

GEOTECHNICAL INVESTIGATIONS

**Highway Construction
Km 1738.3 to 1750.2 Highway #1
Yukon, 2002-2003
Volume 3 of 4**

Yukon

Community and Transportation Services
Transportation Engineering Branch

Geotechnical Services

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PHONE 867-667-8820 FAX 867-393-6447

ORIGINAL - Do Not Remove From File

HIGHWAY CONSTRUCTION

GEOTECHNICAL INVESTIGATION

Km 1738.3 to 1750.2
YUKON 2002-2003

ALASKA HIGHWAY #1

Highway Construction
Km 1738.3 to 1750.2
Alaska Highway #1
Yukon 2002-2003
Volume 3 of 4

This Data Package prepared for project viewing:

March, 2002

Transportation Engineering Branch
Geotechnical Services
461 Range Road
Whitehorse, Yukon

CONTENTS

Volume 1 of 4

INTRODUCTION

Investigation notes, classification methods and legends.

CENTRELINE TESTING ALASKA HIGHWAY

Subsurface Exploration and Testing Report Sheets are provided.
The reports for the centreline holes are arranged according to project location, starting at Km 1775+500 and increasing to Km 1786+500.

TEST HOLES 1292 to 1326	shown with prefix 541-
TEST HOLES 1327 to 1333	shown with prefix 542-
TEST HOLES 1334 to 1369	shown with prefix 543-
TEST HOLES 1370 to 1400	shown with prefix 544-
TEST HOLES 287 to 332	shown with prefix 611-
TEST HOLES 333 to 353	shown with prefix 612-

NOTE:

Centreline Test Hole locations indicated on the Subsurface Exploration and Testing Report Sheets are approximate. Actual Test Hole locations, located by GPS survey or field survey, are as shown on project plans.

CONTENTS (continued)**Volume 2 of 4****CENTRELINE TESTING ALASKA HIGHWAY**

Laboratory Testing Result Sheets are provided.
The reports for the centreline holes are arranged according to test hole number, starting at 541-1292 and increasing to 612-353.

TEST HOLES 1292 to 1326	shown with prefix 541-
TEST HOLES 1327 to 1333	shown with prefix 542-
TEST HOLES 1334 to 1369	shown with prefix 543-
TEST HOLES 1370 to 1400	shown with prefix 544-
TEST HOLES 287 to 332	shown with prefix 611-
TEST HOLES 333 to 353	shown with prefix 612-

NOTE:

Centreline Test Hole locations indicated on the Subsurface Exploration and Testing Report Sheets are approximate. Actual Test Hole locations, located by GPS survey or field survey, are as shown on project plans.

CONTENTS (continued)

Volume 3 of 4

GRANULAR SOURCE Km 1738.8 RHS & LHS ALASKA HIGHWAY

Location plans and subsurface exploration and testing report sheets are provided.

Auger Testing

2001	TEST HOLES 344 & 345	shown with prefix 612-
2001	TEST HOLES 1891 to 1904	shown with prefix 622-

Backhoe Testing

2001	TEST PITS 1699 to 1713	shown with prefix 630-
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CONTENTS (continued)**Volume 4 of 4****GRANULAR SOURCE Km 1750.0 LHS ALASKA HIGHWAY**

Location plans, photographs, and subsurface exploration and testing report sheets are provided.

Auger Testing

1985	TEST HOLES 32 and 37 to 40	shown with prefix 777-
2001	TEST HOLES 1948 to 1964	shown with prefix 625-

Backhoe Testing

1985	TEST PITS 108 to 112	shown with prefix 808-
1988	TEST PITS 1 to 21	shown with prefix 029-
1988	TEST PITS 22 to 39	shown with prefix 030-
2002	TEST PITS 1 to 25	shown with prefix 631-

HIGHWAY CONSTRUCTION

GEOTECHNICAL INVESTIGATION

Km 1738.3 to 1750.2
YUKON 2002-2003

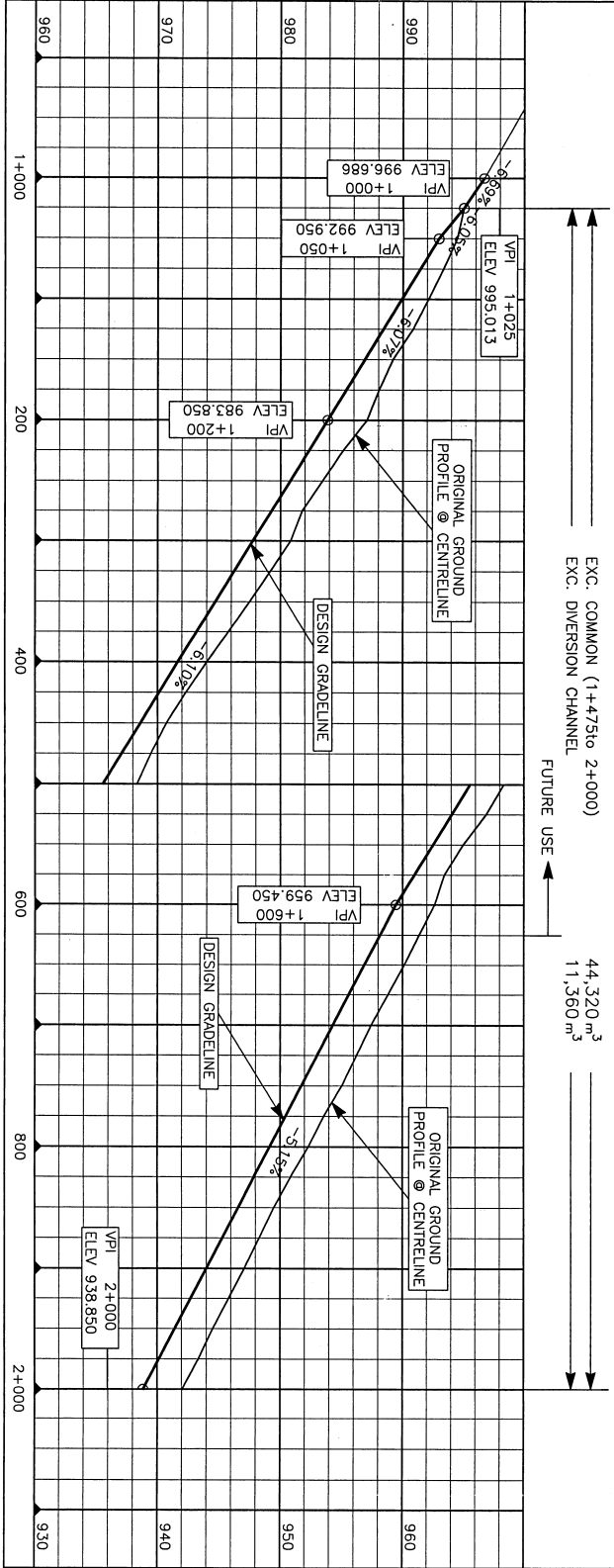
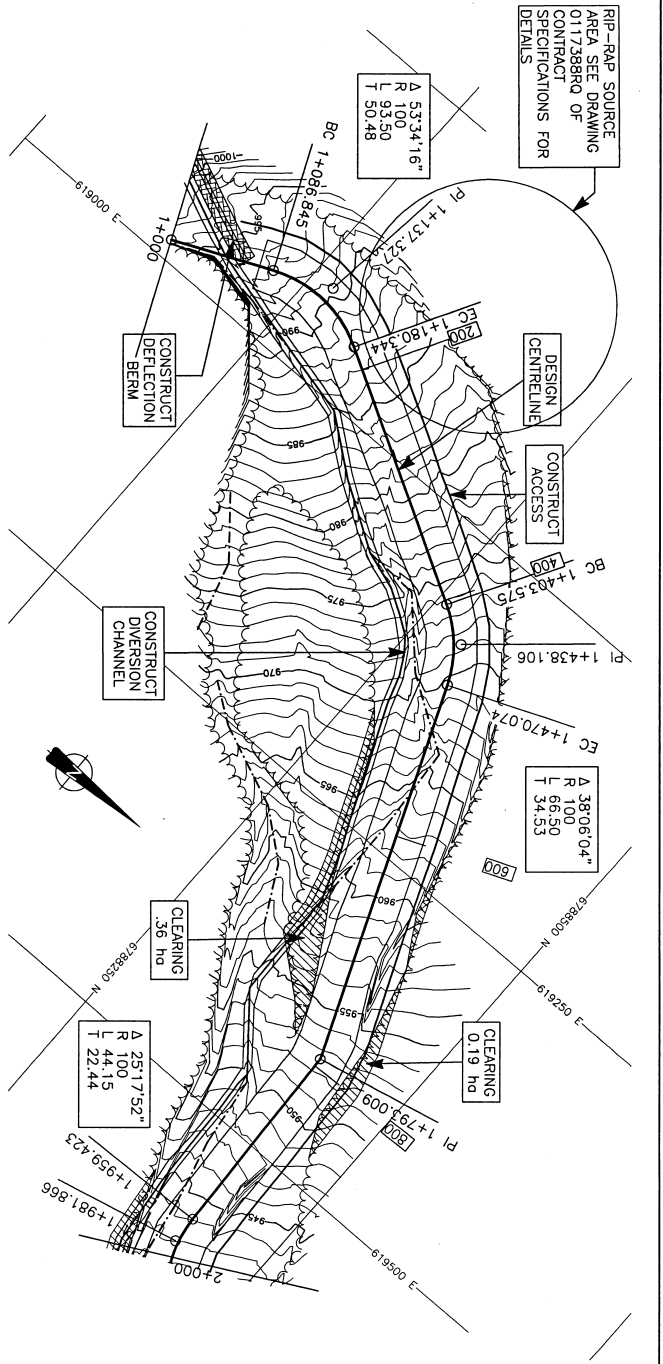
ALASKA HIGHWAY #1

GRANULAR SOURCE TESTING
Km 1738.8 RHS & LHS
ALASKA HIGHWAY

**Km 1738.8 LHS Alaska Highway
(Bocks Brook)**

**2001
Test Hole Logs**

RIP-RAP SOURCE AREA SEE DRAWING 0117388BP OF CONTRACT SPECIFICATIONS FOR DETAILS



Yukon
Infrastructure
Transportation Engineering Branch

- NOTES:
1. CONTOUR INTERVAL 1m
 2. DESIGN GRADELINE SHOWN IS BOTTOM OF CHANNEL
 3. COORDINATE GRID IS NAD 83 ZONE 7
 4. EXISTING CREEK CHANNELS AS OF SEPTEMBER 2001

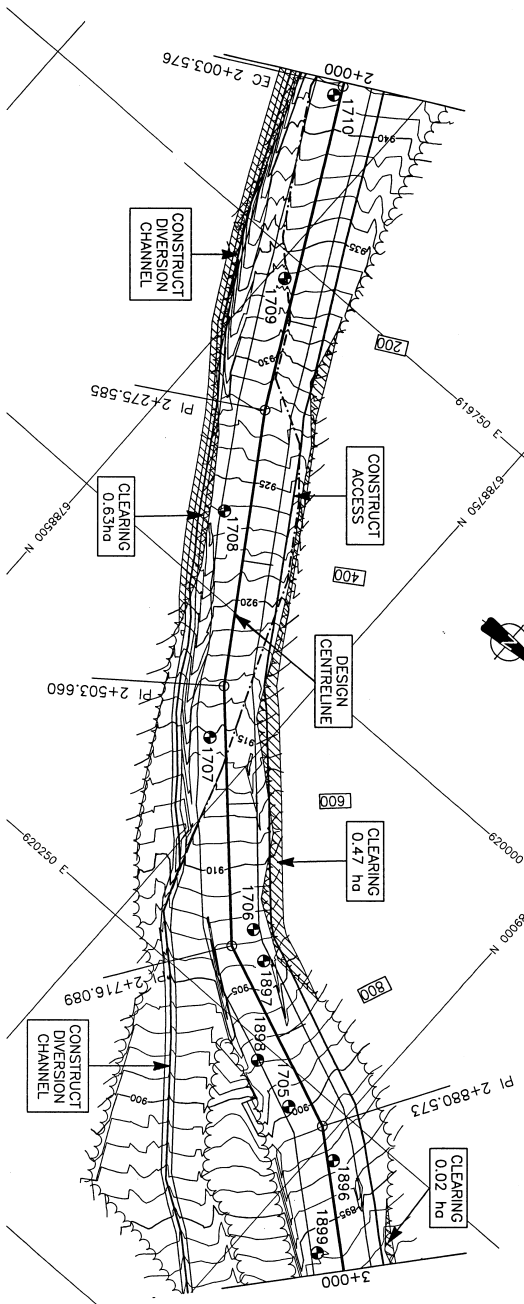
PROJECT:
HIGHWAY CONSTRUCTION
km1738.3-km1750.2
ALASKA HIGHWAY #1

DRAWING TITLE:
BOCKS BROOK 1+000-2+000

DATE: 2002-03-22
DRAWN: DT \ KJL
HORIZONTAL SCALE: 1:4,000
VERTICAL SCALE: 1:400

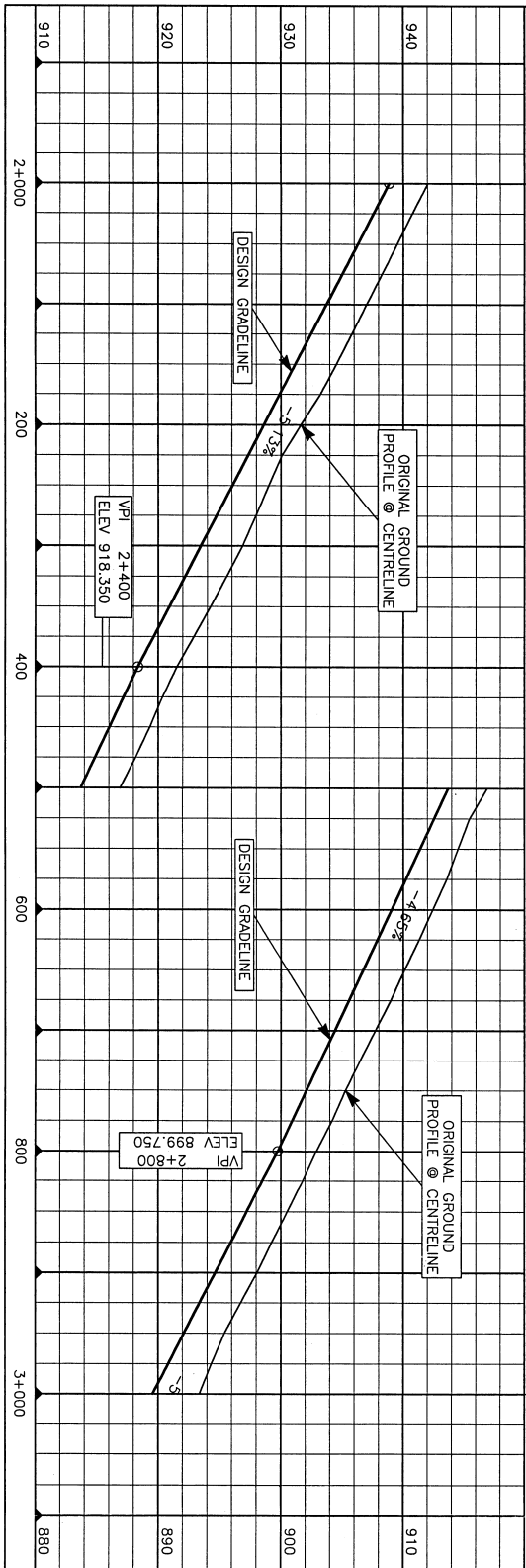
DESIGN: B STANLEY
CHECKED: P. KATSH, P. ENG
APPROVED:
DRAWING NO: 117388BP-1 SHEET 26 of 29

- NOTES:
1. CONTOUR INTERVAL 1m
 2. DESIGN GRADELINE SHOWN IS BOTTOM OF CHANNEL
 3. COORDINATE GRID IS NAD 83 ZONE 7
 4. EXISTING CREEK CHANNELS AS OF SEPTEMBER 2001



