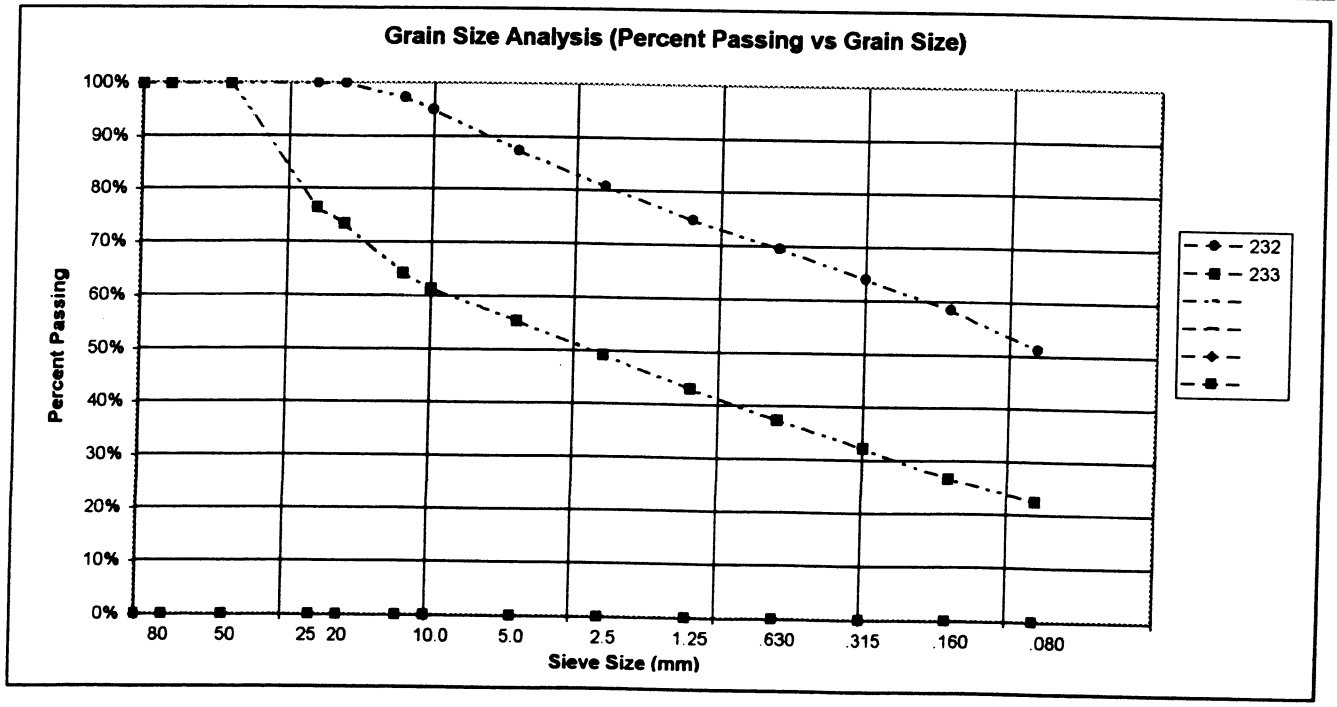
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634222-6772256
LOGGED BY: RW

HOLE No.: 30117

DATE COMP: 12/8/2004

FIELD NO:	232	233				
LAB NO:	232	233				
DEPTH:	0.0-0.6	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	77%				
20.0	100%	73%				
12.5	97%	64%				
10.0	95%	61%				
5.0	87%	56%				
2.5	81%	49%				
1.25	75%	43%				
0.630	70%	38%				
0.315	64%	32%				
0.160	59%	27%				
0.080	51%	23%				
M.C.(%):	14%	9%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	13	44				
% SAND:	36	33				
% FINES:	51	23				
CLASSIFICATION	SANDY SILT (ML)	SILTY GRAVEL WITH SAND (GM)				



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

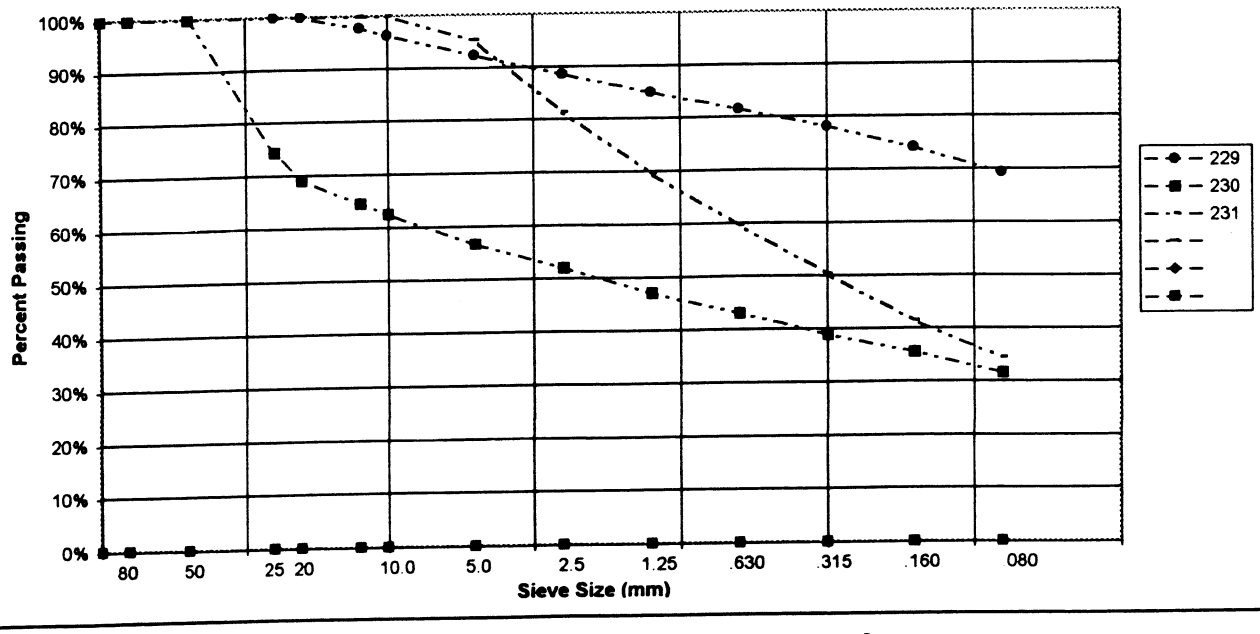
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634185-6772272
LOGGED BY: RW

HOLE No.: 30118

DATE COMP: 12/8/2004

FIELD NO:	229	230	231			
LAB NO:	229	230	231			
DEPTH:	0.6-1.2	1.8-2.4	3.0-3.4			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	74%	100%			
20.0	100%	69%	100%			
12.5	98%	65%	100%			
10.0	96%	63%	100%			
5.0	92%	57%	95%			
2.5	89%	52%	81%			
1.25	85%	47%	70%			
0.630	82%	43%	60%			
0.315	78%	39%	50%			
0.160	74%	36%	42%			
0.080	69%	32%	34%			
M.C.(%):	16%	5%	3%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	8	43	5			
% SAND:	23	25	61			
% FINES:	69	32	34			
CLASSIFICATION	SANDY SILT (ML)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

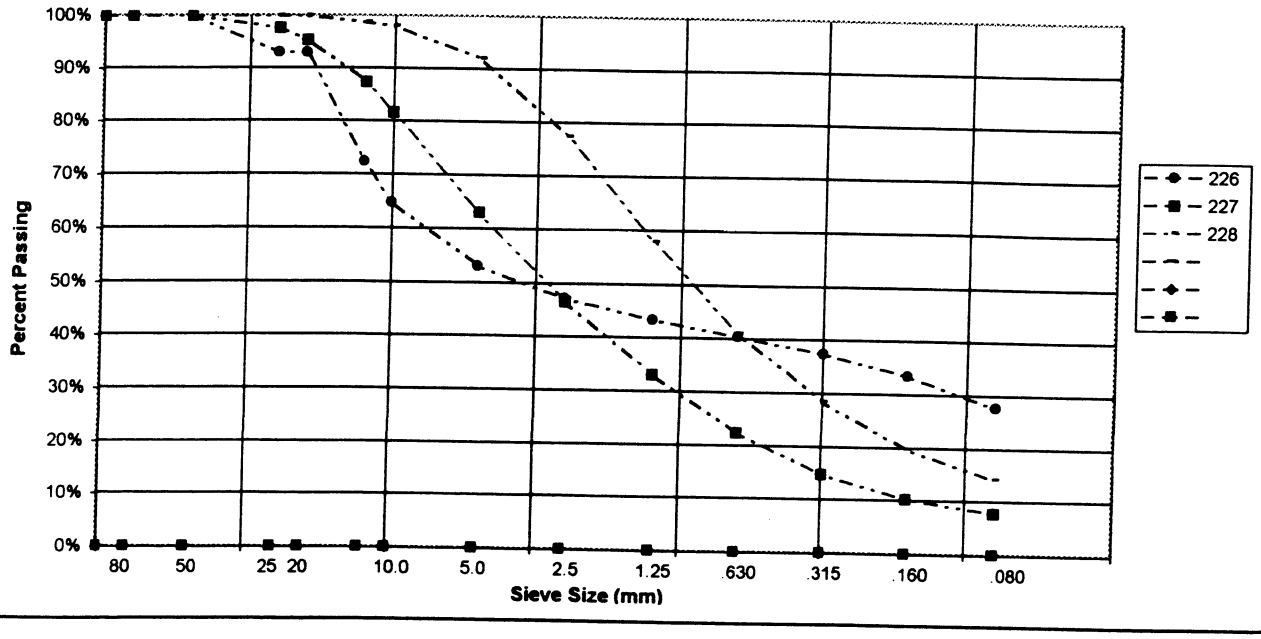
PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	634109-6772380
LOGGED BY:	RW

HOLE No.: 30119

DATE COMP: 12/8/2004

FIELD NO:	226	227	228			
LAB NO:	226	227	228			
DEPTH:	0.1-0.6	2.1-2.7	3.7-4.3			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	93%	98%	100%			
20.0	93%	95%	100%			
12.5	72%	87%	99%			
10.0	65%	82%	98%			
5.0	53%	63%	92%			
2.5	47%	47%	78%			
1.25	43%	33%	58%			
0.630	41%	23%	41%			
0.315	38%	15%	29%			
0.160	33%	10%	20%			
0.080	28%	8%	14%			
M.C.(%):	16%	3%	12%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	47	37	8			
% SAND:	25	55	78			
% FINES:	28	8	14			
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

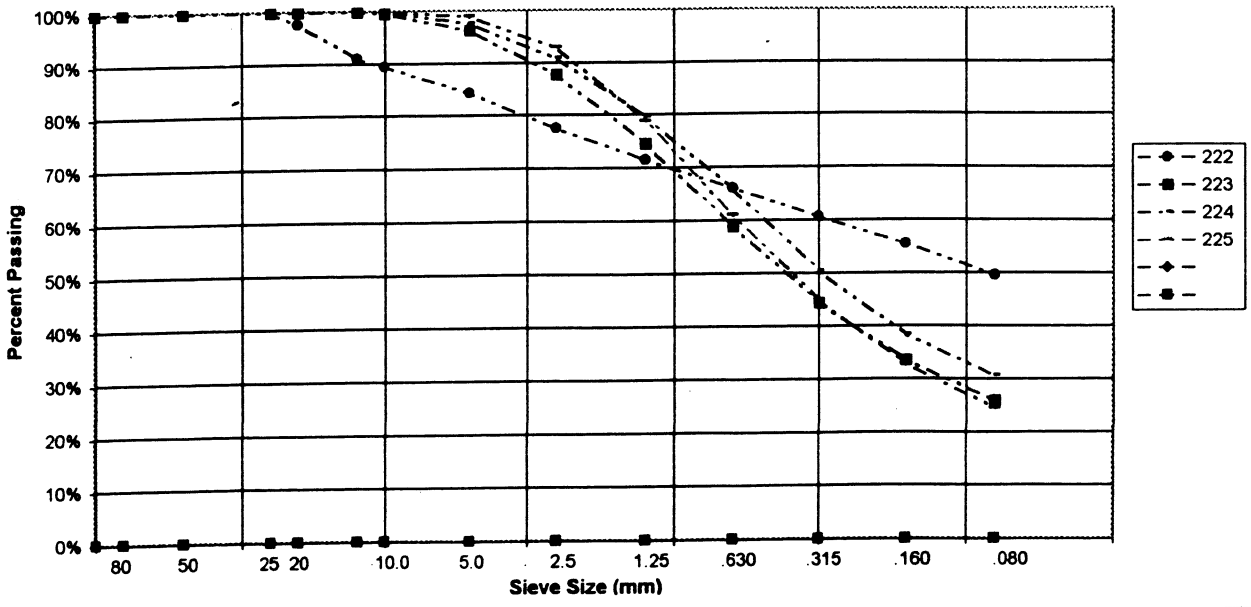
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 634076-6772396
LOGGED BY: RW

HOLE No.: 30120

DATE COMP: 12/8/2004

FIELD NO:	222	223	224	225		
LAB NO:	222	223	224	225		
DEPTH:	0.3-0.9	2.1-2.4	3.7-4.3	4.9-5.3		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	100%	100%	100%		
20.0	98%	100%	100%	100%		
12.5	91%	100%	100%	100%		
10.0	90%	100%	100%	100%		
5.0	84%	96%	98%	99%		
2.5	78%	88%	91%	93%		
1.25	72%	75%	80%	79%		
0.630	66%	59%	66%	61%		
0.315	61%	44%	50%	45%		
0.160	56%	34%	38%	33%		
0.080	50%	26%	31%	25%		
M.C.(%):	10%	7%	5%	3%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	16	4	2	1		
% SAND:	35	70	67	75		
% FINES:	50	26	31	25		
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



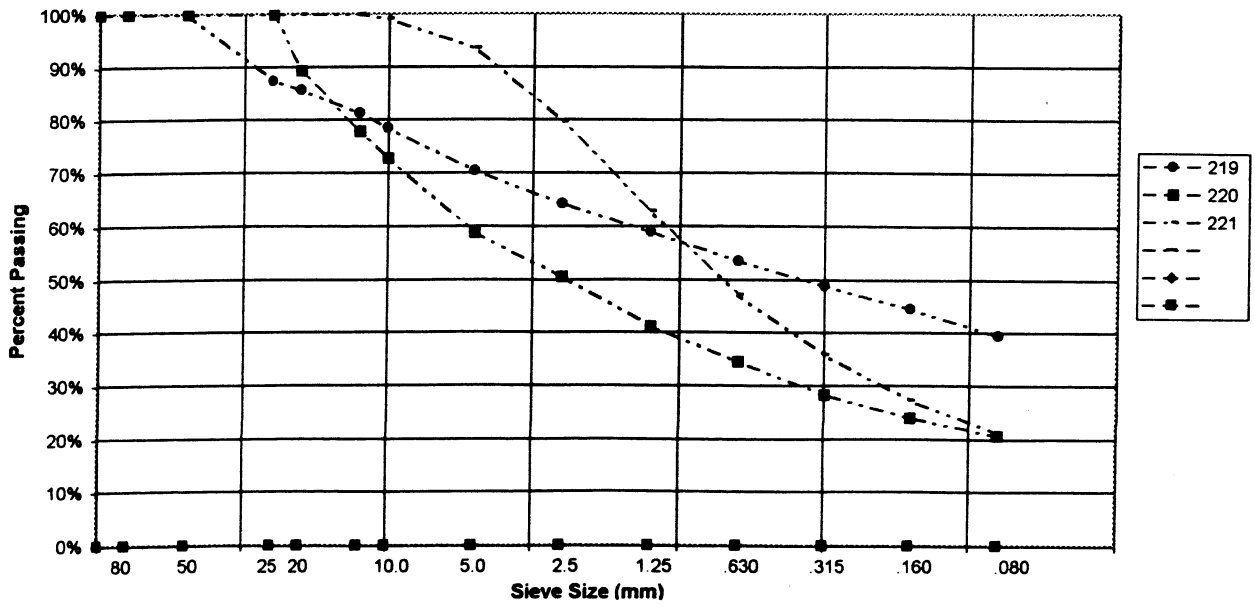
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318		HOLE No.: 30121
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	633974-6772578		
LOGGED BY:	RW		DATE COMP: 12/8/2004

FIELD NO:	219	220	221			
LAB NO:	219	220	221			
DEPTH:	0.6-1.2	1.5-2.1	2.7-3.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	87%	100%	100%			
20.0	86%	89%	100%			
12.5	81%	78%	100%			
10.0	79%	73%	99%			
5.0	71%	59%	94%			
2.5	64%	51%	80%			
1.25	59%	41%	63%			
0.630	54%	35%	47%			
0.315	49%	28%	36%			
0.160	45%	24%	27%			
0.080	40%	21%	21%			
M.C.(%):	7%	4%	2%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	29	41	6			
% SAND:	31	38	72			
% FINES:	40	21	21			
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

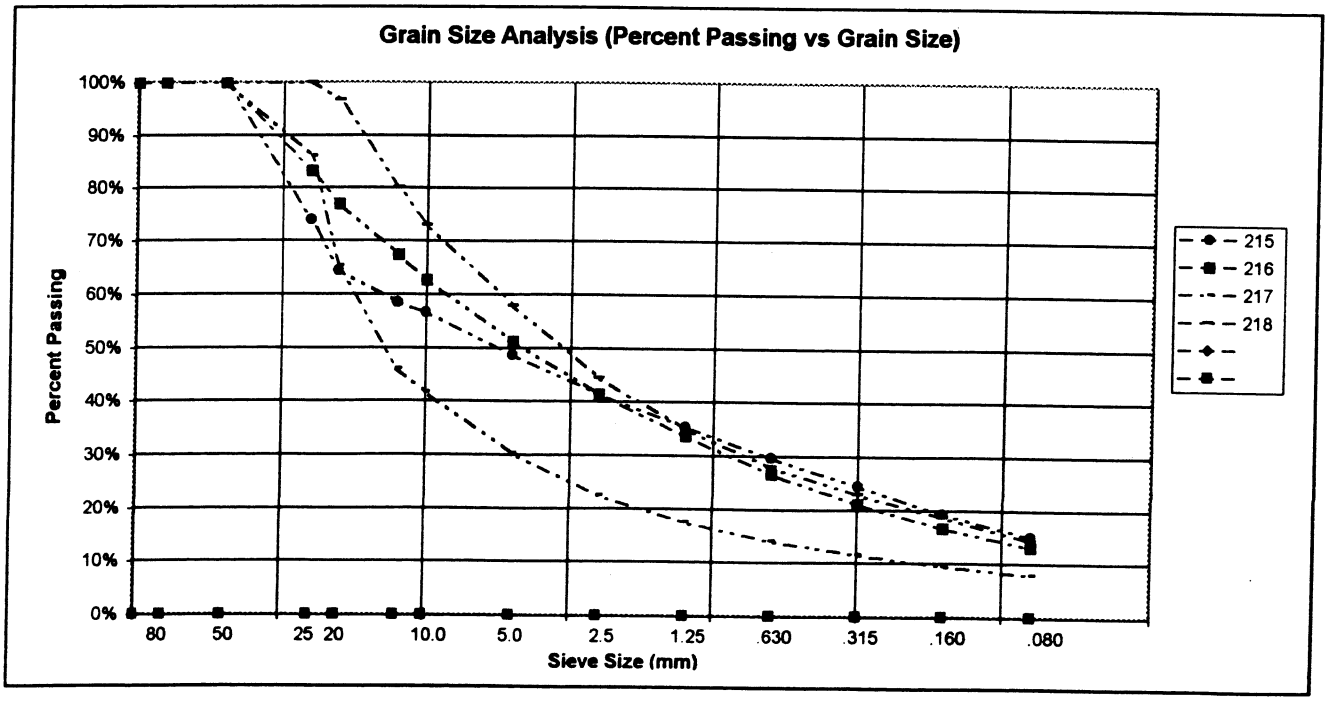
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633916-6772688
LOGGED BY: RW

HOLE No.: 30122

DATE COMP: 12/8/2004

FIELD NO:	215	216	217	218		
LAB NO:	215	216	217	218		
DEPTH:	0.6-1.2	1.6-2.4	3.4-4.0	4.6-5.2		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	74%	83%	86%	100%		
20.0	64%	77%	65%	97%		
12.5	59%	68%	46%	80%		
10.0	57%	63%	42%	73%		
5.0	49%	51%	30%	58%		
2.5	41%	41%	23%	44%		
1.25	35%	34%	18%	35%		
0.630	30%	27%	14%	28%		
0.315	25%	21%	12%	23%		
0.160	19%	17%	10%	19%		
0.080	15%	13%	8%	14%		
M.C.(%):	15%	9%	9%	8%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	51	49	70	42		
% SAND:	34	38	22	44		
% FINES:	15	13	8	14		
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SILTY GRAVEL WITH SAND (GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY SAND WITH GRAVEL (SM)		



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

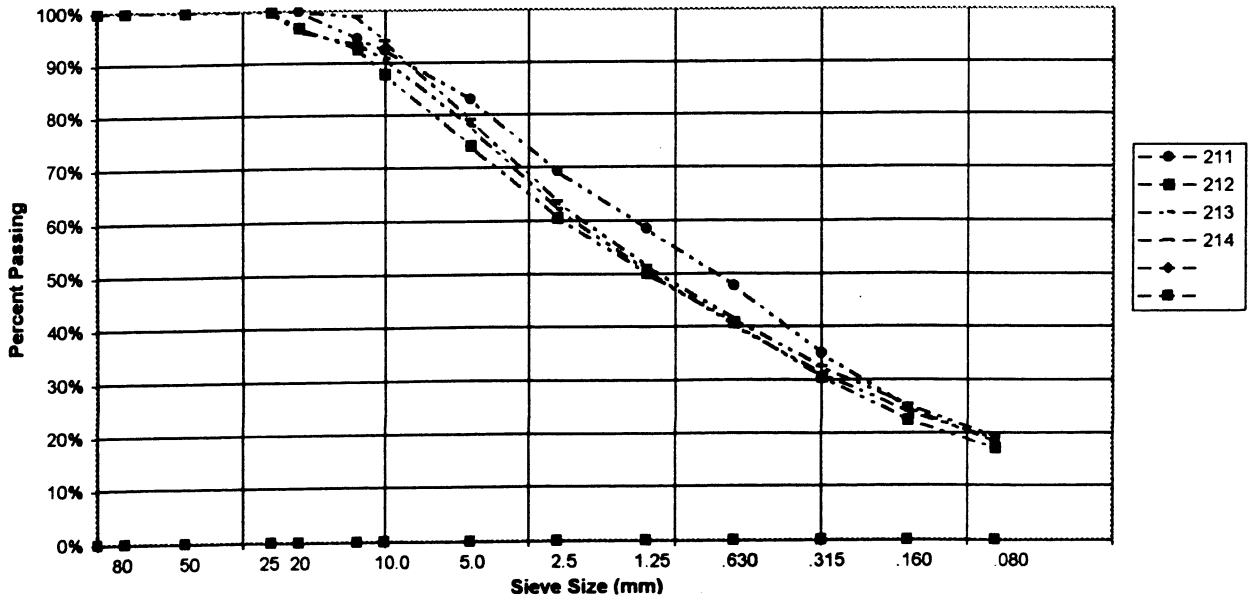
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633863-6772714
LOGGED BY: RW

HOLE No.: 30123B

DATE COMP: 11/8/2004

FIELD NO:	211	212	213	214		
LAB NO:	211	212	213	214		
DEPTH:	9.4-10.1	11.0-11.6	13.1-13.7	14.3-14.6		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	100%	100%	100%		
20.0	100%	97%	96%	100%		
12.5	95%	93%	94%	99%		
10.0	93%	88%	91%	94%		
5.0	83%	74%	78%	79%		
2.5	69%	61%	62%	64%		
1.25	59%	50%	51%	52%		
0.630	48%	41%	40%	42%		
0.315	35%	31%	31%	33%		
0.160	25%	23%	24%	25%		
0.080	18%	17%	19%	19%		
M.C.(%):	10%	9%	10%	10%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	17	26	22	21		
% SAND:	65	57	59	60		
% FINES:	18	17	19	19		
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

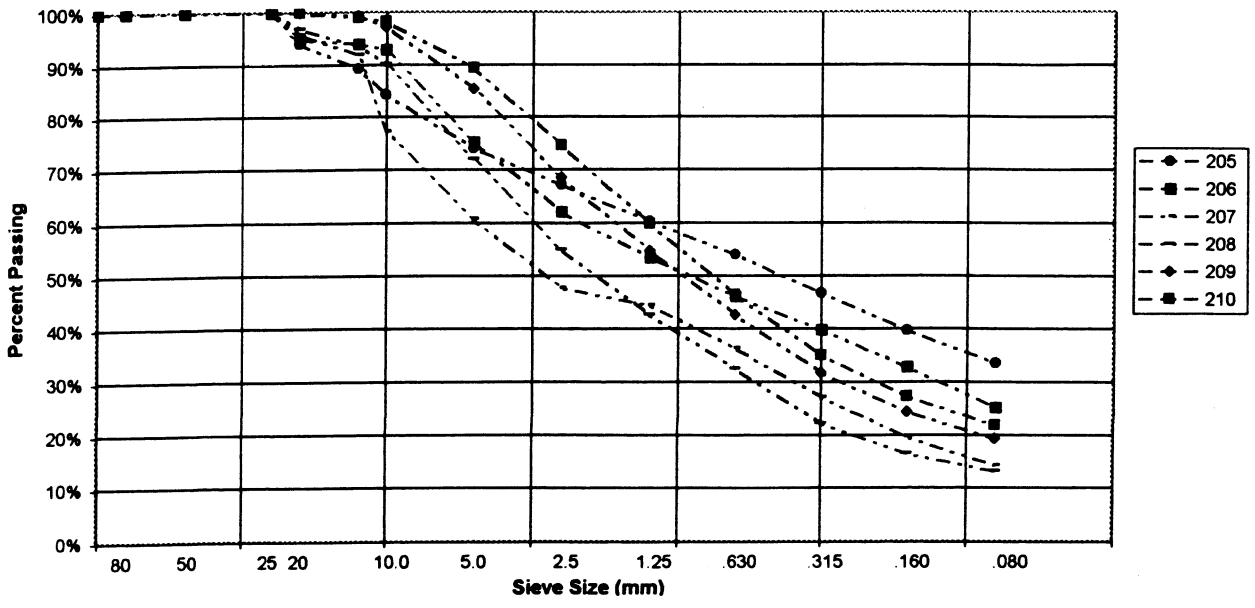
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633863-6772714
LOGGED BY: RW

HOLE No.: 30123

DATE COMP: 11/8/2004

FIELD NO:	205	206	207	208	209	210
LAB NO:	205	206	207	208	209	210
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.0	5.2-5.8	6.4-7.0	7.9-8.5
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	100%	100%	100%	100%	100%	100%
20.0	94%	95%	96%	97%	100%	100%
12.5	89%	94%	92%	94%	99%	99%
10.0	84%	93%	77%	90%	97%	98%
5.0	74%	75%	61%	72%	85%	89%
2.5	67%	62%	48%	55%	69%	75%
1.25	60%	53%	44%	43%	55%	60%
0.630	54%	46%	36%	32%	43%	46%
0.315	47%	40%	27%	22%	32%	35%
0.160	40%	33%	20%	17%	24%	27%
0.080	34%	25%	14%	13%	19%	22%
M.C.(%):	6%	6%	5%	5%	7%	7%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	26	25	39	28	15	11
% SAND:	40	50	46	59	66	68
% FINES:	34	25	14	13	19	22
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	SILTY SAND (SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