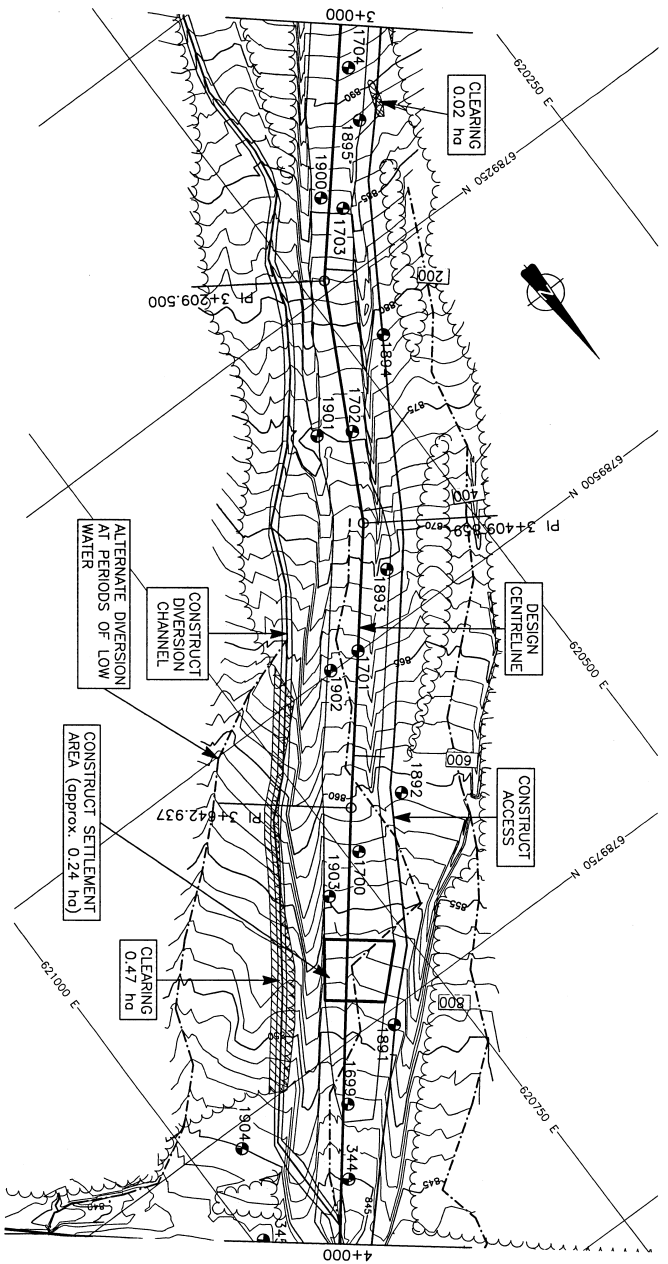
EXC. COMMON
EXC. DIVERSION CHANNEL

127,890 m³
8,520 m³



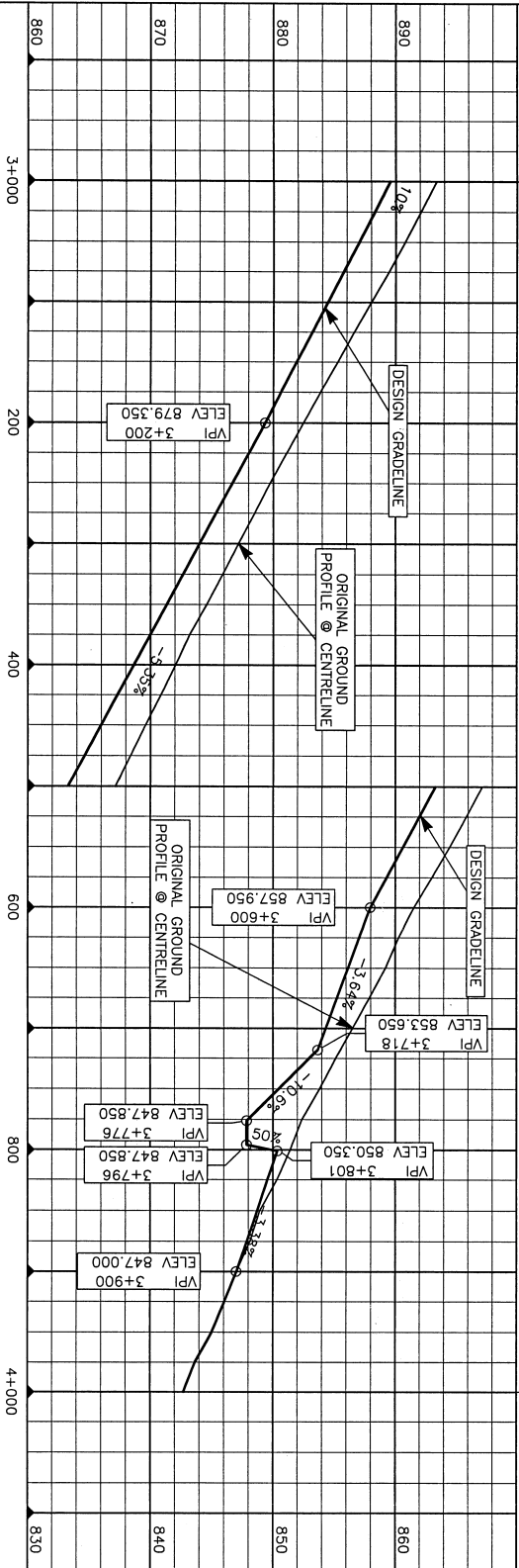
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DRAWING TITLE:		BOCKS BROOK 2+000-3+000	
DATE:	2002-03-22	HORIZONTAL SCALE:	1:4,000
DRAWN BY:	KLJ	VERTICAL SCALE:	1:400
DESIGN: B. STANLEY			
CHECKED: P. KNSH, P.ENG			
APPROVED:			
DRAWING NO. 117388BP-2		SHEET 27 of 29	

- NOTES:
1. CONTOUR INTERVAL 1m
 2. DESIGN GRADELINE SHOWN IS BOTTOM OF CHANNEL
 3. COORDINATE GRID IS NAD 83 ZONE 7
 4. EXISTING CREEK CHANNELS AS OF SEPTEMBER 2001



EXC. COMMON
EXC. DIVERSION CHANNEL

99,770 m³
9,930 m³



PROJECT:

HIGHWAY CONSTRUCTION
km1738.3-km1750.2
ALASKA HIGHWAY #1

DRAWING TITLE:

BOCKS BROOK 3+000-4+000

DATE: 2002-03-22

HORIZONTAL SCALE: 1:4,000

DRAWN: DT \ KJ

VERTICAL SCALE: 1:400

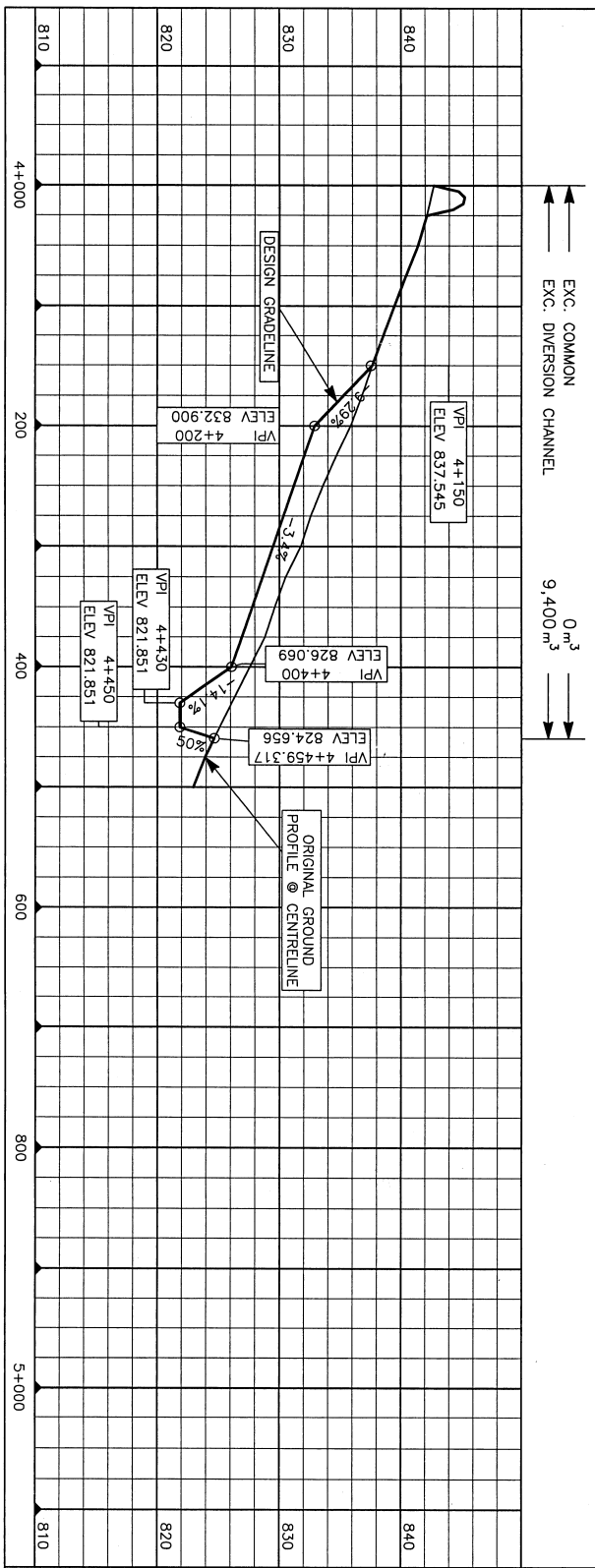
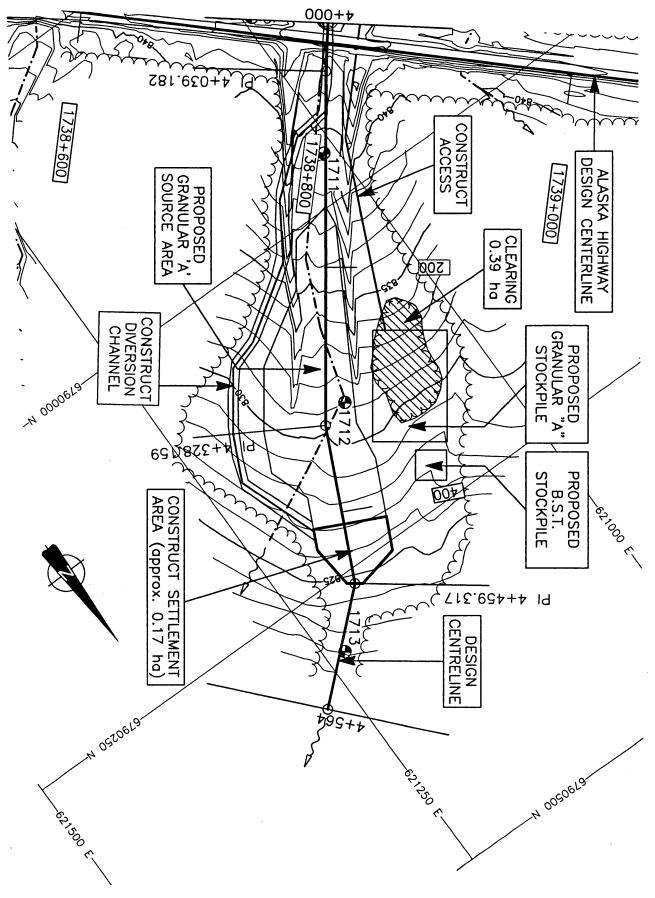
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CHECKED: P. KINISHI, P.ENG

APPROVED:

DRAWING NO. 117388BP-3 SHEET 28 of 29

- NOTES:
1. CONTOUR INTERVAL 1m
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 3. COORDINATE GRID IS NAD 83 ZONE 7
 4. EXISTING CREEK CHANNELS AS OF SEPTEMBER 2001



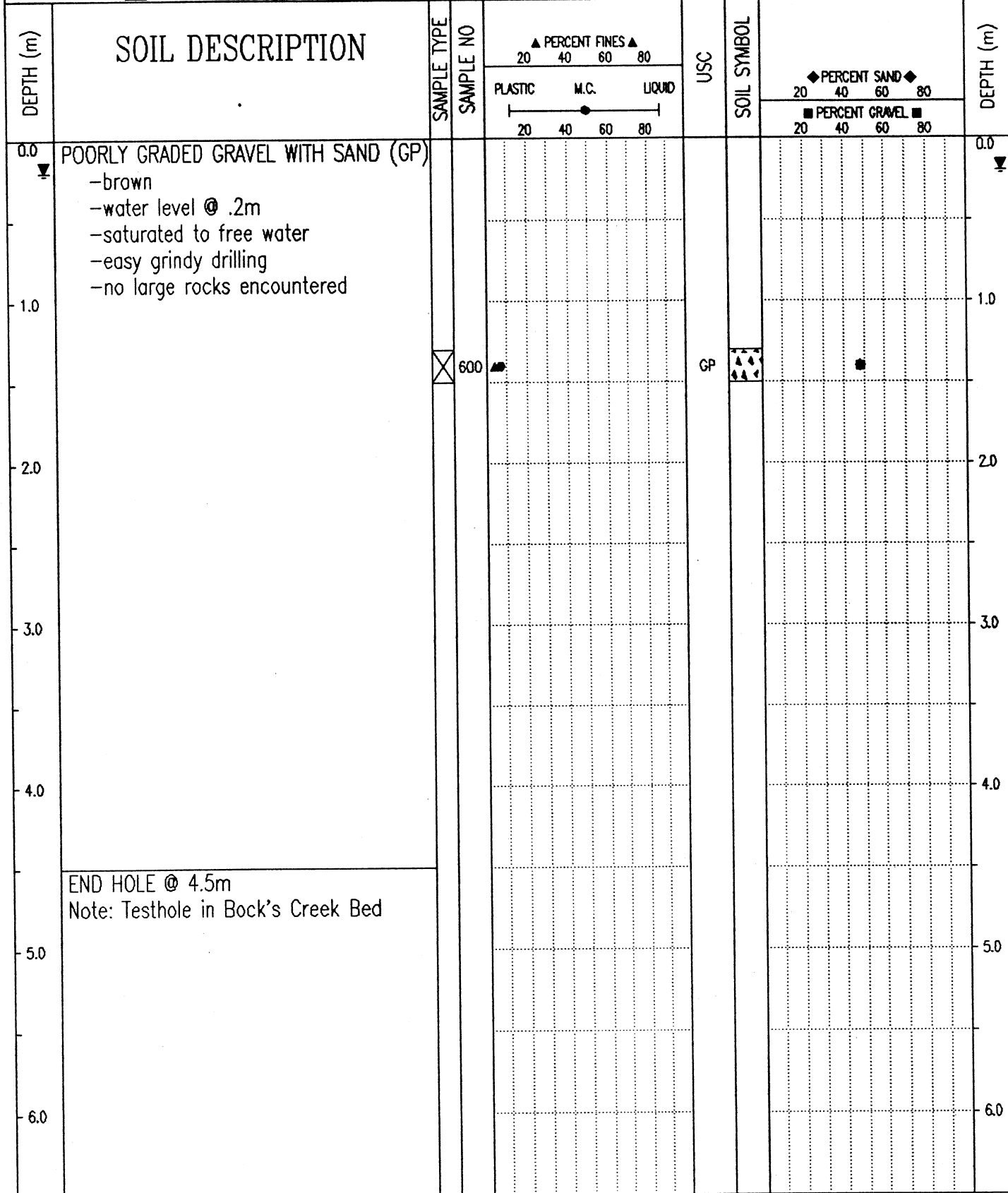
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HIGHWAY CONSTRUCTION
km 1738.3 - km 1750.2
ALASKA HIGHWAY #1

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BOCKS BROOK 4+000-4+564.476

DATE: 2002-03-22
DRAWN: DT \ KJU
HORIZONTAL SCALE: 1:4,000
VERTICAL SCALE: 1:400

DESIGN: B. STANLEY
CHECKED: P. KINOSH, P. ENG
APPROVED:
DRAWING NO. 117388BP-4 SHEET 29 of 29

SUBSURFACE EXPLORATION & TESTING REPORT	SEG 11	TEST PIT NO: 612-344
ENGINEERING CAPITAL	ROW TESTING A/H	Project No: 092-202101-0361
B40-L DRILL 6" AUGERS	LOCATION: 1734+661 BK; 1738+799 AH 69m LT	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE	



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REVIEWED BY:
Fig. No:

COMPLETION DEPTH: 4.5 m
COMPLETE: 01/08/06
Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SEG 11		TEST PIT NO: 612-345								
ENGINEERING CAPITAL		ROW TESTING A/H		Project No: 092-202101-0361								
B40-L DRILL 6" AUGERS		LOCATION: 1734+598 BK; 1738+736 AH 14m LT		ELEVATION: 0.00 (m)								
SAMPLE TYPE		RETURN		S.P.T.								
		<input checked="" type="checkbox"/> AUGER		<input type="checkbox"/> BULK								
		<input type="checkbox"/> TUBE		<input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	SOIL SYMBOL	PERCENT SAND ◆			DEPTH (m)
				PLASTIC	M.C.	LIQUID			PERCENT GRAVEL ■			
0.0	GRAVELLY SAND -brown -moist										0.0	
1.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -grey -damp -grindy drilling	<input checked="" type="checkbox"/>	601	▲			GP-GM	▲	◆	■	1.0	
2.0											2.0	
3.0	SILT AND ORGANIC -brown - black -saturated -smooth drilling										3.0	
4.0	GRANULAR MATERIAL SUSPECTED -sample washed off auger -H2O level @ 3.0m -some grindy drilling										4.0	
5.0	END HOLE @ 4.5m										5.0	
6.0											6.0	

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REVIEWED BY:

Fig. No:

COMPLETION DEPTH: 4.5 m

COMPLETE: 01/08/06

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SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEG 11		TEST HOLE NO: 622-1891										
ENGINEERING CAPITAL		BOCK'S BROOK		Project No: 092-202101-0361										
MOBILE B40L 6" AUGER		LOCATION:SEE PLAN		ELEVATION: 0.00 (m)										
SAMPLE TYPE <input type="checkbox"/> RETURN		<input checked="" type="checkbox"/> S.P.T.		<input checked="" type="checkbox"/> AUGER										
		<input type="checkbox"/> BULK		<input type="checkbox"/> TUBE										
				<input type="checkbox"/> CORE										
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	SOIL SYMBOL	PERCENT SAND ◆			DEPTH (m)		
				PLASTIC	M.C.	LIQUID			PERCENT GRAVEL ■					
0.0	POORLY GRADED GRAVEL WITH SAND (GP) -wet to saturated -grinding drilling from surface to 3.0m			20	40	60	80			20	40	60	80	0.0
1.0														1.0
2.0			1314					GP						2.0
3.0	SILTY SAND (SM) -brown -saturated -smooth drilling													3.0
4.0	ORGANICS -wet		1315					SM						4.0
5.0	END HOLE @ 4.5m													5.0
6.0														6.0

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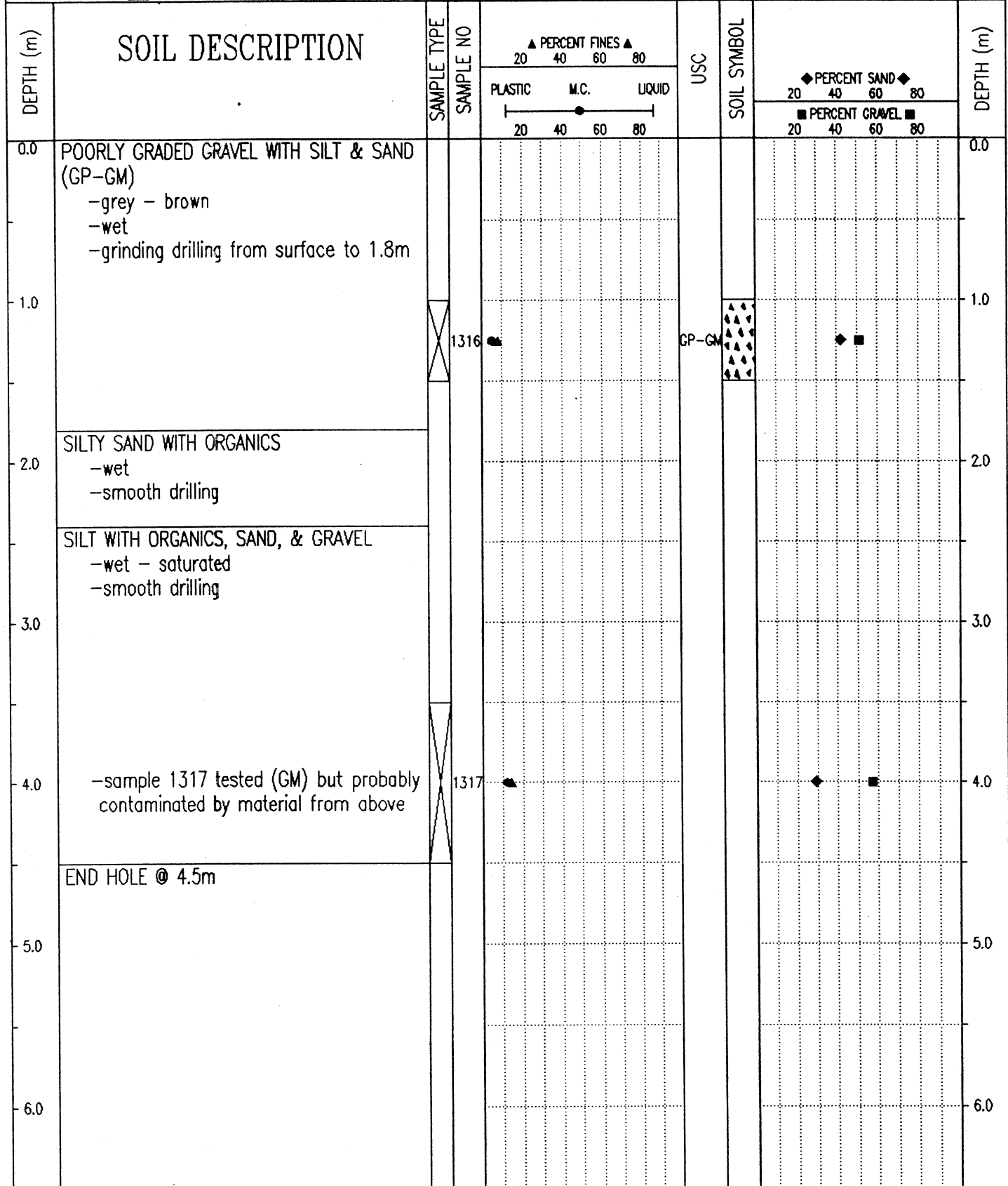
Fig. No:

COMPLETION DEPTH: 4.5 m

COMPLETE: 01/09/18

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SUBSURFACE EXPLORATION & TESTING REPORT	SHAKWAK SEG 11	TEST HOLE NO: 622-1892
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
MOBILE B40L 6" AUGER	LOCATION:SEE PLAN	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE	

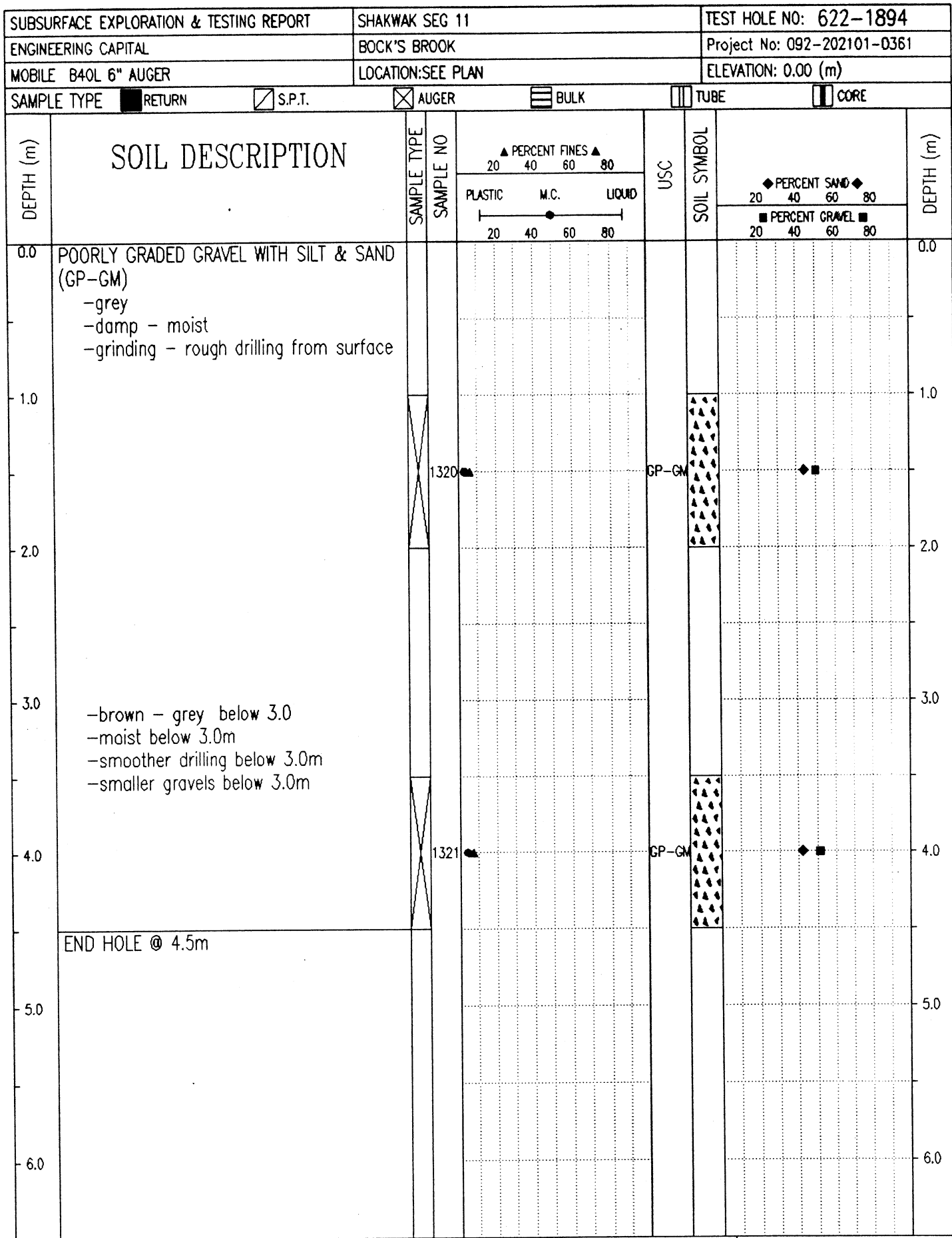


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REVIEWED BY:
Fig. No:

COMPLETION DEPTH: 4.5 m
COMPLETE: 01/09/18

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEG 11		TEST HOLE NO: 622-1893							
ENGINEERING CAPITAL		BOCK'S BROOK		Project No: 092-202101-0361							
MOBILE B40L 6" AUGER		LOCATION:SEE PLAN		ELEVATION: 0.00 (m)							
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE											
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND	PERCENT GRAVEL	DEPTH (m)
				PLASTIC	M.C.	LIQUID					
0.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -grey -moist -grinding drilling starts at surface										0.0
1.0			1318								1.0
2.0	DECOMPOSED WOOD -smooth drilling POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -grey -moist -grinding drilling										2.0
3.0											3.0
4.0			1319								4.0
5.0	END HOLE @ 4.5m										5.0
6.0											6.0
Government of Yukon Transportation Engineering				LOGGED BY: G.C. REVIEWED BY: Fig. No:		COMPLETION DEPTH: 4.5 m COMPLETE: 01/09/18		Page 1 of 1			



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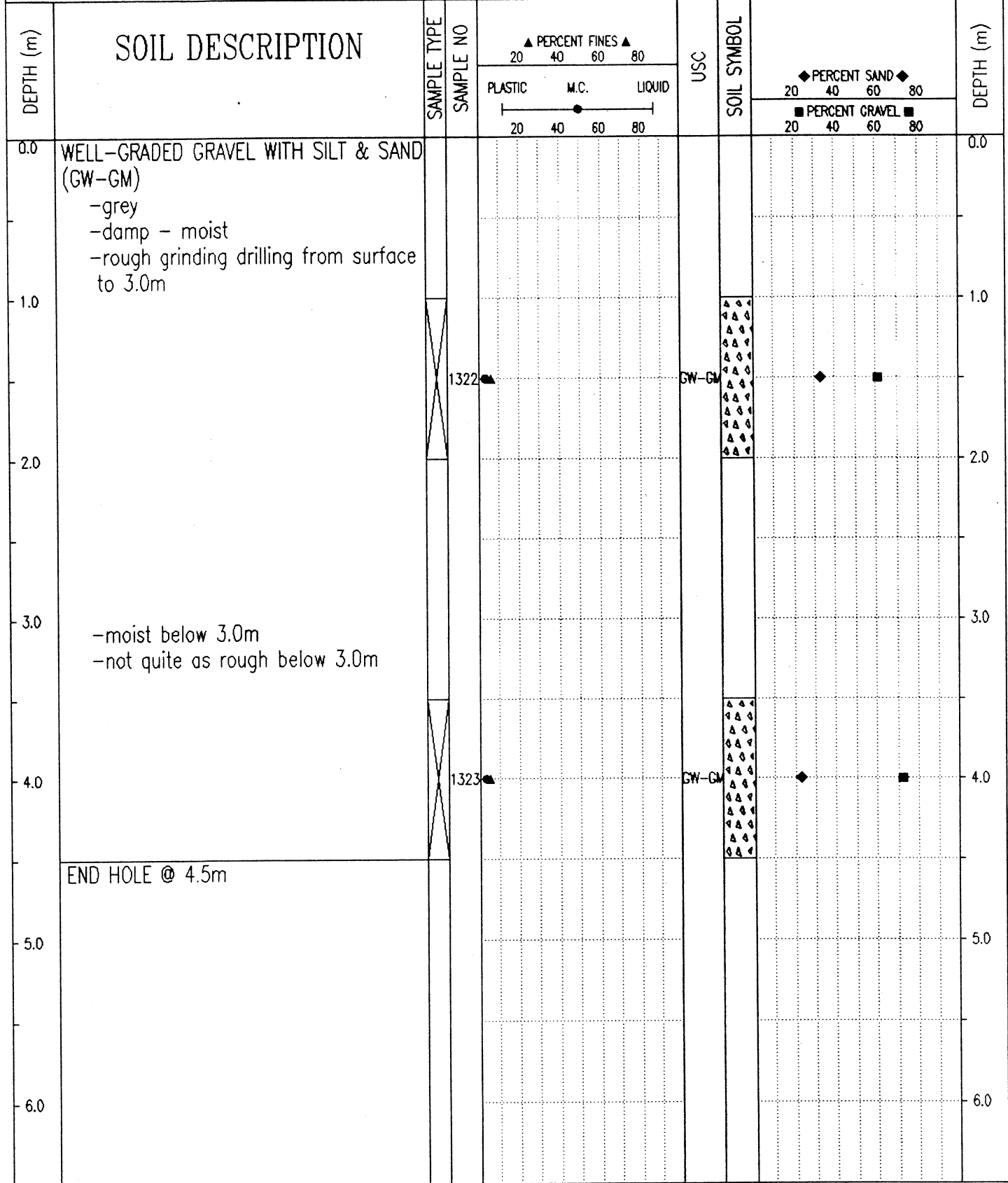
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COMPLETION DEPTH: 4.5 m