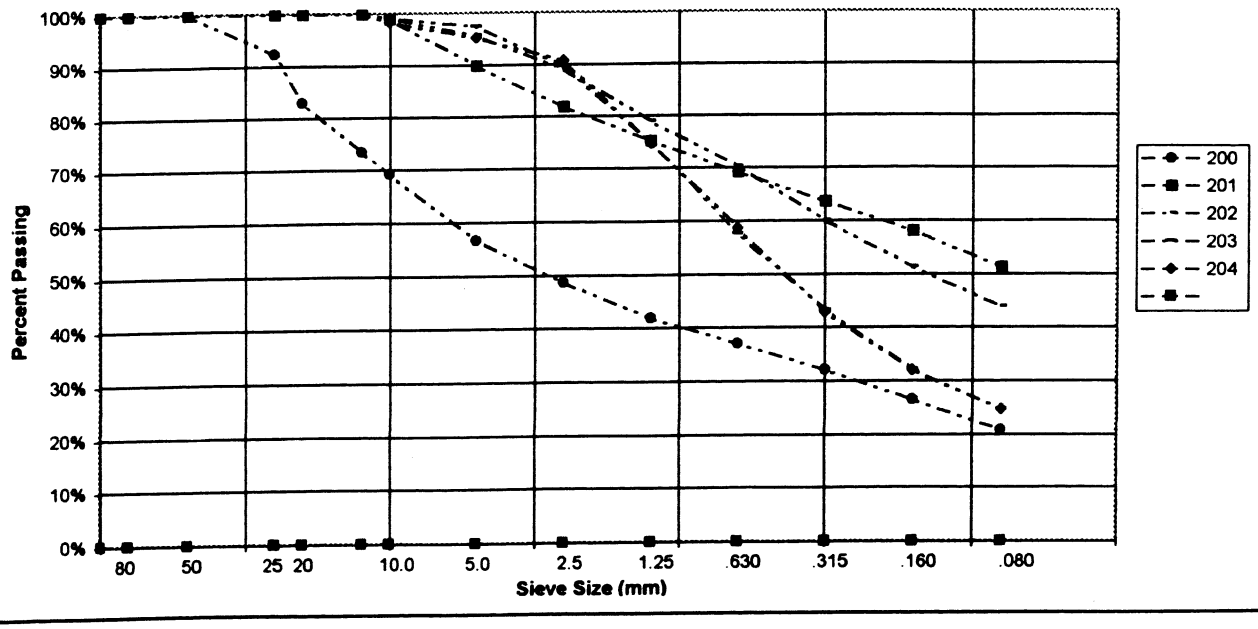
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633827-6772909
LOGGED BY: RW

HOLE No.: 30124

DATE COMP: 11/8/2004

FIELD NO:	200	201	202	203	204	
LAB NO:	200	201	202	203	204	
DEPTH:	0.6-1.2	1.8-2.4	3.4-4.0	5.2-5.8	6.7-7.3	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	92%	100%	100%	100%	100%	
20.0	83%	100%	100%	100%	100%	
12.5	74%	100%	100%	100%	100%	
10.0	69%	99%	99%	99%	98%	
5.0	57%	90%	96%	97%	95%	
2.5	49%	82%	89%	90%	91%	
1.25	42%	75%	79%	75%	75%	
0.630	37%	69%	70%	58%	59%	
0.315	32%	64%	60%	43%	43%	
0.160	27%	58%	51%	32%	32%	
0.080	21%	51%	44%	25%	25%	
M.C.(%):	9%	17%	14%	4%	2%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	43	10	4	3	5	
% SAND:	36	39	52	73	70	
% FINES:	21	51	44	25	25	
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SANDY SILT (ML)	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND (SM)	

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

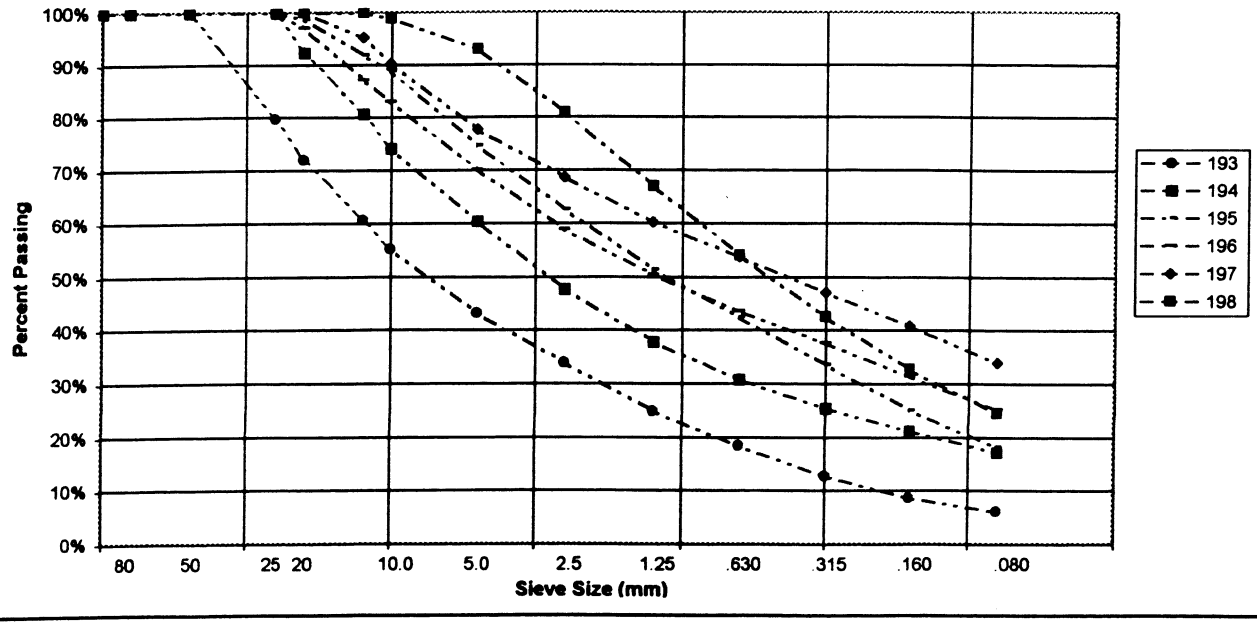
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633773-6773058
LOGGED BY: RW

HOLE No.: 30125

DATE COMP: 11/8/2004

FIELD NO:	193	194	195	196	197	198
LAB NO:	193	194	195	196	197	198
DEPTH:	0.3-0.9	1.8-2.4	3.4-4.0	4.9-5.5	6.4-7.0	7.9-8.5
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	80%	100%	100%	100%	100%	100%
20.0	72%	92%	99%	97%	100%	100%
12.5	61%	81%	92%	87%	95%	100%
10.0	55%	74%	89%	83%	90%	99%
5.0	43%	60%	75%	70%	78%	93%
2.5	34%	48%	63%	59%	69%	81%
1.25	25%	38%	51%	50%	60%	67%
0.630	19%	31%	42%	44%	54%	54%
0.315	13%	26%	34%	38%	47%	43%
0.160	9%	21%	25%	31%	41%	33%
0.080	6%	17%	18%	25%	34%	25%
M.C.(%):	2%	8%	10%	8%	11%	11%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	57	40	25	30	22	7
% SAND:	37	43	56	45	44	68
% FINES:	6	17	18	25	34	25
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

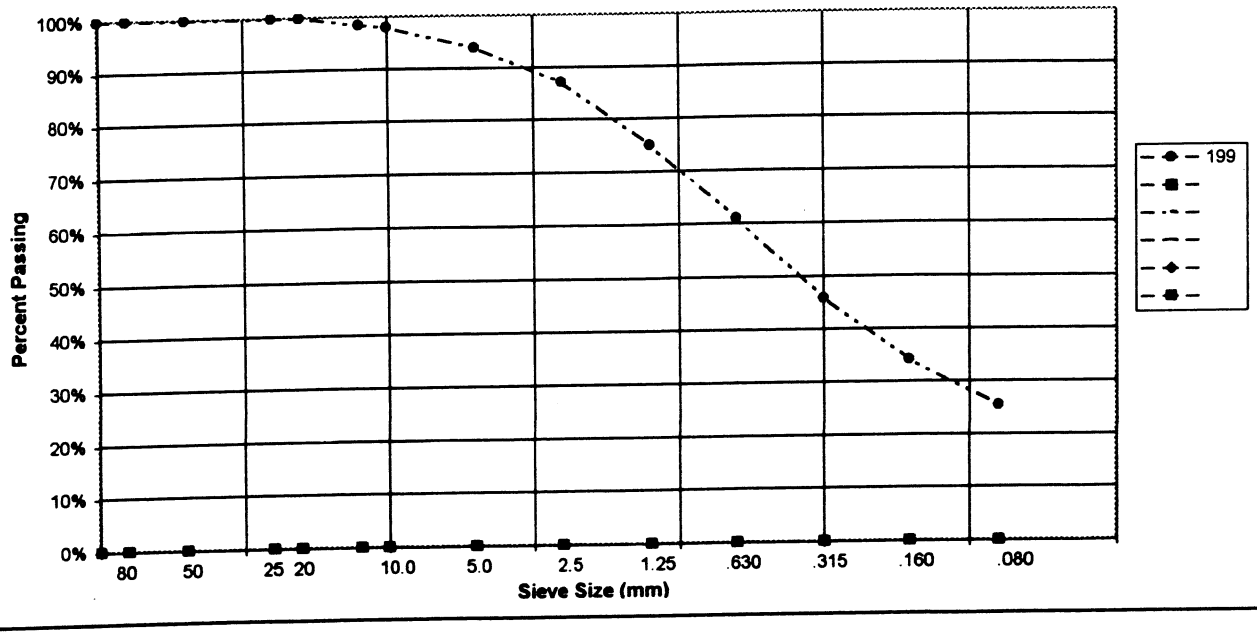
HOLE No.: 30125B

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633773-6773058
LOGGED BY: RW

DATE COMP: 11/8/2004

FIELD NO:	199
LAB NO:	199
DEPTH:	10.4-10.7
TYPE:	AUGER
SIEVE SIZE	**PERCENT PASSING**
100.0	100%
80.0	100%
50.0	100%
25.0	100%
20.0	100%
12.5	99%
10.0	98%
5.0	94%
2.5	87%
1.25	75%
0.630	61%
0.315	46%
0.160	34%
0.080	25%
M.C.(%):	12%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	6
% SAND:	69
% FINES:	25
CLASSIFICATION	SILTY SAND (SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

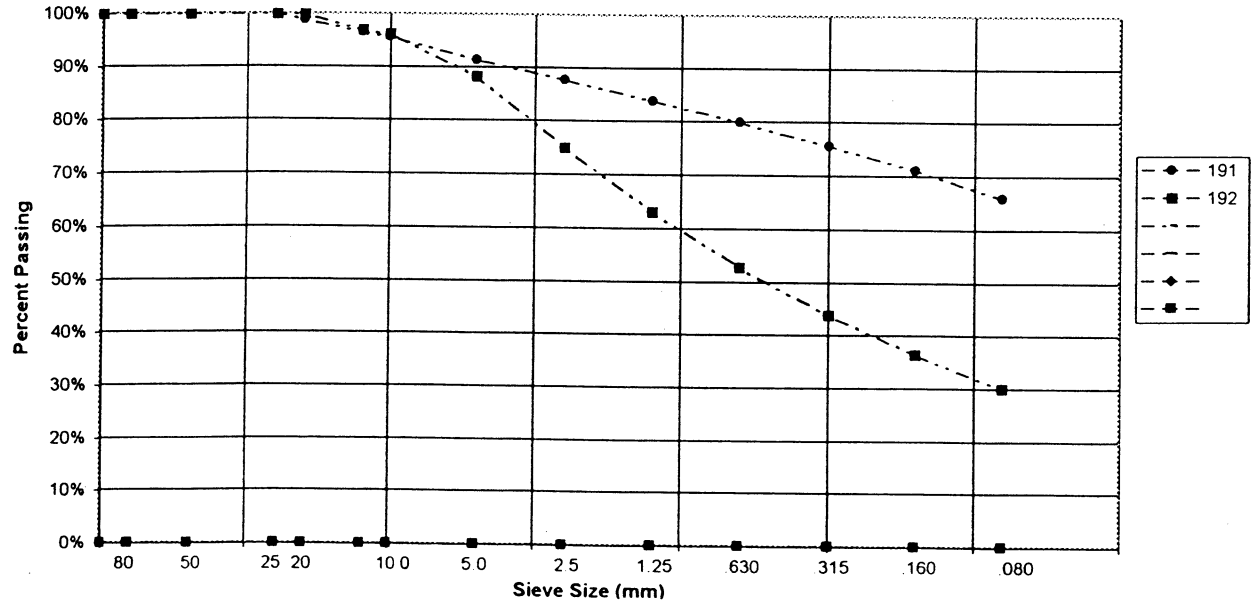
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633699-6773199
LOGGED BY: RW

HOLE No.: 30126

DATE COMP: 08/10/2004

FIELD NO:	191	192				
LAB NO:	191	192				
DEPTH:	0.5-0.8	1.5-1.8				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	99%	100%				
12.5	97%	97%				
10.0	96%	96%				
5.0	91%	88%				
2.5	88%	75%				
1.25	84%	63%				
0.630	80%	53%				
0.315	76%	44%				
0.160	71%	37%				
0.080	66%	30%				
M.C.(%):	13%	4%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	9	12				
% SAND:	25	58				
% FINES:	66	30				
CLASSIFICATION	SANDY SILT (ML)	SILTY SAND (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

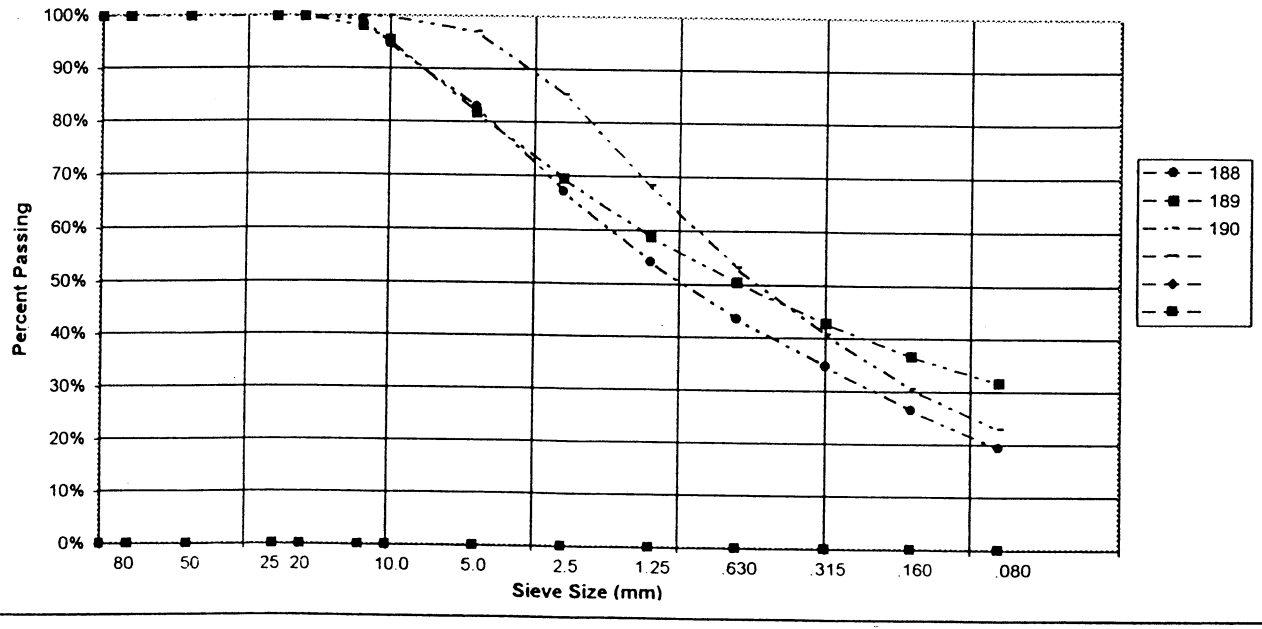
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633619-6773331
LOGGED BY: RW

HOLE No.: 30127

DATE COMP: 08/10/2004

FIELD NO:	188	189	190			
LAB NO:	188	189	190			
DEPTH:	0.6-1.2	2.1-2.9	4.0-4.6			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	100%	100%	100%			
12.5	99%	98%	100%			
10.0	95%	95%	100%			
5.0	83%	82%	97%			
2.5	67%	70%	85%			
1.25	54%	59%	68%			
0.630	44%	51%	53%			
0.315	35%	43%	41%			
0.160	27%	37%	31%			
0.080	20%	32%	23%			
M.C.(%):	16%	12%	3%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	17	18	3			
% SAND:	64	50	74			
% FINES:	20	32	23			
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

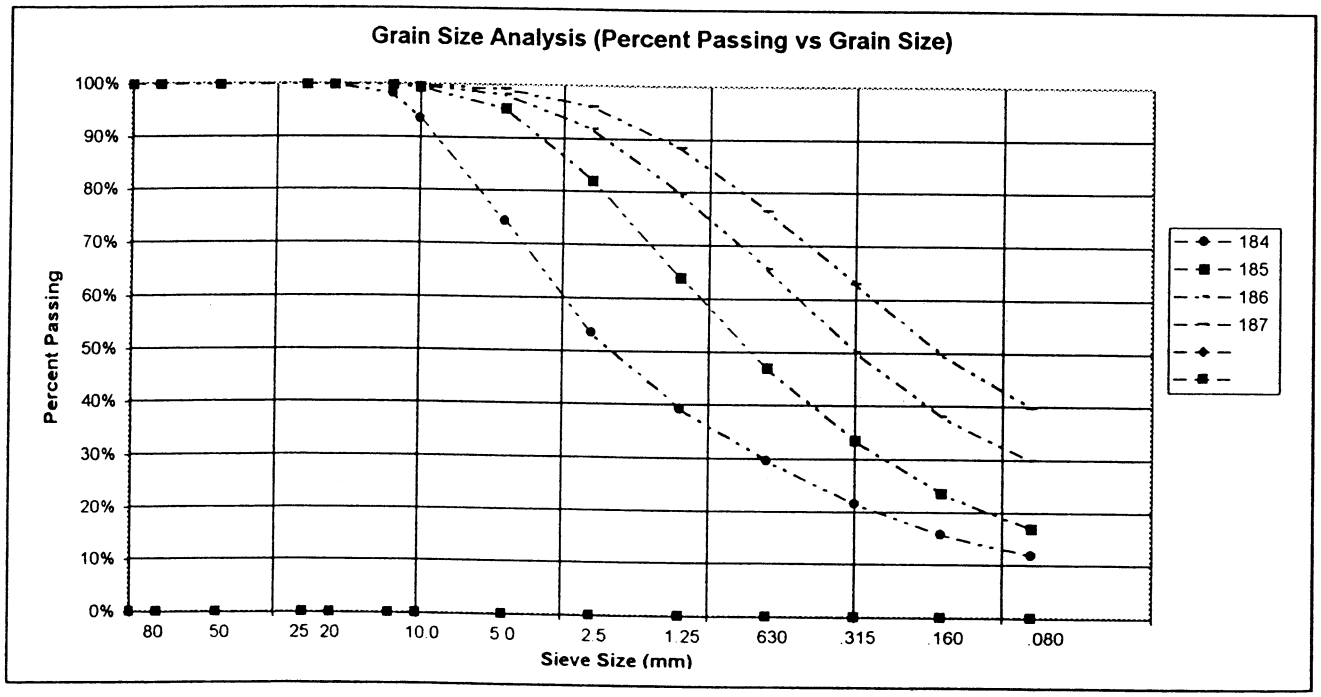
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	633550-6773445
LOGGED BY:	RW

HOLE No.: 30128

DATE COMP: 08/10/2004

FIELD NO:	184	185	186	187		
LAB NO:	184	185	186	187		
DEPTH:	0.4-0.9	2.1-2.9	3.7-4.3	5.2-5.8		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	100%	100%	100%	100%		
20.0	100%	100%	100%	100%		
12.5	98%	100%	100%	100%		
10.0	94%	100%	100%	100%		
5.0	74%	96%	98%	99%		
2.5	54%	82%	92%	96%		
1.25	39%	64%	80%	88%		
0.630	30%	47%	66%	77%		
0.315	22%	34%	50%	63%		
0.160	16%	24%	38%	50%		
0.080	12%	17%	30%	40%		
M.C.(%):	2%	9%	9%	10%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	26	4	2	1		
% SAND:	62	79	68	60		
% FINES:	12	17	30	40		
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND (SM)		



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

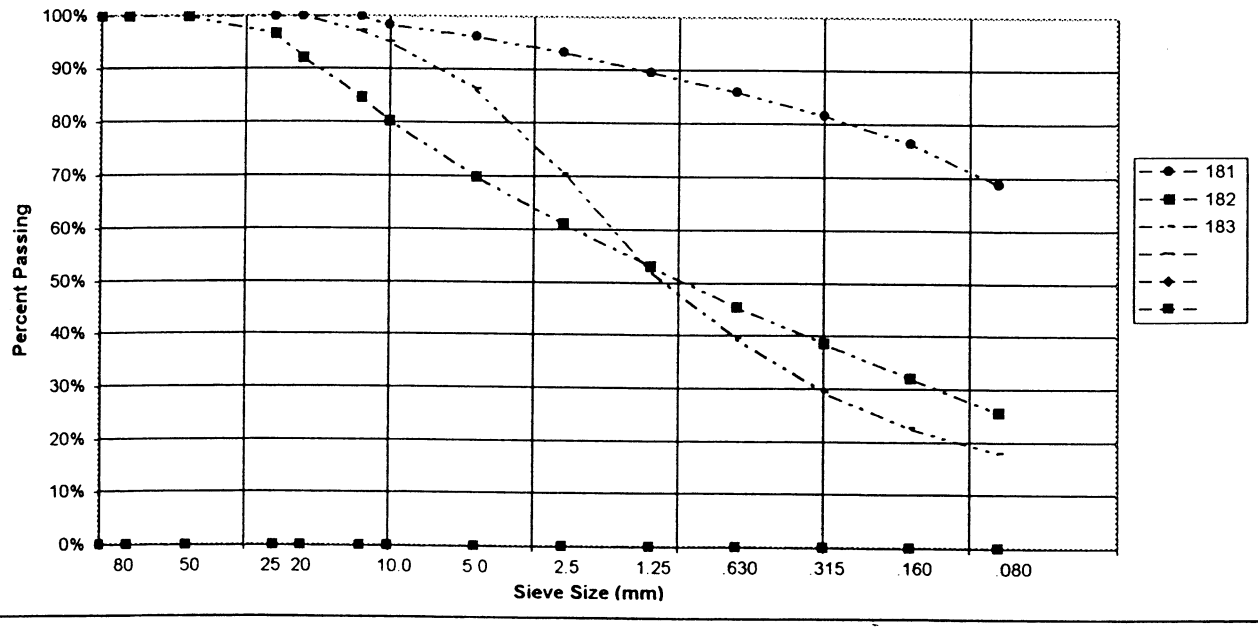
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633531-6773473
LOGGED BY: RW

HOLE No.: 30129

DATE COMP: 08/10/2004

FIELD NO:	181	182	183			
LAB NO:	181	182	183			
DEPTH:	0.6-1.2	1.8-2.4	3.4-3.7			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	97%	100%			
20.0	100%	92%	100%			
12.5	100%	85%	97%			
10.0	98%	80%	95%			
5.0	96%	70%	86%			
2.5	93%	61%	70%			
1.25	90%	53%	52%			
0.630	86%	46%	39%			
0.315	82%	39%	29%			
0.160	76%	32%	23%			
0.080	69%	26%	18%			
M.C.(%):	34%	9%	5%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	4	30	14			
% SAND:	27	44	68			
% FINES:	69	26	18			
CLASSIFICATION	SANDY SILT (ML)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

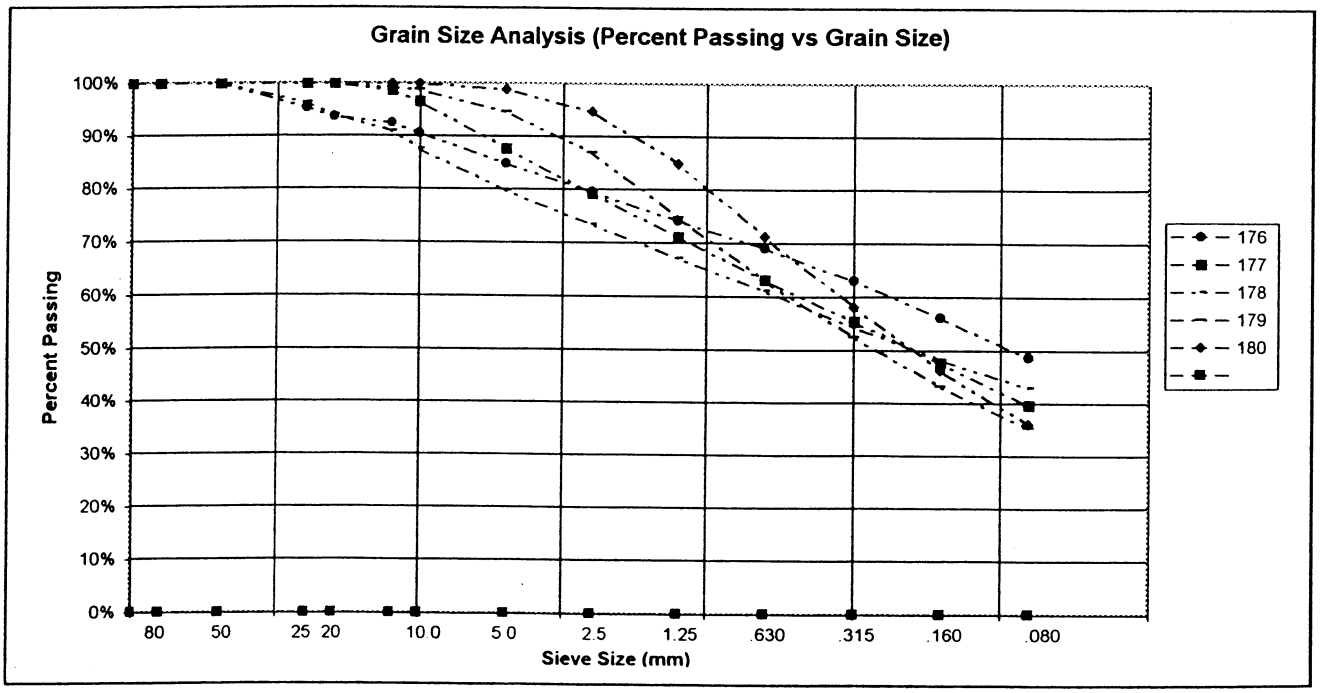
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633472-6773537
LOGGED BY: RW

HOLE No.: 30130

DATE COMP: 08/10/2004

FIELD NO:	176	177	178	179	180	
LAB NO:	176	177	178	179	180	
DEPTH:	0.6-1.2	1.8-2.4	3.7-4.3	4.9-5.5	7.0-7.6	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	95%	100%	96%	100%	100%	
20.0	94%	100%	94%	100%	100%	
12.5	93%	99%	91%	99%	100%	
10.0	91%	97%	87%	99%	100%	
5.0	85%	88%	80%	95%	99%	
2.5	80%	79%	74%	87%	95%	
1.25	74%	71%	67%	75%	85%	
0.630	69%	63%	61%	63%	71%	
0.315	63%	55%	54%	53%	58%	
0.160	56%	48%	48%	43%	46%	
0.080	49%	40%	43%	35%	36%	
M.C.(%):	13%	10%	9%	5%	4%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	15	12	20	5	1	
% SAND:	36	48	37	59	63	
% FINES:	49	40	43	35	36	
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	SILTY SAND (SM)	



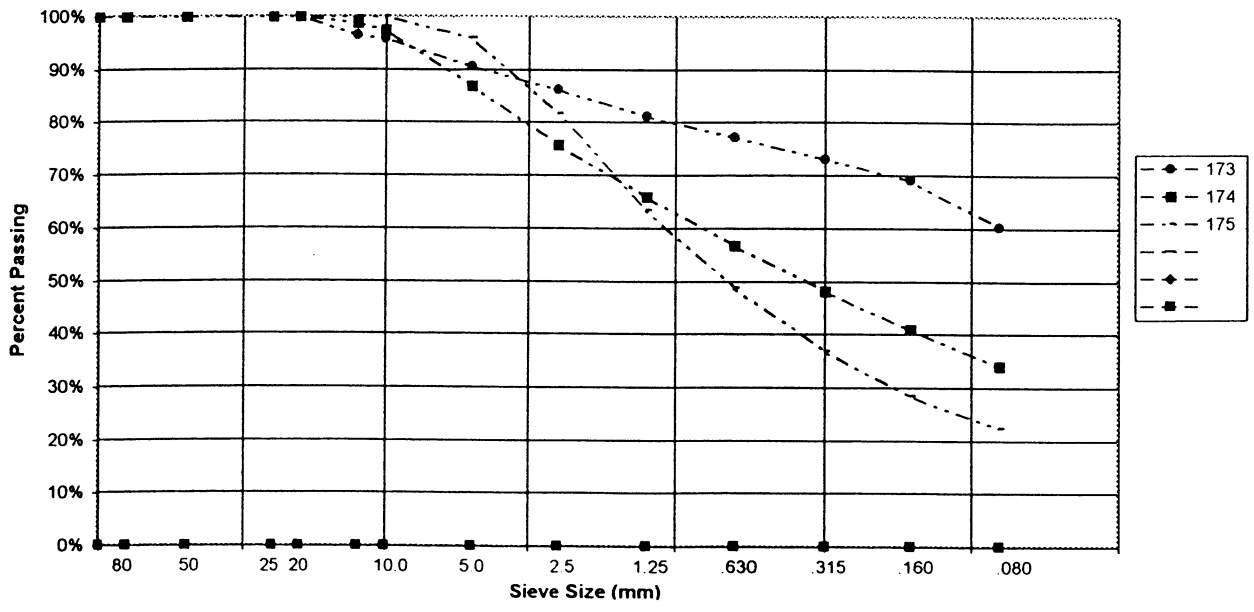
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318		HOLE No.: 30131
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	633423-6773651		
LOGGED BY:	RW		DATE COMP: 08/10/2004

FIELD NO:	173	174	175			
LAB NO:	173	174	175			
DEPTH:	0.3-0.9	1.8-2.4	3.4-3.7			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	100%	100%	100%			
12.5	96%	99%	100%			
10.0	96%	98%	100%			
5.0	91%	87%	96%			
2.5	86%	76%	82%			
1.25	81%	66%	63%			
0.630	77%	57%	49%			
0.315	73%	48%	37%			
0.160	69%	41%	29%			
0.080	60%	34%	22%			
M.C.(%):	31%	7%	3%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	9	13	4			
% SAND:	30	53	74			
% FINES:	60	34	22			
CLASSIFICATION	SANDY SILT (ML)	SILTY SAND (SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



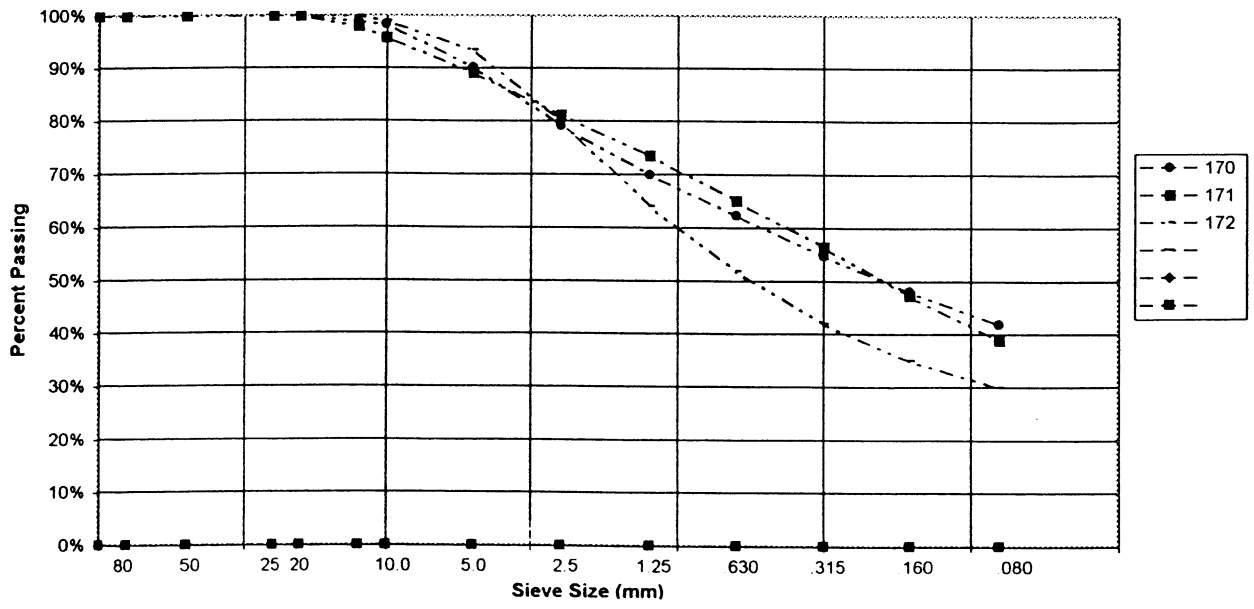
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318		HOLE No.: 30132
CLIENT:	YTG, Transportation & Engineering		
PROJECT NAME:	Geotechnical Services		
PROJECT LOCATION:	Km 1691.7-1717.3		
DRILL UNIT:	CME75		
HOLE LOCATION:	633337-6773786		
LOGGED BY:	RW		DATE COMP: 08/09/2004

FIELD NO:	170	171	172			
LAB NO:	170	171	172			
DEPTH:	0.9-1.2	2.1-2.7	3.4-4.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	100%	100%	100%			
12.5	99%	98%	100%			
10.0	98%	96%	99%			
5.0	90%	89%	93%			
2.5	79%	81%	80%			
1.25	70%	74%	64%			
0.630	62%	65%	52%			
0.315	55%	56%	42%			
0.160	48%	47%	35%			
0.080	42%	39%	30%			
M.C.(%):	10%	9%	6%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	10	11	7			
% SAND:	48	50	63			
% FINES:	42	39	30			
CLASSIFICATION	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)

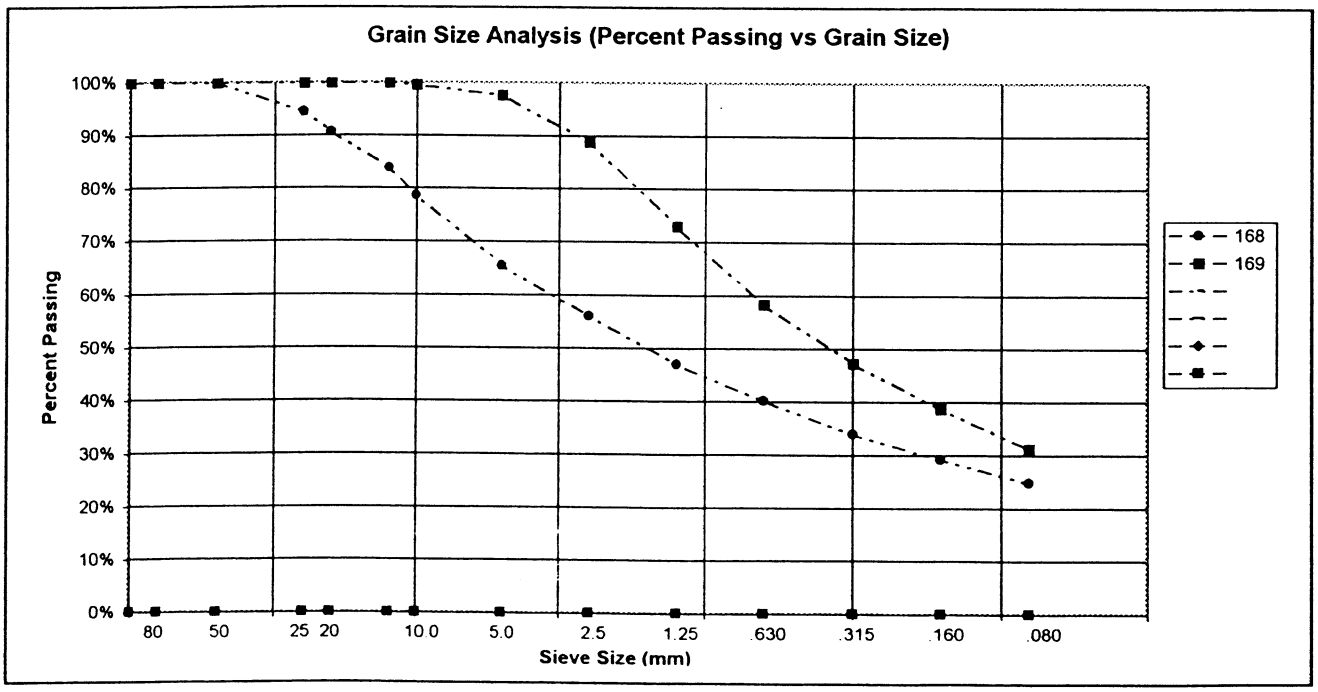


HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.: 30133
CLIENT:	YTG, Transportation & Engineering	
PROJECT NAME:	Geotechnical Services	
PROJECT LOCATION:	Km 1691.7-1717.3	
DRILL UNIT:	CME75	
HOLE LOCATION:	633261-6773901	
LOGGED BY:	RW	DATE COMP: 08/09/2004

FIELD NO:	168	169
LAB NO:	168	169
DEPTH:	0.9-1.2	1.8-2.4
TYPE:	AUGER	AUGER
SIEVE SIZE	**PERCENT PASSING**	**PERCENT PASSING**
100.0	100%	100%
80.0	100%	100%
50.0	100%	100%
25.0	95%	100%
20.0	91%	100%
12.5	84%	100%
10.0	79%	100%
5.0	65%	98%
2.5	56%	89%
1.25	47%	73%
0.630	40%	58%
0.315	34%	47%
0.160	29%	39%
0.080	25%	31%
M.C.(%):	7%	8%
LIQUID LIMIT:	0.0	0.0
PLASTIC LIMIT:	0.0	0.0
PLASTIC INDEX.:	0.0	0.0
% GRAVEL:	35	2
% SAND:	41	66
% FINES:	25	31
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)

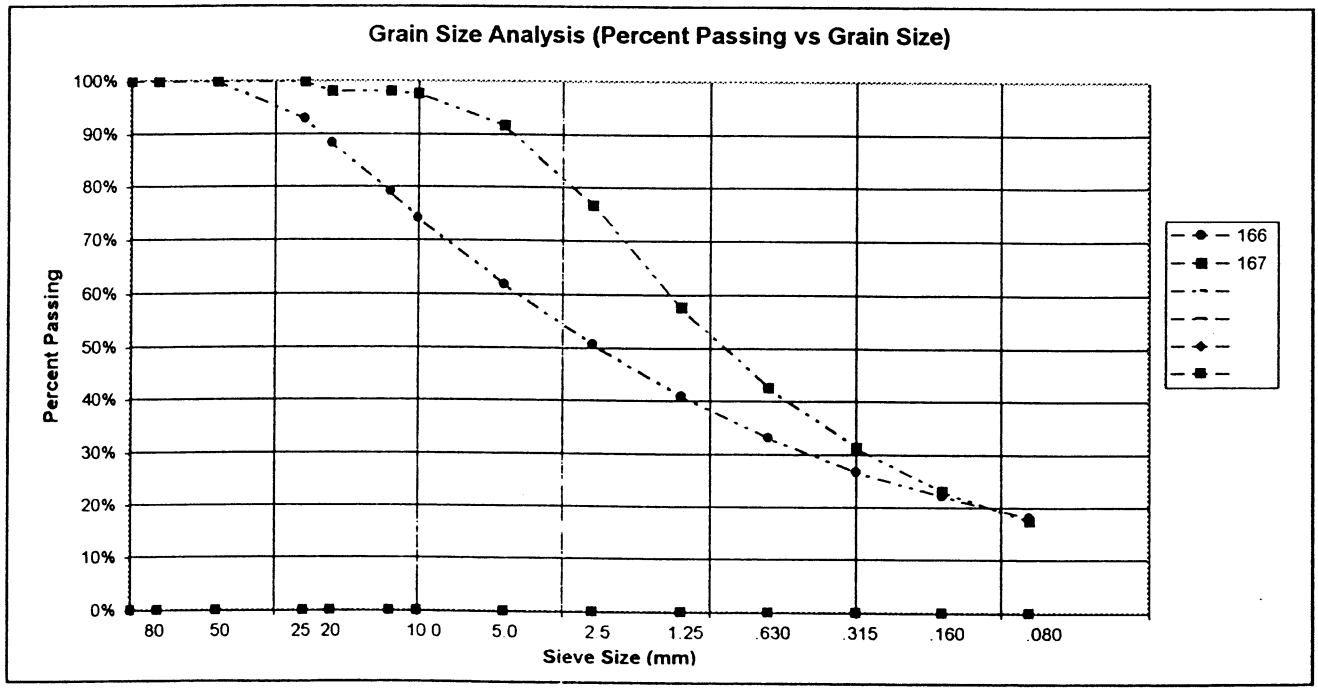


HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.: 30134
CLIENT:	YTG, Transportation & Engineering	
PROJECT NAME:	Geotechnical Services	
PROJECT LOCATION:	Km 1691.7-1717.3	
DRILL UNIT:	CME75	
HOLE LOCATION:	633158-6774008	
LOGGED BY:	RW	DATE COMP: 08/09/2004

FIELD NO:	166	167				
LAB NO:	166	167				
DEPTH:	0.9-1.2	1.8-2.4				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	93%	100%				
20.0	88%	98%				
12.5	79%	98%				
10.0	74%	98%				
5.0	62%	92%				
2.5	51%	77%				
1.25	41%	58%				
0.630	33%	43%				
0.315	27%	31%				
0.160	22%	23%				
0.080	18%	18%				
M.C.(%):	8%	1%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	38	8				
% SAND:	44	74				
% FINES:	18	18				
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)				



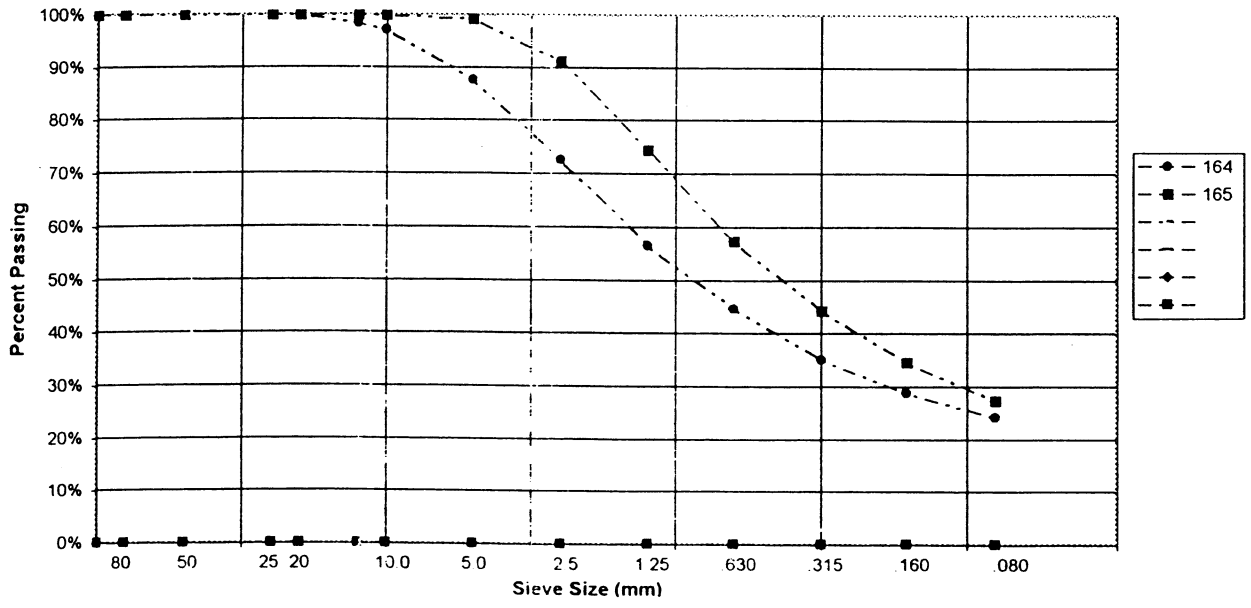
HOGGAN ENGINEERING & TESTING (1980) LTD.

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

PROJECT NUMBER:	8002-318	HOLE No.: 30135
CLIENT:	YTG, Transportation & Engineering	
PROJECT NAME:	Geotechnical Services	
PROJECT LOCATION:	Km 1691.7-1717.3	
DRILL UNIT:	CME75	
HOLE LOCATION:	633067-6774137	
LOGGED BY:	RW	DATE COMP: 08/09/2004

FIELD NO:	164	165				
LAB NO:	164	165				
DEPTH:	0.9-1.5	2.1-3.0				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	100%	100%				
12.5	98%	100%				
10.0	97%	100%				
5.0	88%	99%				
2.5	73%	91%				
1.25	57%	74%				
0.630	45%	57%				
0.315	35%	44%				
0.160	29%	35%				
0.080	24%	27%				
M.C.(%):	10%	9%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	12	1				
% SAND:	63	72				
% FINES:	24	27				
CLASSIFICATION	SILTY SAND (SM)	SILTY SAND (SM)				

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

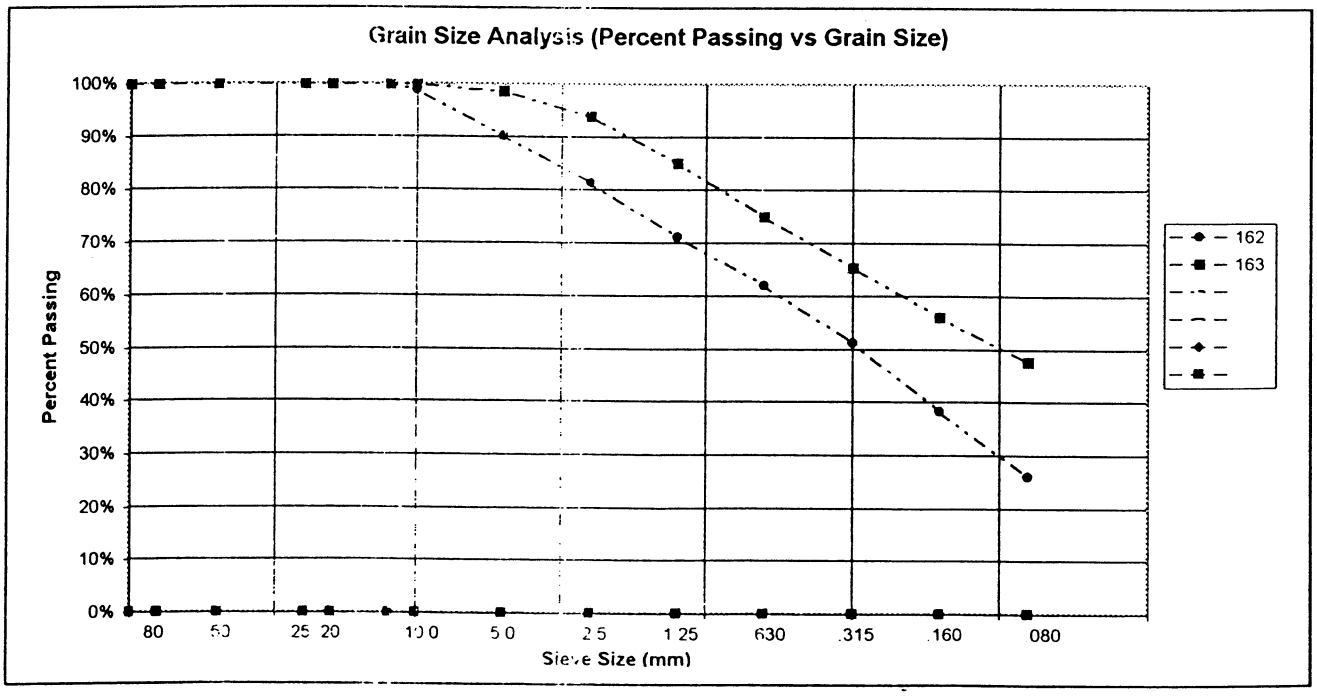
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 633003-6774206
LOGGED BY: RW

HOLE No.: 30136

DATE COMP: 08/09/2004

FIELD NO:	162	163				
LAB NO:	162	163				
DEPTH:	0.6-1.2	1.5-2.1				
TYPE:	AUGER	AUGER				
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING				
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	100%	100%				
12.5	100%	100%				
10.0	99%	100%				
5.0	90%	99%				
2.5	81%	94%				
1.25	71%	85%				
0.630	62%	75%				
0.315	51%	65%				
0.160	38%	56%				
0.080	26%	48%				
M.C.(%):	11%	14%				
LIQUID LIMIT:	0.0	0.0				
PLASTIC LIMIT:	0.0	0.0				
PLASTIC INDEX.:	0.0	0.0				
% GRAVEL:	10	1				
% SAND:	64	51				
% FINES:	26	48				
CLASSIFICATION	SILTY SAND (SM)	SILTY SAND (SM)				



HOGGAN ENGINEERING & TESTING (1980) LTD.

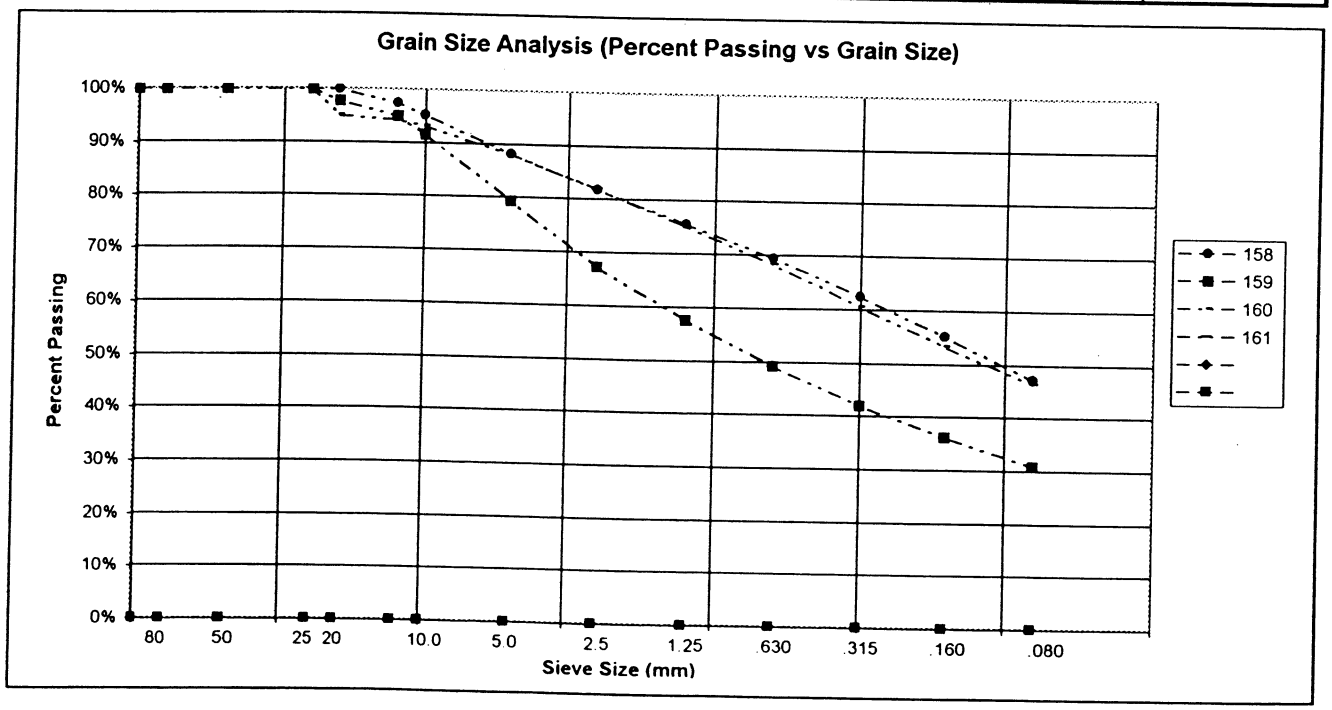
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 632037-6775613
LOGGED BY: RW

HOLE No.: 30148

DATE COMP: 08/03/2004

FIELD NO:	158	159	160	161		
LAB NO:	158	159	160	161		
DEPTH:	0.9-1.5	2.1-2.7	3.7-4.3	4.9-5.2		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	100%	98%	95%			
12.5	98%	95%	94%			
10.0	95%	92%	93%			
5.0	88%	79%	88%			
2.5	82%	67%	82%			
1.25	76%	58%	75%			
0.630	70%	49%	68%			
0.315	63%	42%	61%			
0.160	55%	36%	53%			
0.080	47%	31%	46%			
M.C.(%):	25%	11%	16%	5%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	12	21	12	#VALUE!		
% SAND:	41	49	42	#VALUE!		
% FINES:	47	31	46	#VALUE!		
CLASSIFICATION	SILTY SAND (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	#VALUE!		



HOGGAN ENGINEERING & TESTING (1980) LTD.

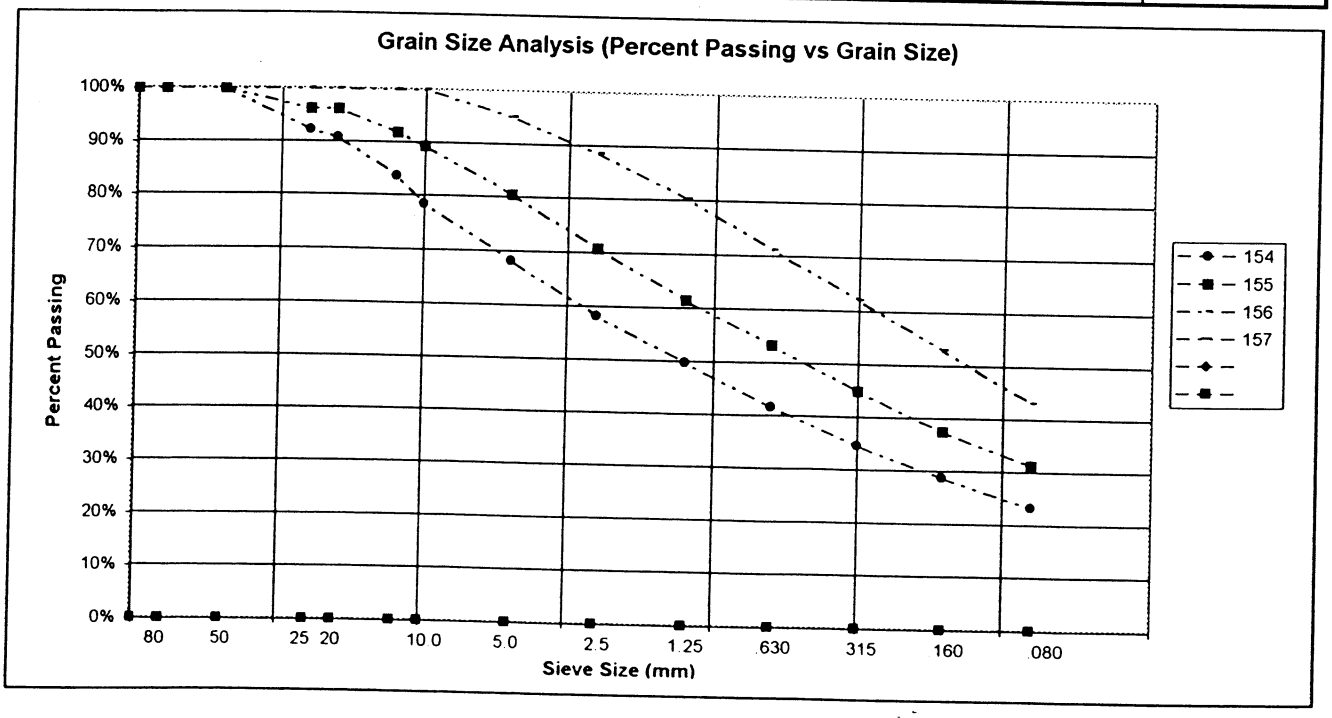
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631983-6775666
LOGGED BY: RW

HOLE No.: 30149

DATE COMP: 08/03/2004

FIELD NO:	154	155	156	157		
LAB NO:	154	155	156	157		
DEPTH:	0.9-1.4	2.1-2.7	4.0-4.6	5.3-5.5		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	92%	96%	100%			
20.0	91%	96%	100%			
12.5	84%	92%	100%			
10.0	79%	89%	100%			
5.0	68%	81%	95%			
2.5	58%	71%	88%			
1.25	50%	62%	80%			
0.630	42%	53%	71%			
0.315	35%	45%	62%			
0.160	29%	38%	53%			
0.080	23%	31%	43%			
M.C.(%):	10%	12%	15%	5%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	32	19	5	#VALUE!		
% SAND:	45	49	52	#VALUE!		
% FINES:	23	31	43	#VALUE!		
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	#VALUE!		