COMPLETE: 01/09/18

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SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEG 11	TEST HOLE NO: 622-1895
ENGINEERING CAPITAL		BOCK'S BROOK	Project No: 092-202101-0361
MOBILE B40L 6" AUGER		LOCATION: SEE PLAN	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input type="checkbox"/> RETURN	<input checked="" type="checkbox"/> S.P.T.	<input checked="" type="checkbox"/> AUGER
		<input type="checkbox"/> BULK	<input type="checkbox"/> TUBE
			<input type="checkbox"/> CORE



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REVIEWED BY:	COMPLETE: 01/09/18
Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEG 11		TEST HOLE NO: 622-1896								
ENGINEERING CAPITAL		BOCK'S BROOK		Project No: 092-202101-0361								
MOBILE B40L 6" AUGER		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)								
SAMPLE TYPE		RETURN		S.P.T.								
		AUGER		BULK								
		TUBE		CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND			DEPTH (m)
				PLASTIC	M.C.	LIQUID			20	40	60	
0.0	POORLY GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT & SAND (GP)-(GP-GM) -grey -damp - moist -grinding drilling from surface -rough drilling from 0 to 4.5m											0.0
1.0												1.0
2.0			1324				GP					2.0
3.0	-one refusal @ 3.0m											3.0
4.0			1325				GP-GM					4.0
5.0	END HOLE @ 4.5m											5.0
6.0												6.0
Government of Yukon Transportation Engineering				LOGGED BY: G.C. REVIEWED BY: Fig. No:				COMPLETION DEPTH: 4.5 m COMPLETE: 01/09/18 Page 1 of 1				

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEG 11		TEST HOLE NO: 622-1897						
ENGINEERING CAPITAL		BOCK'S BROOK		Project No: 092-202101-0361						
MOBILE B40L 6" AUGER		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)						
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE										
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	SOIL SYMBOL	◆ PERCENT SAND ◆		DEPTH (m)
				PLASTIC	M.C.			LIQUID	20	
0.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)									0.0
1.0	-grey -moist -grinding drilling from surface to 3.5m -rough drilling									1.0
2.0			1326				GP-GM			2.0
3.0										3.0
4.0	-with organics below 3.5m -moist to wet below 3.5m -smoother drilling below 3.5m		1327				GP-GM			4.0
5.0	END HOLE @ 4.5m Note: water presently running 100m It of testhole #1897 (wider fan) -fan continues 500m									5.0
6.0										6.0
Government of Yukon Transportation Engineering				LOGGED BY: G.C. REVIEWED BY: Fig. No:		COMPLETION DEPTH: 4.5 m COMPLETE: 01/09/18		Page 1 of 1		

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEG 11		TEST HOLE NO: 622-1898								
ENGINEERING CAPITAL		BOCK'S BROOK		Project No: 092-202101-0361								
MOBILE B40L 6" AUGER		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)								
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE												
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	SOIL SYMBOL	◆ PERCENT SAND ◆		DEPTH (m)		
				PLASTIC	M.C.			LIQUID	PERCENT GRAVEL ■			
0.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -grey -damp - moist -grinding from surface to 2.5m			20	40	60	80	20	40	60	80	0.0
1.0												1.0
2.0			1328				GP-GM					2.0
3.0	SILTY SAND WITH ORGANICS (SM) -brown -moist -smooth drilling											3.0
4.0			1329				SM					4.0
5.0	END HOLE @ 4.5m											5.0
6.0												6.0
Government of Yukon Transportation Engineering				LOGGED BY: G.C.		COMPLETION DEPTH: 4.5 m						
				REVIEWED BY:		COMPLETE: 01/09/18						
				Fig. No:		Page 1 of 1						

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEG 11		TEST HOLE NO: 622-1899									
ENGINEERING CAPITAL		BOCK'S BROOK		Project No: 092-202101-0361									
MOBILE B40L 6" AUGER		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)									
SAMPLE TYPE		RETURN		S.P.T.									
		AUGER		BULK									
		TUBE		CORE									
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND			PERCENT GRAVEL	DEPTH (m)
				PLASTIC	M.C.	LIQUID			20	40	60		
0.0	POORLY GRADED GRAVEL WITH SAND TO POORLY GRADED GRAVEL WITH SILT & SAND (GP)-(GP-GM) -grey -moist -rough grinding drilling from surface to 4.5m											0.0	
1.0												1.0	
2.0			1330				GP					2.0	
3.0												3.0	
4.0			1331				GP-GM					4.0	
5.0	END HOLE @ 4.5m											5.0	
6.0												6.0	

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Transportation Engineering

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REVIEWED BY:

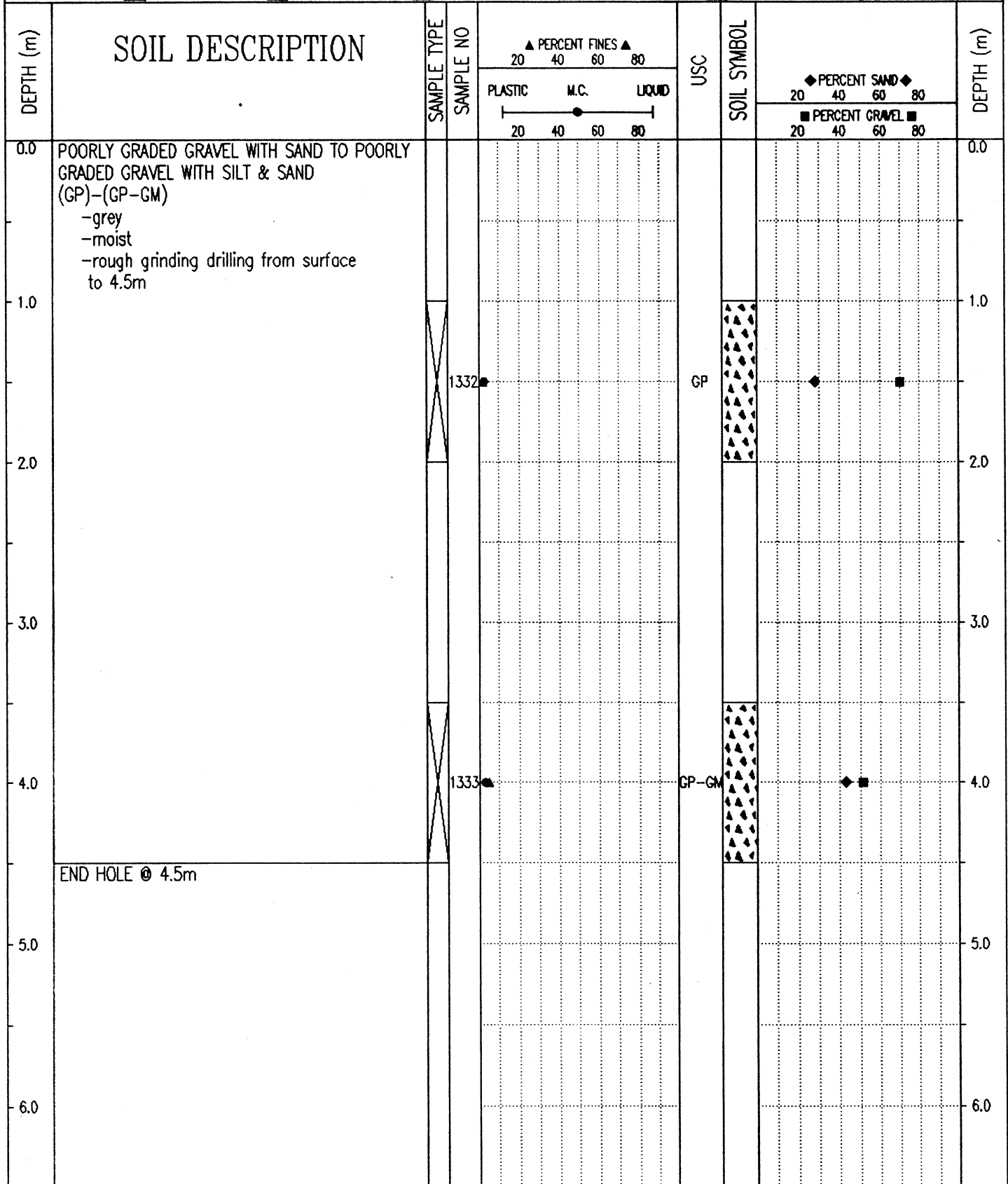
Fig. No:

COMPLETION DEPTH: 4.5 m

COMPLETE: 01/09/18

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SUBSURFACE EXPLORATION & TESTING REPORT	SHAKWAK SEG 11	TEST HOLE NO: 622-1900
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
MOBILE B40L 6" AUGER	LOCATION: SEE PLAN	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE	

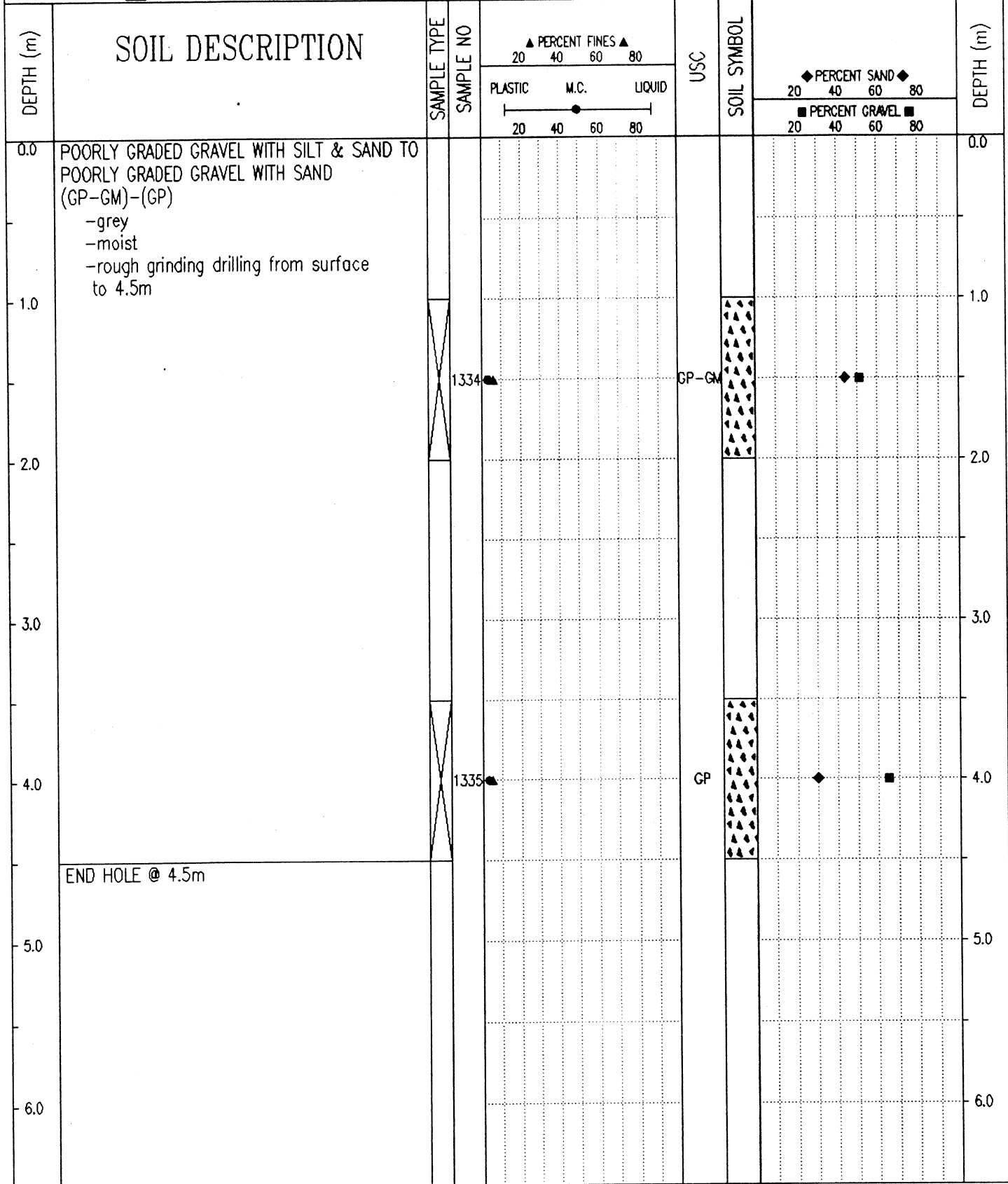


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REVIEWED BY:
Fig. No:

COMPLETION DEPTH: 4.5 m
COMPLETE: 01/09/18

SUBSURFACE EXPLORATION & TESTING REPORT	SHAKWAK SEG 11	TEST HOLE NO: 622-1901
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
MOBILE B40L 6" AUGER	LOCATION: SEE PLAN	ELEVATION: 0.00 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Government of Yukon Transportation Engineering	LOGGED BY: G.C.	COMPLETION DEPTH: 4.5 m
	REVIEWED BY:	COMPLETE: 01/09/18
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEG 11		TEST HOLE NO: 622-1902						
ENGINEERING CAPITAL		BOCK'S BROOK		Project No: 092-202101-0361						
MOBILE B40L 6" AUGER		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)						
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE										
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	SOIL SYMBOL	◆ PERCENT SAND ◆		DEPTH (m)
				PLASTIC	M.C.			LIQUID	20	
0.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -grey -moist -rough grinding drilling from surface									0.0
1.0										1.0
2.0			1336				GP-GM			2.0
3.0										3.0
4.0			1337				GP-GM			4.0
5.0	END HOLE @ 4.5m									5.0
6.0										6.0
Government of Yukon Transportation Engineering				LOGGED BY: G.C. REVIEWED BY: Fig. No:		COMPLETION DEPTH: 4.5 m COMPLETE: 01/09/18 Page 1 of 1				

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEG 11		TEST HOLE NO: 622-1903					
ENGINEERING CAPITAL		BOCK'S BROOK		Project No: 092-202101-0361					
MOBILE B40L 6" AUGER		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)					
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN		<input checked="" type="checkbox"/> S.P.T.		<input checked="" type="checkbox"/> AUGER					
		<input type="checkbox"/> BULK		<input type="checkbox"/> TUBE					
				<input type="checkbox"/> CORE					
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	POORLY GRADED GRAVEL WITH SAND (GP) -grey -moist -rough grinding drilling from surface to 4.5m			20	40	60	80		0.0
1.0									1.0
2.0			1338					GP	2.0
3.0	-wet below 3.0m								3.0
4.0			1339					GP	4.0
5.0	END HOLE @ 4.5m								5.0
6.0									6.0

Government of Yukon
Transportation Engineering

LOGGED BY: G.C.
REVIEWED BY:
Fig. No:

COMPLETION DEPTH: 4.5 m
COMPLETE: 01/09/18

SUBSURFACE EXPLORATION & TESTING REPORT		SHAKWAK SEG 11		TEST HOLE NO: 622-1904									
ENGINEERING CAPITAL		BOCK'S BROOK		Project No: 092-202101-0361									
MOBILE B40L 6" AUGER		LOCATION: SEE PLAN		ELEVATION: 0.00 (m)									
SAMPLE TYPE		S.P.T.		AUGER									
RETURN		S.P.T.		AUGER									
BULK		TUBE		CORE									
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	SOIL SYMBOL	PERCENT SAND			PERCENT GRAVEL	DEPTH (m)
				PLASTIC	M.C.	LIQUID			20	40	60		
0.0	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM) -grey -moist -rough grinding drilling starts @ surface											0.0	
1.0												1.0	
2.0	POORLY GRADED GRAVEL WITH SAND (GP) -saturated -smooth drilling below 2.0m		1340				GP-GM					2.0	
3.0												3.0	
4.0			1341				GP					4.0	
5.0	END HOLE @ 4.5m											5.0	
6.0												6.0	

Government of Yukon
Transportation Engineering

LOGGED BY: G.C.
REVIEWED BY:
Fig. No:

COMPLETION DEPTH: 4.5 m
COMPLETE: 01/09/19

**Km 1738.8 LHS Alaska Highway
(Bocks Brook)**

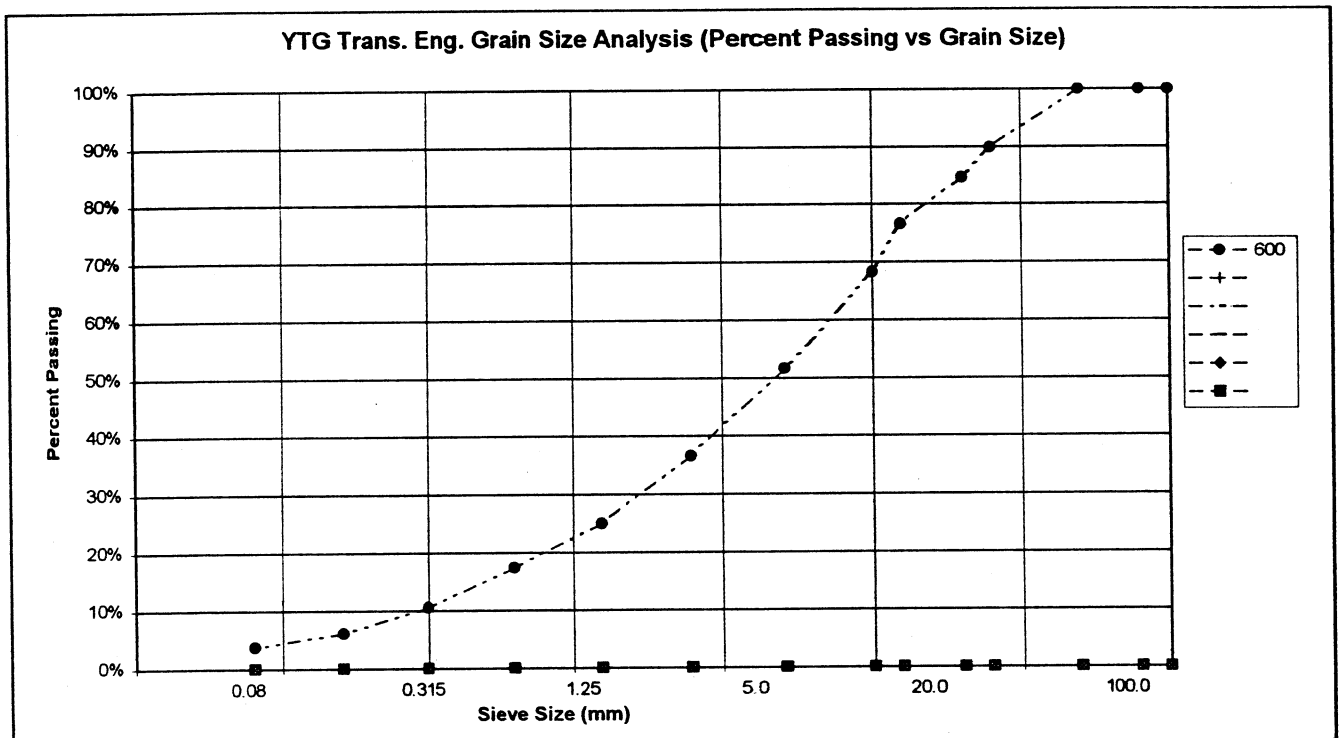
**2001
Sample Test Results**

PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Km 1729.6-1787 A/H
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: 1734+666 BK; 1738+804 AH 82m LT
 LOGGED BY: B.B.

HOLE No.: 812-344

DATE COMP: 2001/08/03

FIELD NO:	600				
LAB NO:	1347				
DEPTH:	1.3-1.5				
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING				
100.0	100%				
80.0	100%				
50.0	100%				
25.0	90%				
20.0	85%				
12.5	77%				
10.0	68%				
5.0	52%				
2.5	37%				
1.25	25%				
0.630	17%				
0.315	11%				
0.160	6%				
0.080	4%				
M.C.(%)	7%				
LIQUID LIMIT:	0.0				
PLASTIC LIMIT:	0.0				
PLASTIC INDEX:	0.0				
% GRAVEL:	48				
% SAND:	48				
% FINES:	4				
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)				

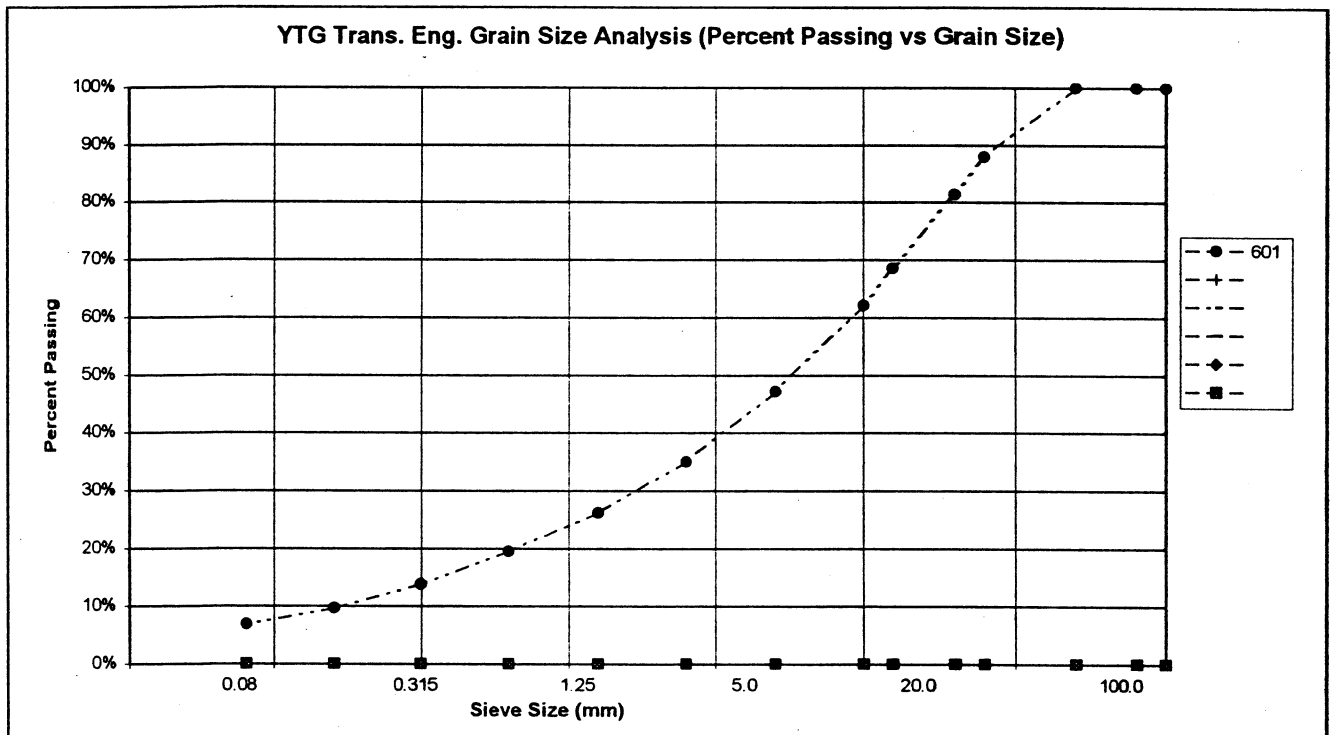


PROJECT NUMBER: 092-202101-0381-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Km 1729.6-1787 A/H
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: 1734+803 BK; 1738+741 AH 21m LT
 LOGGED BY: B.B.

HOLE No.: 612-345

DATE COMP: 2001/08/03

FIELD NO:	601				
LAB NO:	1348				
DEPTH:	1.2-1.4				
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING				
100.0	100%				
80.0	100%				
50.0	100%				
25.0	88%				
20.0	81%				
12.5	69%				
10.0	62%				
5.0	47%				
2.5	35%				
1.25	26%				
0.630	20%				
0.315	14%				
0.160	10%				
0.080	7%				
M.C.(%):	2%				
LIQUID LIMIT:	0.0				
PLASTIC LIMIT:	0.0				
PLASTIC INDEX.:	0.0				
% GRAVEL:	53				
% SAND:	40				
% FINES:	7				
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)				

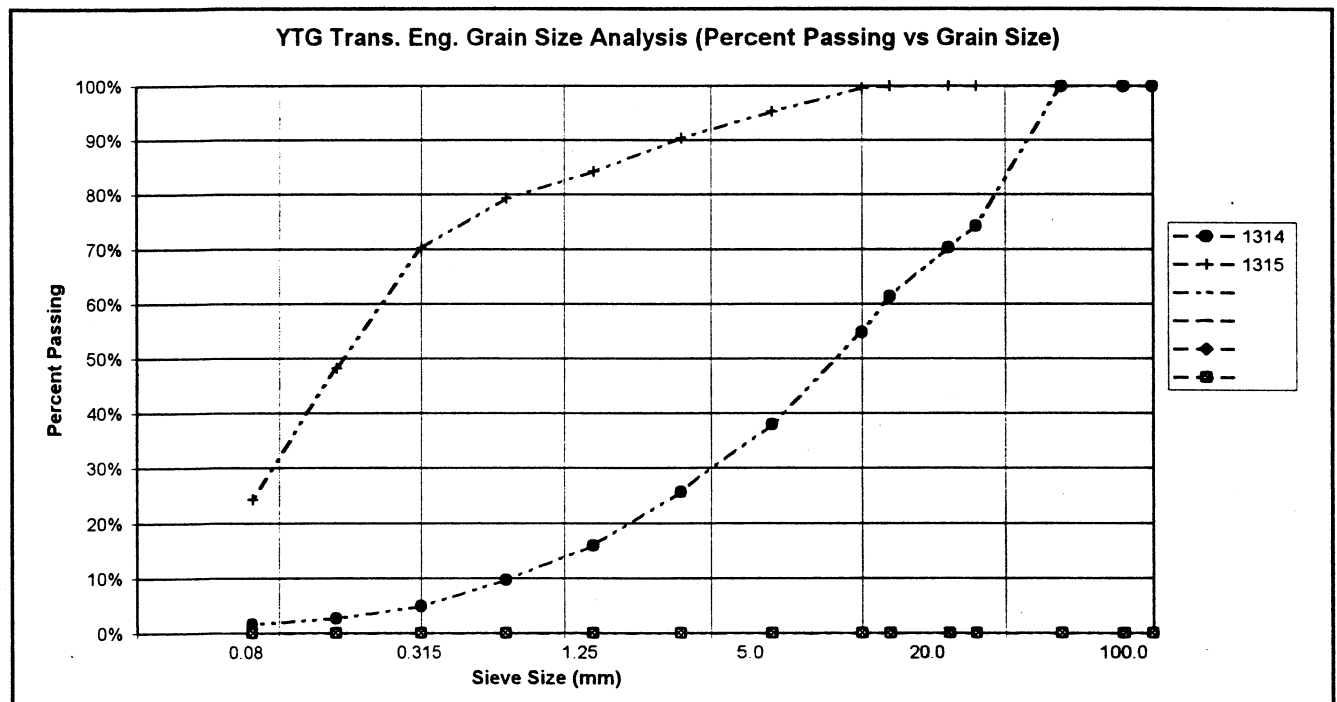


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1891

DATE COMP: 2001/09/17

FIELD NO:	1314	1315			
LAB NO:	2091	2092			
DEPTH:	1.5-2.0	3.5-4.0			
TYPE:	AUGER	AUGER	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	70%	100%			
12.5	61%	100%			
10.0	55%	100%			
5.0	38%	95%			
2.5	26%	90%			
1.25	16%	84%			
0.630	10%	79%			
0.315	5%	70%			
0.160	3%	48%			
0.080	2%	24%			
M.C.(%):	6%	15%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0			
% GRAVEL:	62	5			
% SAND:	36	71			
% FINES:	2	24			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	SILTY SAND (SM)			

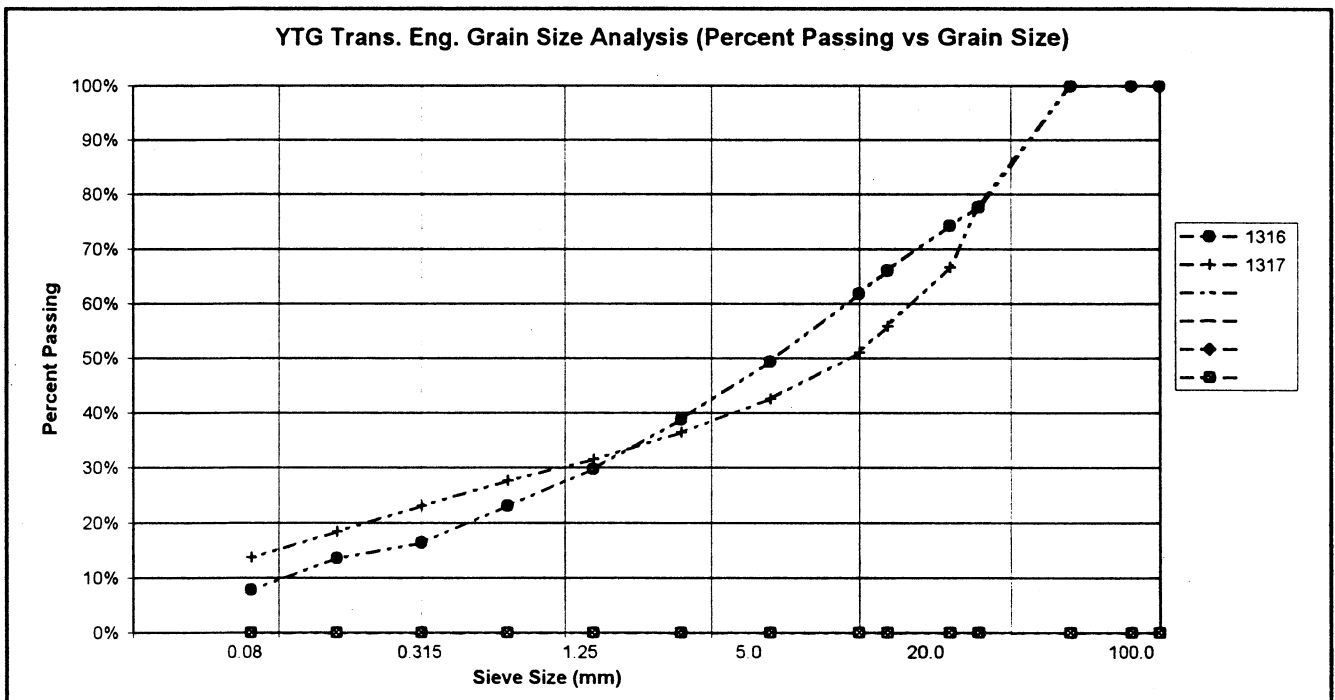


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1892

DATE COMP: 2001/09/17

FIELD NO:	1316	1317			
LAB NO:	2093	2094			
DEPTH:	1.0-1.5	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	100%			
25.0	78%	78%			
20.0	74%	67%			
12.5	66%	56%			
10.0	62%	51%			
5.0	49%	43%			
2.5	39%	37%			
1.25	30%	32%			
0.630	23%	28%			
0.315	16%	23%			
0.160	14%	18%			
0.080	8%	14%			
M.C.(%):	5%	12%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0			
% GRAVEL:	51	57			
% SAND:	42	29			
% FINES:	8	14			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY GRAVEL WITH SAND (GM)			