HOGGAN ENGINEERING & TESTING (1980) LTD.

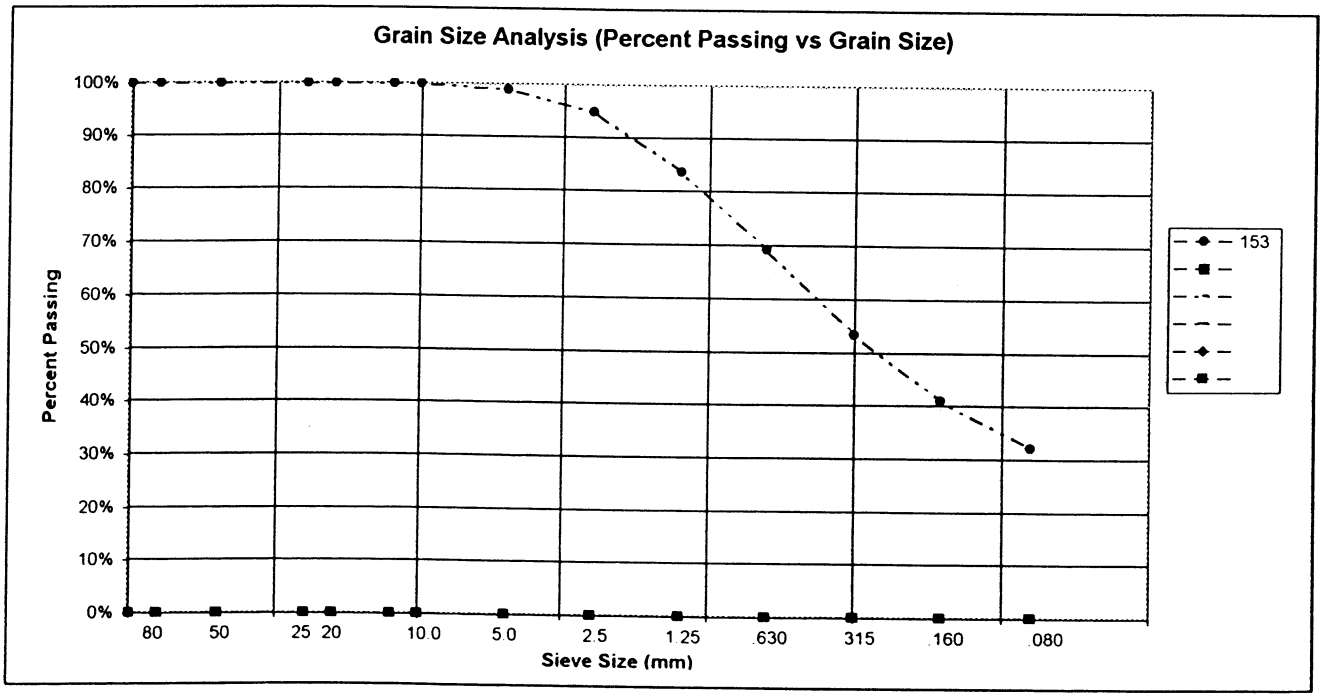
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER:	8002-318
CLIENT:	YTG, Transportation & Engineering
PROJECT NAME:	Geotechnical Services
PROJECT LOCATION:	Km 1691.7-1717.3
DRILL UNIT:	CME75
HOLE LOCATION:	631923-6775739
LOGGED BY:	RW

HOLE No.: 30150

DATE COMP: 08/03/2004

FIELD NO:	153
LAB NO:	153
DEPTH:	9.4-10.1
TYPE:	AUGER
SIEVE SIZE	**PERCENT PASSING**
100.0	100%
80.0	100%
50.0	100%
25.0	100%
20.0	100%
12.5	100%
10.0	100%
5.0	99%
2.5	95%
1.25	84%
0.630	69%
0.315	53%
0.160	41%
0.080	32%
M.C.(%):	5%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	1
% SAND:	67
% FINES:	32
CLASSIFICATION	SILTY SAND (SM)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

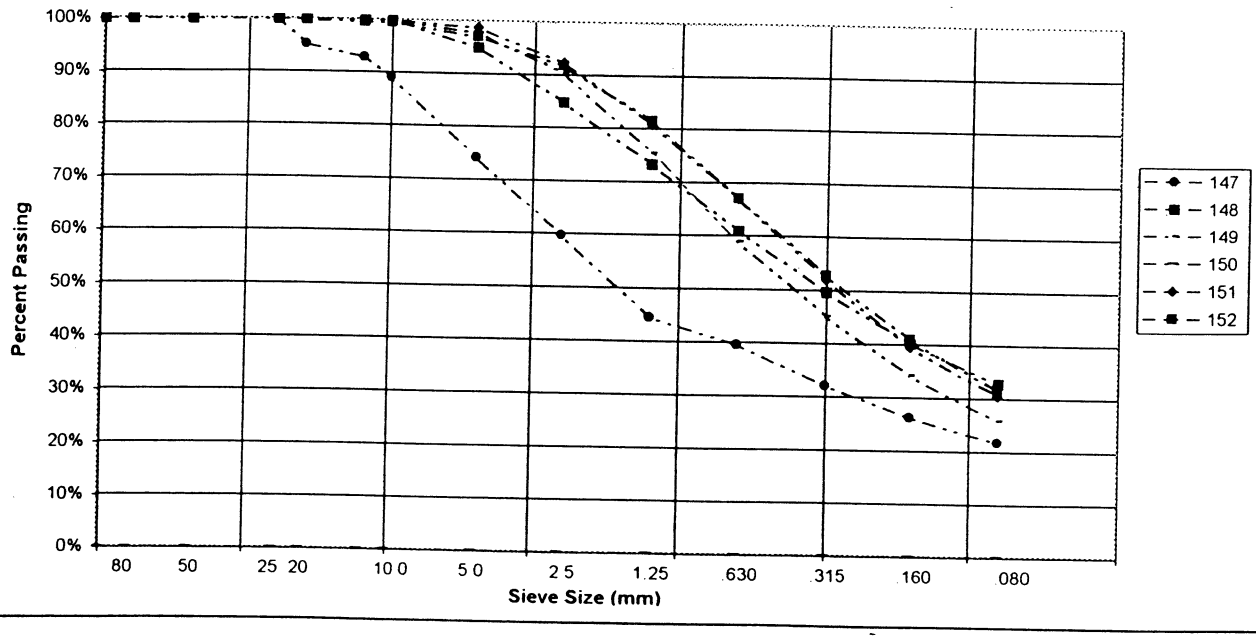
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631923-6775739
LOGGED BY: RW

HOLE No.: 30150

DATE COMP: 08/03/2004

FIELD NO:	147	148	149	150	151	152
LAB NO:	147	148	149	150	151	152
DEPTH:	0.9-1.2	1.8-2.4	3.7-4.3	5.3-5.5	6.4-7.3	7.9-8.5
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%		100%	100%
80.0	100%	100%	100%		100%	100%
50.0	100%	100%	100%		100%	100%
25.0	100%	100%	100%		100%	100%
20.0	95%	100%	100%		100%	100%
12.5	93%	100%	100%		100%	100%
10.0	89%	100%	100%		100%	100%
5.0	74%	95%	98%		99%	97%
2.5	60%	85%	90%		92%	92%
1.25	45%	73%	75%		81%	81%
0.630	40%	61%	59%		67%	67%
0.315	32%	50%	45%		52%	53%
0.160	26%	40%	34%		40%	41%
0.080	22%	33%	26%		30%	32%
M.C.(%):	15%	3%	14%	7%	5%	7%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	26	5	2	#VALUE!	1	3
% SAND:	52	62	72	#VALUE!	68	66
% FINES:	22	33	26	#VALUE!	30	32
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	SILTY SAND (SM)	#VALUE!	SILTY SAND (SM)	SILTY SAND (SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

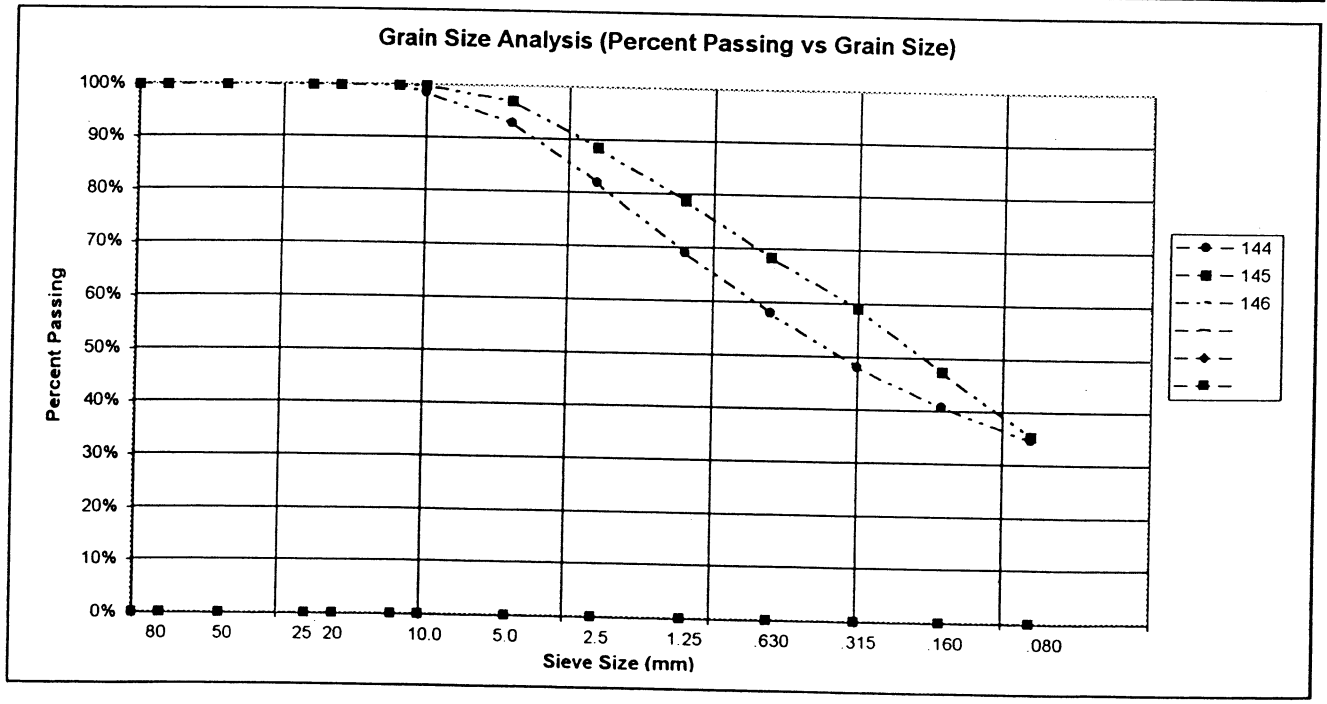
An Affiliate of J. H. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631868-6775813
LOGGED BY: RW

HOLE No.: 30151

DATE COMP: 08/03/2004

FIELD NO:	144	145	146			
LAB NO:	144	145	146			
DEPTH:	0.9-1.2	1.5-2.1	3.0-3.2			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%				
80.0	100%	100%				
50.0	100%	100%				
25.0	100%	100%				
20.0	100%	100%				
12.5	100%	100%				
10.0	99%	100%				
5.0	93%	97%				
2.5	82%	89%				
1.25	69%	79%				
0.630	58%	68%				
0.315	48%	59%				
0.160	41%	48%				
0.080	35%	35%				
M.C.(%):	22%	11%	7%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	7	3	#VALUE!			
% SAND:	58	62	#VALUE!			
% FINES:	35	35	#VALUE!			
CLASSIFICATION	SILTY SAND (SM)	SILTY SAND (SM)	#VALUE!			



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

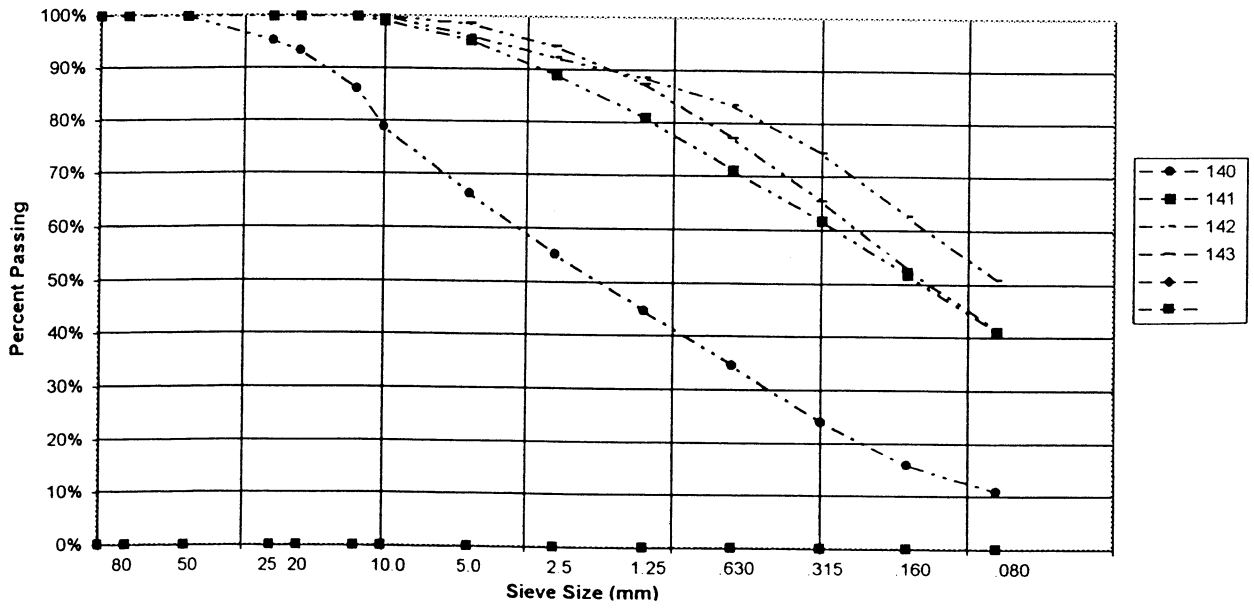
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631805-6775939
LOGGED BY: RW

HOLE No.: 30152

DATE COMP: 08/03/2004

FIELD NO:	140	141	142	143		
LAB NO:	140	141	142	143		
DEPTH:	0.3-0.9	2.1-2.7	3.4-4.0	4.9-5.2		
TYPE:	AUGER	AUGER	AUGER	AUGER		
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%	100%		
80.0	100%	100%	100%	100%		
50.0	100%	100%	100%	100%		
25.0	95%	100%	100%	100%		
20.0	93%	100%	100%	100%		
12.5	86%	100%	100%	100%		
10.0	79%	99%	100%	100%		
5.0	66%	96%	96%	99%		
2.5	55%	89%	92%	94%		
1.25	45%	81%	88%	87%		
0.630	35%	71%	83%	77%		
0.315	24%	62%	74%	65%		
0.160	16%	52%	63%	53%		
0.080	11%	41%	51%	41%		
M.C.(%):	3%	9%	9%	6%		
LIQUID LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC LIMIT:	0.0	0.0	0.0	0.0		
PLASTIC INDEX.:	0.0	0.0	0.0	0.0		
% GRAVEL:	34	4	4	1		
% SAND:	55	54	45	57		
% FINES:	11	41	51	41		
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND (SM)	SANDY SILT (ML)	SILTY SAND (SM)		

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

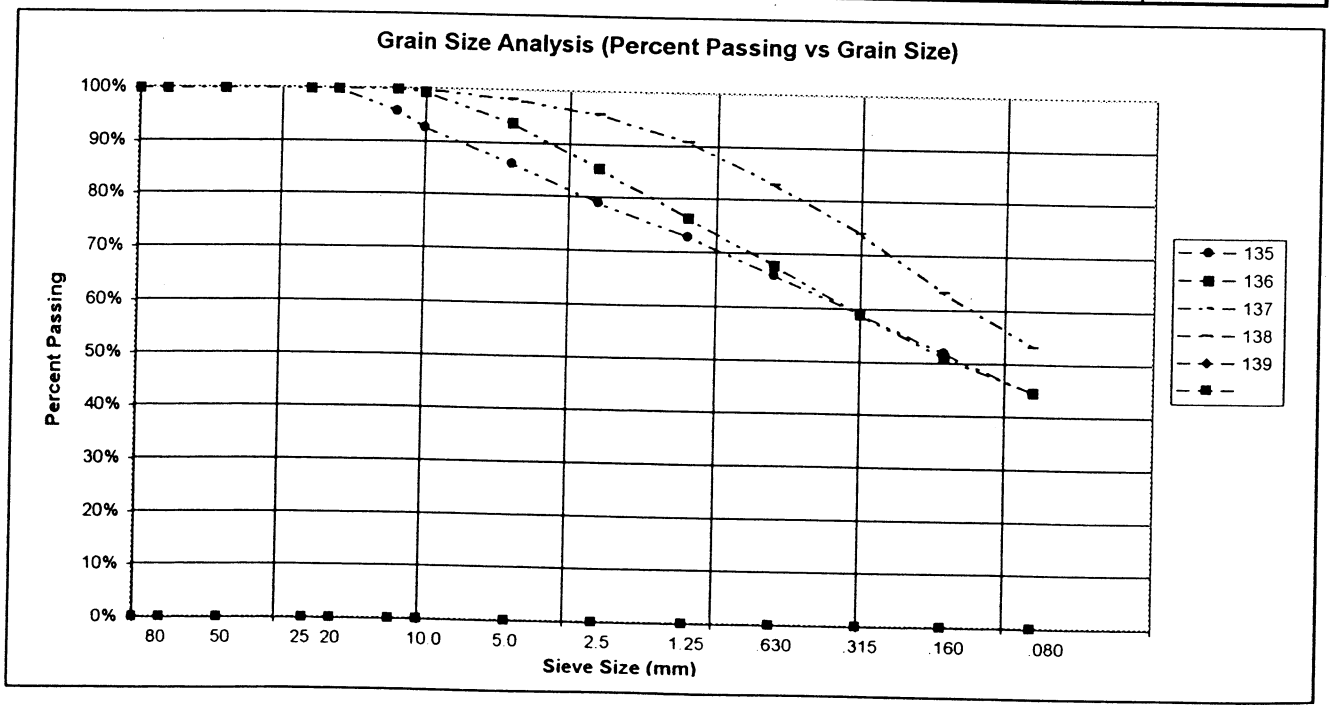
An Affiliate of J. H. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631728-6776010
LOGGED BY: RW

HOLE No.: 30153

DATE COMP: 08/03/2004

FIELD NO:	135	136	137	138	139	
LAB NO:	135	136	137	138	139	
DEPTH:	0.6-1.2	1.5-2.4	3.4-4.0	5.2-5.8	7.3-7.6	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%		100%		
80.0	100%	100%		100%		
50.0	100%	100%		100%		
25.0	100%	100%		100%		
20.0	100%	100%		100%		
12.5	96%	100%		100%		
10.0	93%	99%		100%		
5.0	86%	94%		98%		
2.5	79%	86%		96%		
1.25	73%	76%		91%		
0.630	66%	68%		83%		
0.315	59%	59%		74%		
0.160	52%	51%		63%		
0.080	44%	45%		53%		
M.C.(%):	11%	12%	7%	10%	5%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	14	6	#VALUE!	2	#VALUE!	
% SAND:	42	49	#VALUE!	45	#VALUE!	
% FINES:	44	45	#VALUE!	53	#VALUE!	
CLASSIFICATION	SILTY SAND (SM)	SILTY SAND (SM)	#VALUE!	SANDY SILT (ML)	#VALUE!	



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

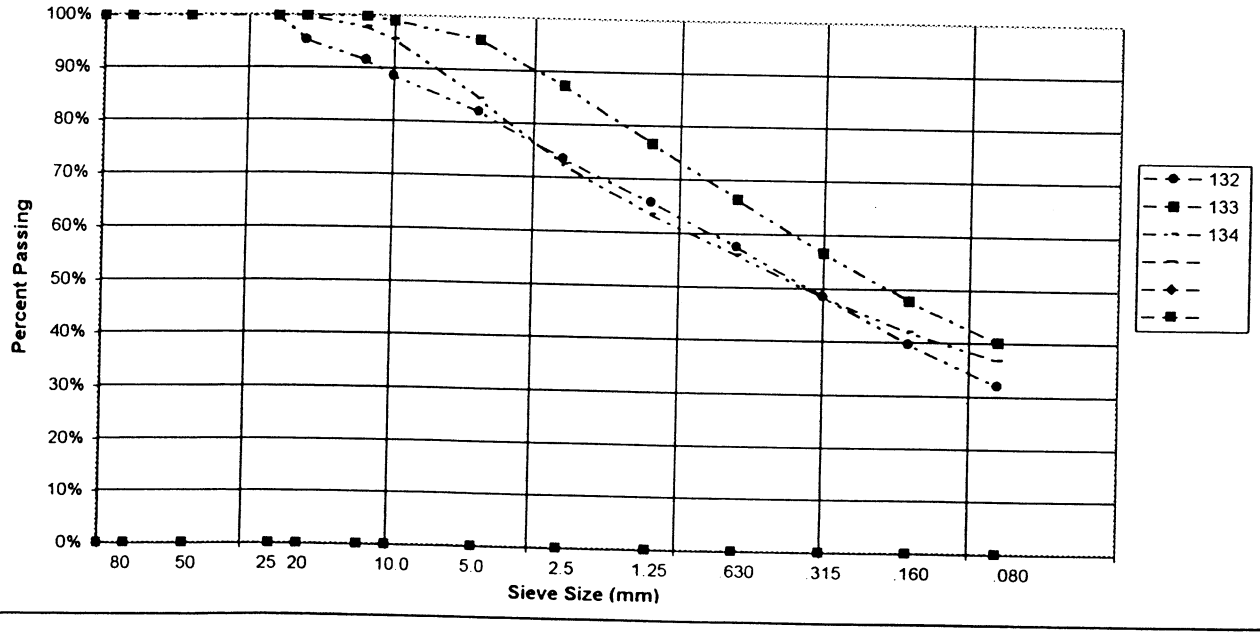
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631698-6776060
LOGGED BY: RW

HOLE No.: 30154

DATE COMP: 07/31/2004

FIELD NO:	132	133	134			
LAB NO:	132	133	134			
DEPTH:	0.3-0.9	1.5-2.4	3.4-4.0			
TYPE:	AUGER	AUGER	AUGER			
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%	100%			
80.0	100%	100%	100%			
50.0	100%	100%	100%			
25.0	100%	100%	100%			
20.0	95%	100%	100%			
12.5	92%	100%	98%			
10.0	89%	99%	96%			
5.0	82%	96%	85%			
2.5	74%	87%	73%			
1.25	66%	77%	64%			
0.630	58%	67%	56%			
0.315	49%	57%	48%			
0.160	40%	48%	42%			
0.080	32%	40%	37%			
M.C.(%):	30%	19%	13%			
LIQUID LIMIT:	0.0	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0	0.0			
% GRAVEL:	18	4	15			
% SAND:	50	55	48			
% FINES:	32	40	37			
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	SILTY SAND WITH GRAVEL (SM)			

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

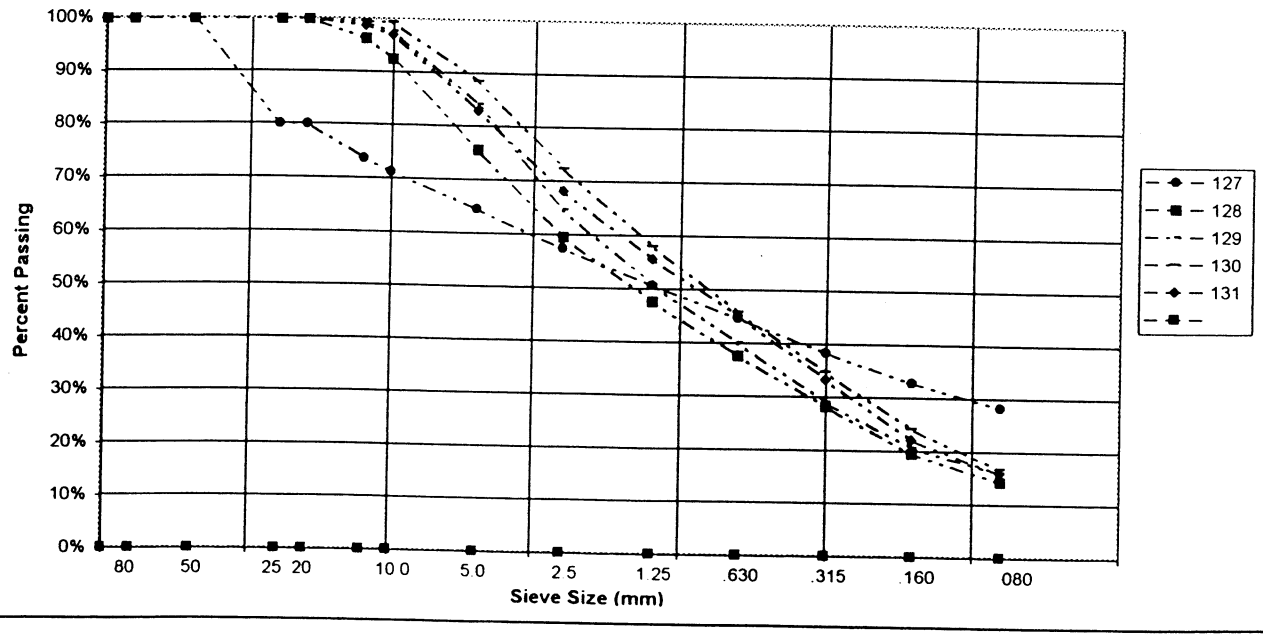
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631643-6776117
LOGGED BY: RW

HOLE No.: 30155

DATE COMP: 07/31/2004

FIELD NO:	127	128	129	130	131	
LAB NO:	127	128	129	130	131	
DEPTH:	0.8-1.2	1.5-2.0	2.4-2.9	3.4-4.0	5.2-5.8	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	80%	100%	100%	100%	100%	
20.0	80%	100%	100%	100%	100%	
12.5	74%	96%	99%	100%	99%	
10.0	71%	93%	98%	99%	97%	
5.0	65%	76%	84%	88%	83%	
2.5	57%	60%	65%	72%	68%	
1.25	51%	48%	51%	58%	56%	
0.630	45%	38%	40%	46%	45%	
0.315	38%	28%	29%	35%	33%	
0.160	33%	20%	21%	24%	22%	
0.080	28%	14%	16%	17%	16%	
M.C.(%):	9%	8%	8%	9%	10%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	35	24	16	12	17	
% SAND:	36	61	68	72	67	
% FINES:	28	14	16	17	16	
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	SILTY SAND WITH GRAVEL (SM)	

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

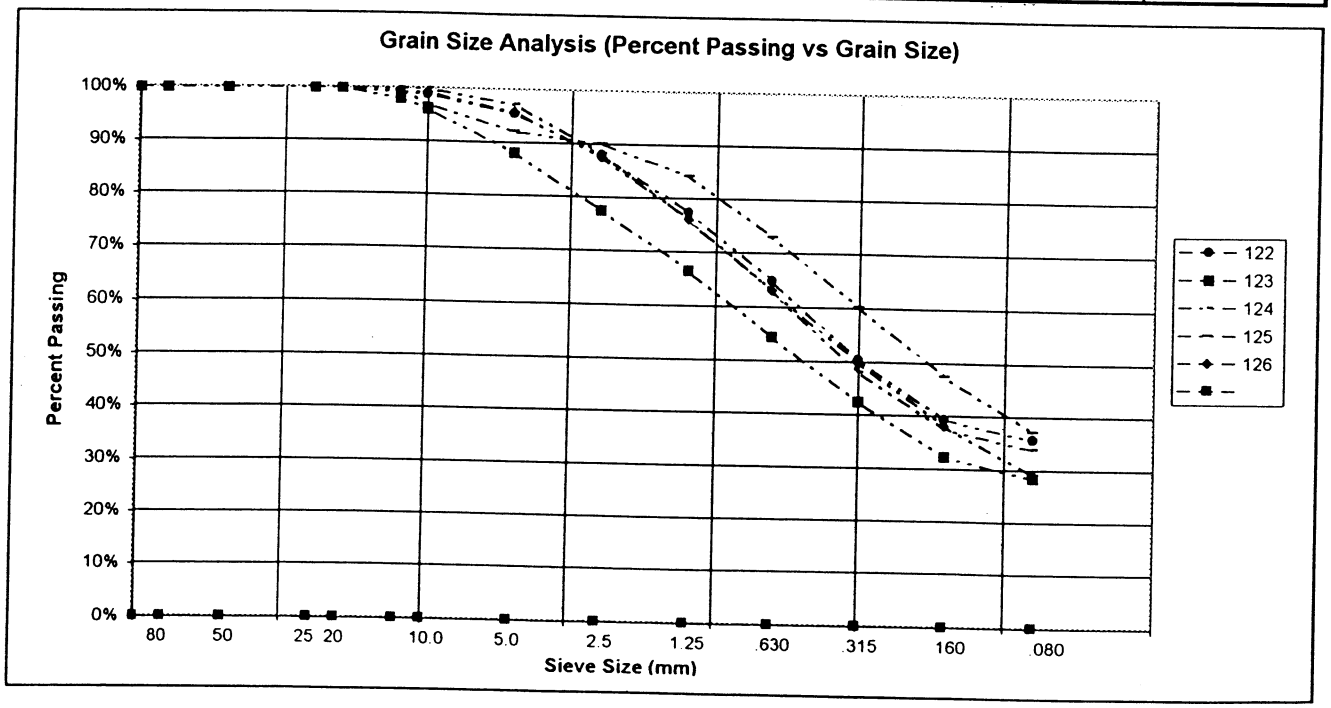
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631600-6776185
LOGGED BY: RW

HOLE No.: 30156

DATE COMP: 07/31/2004

FIELD NO:	122	123	124	125	126	
LAB NO:	122	123	124	125	126	
DEPTH:	9.4-10.1	10.4-11.0	11.3-11.9	12.5-13.4	13.7-14.6	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	100%	100%	100%	100%	100%	
20.0	100%	100%	100%	100%	100%	
12.5	99%	98%	100%	100%	99%	
10.0	99%	96%	100%	97%	99%	
5.0	96%	88%	97%	92%	96%	
2.5	88%	78%	88%	90%	88%	
1.25	77%	67%	76%	84%	76%	
0.630	65%	55%	63%	73%	63%	
0.315	50%	43%	48%	60%	50%	
0.160	39%	32%	38%	48%	38%	
0.080	36%	29%	34%	37%	29%	
M.C.(%):	5%	4%	5%	6%	5%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	4	12	3	8	4	
% SAND:	60	60	63	55	67	
% FINES:	36	29	34	37	29	
CLASSIFICATION	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND (SM)	



HOGGAN ENGINEERING & TESTING (1980) LTD.

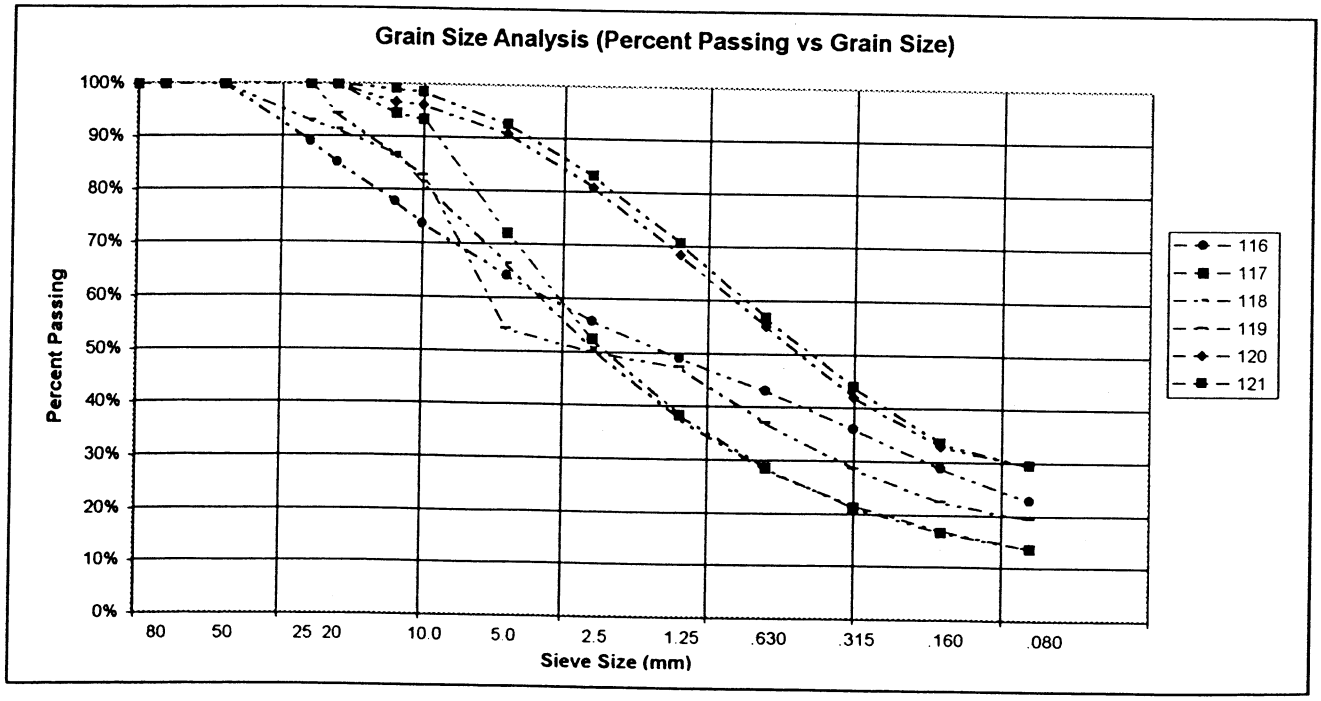
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631600-6776185
LOGGED BY: RW

HOLE No.: 30156

DATE COMP: 07/31/2004

FIELD NO:	116	117	118	119	120	121
LAB NO:	116	117	118	119	120	121
DEPTH:	0.9-1.5	1.5-2.4	3.0-4.0	4.9-5.5	6.4-7.0	7.9-8.5
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	89%	100%	93%	100%	100%	100%
20.0	85%	100%	91%	94%	100%	100%
12.5	78%	95%	87%	87%	97%	99%
10.0	74%	93%	82%	83%	96%	99%
5.0	64%	72%	66%	54%	91%	93%
2.5	56%	53%	51%	50%	81%	83%
1.25	49%	38%	38%	47%	68%	71%
0.630	43%	29%	28%	37%	55%	57%
0.315	36%	21%	22%	29%	42%	44%
0.160	29%	17%	17%	23%	33%	34%
0.080	23%	14%	14%	19%	30%	29%
M.C.(%):	24%	7%	7%	7%	6%	6%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	36	28	34	46	9	7
% SAND:	41	58	53	35	61	63
% FINES:	23	14	14	19	30	29
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND (SM)	SILTY SAND (SM)



HOGGAN ENGINEERING & TESTING (1980) LTD.

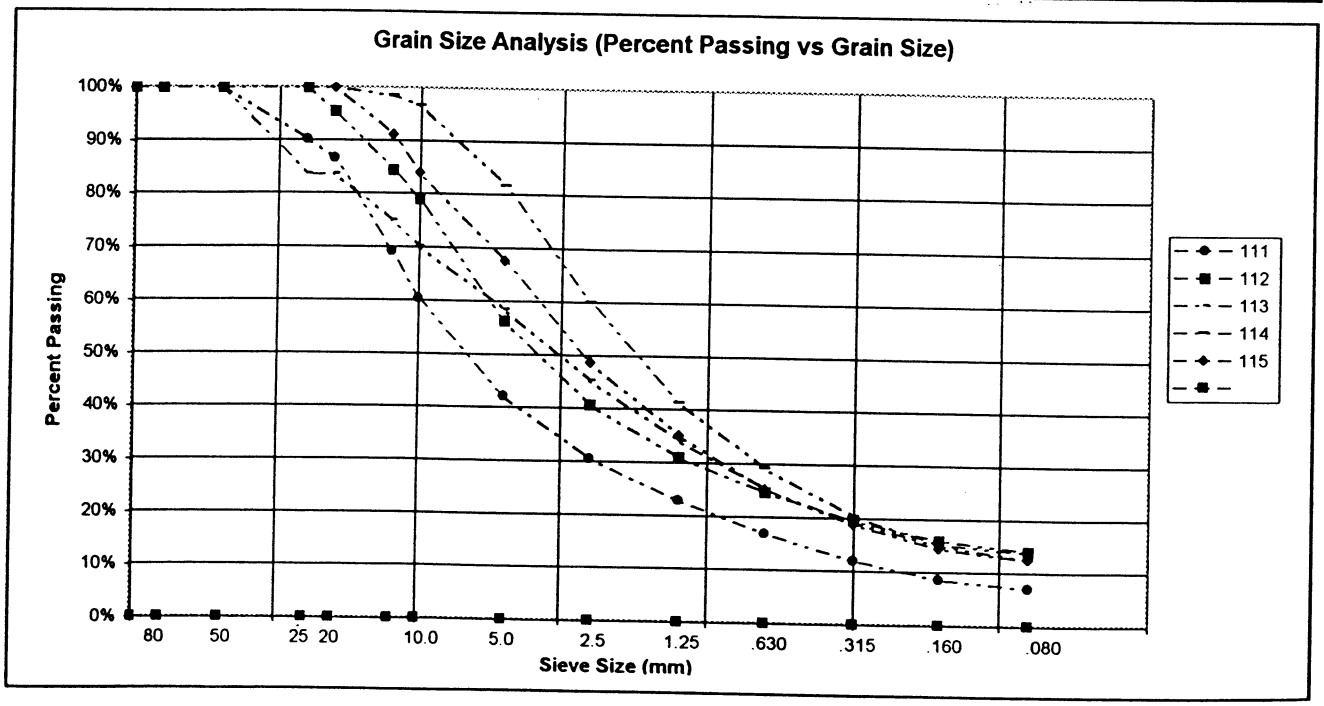
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631655-6776190
LOGGED BY: RW

HOLE No.: 30157

DATE COMP: 07/31/2004

FIELD NO:	111	112	113	114	115	
LAB NO:	111	112	113	114	115	
DEPTH:	0.3-0.9	1.5-2.1	2.1-2.7	3.0-4.3	4.9-5.5	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	90%	100%	84%	100%	100%	
20.0	87%	96%	84%	100%	100%	
12.5	69%	85%	75%	99%	91%	
10.0	60%	79%	70%	97%	84%	
5.0	42%	56%	59%	82%	68%	
2.5	31%	41%	45%	60%	49%	
1.25	23%	31%	34%	41%	35%	
0.630	17%	25%	25%	29%	25%	
0.315	12%	20%	19%	20%	19%	
0.160	9%	16%	15%	15%	14%	
0.080	7%	14%	13%	14%	13%	
M.C.(%):	4%	6%	5%	4%	6%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	58	44	41	18	32	
% SAND:	35	42	46	68	55	
% FINES:	7	14	13	14	13	
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	



HOGGAN ENGINEERING & TESTING (1980) LTD.

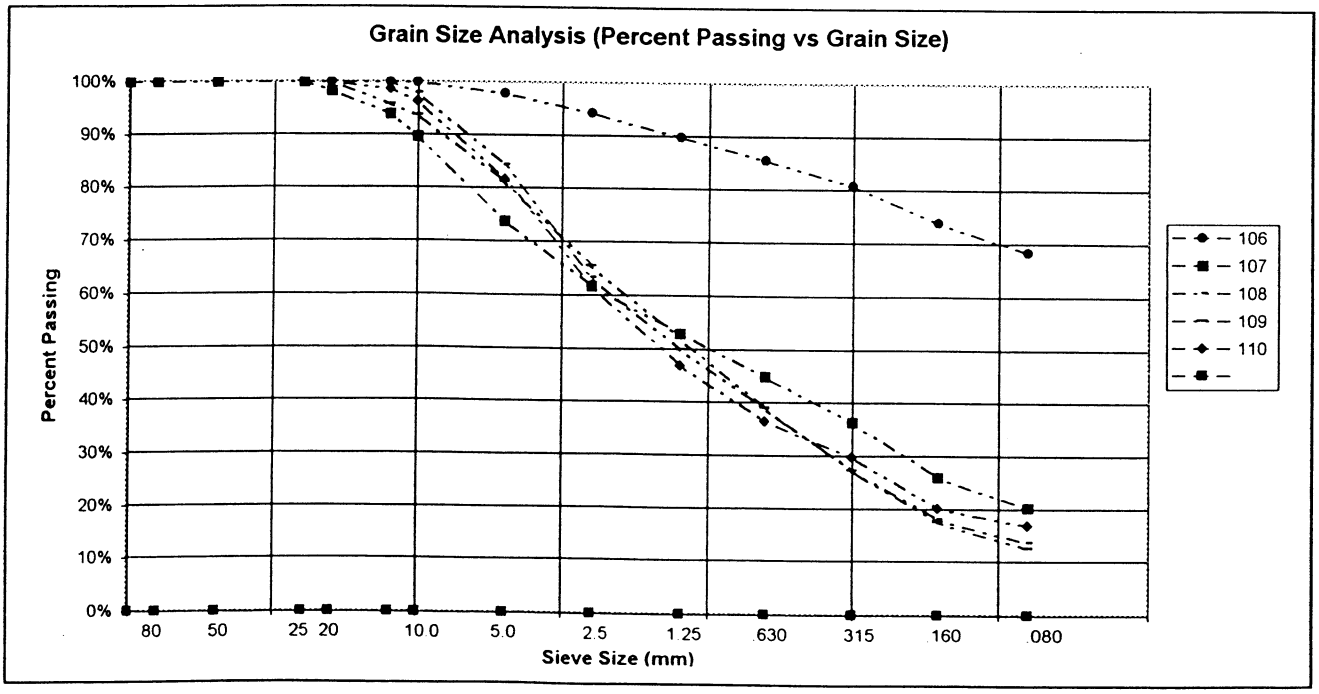
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631563-6776272
LOGGED BY: RW

HOLE No.: 30158

DATE COMP: 07/30/2004

FIELD NO:	106	107	108	109	110	
LAB NO:	106	107	108	109	110	
DEPTH:	0.9-1.2	1.5-2.4	2.7-3.4	3.7-4.3	4.6-5.2	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	100%	100%	100%	100%	100%	
20.0	100%	98%	100%	100%	100%	
12.5	100%	94%	100%	96%	99%	
10.0	100%	90%	98%	94%	96%	
5.0	98%	74%	84%	81%	82%	
2.5	94%	62%	63%	66%	62%	
1.25	90%	53%	50%	52%	47%	
0.630	86%	45%	39%	39%	37%	
0.315	81%	36%	27%	27%	30%	
0.160	74%	26%	18%	18%	20%	
0.080	68%	20%	14%	13%	17%	
M.C.(%):	93%	11%	9%	8%	8%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	2	26	16	19	18	
% SAND:	30	54	71	69	65	
% FINES:	68	20	14	13	17	
CLASSIFICATION	SANDY SILT (ML)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	



HOGGAN ENGINEERING & TESTING (1980) LTD.

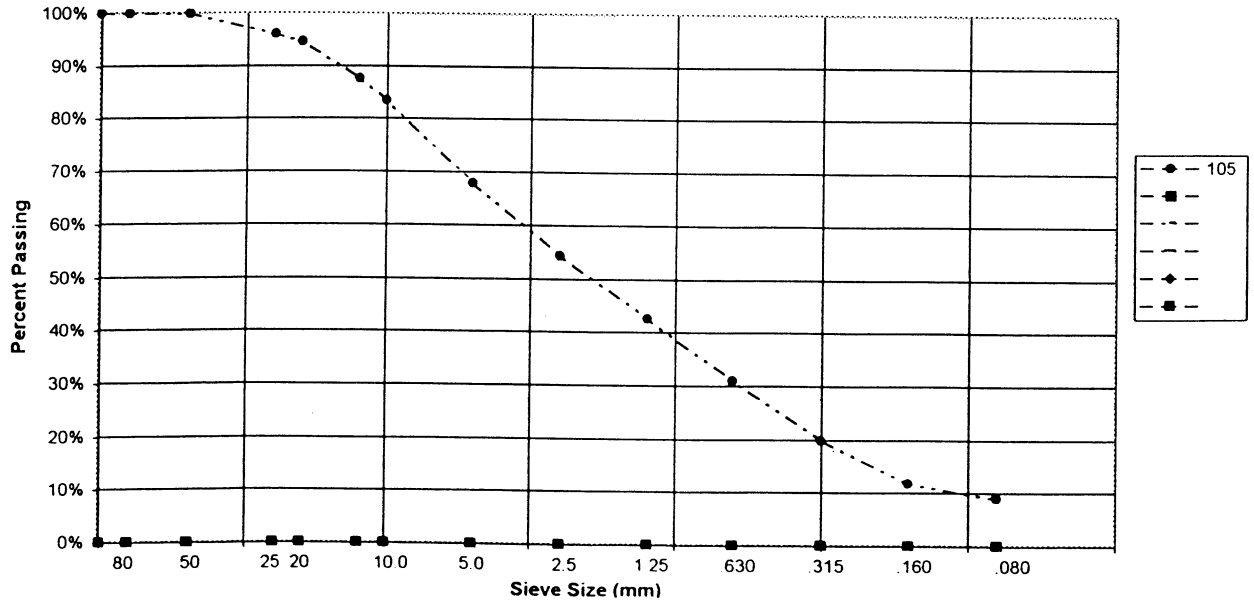
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER:	8002-318	HOLE No.: 30159
CLIENT:	YTG, Transportation & Engineering	
PROJECT NAME:	Geotechnical Services	
PROJECT LOCATION:	Km 1691.7-1717.3	
DRILL UNIT:	CME75	
HOLE LOCATION:	631517-6776361	
LOGGED BY:	RW	DATE COMP: 07/30/2004

FIELD NO:	105
LAB NO:	105
DEPTH:	14.3-14.9
TYPE:	AUGER

SIEVE SIZE	PERCENT PASSING
100.0	100%
80.0	100%
50.0	100%
25.0	96%
20.0	95%
12.5	88%
10.0	83%
5.0	68%
2.5	54%
1.25	43%
0.630	31%
0.315	20%
0.160	12%
0.080	9%
M.C.(%):	3%
LIQUID LIMIT:	0.0
PLASTIC LIMIT:	0.0
PLASTIC INDEX.:	0.0
% GRAVEL:	32
% SAND:	59
% FINES:	9
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

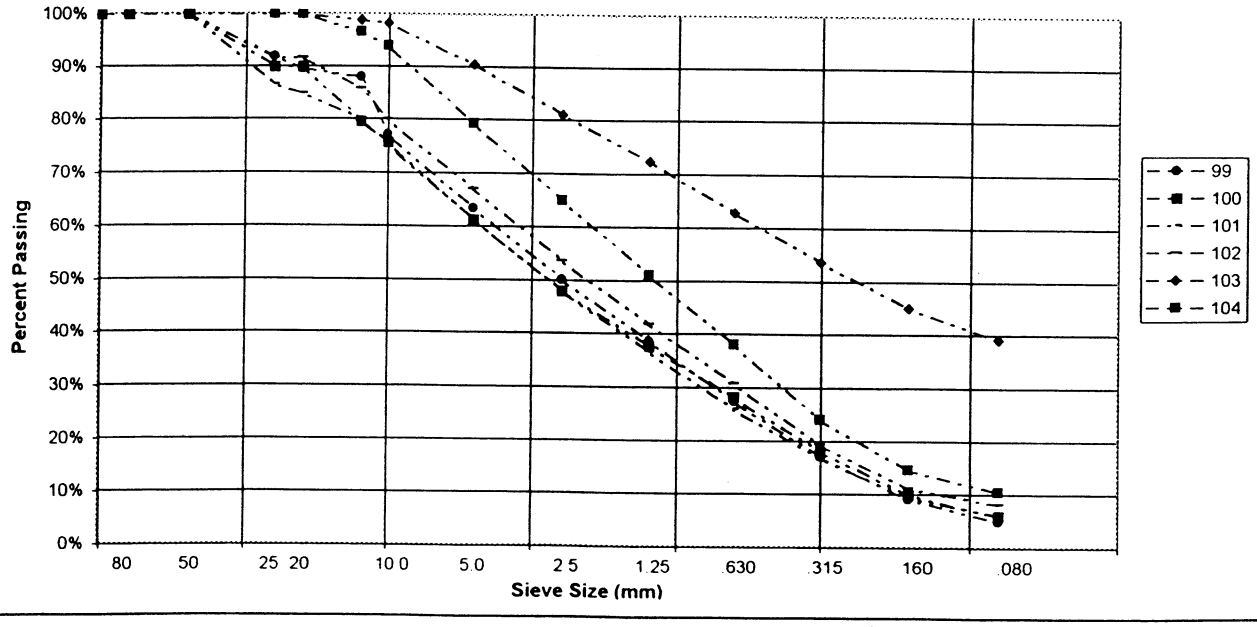
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631517-6776361
LOGGED BY: RW

HOLE No.: 30159

DATE COMP: 07/30/2004

FIELD NO:	99	100	101	102	103	104
LAB NO:	99	100	101	102	103	104
DEPTH:	7.9-8.5	9.4-10.1	10.4-11.0	11.3-11.9	12.8-13.4	13.7-14.0
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	92%	90%	87%	92%	100%	100%
20.0	90%	90%	85%	92%	100%	100%
12.5	88%	80%	80%	86%	99%	97%
10.0	77%	76%	75%	80%	98%	94%
5.0	64%	61%	61%	67%	90%	79%
2.5	50%	48%	48%	54%	81%	65%
1.25	39%	38%	37%	42%	72%	51%
0.630	28%	28%	26%	31%	63%	38%
0.315	17%	18%	17%	19%	54%	24%
0.160	9%	10%	10%	11%	45%	15%
0.080	5%	6%	6%	8%	39%	11%
M.C.(%):	2%	2%	2%	2%	7%	3%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	36	39	39	33	10	21
% SAND:	59	55	55	59	51	69
% FINES:	5	6	6	8	39	11
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND (SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

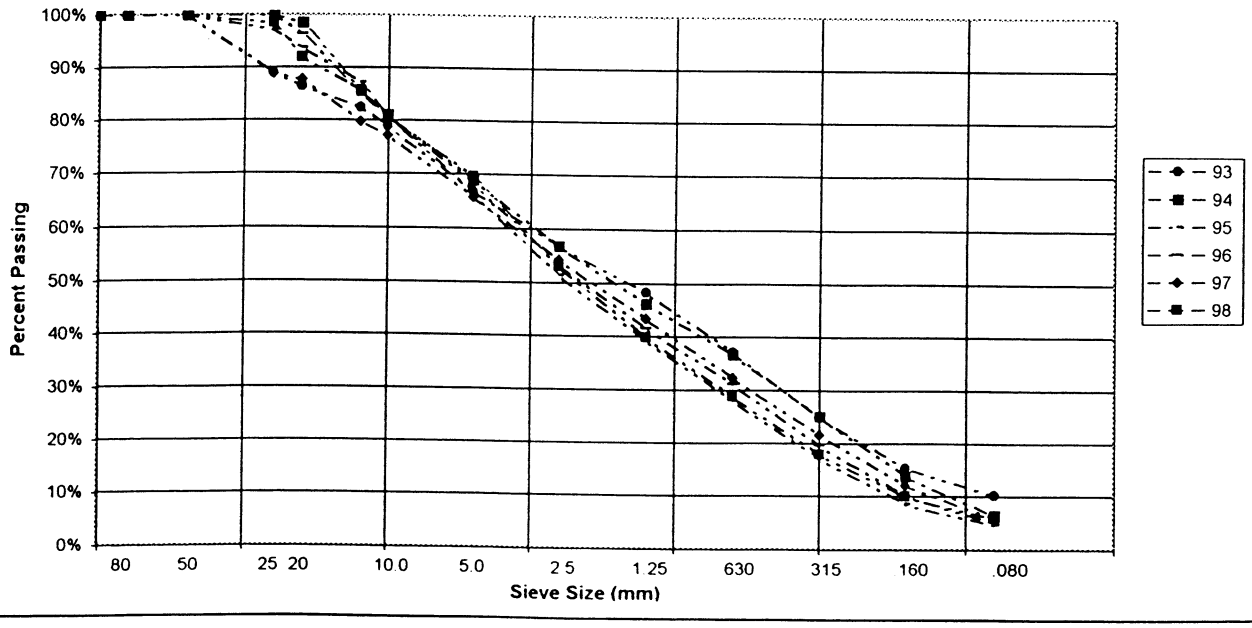
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631517-6776361
LOGGED BY: RW

HOLE No.: 30159

DATE COMP: 07/30/2004

FIELD NO:	93	94	95	96	97	98
LAB NO:	93	94	95	96	97	98
DEPTH:	0.3-0.9	1.5-2.1	3.0-3.7	4.6-5.2	5.2-5.8	6.7-7.3
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	89%	100%	97%	100%	89%	99%
20.0	87%	99%	94%	96%	88%	92%
12.5	83%	86%	87%	85%	80%	86%
10.0	79%	81%	81%	81%	77%	81%
5.0	67%	69%	66%	68%	66%	70%
2.5	57%	57%	51%	53%	54%	53%
1.25	48%	46%	39%	42%	43%	40%
0.630	37%	37%	28%	31%	32%	29%
0.315	25%	25%	17%	20%	22%	18%
0.160	15%	14%	9%	10%	12%	10%
0.080	10%	6%	5%	5%	6%	6%
M.C.(%):	1%	1%	2%	4%	2%	2%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	33	31	34	32	34	30
% SAND:	57	62	62	63	60	64
% FINES:	10	6	5	5	6	6
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH GRAVEL (SW)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