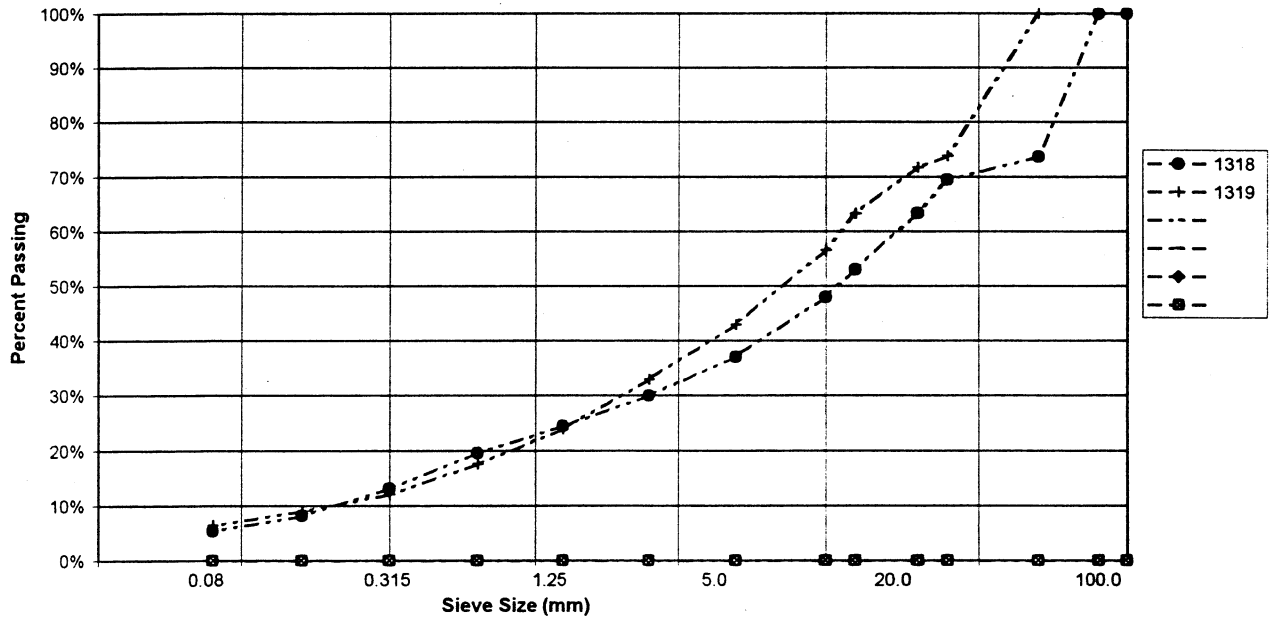
PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1893

DATE COMP: 2001/09/17

FIELD NO:	1318	1319			
LAB NO:	2095	2096			
DEPTH:	0.6-1.2	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	74%	100%			
25.0	69%	74%			
20.0	63%	72%			
12.5	53%	63%			
10.0	48%	57%			
5.0	37%	43%			
2.5	30%	33%			
1.25	25%	24%			
0.630	20%	18%			
0.315	13%	12%			
0.160	8%	9%			
0.080	5%	6%			
M.C.(%)	3%	4%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX:	0.0	0.0			
% GRAVEL:	63	57			
% SAND:	32	37			
% FINES:	5	6			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)

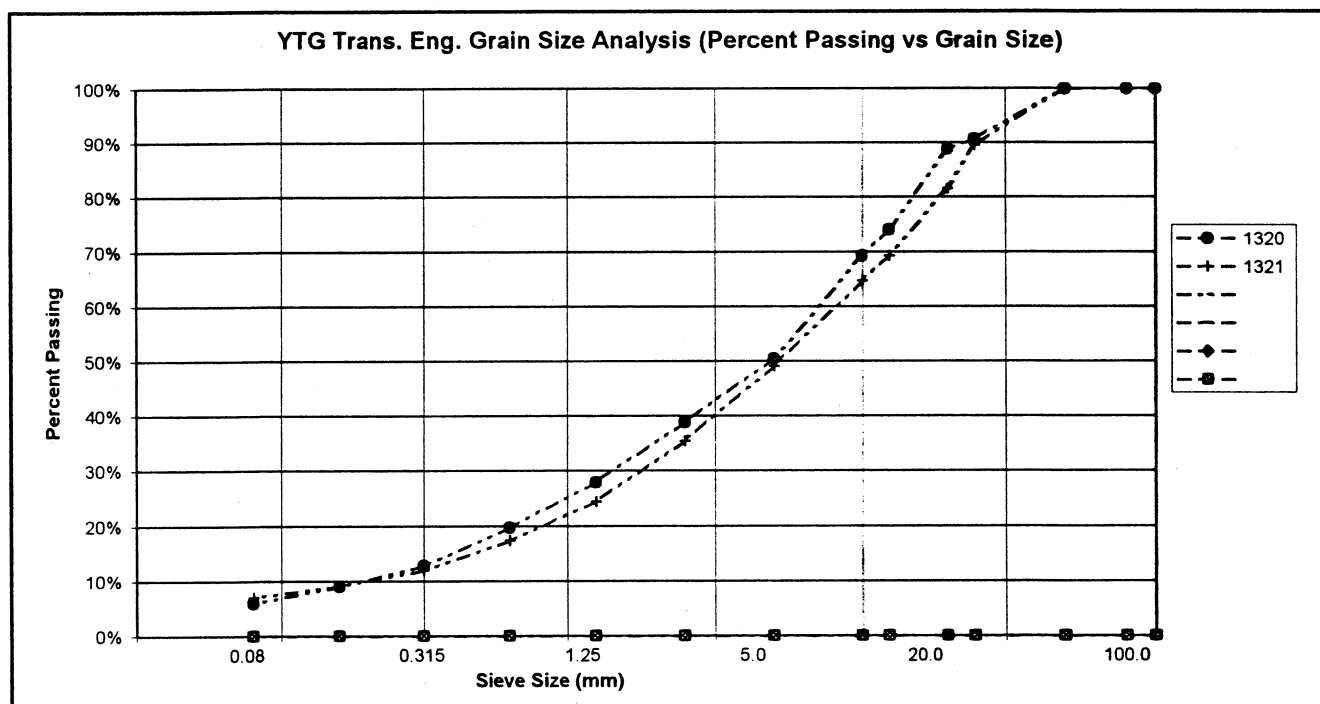


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1894

DATE COMP: 2001/09/17

FIELD NO:	1320	1321			
LAB NO:	2097	2098			
DEPTH:	1.0-2.0	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	100%			
25.0	91%	90%			
20.0	89%	82%			
12.5	74%	69%			
10.0	69%	65%			
5.0	50%	49%			
2.5	39%	35%			
1.25	28%	24%			
0.630	20%	17%			
0.315	13%	12%			
0.160	9%	9%			
0.080	6%	7%			
M.C.(%)	3%	4%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX:	0.0	0.0			
% GRAVEL:	50	51			
% SAND:	44	42			
% FINES:	6	7			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			



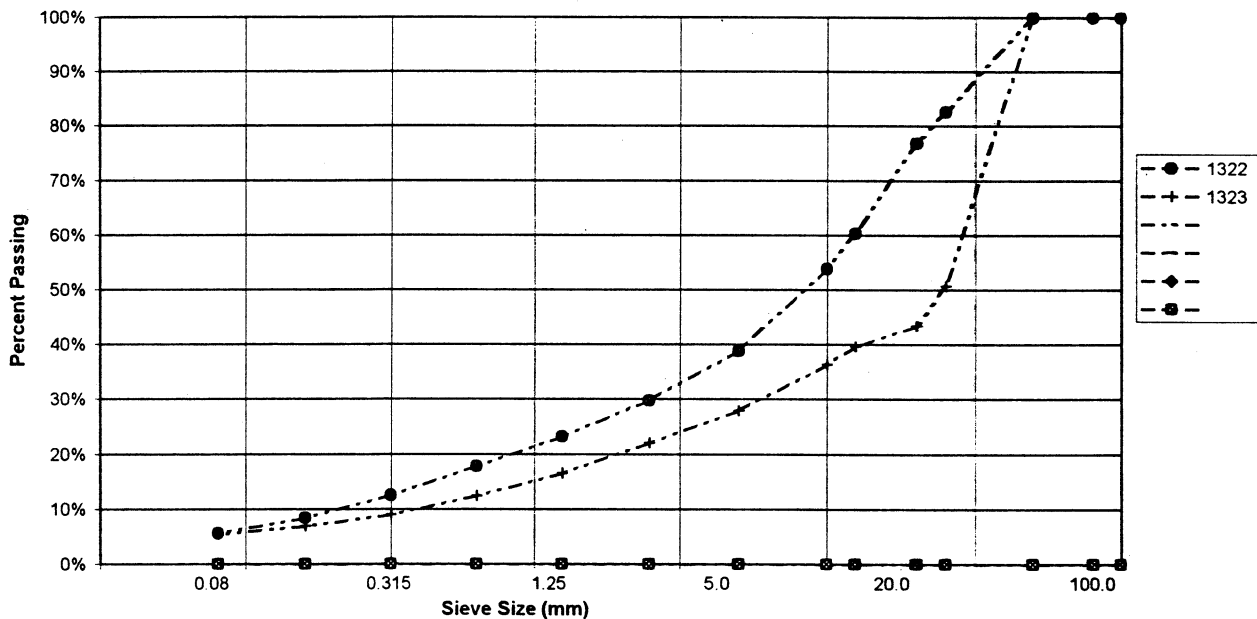
OBJECT NUMBER: 092-202101-0361-1
 ENT: ENGINEERING CAPITAL
 OBJECT NAME: SHAKWAK SEG 11
 OBJECT LOCATION: Bock's Brook
 BILL UNIT: MOBILE B40 L
 FIELD LOCATION: See Testhole Log Sheet
 DRILLED BY: G.C.

HOLE No.: 622-1895

DATE COMP: 2001/09/17

FIELD NO:	1322	1323			
LAB NO:	2099	2100			
DEPTH:	1.0-2.0	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	100%			
25.0	83%	51%			
20.0	77%	43%			
12.5	60%	40%			
10.0	54%	36%			
5.0	39%	28%			
2.5	30%	22%			
1.25	23%	17%			
0.630	18%	12%			
0.315	13%	9%			
0.160	9%	7%			
0.080	6%	5%			
M.C.(%):	3%	3%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX:	0.0	0.0			
% GRAVEL:	61	72			
% SAND:	33	23			
% FINES:	6	5			
CLASSIFICATION	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)	WELL-GRADED GRAVEL WITH SILT & SAND (GW-GM)			

YTG Trans. Eng. Grain Size Analysis (Percent Passing vs Grain Size)

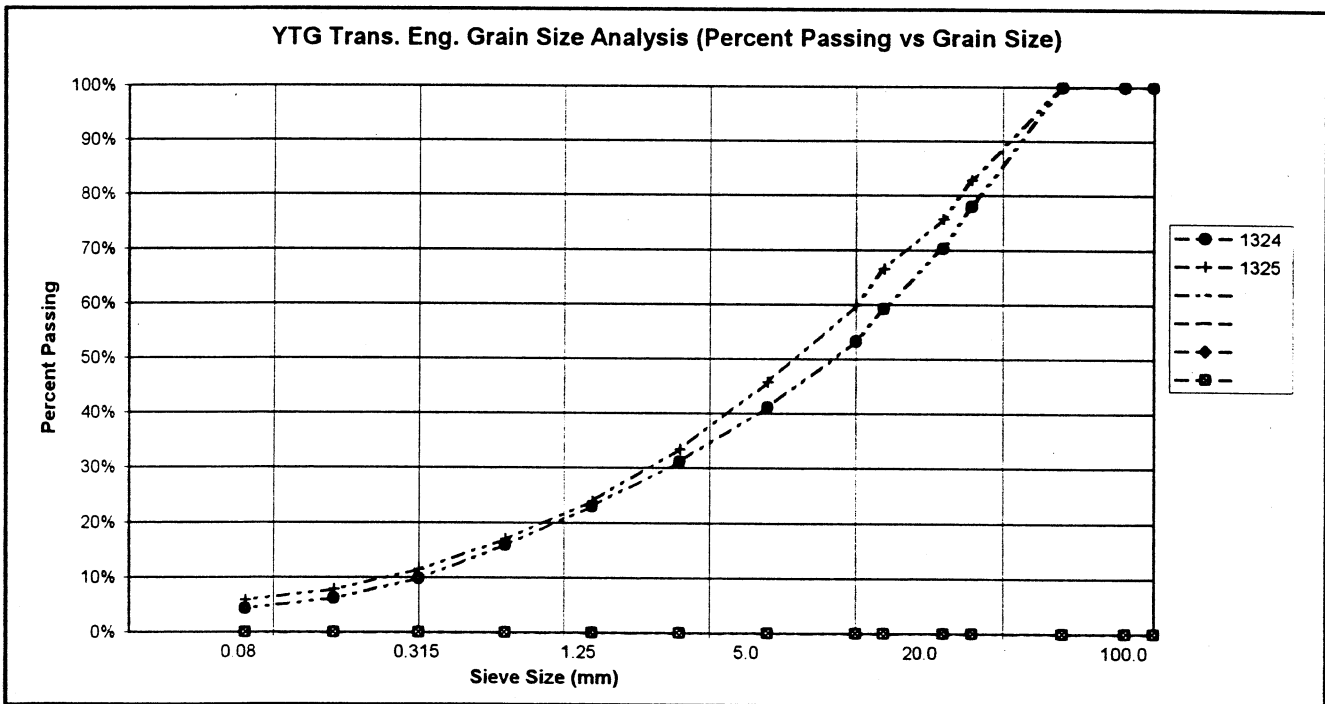


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1886

DATE COMP: 2001/09/17

FIELD NO:	1324	1325			
LAB NO:	2101	2102			
DEPTH:	1.0-2.0	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	100%			
25.0	78%	83%			
20.0	70%	76%			
12.5	59%	67%			
10.0	53%	60%			
5.0	41%	46%			
2.5	31%	33%			
1.25	23%	24%			
0.630	16%	17%			
0.315	10%	11%			
0.160	6%	8%			
0.080	4%	6%			
M.C.(%):	3%	3%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0			
% GRAVEL:	59	54			
% SAND:	37	40			
% FINES:	4	6			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

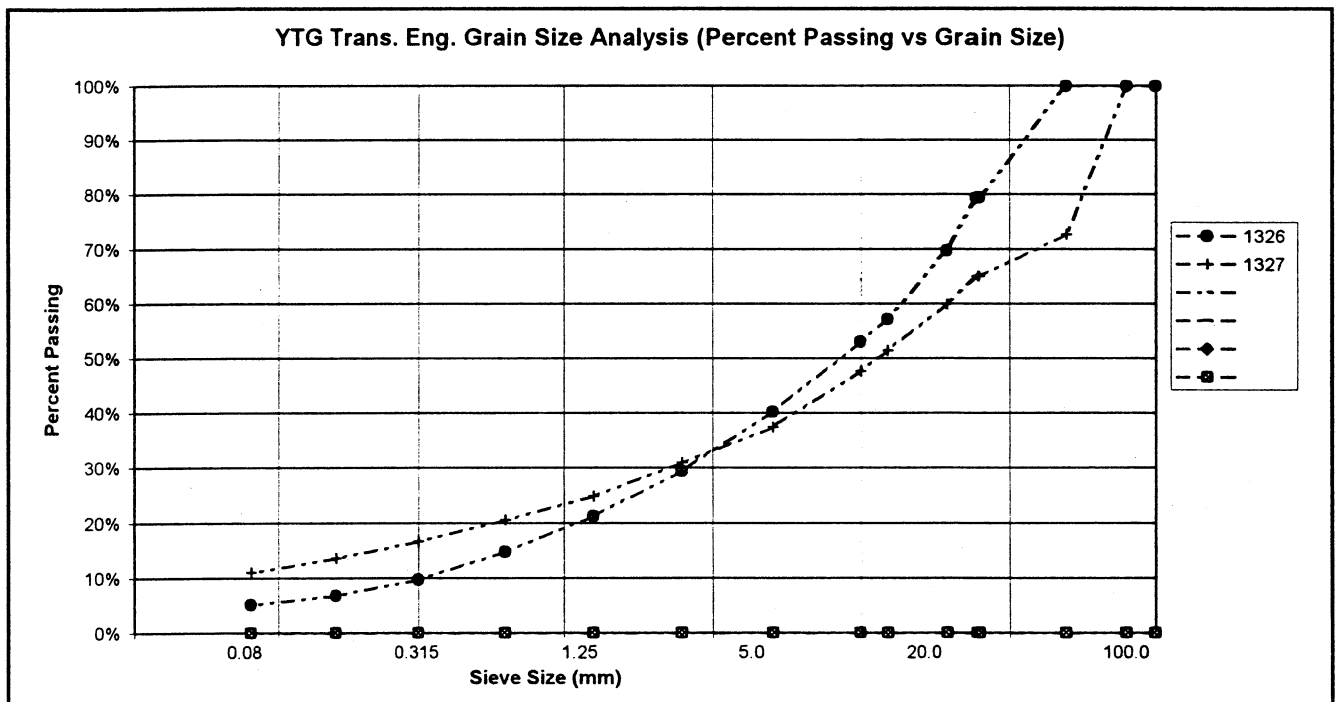


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1897

DATE COMP: 2001/09/17

FIELD NO:	1326	1327			
LAB NO:	2103	2104			
DEPTH:	1.0-2.0	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	73%			
25.0	79%	65%			
20.0	70%	60%			
12.5	57%	51%			
10.0	53%	48%			
5.0	40%	37%			
2.5	29%	31%			
1.25	21%	25%			
0.630	15%	21%			
0.315	10%	17%			
0.160	7%	14%			
0.080	5%	11%			
M.C.(%)	4%	9%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0			
% GRAVEL:	60	63			
% SAND:	35	26			
% FINES:	5	11			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