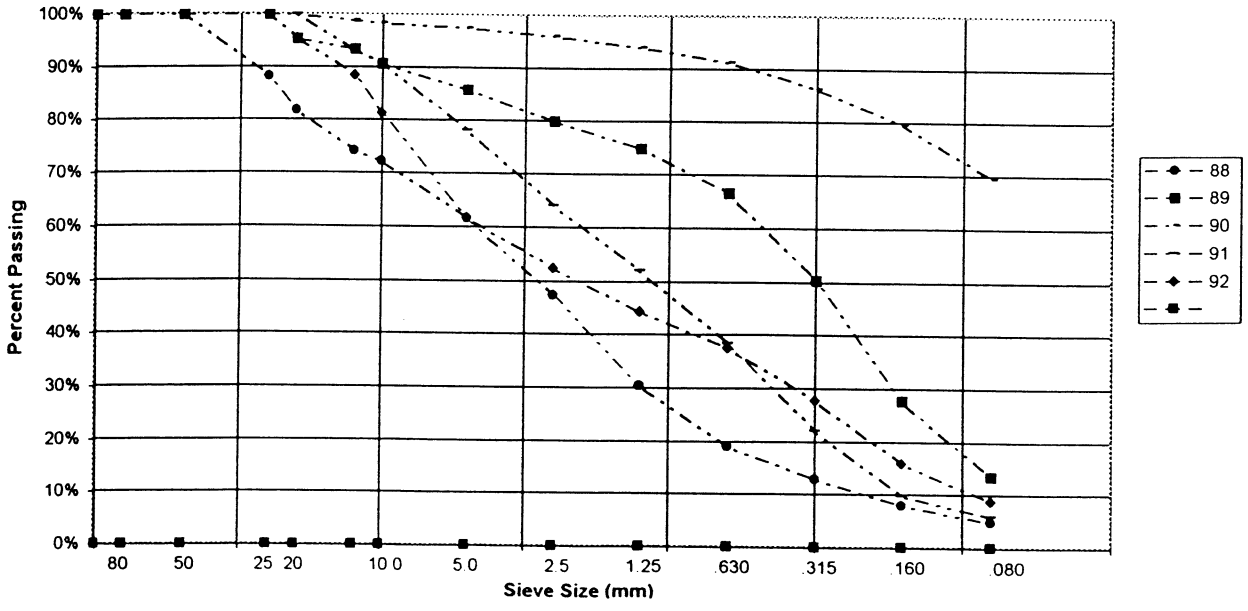
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631499-6776506
LOGGED BY: RW

HOLE No.: 30160

DATE COMP: 07/29/2004

FIELD NO:	88	89	90	91	92	
LAB NO:	88	89	90	91	92	
DEPTH:	0.3-0.9	1.8-2.1	2.4-2.9	3.4-4.0	4.9-5.5	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	88%	100%	100%	100%	100%	
20.0	82%	95%	100%	100%	96%	
12.5	74%	94%	99%	93%	88%	
10.0	72%	91%	98%	91%	81%	
5.0	62%	86%	98%	78%	62%	
2.5	47%	80%	96%	64%	53%	
1.25	30%	75%	94%	52%	44%	
0.630	19%	67%	91%	38%	38%	
0.315	13%	50%	86%	22%	28%	
0.160	8%	28%	80%	10%	16%	
0.080	5%	14%	70%	6%	9%	
M.C.(%):	3%	17%	61%	11%	11%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	38	14	2	22	38	
% SAND:	57	72	28	72	53	
% FINES:	5	14	70	6	9	
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	SILTY SAND (SM)	SANDY SILT (ML)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

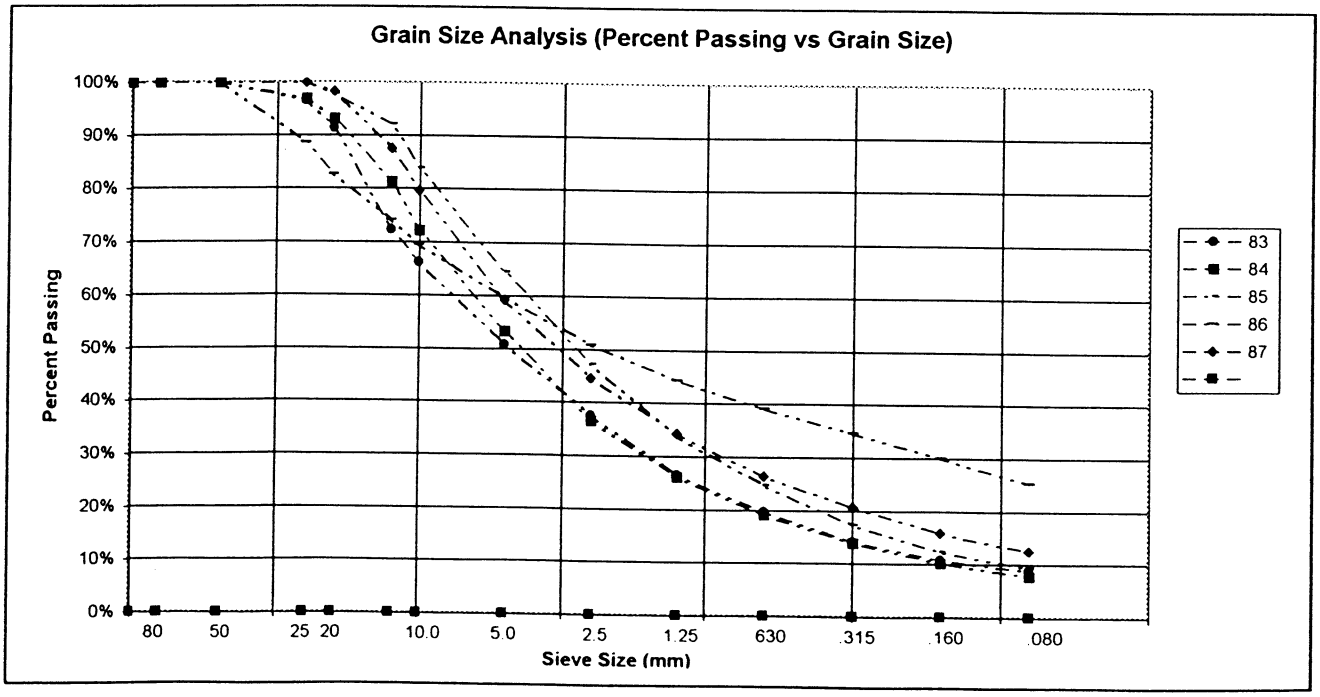
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631513-6776711
LOGGED BY: RW

HOLE No.: 30161

DATE COMP: 07/29/2004

FIELD NO:	83	84	85	86	87	
LAB NO:	83	84	85	86	87	
DEPTH:	0.3-0.9	1.5-2.1	3.0-3.7	4.0-4.3	4.9-5.5	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	97%	97%	100%	89%	100%	
20.0	91%	93%	98%	83%	98%	
12.5	72%	81%	92%	74%	88%	
10.0	66%	72%	84%	70%	80%	
5.0	51%	53%	65%	60%	59%	
2.5	38%	37%	47%	51%	45%	
1.25	27%	26%	34%	44%	34%	
0.630	20%	19%	25%	39%	26%	
0.315	14%	14%	17%	35%	21%	
0.160	11%	10%	12%	30%	16%	
0.080	9%	8%	9%	25%	13%	
M.C.(%):	5%	5%	4%	12%	6%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	49	47	35	40	41	
% SAND:	42	45	55	34	47	
% FINES:	9	8	9	25	13	
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	



HOGGAN ENGINEERING & TESTING (1980) LTD.

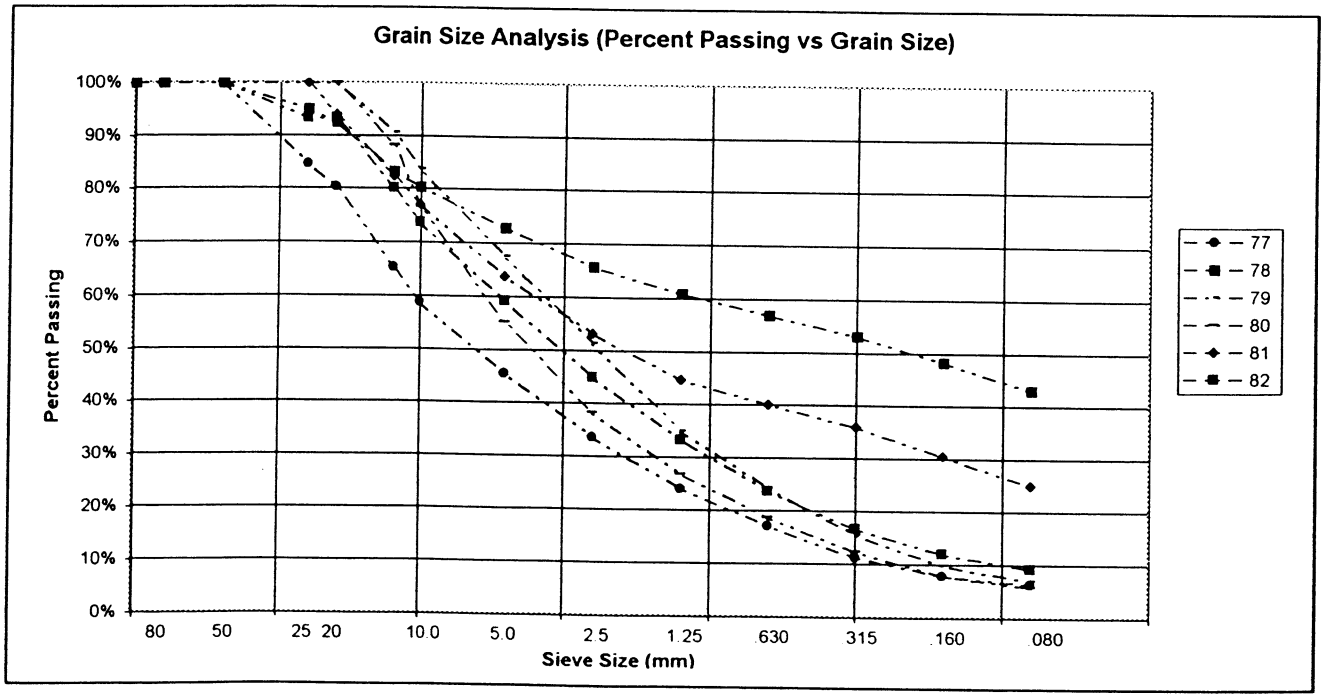
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631538-6776914
LOGGED BY: RW

HOLE No.: 30162

DATE COMP: 07/29/2004

FIELD NO:	77	78	79	80	81	82
LAB NO:	77	78	79	80	81	82
DEPTH:	0.3-0.6	1.5-2.1	2.4-2.7	3.0-4.0	4.6-5.2	5.2-5.8
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	85%	95%	100%	100%	100%	93%
20.0	80%	93%	100%	100%	94%	93%
12.5	65%	83%	91%	88%	82%	80%
10.0	59%	80%	84%	77%	77%	74%
5.0	46%	73%	68%	55%	64%	59%
2.5	34%	66%	51%	38%	53%	45%
1.25	24%	61%	35%	27%	45%	33%
0.630	17%	57%	24%	19%	40%	24%
0.315	11%	53%	16%	12%	36%	17%
0.160	8%	48%	10%	8%	31%	12%
0.080	6%	43%	7%	6%	25%	9%
M.C.(%):	3%	18%	5%	4%	10%	4%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	54	27	32	45	36	41
% SAND:	39	30	60	49	39	50
% FINES:	6	43	7	6	25	9
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	SILTY SAND WITH GRAVEL (SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)



HOGGAN ENGINEERING & TESTING (1980) LTD.

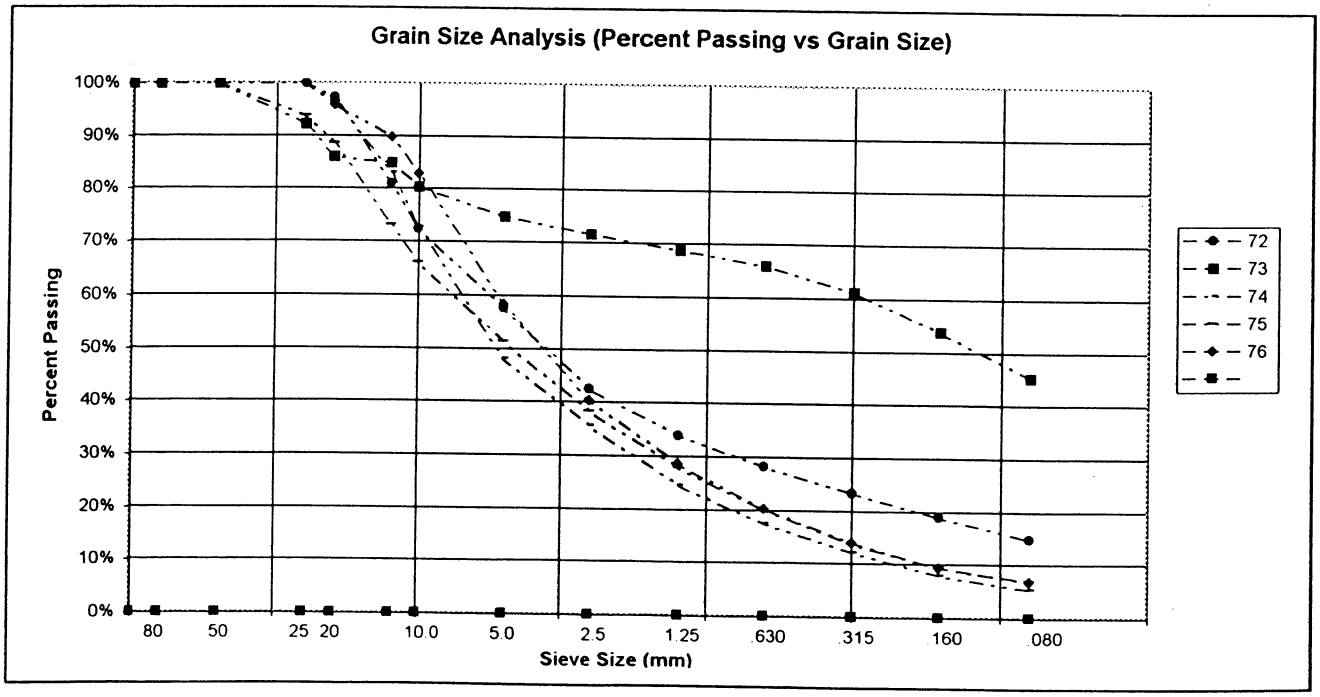
An Affiliate of J. H. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631563-6776900
LOGGED BY: RW

HOLE No.: 30163

DATE COMP: 07/29/2004

FIELD NO:	72	73	74	75	76	
LAB NO:	72	73	74	75	76	
DEPTH:	0.3-0.9	1.5-2.1	2.1-2.7	3.4-4.3	5.2-5.6	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	100%	92%	100%	94%	100%	
20.0	97%	86%	97%	89%	96%	
12.5	81%	85%	83%	73%	90%	
10.0	72%	80%	73%	66%	83%	
5.0	58%	75%	48%	51%	58%	
2.5	43%	72%	36%	38%	40%	
1.25	34%	69%	25%	28%	29%	
0.630	28%	66%	17%	20%	20%	
0.315	24%	61%	12%	14%	14%	
0.160	19%	54%	8%	9%	9%	
0.080	15%	45%	5%	7%	7%	
M.C.(%):	6%	24%	4%	4%	7%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	42	25	52	49	42	
% SAND:	43	29	43	44	52	
% FINES:	15	45	5	7	7	
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	



HOGGAN ENGINEERING & TESTING (1980) LTD.

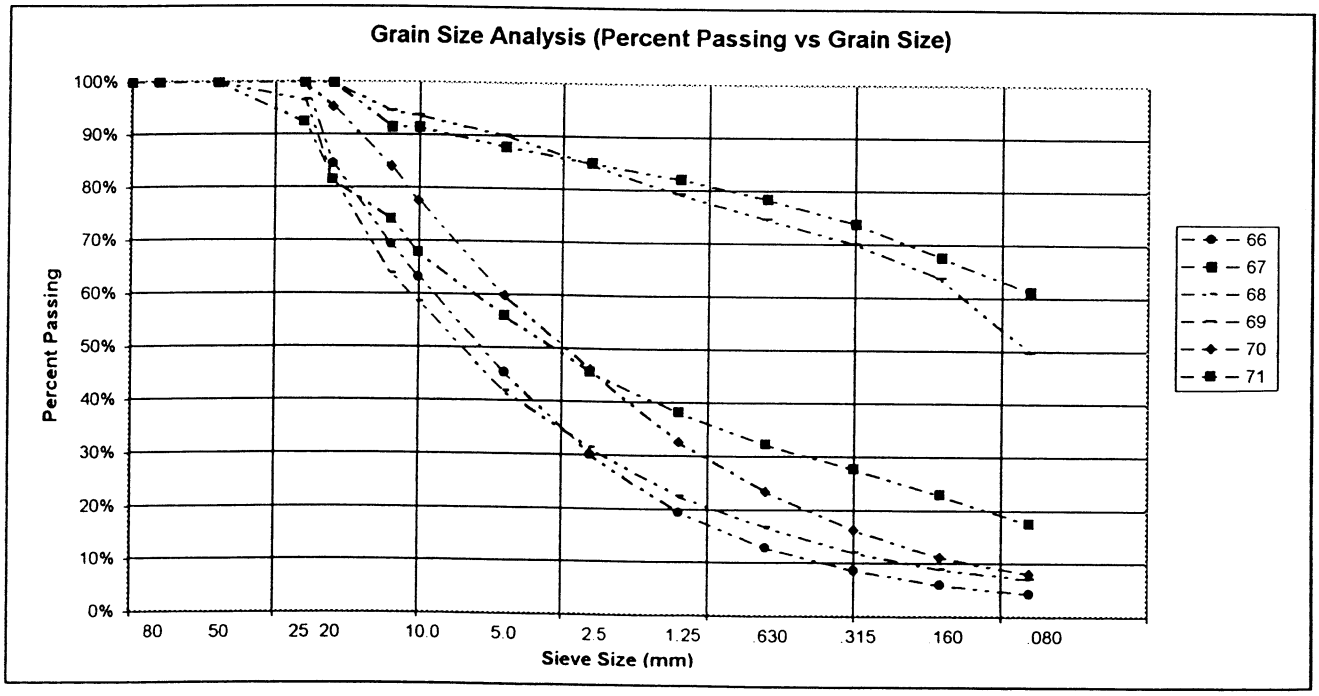
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631580-6777031
LOGGED BY: RW

HOLE No.: 30164

DATE COMP: 07/29/2004

FIELD NO:	66	67	68	69	70	71
LAB NO:	66	67	68	69	70	71
DEPTH:	0.2-0.6	0.8-1.2	1.5-2.1	2.4-2.7	3.4-4.0	4.6-5.5
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	100%	100%	97%	100%	100%	92%
20.0	85%	100%	82%	100%	95%	81%
12.5	69%	91%	64%	95%	84%	74%
10.0	63%	91%	59%	94%	78%	68%
5.0	45%	88%	42%	90%	60%	56%
2.5	30%	85%	31%	85%	46%	46%
1.25	19%	82%	22%	79%	33%	38%
0.630	13%	79%	17%	75%	24%	32%
0.315	9%	74%	12%	70%	16%	28%
0.160	6%	68%	9%	64%	11%	23%
0.080	4%	61%	7%	50%	8%	18%
M.C.(%):	3%	43%	3%	19%	3%	9%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	55	12	58	10	40	44
% SAND:	41	27	35	40	52	38
% FINES:	4	61	7	50	8	18
CLASSIFICATION	WELL-GRADED GRAVEL WITH SAND (GW)	SANDY SILT (ML)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	SILTY SAND (SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY GRAVEL WITH SAND (GM)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

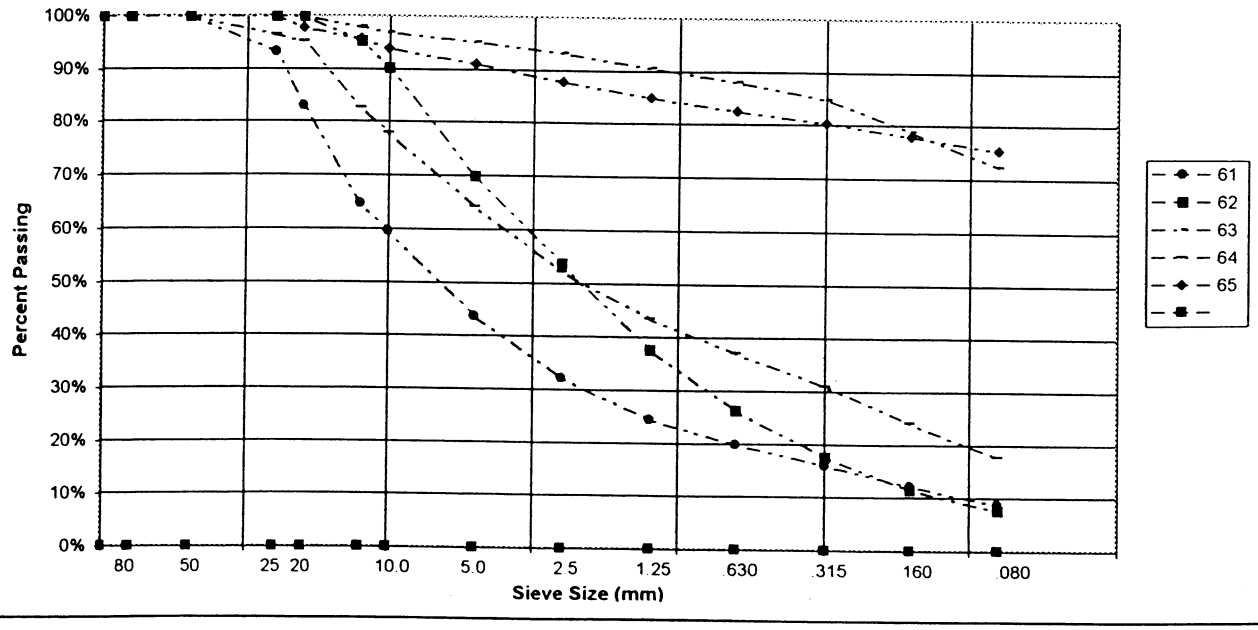
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631607-6777126
LOGGED BY: RW

HOLE No.: 30165

DATE COMP: 07/29/2004

FIELD NO:	61	62	63	64	65	
LAB NO:	61	62	63	64	65	
DEPTH:	0.3-0.9	1.5-2.1	3.4-4.0	4.1-4.4	4.9-5.5	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	93%	100%	100%	97%	100%	
20.0	83%	100%	100%	95%	98%	
12.5	65%	95%	98%	83%	96%	
10.0	60%	90%	97%	78%	94%	
5.0	44%	70%	95%	64%	91%	
2.5	32%	54%	93%	52%	88%	
1.25	25%	38%	91%	43%	85%	
0.630	20%	26%	88%	37%	83%	
0.315	16%	18%	85%	31%	80%	
0.160	12%	12%	79%	24%	78%	
0.080	9%	8%	72%	18%	75%	
M.C.(%):	3%	2%	13%	5%	20%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	56	30	5	36	9	
% SAND:	35	62	23	47	16	
% FINES:	9	8	72	18	75	
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILT WITH SAND (ML)	SILTY SAND WITH GRAVEL (SM)	SILT WITH SAND (ML)	

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

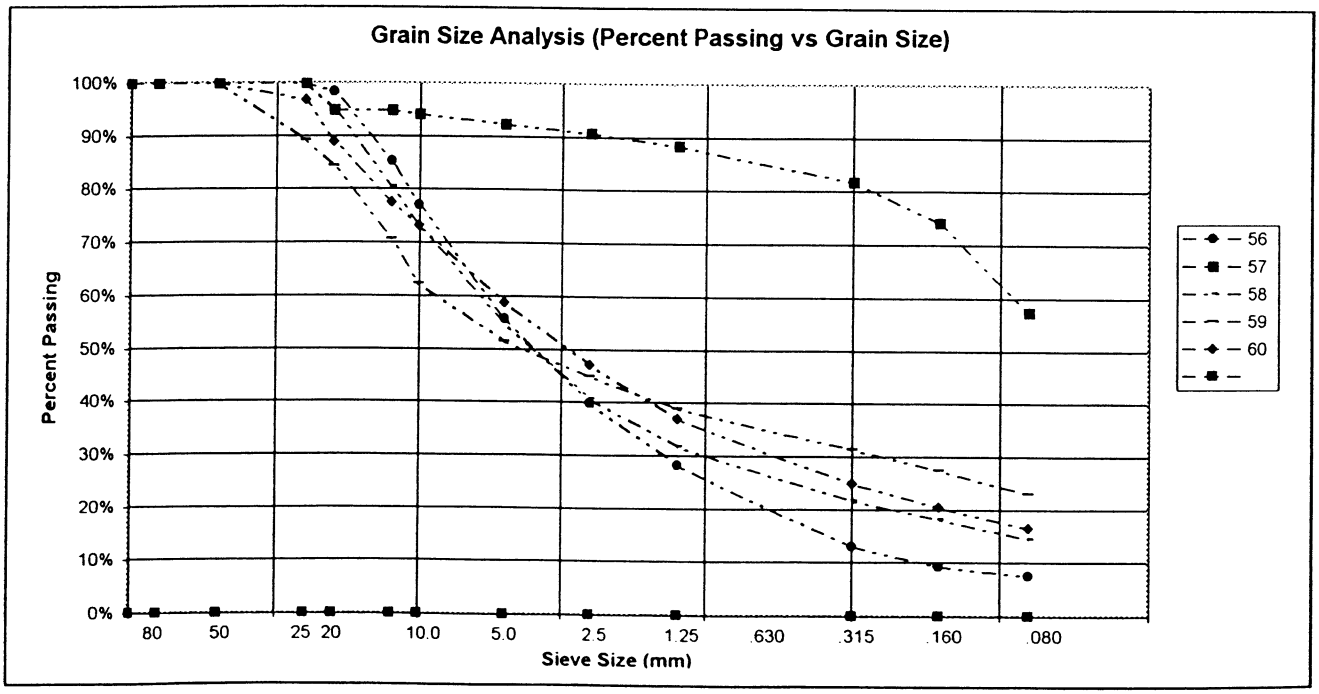
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631583-6777139
LOGGED BY: RW

HOLE No.: 30166

DATE COMP: 07/28/2004

FIELD NO:	56	57	58	59	60	
LAB NO:	56	57	58	59	60	
DEPTH:	0.3-0.9	1.5-1.8	2.1-2.7	3.4-4.0	4.9-5.5	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	100%	100%	100%	89%	97%	
20.0	98%	95%	95%	84%	89%	
12.5	85%	95%	81%	71%	78%	
10.0	77%	94%	73%	62%	73%	
5.0	56%	92%	55%	51%	59%	
2.5	40%	91%	41%	45%	47%	
1.25	28%	89%	32%	39%	37%	
0.630				35%	30%	
0.315	13%	82%	22%	31%	25%	
0.160	9%	74%	18%	28%	21%	
0.080	8%	57%	15%	23%	17%	
M.C.(%):	3%	24%	5%	10%	7%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	44	8	45	49	41	
% SAND:	48	35	40	28	42	
% FINES:	8	57	15	23	17	
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SANDY SILT (ML)	SILTY GRAVEL WITH SAND (GM)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	



HOGGAN ENGINEERING & TESTING (1980) LTD.