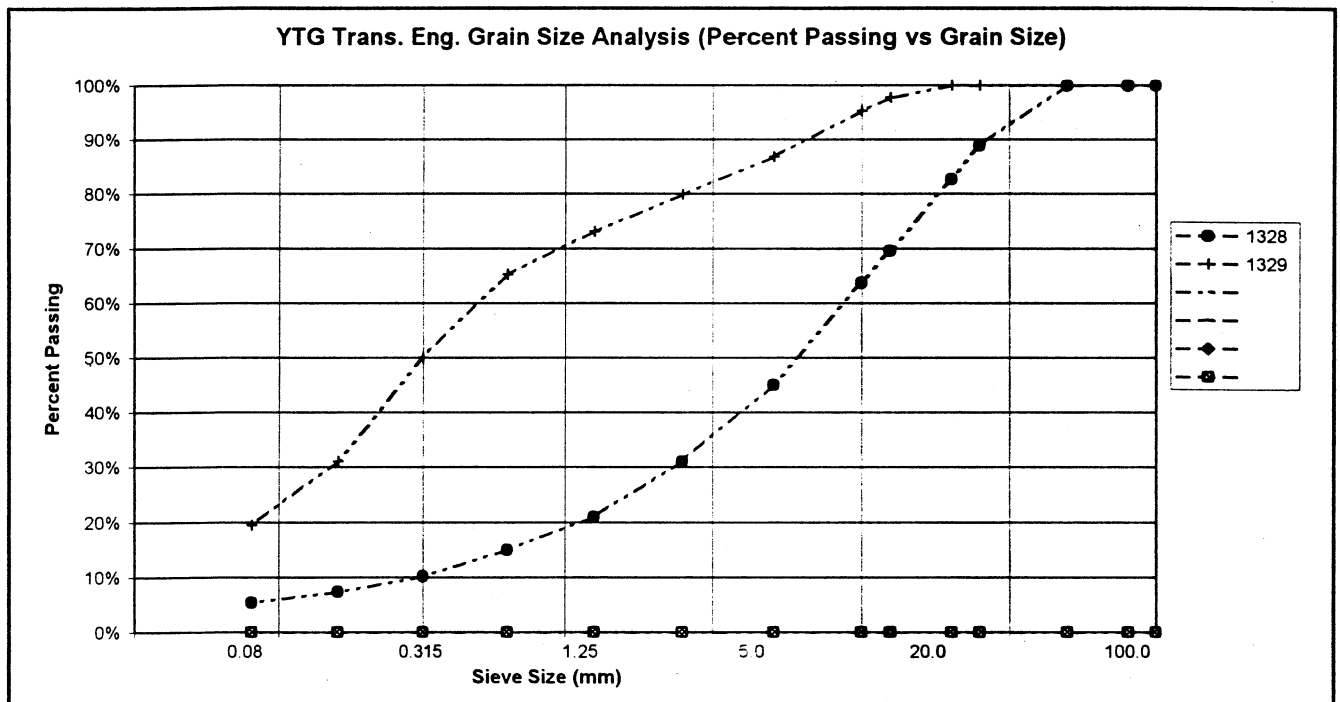


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1898

DATE COMP: 2001/09/17

FIELD NO:	1328	1329			
LAB NO:	2105	2106			
DEPTH:	1.0-2.0	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	100%			
25.0	89%	100%			
20.0	83%	100%			
12.5	70%	98%			
10.0	64%	95%			
5.0	45%	87%			
2.5	31%	80%			
1.25	21%	73%			
0.630	15%	65%			
0.315	10%	50%			
0.160	7%	31%			
0.080	5%	19%			
M.C.(%)	3%	14%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX:	0.0	0.0			
% GRAVEL:	55	13			
% SAND:	40	67			
% FINES:	5	19			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	SILTY SAND (SM)			

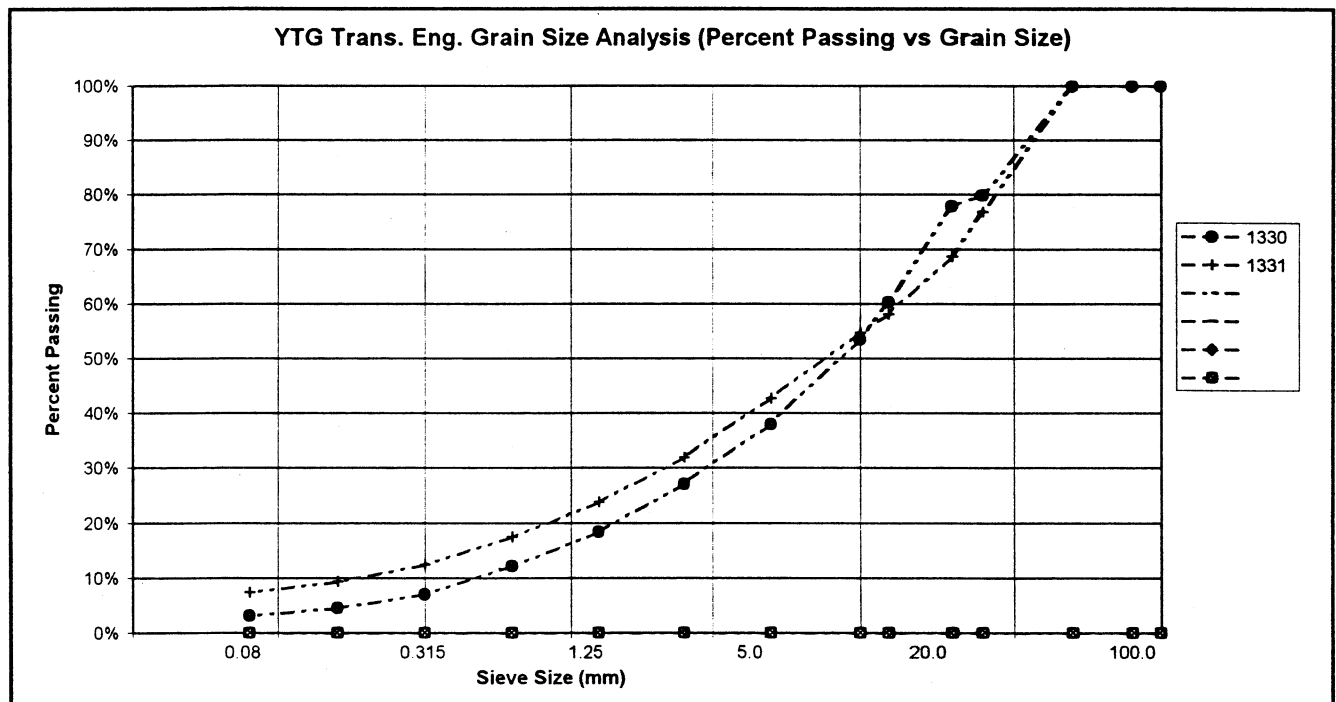


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1888

DATE COMP: 2001/09/17

FIELD NO:	1330	1331			
LAB NO:	2107	2108			
DEPTH:	1.0-2.0	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	100%			
25.0	80%	77%			
20.0	78%	69%			
12.5	60%	58%			
10.0	53%	55%			
5.0	38%	43%			
2.5	27%	32%			
1.25	18%	24%			
0.630	12%	18%			
0.315	7%	12%			
0.160	5%	9%			
0.080	3%	7%			
M.C.(%):	3%	3%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0			
% GRAVEL:	62	57			
% SAND:	35	35			
% FINES:	3	7			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

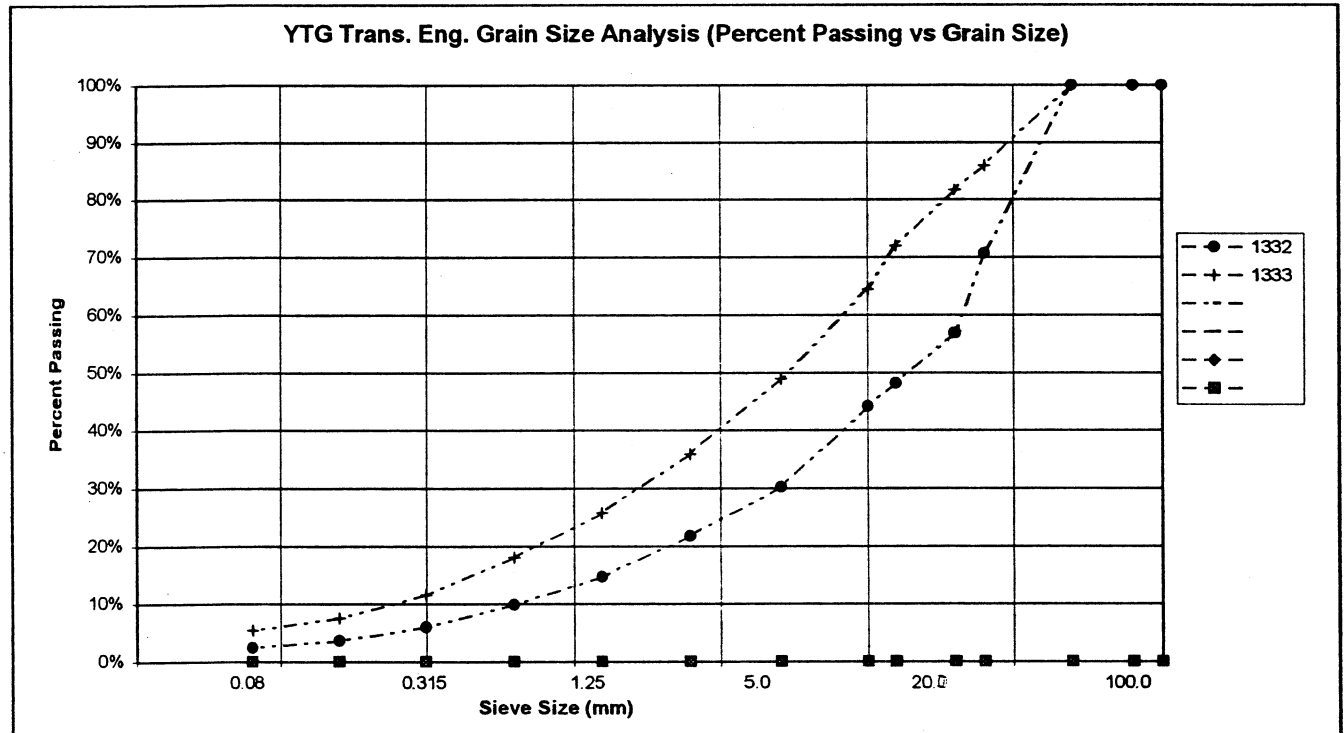


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1900

DATE COMP: 2001/09/17

FIELD NO:	1332	1333			
LAB NO:	2109	2110			
DEPTH:	1.0-2.0	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	100%			
25.0	71%	86%			
20.0	57%	82%			
12.5	48%	72%			
10.0	44%	64%			
5.0	30%	49%			
2.5	22%	36%			
1.25	15%	26%			
0.630	10%	18%			
0.315	6%	12%			
0.160	4%	8%			
0.080	2%	5%			
M.C.(%):	3%	3%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0			
% GRAVEL:	70	51			
% SAND:	28	43			
% FINES:	2	5			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

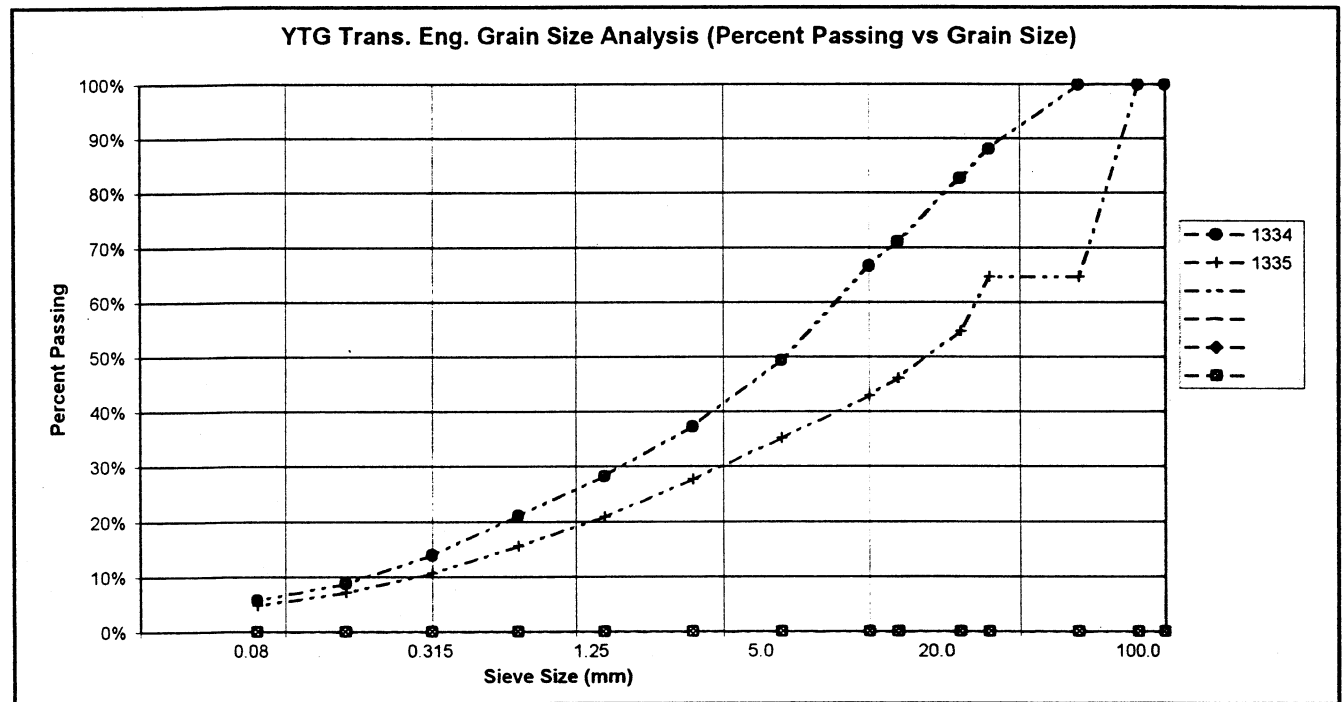


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1901

DATE COMP: 2001/09/17

FIELD NO:	1334	1335			
LAB NO:	2111	2112			
DEPTH:	1.0-2.0	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	65%			
25.0	88%	65%			
20.0	83%	55%			
12.5	71%	46%			
10.0	67%	43%			
5.0	49%	35%			
2.5	37%	28%			
1.25	28%	21%			
0.630	21%	16%			
0.315	14%	11%			
0.160	9%	7%			
0.080	6%	5%			
M.C.(%)	3%	3%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX:	0.0	0.0			
% GRAVEL:	51	65			
% SAND:	44	30			
% FINES:	6	5			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SAND (GP)			