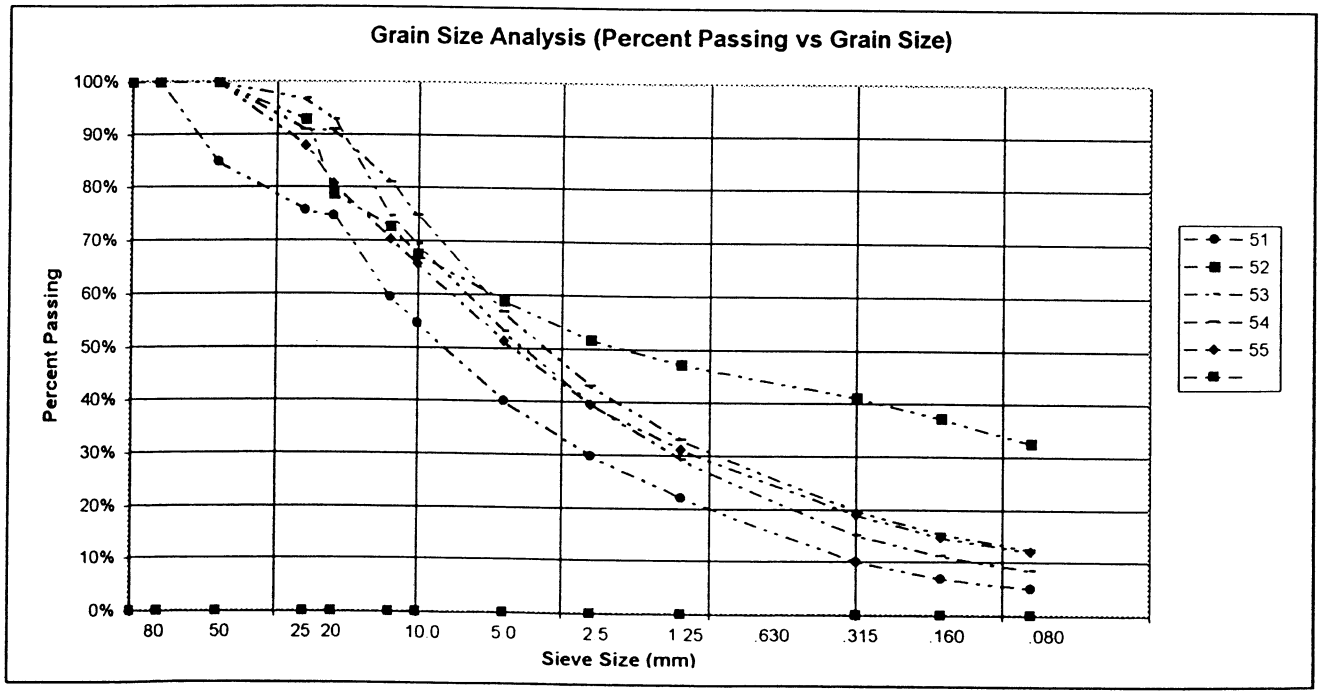
An Affiliate of J. H. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631589-6777298
LOGGED BY: RW

HOLE No.: 30167

DATE COMP: 07/28/2004

	FIELD NO:	51	52	53	54	55	
	LAB NO:	51	52	53	54	55	
	DEPTH:	0.6-1.2	1.5-2.1	2.3-2.7	3.4-4.3	4.9-5.5	
	TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE		PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0		100%	100%	100%	100%	100%	
80.0		100%	100%	100%	100%	100%	
50.0		85%	100%	100%	100%	100%	
25.0		76%	93%	97%	91%	88%	
20.0		75%	79%	93%	91%	81%	
12.5		60%	73%	75%	81%	70%	
10.0		55%	68%	69%	75%	66%	
5.0		40%	59%	53%	57%	51%	
2.5		30%	52%	40%	43%	40%	
1.25		22%	47%	29%	33%	31%	
0.630							
0.315		10%	41%	15%	20%	19%	
0.160		7%	37%	11%	15%	15%	
0.080		5%	33%	8%	12%	12%	
M.C.(%):		3%	15%	4%	6%	5%	
LIQUID LIMIT:		0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:		0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:		0.0	0.0	0.0	0.0	0.0	
% GRAVEL:		60	41	47	43	49	
% SAND:		35	26	45	44	39	
% FINES:		5	33	8	12	12	
CLASSIFICATION		WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	SILTY GRAVEL WITH SAND (GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY SAND WITH GRAVEL (SM)	SILTY GRAVEL WITH SAND (GM)	



HOGGAN ENGINEERING & TESTING (1980) LTD.

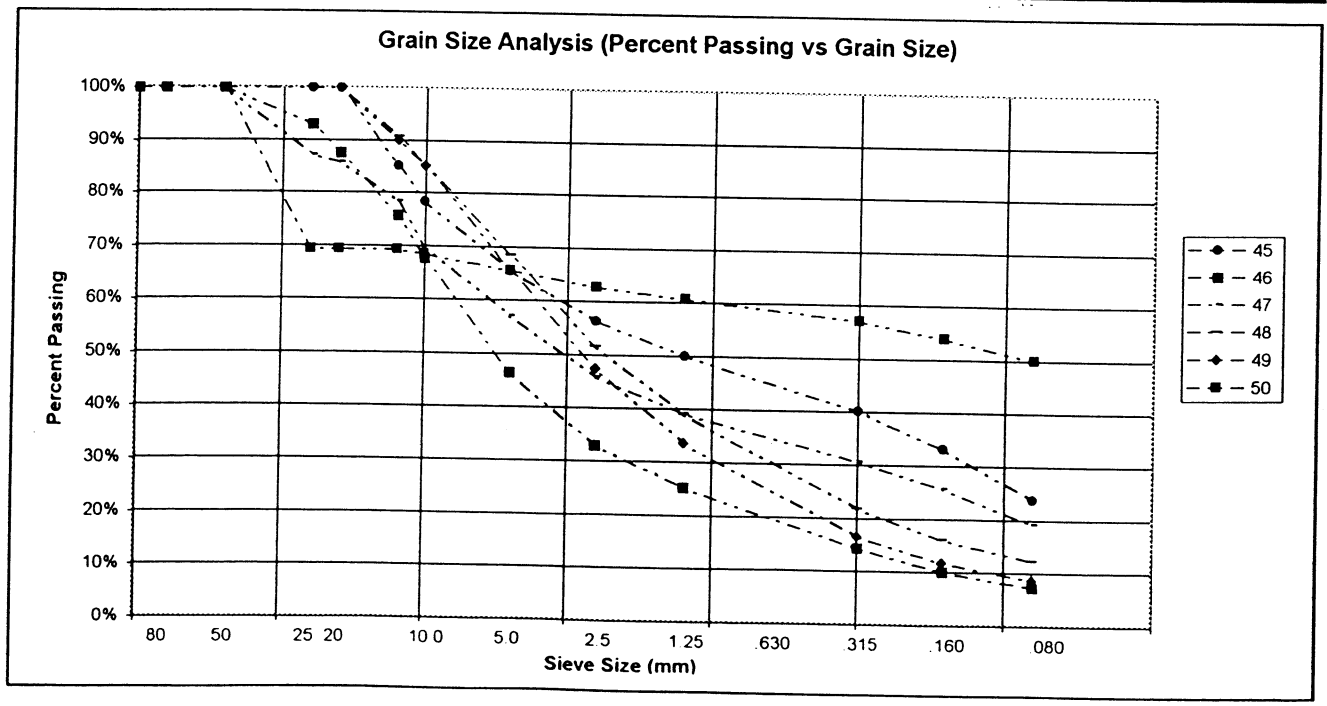
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631509-6777587
LOGGED BY: RW

HOLE No.: 30168

DATE COMP: 07/28/2004

FIELD NO:	45	46	47	48	49	50
LAB NO:	45	46	47	48	49	50
DEPTH:	0.2-0.6	0.6-1.2	1.8-2.1	3.4-4.3	4.6-5.2	5.5-5.8
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	100%	93%	87%	100%	100%	69%
20.0	100%	88%	86%	100%	100%	69%
12.5	85%	76%	79%	91%	90%	69%
10.0	79%	68%	70%	85%	85%	69%
5.0	66%	46%	57%	69%	66%	66%
2.5	56%	33%	46%	52%	48%	63%
1.25	50%	25%	39%	39%	34%	61%
0.630						
0.315	40%	14%	31%	22%	17%	57%
0.160	33%	10%	26%	16%	12%	54%
0.080	24%	7%	19%	12%	9%	50%
M.C.(%):	6%	4%	8%	5%	3%	23%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	34	54	43	31	34	34
% SAND:	42	39	38	56	57	16
% FINES:	24	7	19	12	9	50
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	GRAVELLY SILT WITH SAND (ML)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

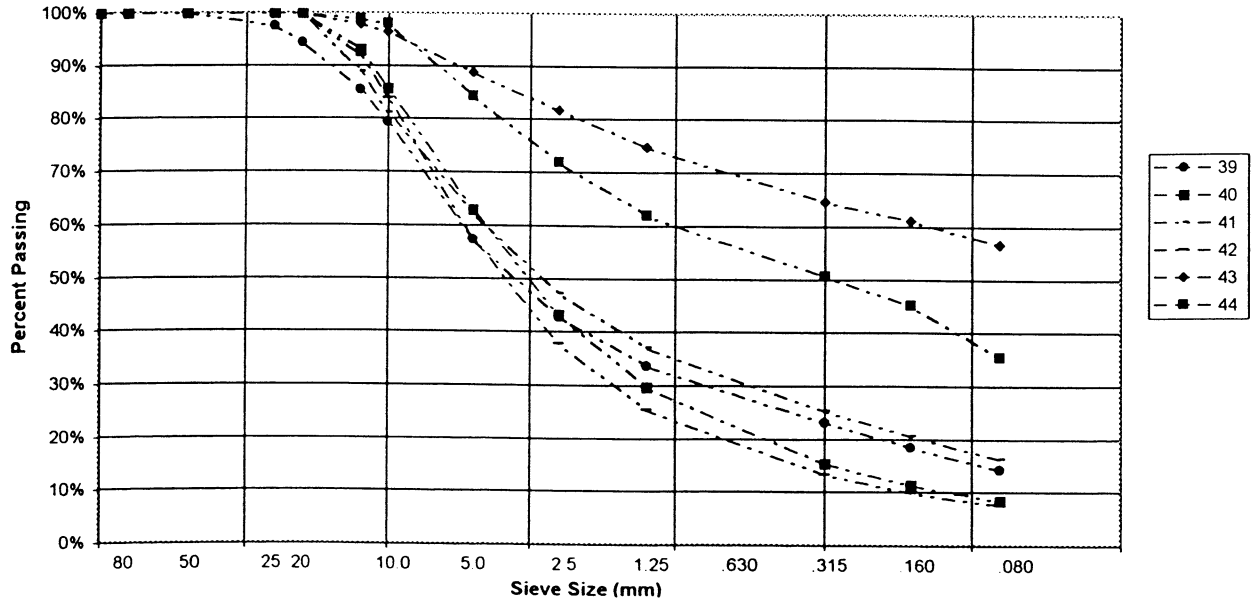
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631458-6777708
LOGGED BY: RW

HOLE No.: 30169

DATE COMP: 07/28/2004

FIELD NO:	39	40	41	42	43	44
LAB NO:	39	40	41	42	43	44
DEPTH:	0.3-0.9	1.5-2.1	2.1-2.7	3.4-4.0	4.3-4.9	4.9-5.5
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	98%	100%	100%	100%	100%	100%
20.0	94%	100%	100%	100%	100%	100%
12.5	85%	93%	89%	92%	98%	99%
10.0	79%	86%	81%	84%	96%	98%
5.0	57%	63%	63%	58%	89%	84%
2.5	43%	43%	47%	38%	82%	72%
1.25	34%	30%	37%	26%	75%	62%
0.630						
0.315	23%	15%	25%	13%	65%	51%
0.160	19%	11%	21%	10%	61%	45%
0.080	14%	9%	16%	8%	57%	35%
M.C.(%):	8%	6%	9%	6%	21%	13%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	43	37	37	42	11	16
% SAND:	43	54	46	50	32	49
% FINES:	14	9	16	8	57	35
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SANDY SILT (ML)	SILTY SAND WITH GRAVEL (SM)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

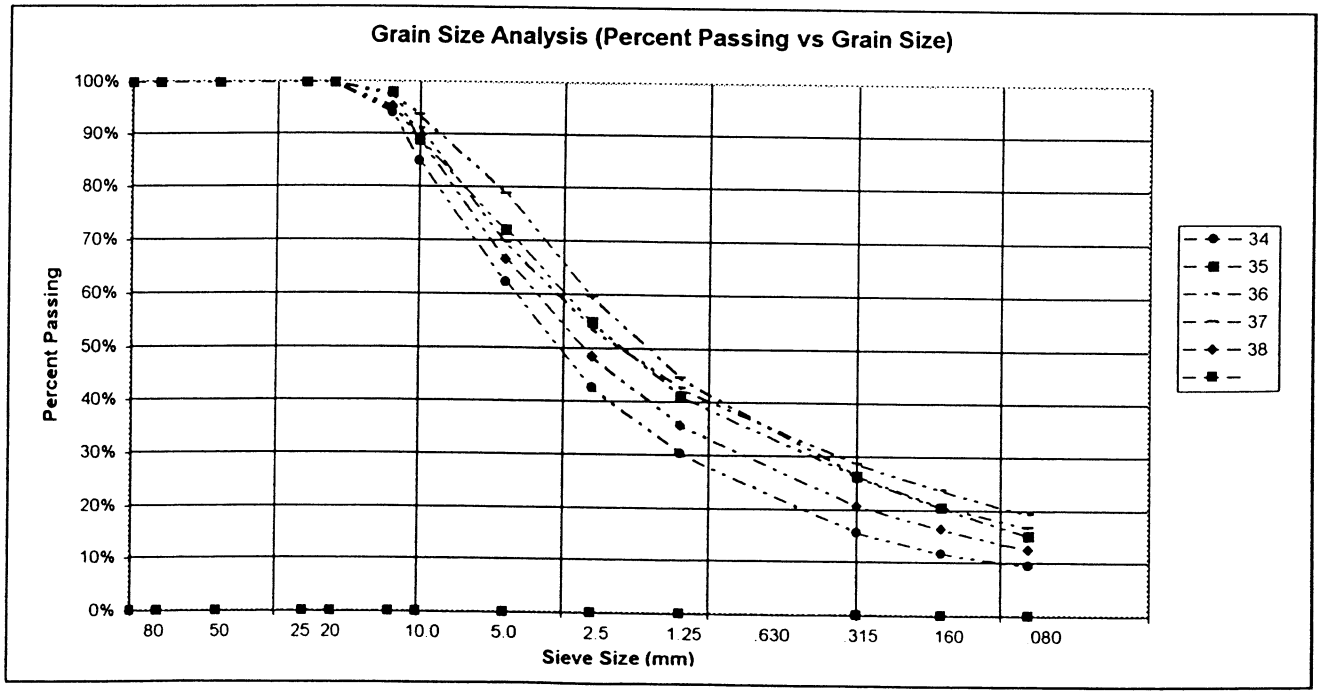
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631414-6777845
LOGGED BY: RW

HOLE No.: 30170

DATE COMP: 07/28/2004

FIELD NO:	34	35	36	37	38	
LAB NO:	34	35	36	37	38	
DEPTH:	0.3-0.9	1.5-2.1	2.9-3.4	3.7-4.3	4.9-5.5	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	100%	100%	100%	100%	100%	
20.0	100%	100%	100%	100%	100%	
12.5	94%	98%	95%	98%	95%	
10.0	85%	89%	91%	94%	89%	
5.0	62%	72%	70%	79%	66%	
2.5	43%	55%	54%	60%	48%	
1.25	30%	41%	43%	45%	36%	
0.630						
0.315	16%	26%	29%	26%	21%	
0.160	12%	21%	24%	21%	16%	
0.080	10%	15%	19%	17%	13%	
M.C.(%):	9%	10%	11%	10%	8%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	38	28	30	21	34	
% SAND:	53	57	50	62	54	
% FINES:	10	15	19	17	13	
CLASSIFICATION	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	



HOGGAN ENGINEERING & TESTING (1980) LTD.

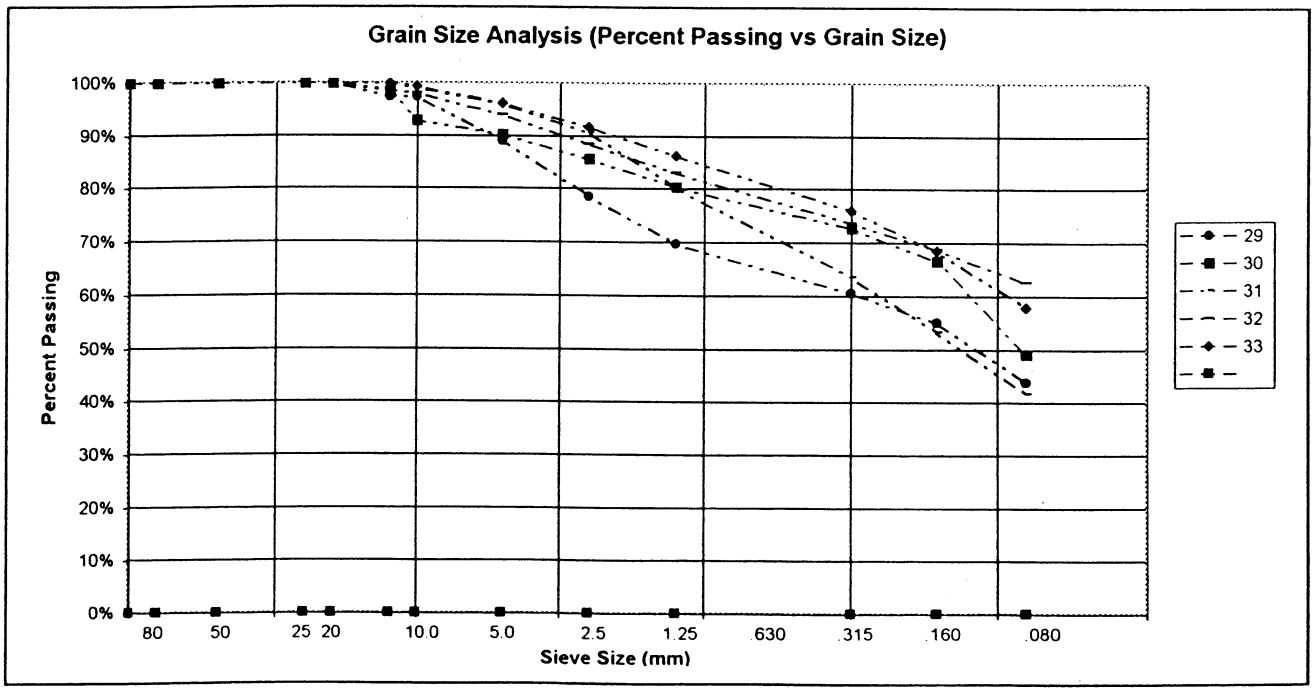
An Affiliate of J. H. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631414-6777998
LOGGED BY: RW

HOLE No.: 30171

DATE COMP: 07/28/2004

FIELD NO:	29	30	31	32	33	
LAB NO:	29	30	31	32	33	
DEPTH:	0.2-0.5	0.6-1.2	1.8-2.4	3.0-3.7	4.6	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	100%	100%	100%	100%	100%	
20.0	100%	100%	100%	100%	100%	
12.5	97%	99%	100%	99%	100%	
10.0	97%	93%	99%	98%	99%	
5.0	89%	90%	96%	94%	96%	
2.5	79%	86%	91%	88%	92%	
1.25	70%	80%	80%	83%	86%	
0.630						
0.315	61%	73%	64%	74%	76%	
0.160	55%	67%	53%	69%	69%	
0.080	44%	49%	42%	63%	58%	
M.C.(%):	18%	28%	35%	31%	28%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	11	10	4	6	4	
% SAND:	45	41	54	31	38	
% FINES:	44	49	42	63	58	
CLASSIFICATION	SILTY SAND (SM)	SILTY SAND (SM)	SILTY SAND (SM)	SANDY SILT (ML)	SANDY SILT (ML)	



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

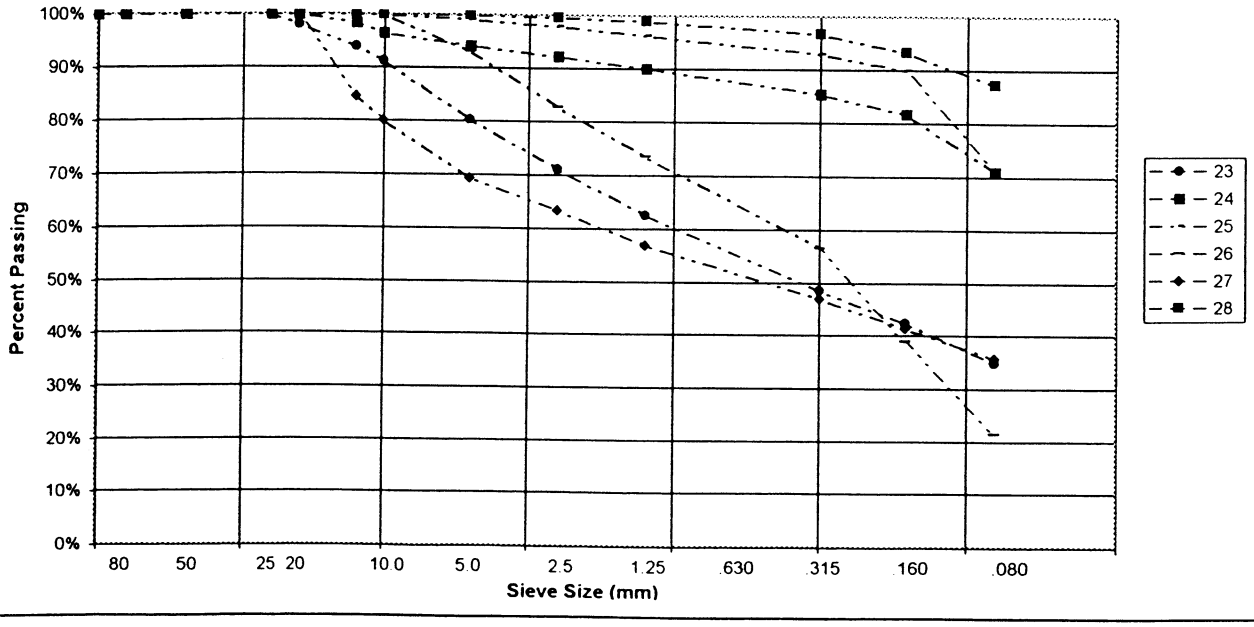
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631432-6778136
LOGGED BY: RW

HOLE No.: 30172

DATE COMP: 07/28/2004

FIELD NO:	23	24	25	26	27	28
LAB NO:	23	24	25	26	27	28
DEPTH:	0.3-0.9	1.5-1.8	2.1-2.7	3.4-4.3	4.9-5.2	5.5-5.9
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	100%	100%	100%	100%	100%	100%
20.0	98%	100%	100%	100%	100%	100%
12.5	94%	98%	100%	100%	85%	100%
10.0	91%	96%	100%	100%	80%	100%
5.0	80%	94%	99%	93%	69%	100%
2.5	71%	92%	98%	83%	63%	100%
1.25	63%	90%	96%	74%	57%	99%
0.630						
0.315	49%	85%	93%	57%	47%	97%
0.160	42%	82%	90%	39%	41%	93%
0.080	35%	71%	71%	22%	36%	87%
M.C.(%):	15%	17%	16%	11%	8%	19%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	20	6	1	7	31	0
% SAND:	45	23	28	72	34	13
% FINES:	35	71	71	22	36	87
CLASSIFICATION	SILTY SAND WITH GRAVEL (SM)	SILT WITH SAND (ML)	SILT WITH SAND (ML)	SILTY SAND (SM)	SILTY SAND WITH GRAVEL (SM)	SILT (ML)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

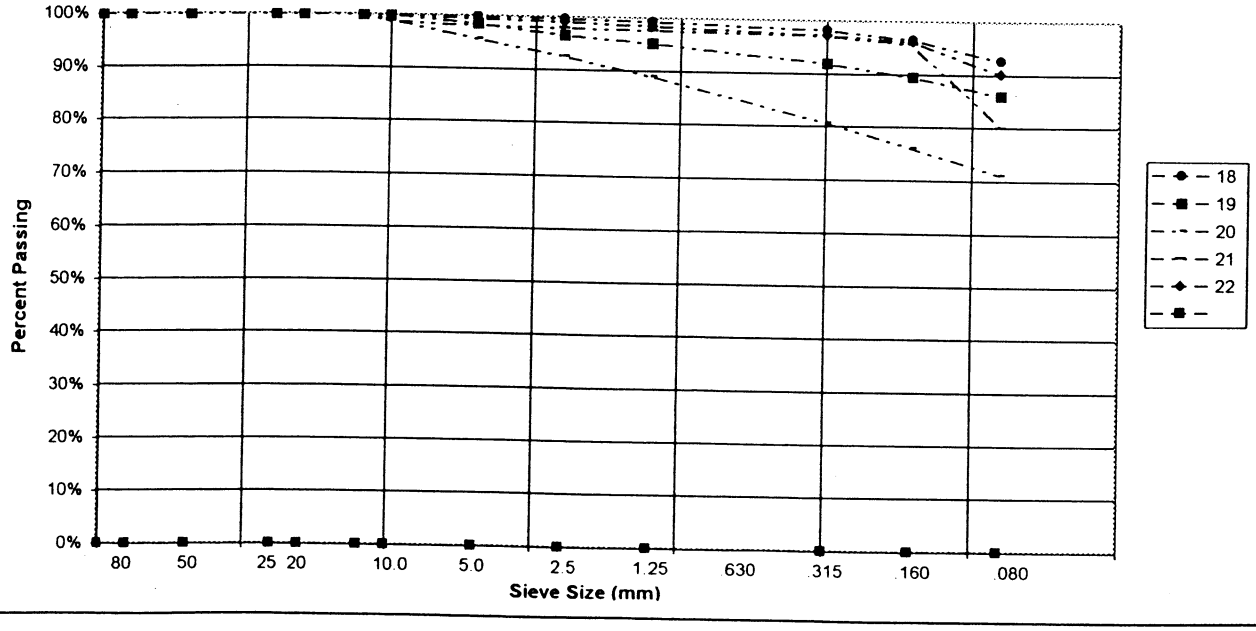
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631425-6778189
LOGGED BY: RW

HOLE No.: 30173

DATE COMP: 07/28/2004

FIELD NO:	18	19	20	21	22	
LAB NO:	18	19	20	21	22	
DEPTH:	0.2-0.6	0.8-1.2	1.8-2.4	3.7-4.3	4.9-5.5	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	100%	100%	100%	100%	100%	
20.0	100%	100%	100%	100%	100%	
12.5	100%	100%	100%	100%	100%	
10.0	100%	100%	99%	99%	100%	
5.0	100%	99%	96%	98%	100%	
2.5	100%	97%	93%	98%	99%	
1.25	99%	95%	89%	98%	99%	
0.630						
0.315	98%	92%	81%	97%	97%	
0.160	97%	90%	76%	96%	96%	
0.080	93%	86%	71%	80%	90%	
M.C.(%):	28%	40%	16%	18%	19%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	0	1	4	2	0	
% SAND:	7	12	24	18	9	
% FINES:	93	86	71	80	90	
CLASSIFICATION	SILT (ML)	SILT (ML)	SILT WITH SAND (ML)	SILT WITH SAND (ML)	SILT (ML)	

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

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

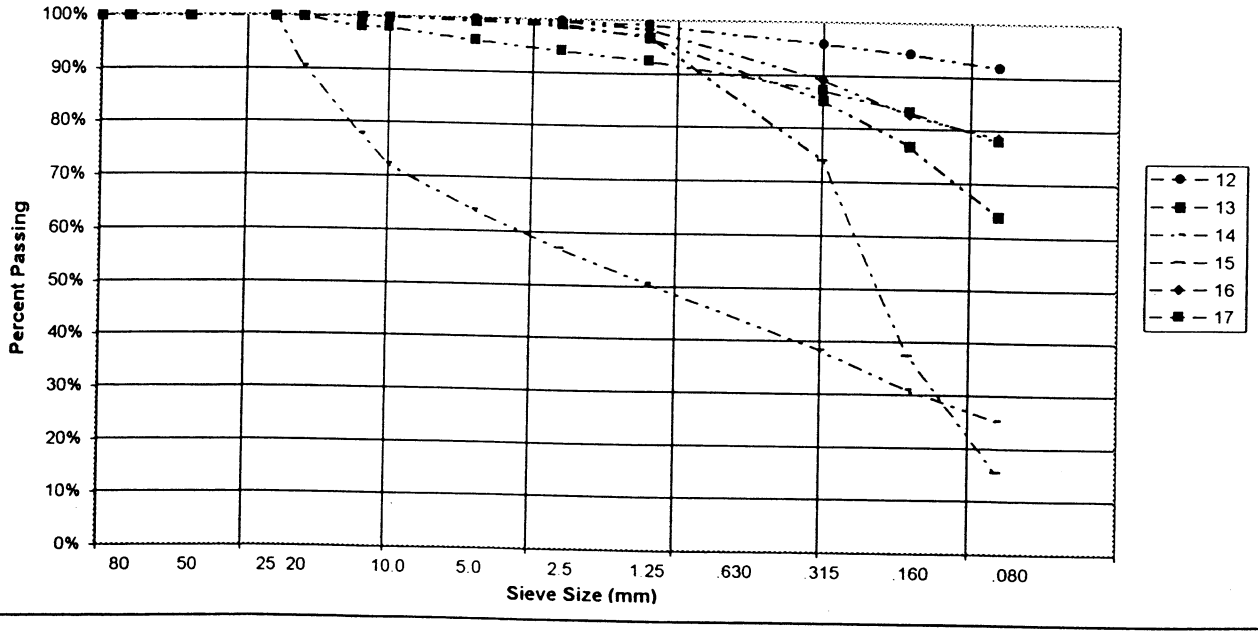
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631499-6778370
LOGGED BY: RW

HOLE No.: 30174

DATE COMP: 07/28/2004

FIELD NO:	12	13	14	15	16	17
LAB NO:	12	13	14	15	16	17
DEPTH:	0.0-0.6	0.6-1.2	1.8-2.7	3.7-4.0	4.0-4.4	4.9-5.5
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	100%	100%	100%	100%	100%	100%
20.0	100%	100%	91%	100%	100%	100%
12.5	100%	100%	78%	100%	100%	98%
10.0	100%	100%	72%	100%	100%	98%
5.0	100%	100%	64%	100%	100%	96%
2.5	100%	99%	57%	99%	100%	94%
1.25	99%	97%	51%	97%	98%	93%
0.630						
0.315	96%	85%	38%	74%	89%	87%
0.160	94%	77%	31%	37%	83%	83%
0.080	92%	64%	25%	16%	79%	78%
M.C.(%):	31%	50%	12%	17%	45%	20%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	0	0	36	0	0	4
% SAND:	8	36	39	84	21	18
% FINES:	92	64	25	16	79	78
CLASSIFICATION	SILT (ML)	SANDY SILT (ML)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)	SILT WITH SAND (ML)	SILT WITH SAND (ML)

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

An Affiliate of J. H. Kaine & Associates Ltd.

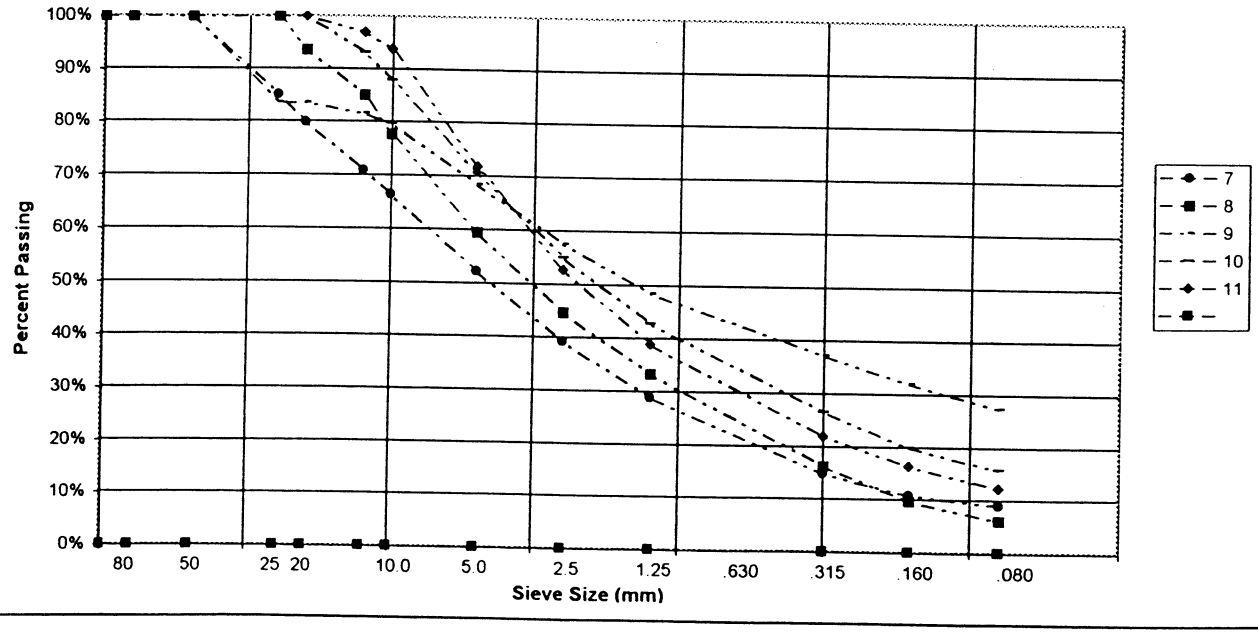
PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631598-6778568
LOGGED BY: RW

HOLE No.: 30175

DATE COMP: 07/28/2004

FIELD NO:	7	8	9	10	11	
LAB NO:	7	8	9	10	11	
DEPTH:	0.3-0.9	2.0-2.9	3.0-3.7	3.7-4.3	4.9-5.5	
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	#N/A
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	
100.0	100%	100%	100%	100%	100%	
80.0	100%	100%	100%	100%	100%	
50.0	100%	100%	100%	100%	100%	
25.0	85%	100%	84%	100%	100%	
20.0	80%	94%	84%	100%	100%	
12.5	71%	85%	82%	93%	97%	
10.0	66%	78%	80%	88%	94%	
5.0	52%	60%	68%	71%	72%	
2.5	39%	45%	58%	55%	53%	
1.25	29%	33%	49%	43%	39%	
0.630						
0.315	15%	16%	37%	27%	22%	
0.160	11%	10%	32%	20%	16%	
0.080	9%	6%	27%	16%	12%	
M.C.(%):	6%	7%	16%	11%	9%	
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	
% GRAVEL:	48	40	32	29	28	
% SAND:	43	53	41	55	60	
% FINES:	9	6	27	16	12	
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	

Grain Size Analysis (Percent Passing vs Grain Size)



HOGGAN ENGINEERING & TESTING (1980) LTD.

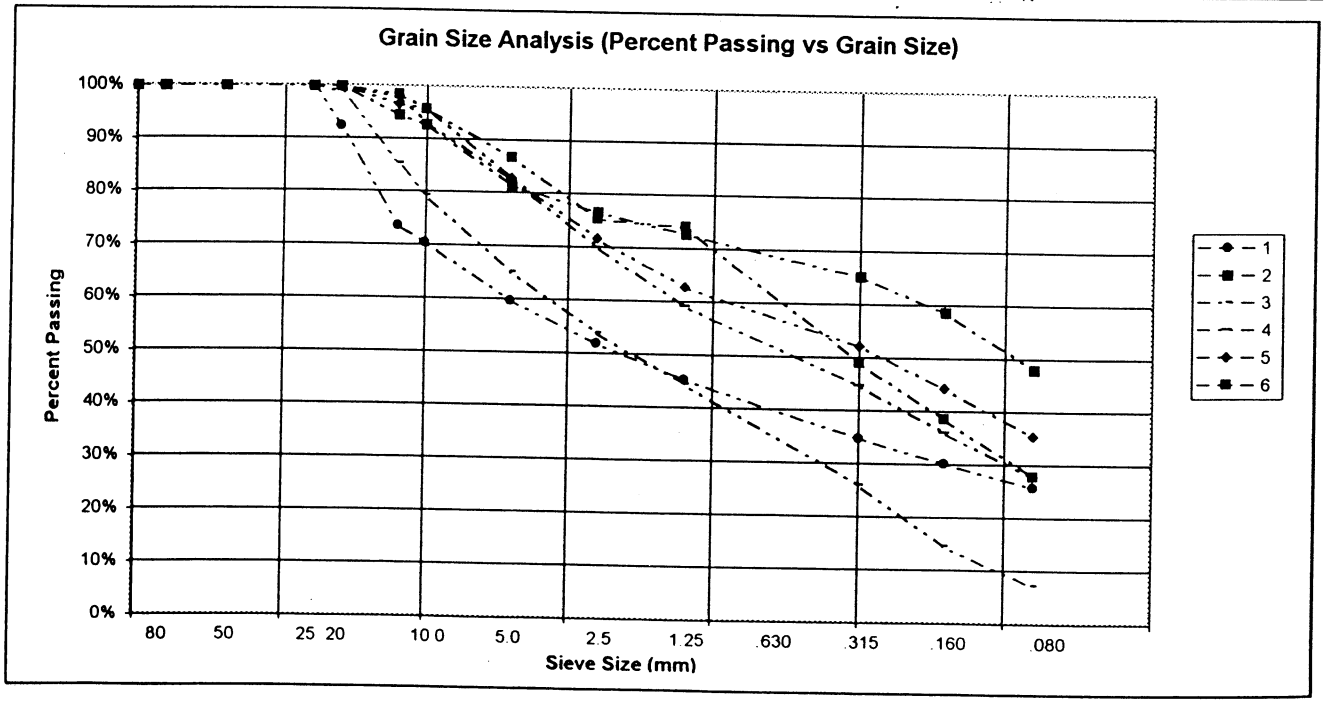
An Affiliate of J. R. Paine & Associates Ltd.

PROJECT NUMBER: 8002-318
CLIENT: YTG, Transportation & Engineering
PROJECT NAME: Geotechnical Services
PROJECT LOCATION: Km 1691.7-1717.3
DRILL UNIT: CME75
HOLE LOCATION: 631642-6778670
LOGGED BY: RW

HOLE No.: 30176

DATE COMP: 07/28/2004

FIELD NO:	1	2	3	4	5	6
LAB NO:	1	2	3	4	5	6
DEPTH:	0.2-0.5	0.6-1.2	1.5-2.1	2.4-2.9	3.7-4.3	4.9-5.5
TYPE:	AUGER	AUGER	AUGER	AUGER	AUGER	AUGER
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING
100.0	100%	100%	100%	100%	100%	100%
80.0	100%	100%	100%	100%	100%	100%
50.0	100%	100%	100%	100%	100%	100%
25.0	100%	100%	100%	100%	100%	100%
20.0	92%	100%	99%	100%	100%	100%
12.5	74%	95%	85%	98%	97%	98%
10.0	71%	93%	79%	93%	96%	96%
5.0	60%	81%	65%	82%	83%	87%
2.5	52%	77%	54%	70%	72%	75%
1.25	45%	73%	45%	59%	63%	74%
0.630						
0.315	35%	65%	26%	45%	52%	49%
0.160	30%	59%	15%	36%	44%	39%
0.080	26%	48%	7%	28%	35%	28%
M.C.(%):	8%	27%	8%	16%	14%	15%
LIQUID LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC LIMIT:	0.0	0.0	0.0	0.0	0.0	0.0
PLASTIC INDEX.:	0.0	0.0	0.0	0.0	0.0	0.0
% GRAVEL:	40	19	35	18	17	13
% SAND:	34	33	58	55	47	59
% FINES:	26	48	7	28	35	28
CLASSIFICATION	SILTY GRAVEL WITH SAND (GM)	SILTY SAND WITH GRAVEL (SM)	WELL-GRADED SAND WITH SILT & GRAVEL (SW-SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND WITH GRAVEL (SM)	SILTY SAND (SM)



SECTION 2

GPS DATA

GPS DATA

HOGGAN ENGINEERING & TESTING (1980) LTD.

Hole #		Easting	Northing	Discrepency	Notes:
	30000	644064	6767987		
30000A		644064	6767988	1.1	
	30001	643863	6768005		
30001A		643863	6768004	0.9	
	30002	643668	6768001		
30002A		643667	6768001	0.4	
	30003	643445	6767988		
30003A		643448	6767987	3.9	
	30004	643437	6768055		
30004A		643430	6768053	7.0	
	30005	643267	6768021		
30005A		643267	6768019	1.7	
30005B		643035	6768022		As Per Site Plan
	30006	642867	6768028		
30006A		642866	6768025	2.6	
	30007	642667	6768033		
30007A		642664	6768030	4.4	
	30008	642466	6768037		
30008A		642463	6768033	5.1	
	30009	642266	6768042		
30009A		642265	6768038	4.1	
	30010	642068	6768044		
30010A		642066	6768040	3.7	
	30011	641866	6768049		
30011A		641865	6768044	5.2	
	30012	641668	6768051		
30012A		641666	6768049	2.3	
	30013	641469	6768055		
30013A		641469	6768054	1.6	
	30014	641288	6768037		
30014A		641287	6768036	0.8	
	30015	641032	6767934		
30015A		641051	6767939	20.1	Relocated as per Site Plan
	30016	641014	6767959		
30016A		641012	6767966	7.3	
	30017	640863	6767837		
30017A		640871	6767834	9.0	
	30018	640689	6767693		
30018A		640691	6767697	5.0	
	30019	640527	6767576		
30019A		640524	6767579	4.5	
	30020	640351	6767453		
30020A		640351	6767452	1.3	
	30021	640194	6767341		
30021A		640194	6767340	1.0	
	30022	640042	6767228		
30022A		640041	6767232	4.1	
	30023	639889	6767124		
30023A		639890	6767125	1.4	
	30024	639690	6766975		

HOGGAN ENGINEERING & TESTING (1980) LTD.

Hole #	Easting	Northing	Discrepency	Notes:
30024A	639688	6766983	8.4	
30025	639558	6766883		
30025A	639558	6766885	2.1	
30026	639359	6766765		
30026A	639356	6766769	5.5	
30027	639214	6766736		
30027A	639213	6766735	1.7	
30028	639224	6766703		
30028A	639229	6766708	6.2	
30029	639106	6766654		
30029A	639106	6766653	1.5	
30030	638905	6766550		
30030A	638909	6766547	4.4	
30031	638931	6766523		
30031A	638926	6766525	5.6	
30032	638814	6766401		
30032A	638808	6766403	6.8	
30033	638656	6766228		
30033A	638653	6766235	8.1	
30034	638450	6766177		
30034A	638452	6766172	5.5	
30035	638289	6766099		
30035A	638287	6766094	5.3	
30036	638095	6766044		
30036A	638094	6766043	2.4	
30037	637905	6765966		
30037A	637902	6765969	4.5	
30038	637702	6765924		
30038A	637704	6765920	4.2	
30039	637561	6765821		
30039A	637563	6765818	3.3	
30040	637423	6765603		
30040A	637444	6765598	**21.0**	Lake Water Restriction
30041	637425	6765450		
30041A	637429	6765452	3.7	
30042	637402	6765203		
30042A	637411	6765198	10.1	
30043	636822	6764756		
30043A	636827	6764763	8.0	
30044	636670	6764729		
30044A	636668	6764727	2.8	
30045	636401	6764644		
30045A	636398	6764640	5.1	
30046	636233	6764567		
30046A	636230	6764571	5.5	
30047	636074	6764454		
30047A	636077	6764452	3.8	
30048	635857	6764424		
30049	635663	6764438		
30049A	635653	6764453	18.2	

HOGGAN ENGINEERING & TESTING (1980) LTD.

Hole #	Easting	Northing	Discrepency	Notes:
30050	635460	6764514		
30050A	635462	6764514	1.4	
30051	635300	6764642		
30051A	635301	6764643	0.8	
30052	635197	6764794		
30052A	635196	6764793	1.4	
30053	635056	6764973		
30053A	635055	6764972	2.2	
30054	634948	6765118		
30054A	634942	6765115	7.4	
30055	634832	6765281		
30055A	634837	6765279	5.3	
30056	634746	6765294		
30056A	634757	6765296	10.6	
30057	634729	6765408		
30057A	634728	6765406	2.5	
30058	634679	6765402		
30058A	634679	6765412	10.5	
30059	634612	6765508		
30059A	634609	6765507	3.6	
30060	634586	6765513		
30061	634617	6765566		
30061A	634611	6765562	7.9	
30062	634495	6765721		
30062A	634495	6765721	0.9	
30063	634374	6765881		
30063A	634376	6765883	2.3	
30064	634254	6766041		
30064A	634253	6766041	1.3	
30065	634121	6766210		
30065A	634121	6766211	0.9	
30066	633991	6766379		
30066A	633993	6766381	2.1	
30067	633887	6766554		
30067A	633887	6766554	0.1	
30068	633842	6766748		
30068A	633842	6766749	1.0	
30069	633865	6766937		
30069A	633866	6766937	0.4	
30070	633919	6767127		
30070A	633921	6767128	2.0	
30071	634019	6767208		
30072	634882	6768365		
30072A	634882	6768366	1.0	
30073	635006	6768364		
30073A	635014	6768367	8.2	
30074	634937	6768448		
30074A	634943	6768449	5.6	
30075	634960	6768521		
30075A	634961	6768519	2.6	

HOGGAN ENGINEERING & TESTING (1980) LTD.

Hole #	Easting	Northing	Discrepency	Notes:
30076	635048	6768519		
30076A	635054	6768523	7.0	
30077	634971	6768592		
30077A	634972	6768591	1.4	
30078	634997	6768667		
30078A	634997	6768663	4.1	
30079	635025	6768735		
30079A	635028	6768745	10.1	
30080	635049	6768801		
30080A	635046	6768798	4.4	
30081	635160	6768762		
30081A	635160	6768752	10.0	
30082	635162	6768919		
30082A	635159	6768928	9.4	
30083	635160	6769181		
30083A	635170	6769180	9.5	
30084	635160	6769283		
30084A	635163	6769283	2.6	
30084R	635167	6769273	10.9	
30085	635150	6769368		
30085A	635155	6769371	5.3	
30085R	635154	6769366	4.7	
30086	635137	6769427		
30086A	635131	6769424	6.8	
30086R	635135	6769428	5.1	
30087	635129	6769474		
30087A	635121	6769468	9.8	
30087R	635128	6769474	9.2	
30088	635108	6769528		
30088A	635104	6769516	12.9	Access Trail/Slope Limitations
30088R	635110	6769513	6.6	
30089	635083	6769607		
30089A	635078	6769606	5.4	
30089R	635080	6769602	4.2	
30090	635063	6769660		
30090A	635061	6769660	2.9	
30090R	635065	6769661	4.5	
30091	635046	6769704		
30091A	635044	6769701	3.7	
30091R	635045	6769700	2.2	
30092	635005	6769770		
30092A	635000	6769764	7.7	
30092R	634998	6769762	3.2	
30093	634974	6769813		
30093A	634966	6769809	9.0	
30093R	634965	6769812	2.8	
30094	634950	6769851		
30094A	634943	6769845	9.4	
30095	634912	6769886		
30095A	634905	6769885	7.8	

HOGGAN ENGINEERING & TESTING (1980) LTD.

Hole #	Easting	Northing	Discrepency	Notes:
30096	634857	6769993		
30096A	634847	6769994	10.3	
30096R	634847	6769986	7.7	
30097	634800	6770135		
30097A	634800	6770135	0.6	
30097R	634803	6770133	3.4	
30098	634698	6770285		
30098A	634696	6770279	6.0	
30099	634665	6770392		
30099A	634666	6770392	0.8	
30100	634634	6770537		
30100A	634636	6770537	1.4	
30100R	634627	6770540	8.6	
30101	634649	6770653		
30101A	634650	6770650	3.2	
30101R	634653	6770659	9.1	
30102	634670	6770755		
30102A	634670	6770753	2.2	
30102R	634667	6770744	9.3	
30103	634658	6770859		
30103A	634651	6770855	8.2	
30103R	634648	6770854	3.6	
30104	634619	6770965		
30104A	634614	6770965	5.8	
30104R	634604	6770967	9.4	
30105	634670	6771006		
30105A	634672	6771005	1.4	
30105R	634672	6771014	8.5	
30106	634580	6771077		
30106A	634574	6771078	6.1	
30106R	634575	6771070	7.9	
30107	634538	6771150		
30107A	634529	6771149	9.4	
30107R	634529	6771151	1.4	
30108	634520	6771276		
30108A	634528	6771278	8.0	
30109	634466	6771431		
30109A	634466	6771427	3.6	
30110	634452	6771559		
30110A	634457	6771567	9.4	
30111	634475	6771631		
30111A	634475	6771627	3.8	
30111R	634480	6771629	5.8	
30112	634472	6771768		
30112A	634468	6771772	6.3	
30112R	634470	6771772	2.9	
30113	634437	6771889		
30113A	634435	6771879	10.6	
30113R	634441	6771880	5.3	
30114	634382	6772025		

HOGGAN ENGINEERING & TESTING (1980) LTD.

Hole #	Easting	Northing	Discrepency	Notes:
30114A	634386	6772019	6.7	
30114R	634386	6772023	3.8	
30115	634342	6772100		
30115A	634339	6772105	6.0	
30115R	634337	6772108	3.8	
30116	634314	6772108		
30116A	634312	6772111	3.7	
30116R	634309	6772107	4.9	
30117	634217	6772251		
30117A	634222	6772256	7.0	
30117R	634224	6772253	3.6	
30118	634186	6772266		
30118A	634185	6772272	5.7	
30118R	634188	6772274	3.7	
30119	634107	6772375		
30119A	634109	6772380	4.8	
30120	634075	6772389		
30120A	634076	6772396	7.3	
30121	633974	6772577		
30121A	633974	6772578	1.0	
30122	633915	6772685		
30122A	633916	6772688	2.9	
30122R	633923	6772688	6.8	
30123	633860	6772725		
30123A	633863	6772714	11.3	
30124	633817	6772924		
30124A	633827	6772909	18.5	Access Trail Limitations
30125	633766	6773061		
30125A	633773	6773058	7.3	
30126	633696	6773199		
30126A	633699	6773199	3.0	
30126R	633699	6773197	1.9	
30127	633622	6773332		
30127A	633619	6773331	3.8	
30127R	633614	6773336	7.4	
30128	633548	6773440		
30128A	633550	6773445	5.2	
30129	633530	6773484		
30129A	633531	6773473	10.9	
30129R	633527	6773477	5.4	
30130	633471	6773546		
30130A	633472	6773537	9.5	
30131	633417	6773660		
30131A	633423	6773651	10.0	
30131R	633418	6773655	6.1	
30132	633338	6773776		
30132A	633337	6773786	9.9	
30132R	633333	6773786	3.7	
30133	633259	6773906		
30133A	633261	6773901	5.2	

HOGGAN ENGINEERING & TESTING (1980) LTD.

Hole #	Easting	Northing	Discrepency	Notes:
30133R	633264	6773908	7.4	
30134	633168	6774005		
30134A	633158	6774008	11.2	
30134R	633155	6774009	2.6	
30135	633072	6774135		
30135A	633067	6774137	6.0	
30135R	633064	6774140	4.0	
30136	633007	6774212		
30136A	633003	6774206	7.8	
30136R	633004	6774199	6.9	
30137	632521	6775027		
30137A	632523	6775028	1.6	
30138	632580	6775069		
30138A	632578	6775066	4.2	
30139	632657	6775120		
30139A	632665	6775122	8.0	
30140	632436	6775099		
30140A	632440	6775097	4.2	
30141	632487	6775136		
30141A	632495	6775140	8.4	
30142	632545	6775189		
30142A	632545	6775194	5.1	
30142D	632558	6775193	12.6	
30143	632610	6775244		
30143A	632619	6775245	8.8	
30144	632295	6775252		
30144A	632303	6775254	7.7	
30145	632345	6775288		
30145A	632345	6775287	0.8	
30146	632398	6775330		
30146A	632400	6775326	4.5	
30146D	632406	6775322	7.0	
30147	632440	6775367		
30147A	632444	6775365	3.7	
30148	632049	6775597		
30148A	632037	6775613	20.0	TH Relocated (Cut Info Required)
30149	631989	6775669		
30149A	631983	6775666	6.9	
30149R	631981	6775671	5.8	
30150	631933	6775743		
30150A	631923	6775739	11.4	
30150R	631923	6775744	5.0	
30151	631864	6775834		
30151A	631868	6775813	21.0	TH Relocated (Cut Info Required)
30151R	631865	6775818	5.7	
30152	631809	6775934		
30152A	631805	6775939	6.4	
30153	631727	6776003		
30153A	631728	6776010	6.7	
30153R	631723	6776014	6.9	
30154	631703	6776064		
30154A	631698	6776060	6.9	

HOGGAN ENGINEERING & TESTING (1980) LTD.

Hole #	Easting	Northing	Discrepency	Notes:
30155	631650	6776118		
30155A	631643	6776117	7.0	
30155R	631647	6776114	5.1	
30156	631614	6776184		
30156A	631600	6776185	14.3	Access Trail Limitations
30156R	631591	6776190	10.7	
30157	631664	6776183		
30157A	631655	6776190	11.5	
30157R	631651	6776191	4.3	
30158	631569	6776278		
30158A	631563	6776272	8.9	
30158R	631560	6776266	6.1	
30159	631540	6776367		
30159A	631517	6776361	23.6	Access Trail Limitations
30159R	631515	6776361	2.1	
30160	631505	6776513		
30160A	631499	6776506	9.6	
30161	631506	6776701		
30161A	631513	6776711	11.6	
30162	631542	6776922		
30162A	631538	6776914	9.1	
30163	631575	6776903		
30163A	631563	6776900	12.9	Access Trail Limitations
30164	631575	6777035		
30164A	631580	6777031	5.8	
30165	631605	6777119		
30165A	631607	6777126	7.6	
30166	631580	6777136		
30166A	631583	6777139	3.6	
30167	631589	6777293		
30167A	631589	6777298	5.2	
30168	631516	6777594		
30168A	631509	6777587	10.4	
30169	631460	6777712		
30169A	631458	6777708	4.7	
30170	631410	6777849		
30170A	631414	6777845	5.1	
30171	631398	6778008		
30171A	631414	6777998	18.4	Access Trail Limitations
30172	631425	6778140		
30172A	631432	6778136	7.8	
30173	631424	6778186		
30173A	631425	6778189	3.0	
30174	631500	6778365		
30174A	631499	6778370	4.8	
30175	631610	6778575		
30175A	631598	6778568	14.3	Proposed within New Roadway
30176	631655	6778670		
30176A	631642	6778670	13.0	Proposed within New Roadway

HOGGAN ENGINEERING & TESTING (1980) LTD.

Hole #	Easting	Northing	Discrepency	Notes:
30177A	636646	6764614		As Per Site Plan
30178A	636697	6764616		As Per Site Plan
30179A	636749	6764619		As Per Site Plan
654-2763D	632672	6774951		As Per 654-2763 Location

Control #	Easting	Northing	Discrepency	
CP192	642738	6768077		
C192	642394	6768079	344.5	CP192 located tieing in CP193
CP3243	633816	6766665		
C3243	633816	6766663	1.7	
CP3254	635059	6768359		
C3254	635062	6768359	2.6	
CP3258	635246	6769238		
C3258	635238	6769243	9.2	
CP3264	634759	6770522		
C3264	634759	6770521	0.6	
CP3272	634404	6772040		
C3272	634403	6772037	3.1	
CP3277	633867	6772901		
C3277	633865	6772897	4.5	
CP3281	633331	6773849		
C3281	633317	6773879	32.7	
CP3289	631930	6775786		
C3289	631927	6775786	2.2	
CP3294	631568	6776652		
C3294	631559	6776666	16.3	
CP3300	631464	6778076		
C3300	631458	6778081	8.2	
CP3314	638458	6766175		
C3314	638458	6766174	1.2	
CP3318	637433	6765315		
C3318	637432	6765316	1.5	
CP3326	635237	6764649		
C3326	635243	6764678	29.9	
CP3536	632914	6774876		
C3536	632914	6774877	1.6	
CP755	641034	6767923		
C755	640828	6767787	246.9	CP755 located tieing in CP756
CP761	639787	6767041		
C761	639563	6766935	247.1	CP761 located tieing in CP762