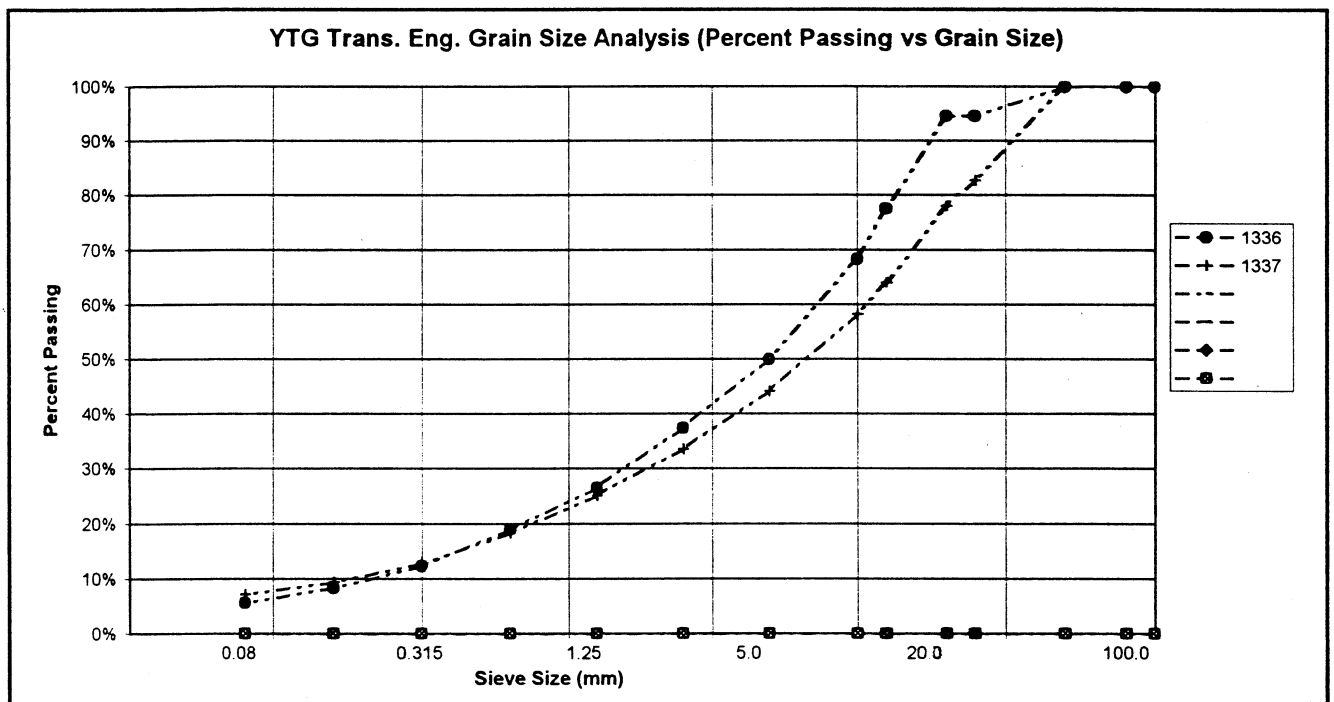


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1902

DATE COMP: 2001/09/17

FIELD NO:	1336	1337			
LAB NO:	2113	2114			
DEPTH:	1.0-2.0	1.0-1.2			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	100%			
25.0	95%	83%			
20.0	95%	78%			
12.5	78%	64%			
10.0	68%	58%			
5.0	50%	44%			
2.5	37%	34%			
1.25	27%	25%			
0.630	19%	18%			
0.315	12%	13%			
0.160	8%	9%			
0.080	6%	7%			
M.C.(%)	3%	4%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX:	0.0	0.0			
% GRAVEL:	50	56			
% SAND:	44	37			
% FINES:	6	7			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)			

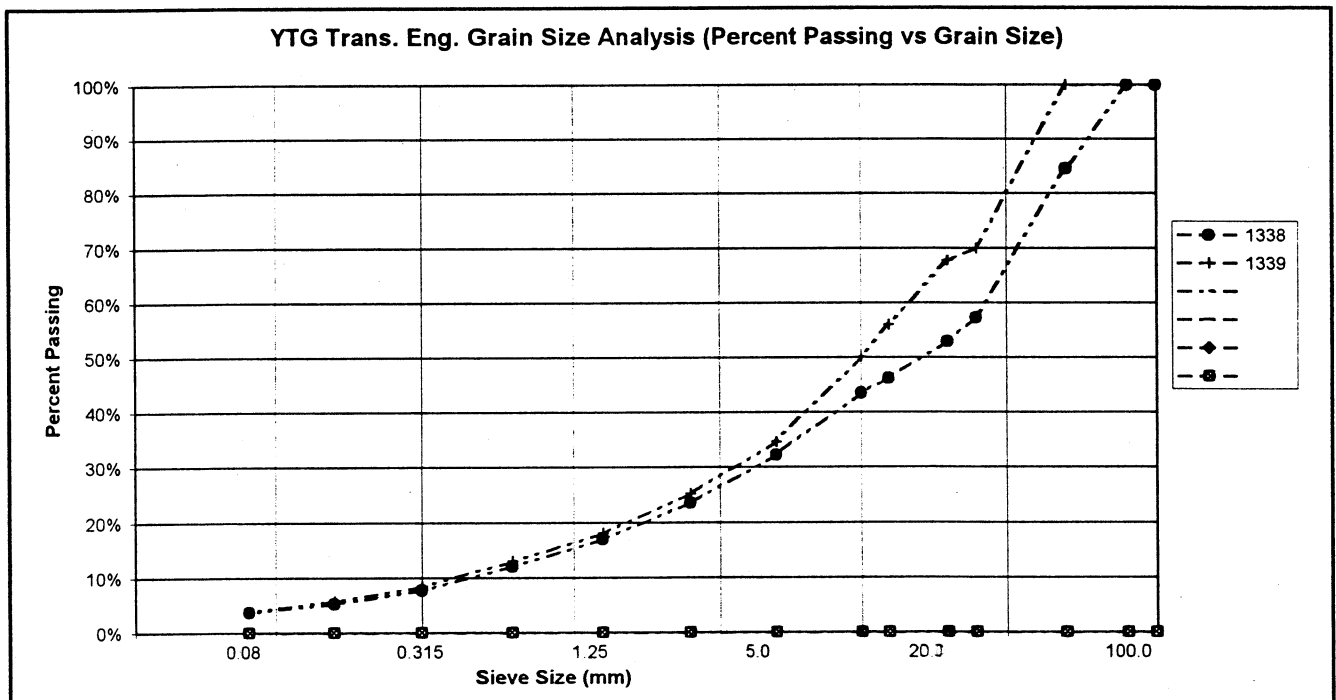


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1903

DATE COMP: 2001/09/17

FIELD NO:	1338	1339			
LAB NO:	2115	2116			
DEPTH:	1.0-2.0	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	85%	100%			
25.0	57%	70%			
20.0	53%	68%			
12.5	46%	56%			
10.0	44%	50%			
5.0	32%	35%			
2.5	24%	25%			
1.25	17%	18%			
0.630	12%	13%			
0.315	8%	8%			
0.160	5%	6%			
0.080	4%	4%			
M.C.(%)	4%	4%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX.:	0.0	0.0			
% GRAVEL:	68	65			
% SAND:	28	31			
% FINES:	4	4			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)			

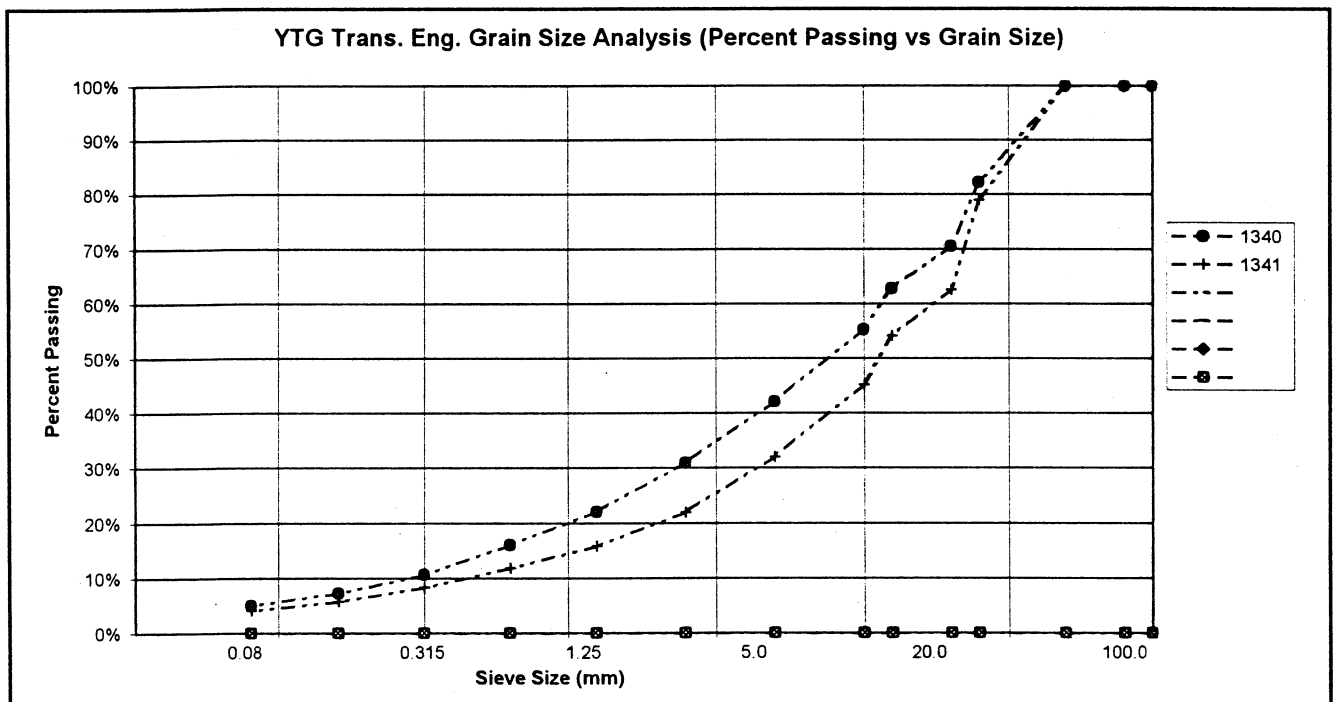


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: Bock's Brook
 DRILL UNIT: MOBILE B40 L
 HOLE LOCATION: See Testhole Log Sheet
 LOGGED BY: G.C.

HOLE No.: 622-1904

DATE COMP: 2001/09/17

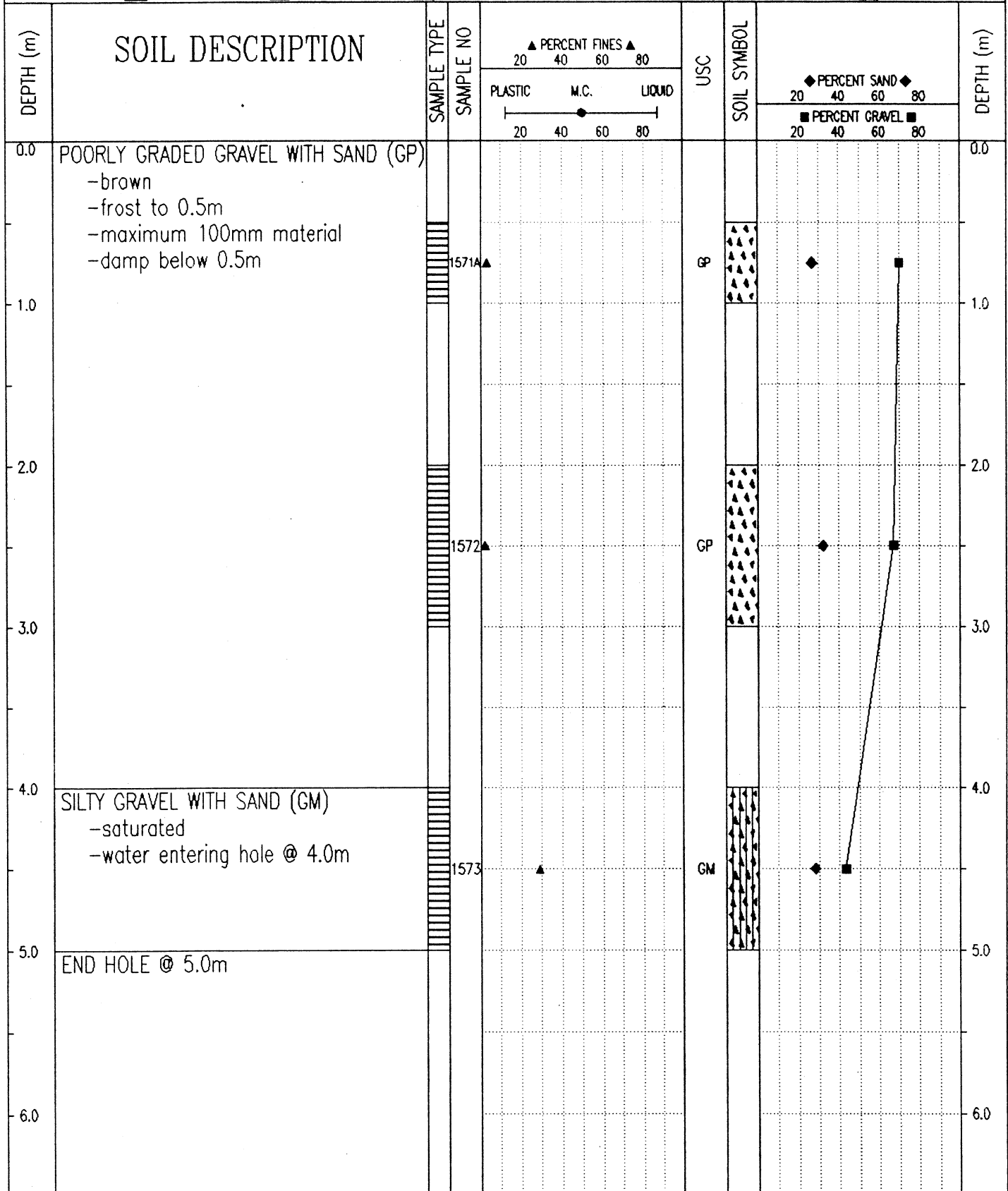
FIELD NO:	1340	1341			
LAB NO:	2117	2118			
DEPTH:	1.0-2.0	3.5-4.5			
TYPE:	AUGER	AUGER	AUGER	AUGER	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING			
100.0	100%	100%			
80.0	100%	100%			
50.0	100%	100%			
25.0	82%	79%			
20.0	70%	63%			
12.5	63%	54%			
10.0	55%	45%			
5.0	42%	32%			
2.5	31%	22%			
1.25	22%	16%			
0.630	16%	12%			
0.315	11%	8%			
0.160	7%	6%			
0.080	5%	4%			
M.C.(%)	4%	8%			
LIQUID LIMIT:	0.0	0.0			
PLASTIC LIMIT:	0.0	0.0			
PLASTIC INDEX:	0.0	0.0			
% GRAVEL:	58	68			
% SAND:	37	28			
% FINES:	5	4			
CLASSIFICATION	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SAND (GP)			



**Km 1738.8 LHS Alaska Highway
(Bocks Brook)**

**2001
Test Pit Logs**

SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1699
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6789790N / 620871E	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE	



Government of Yukon
Transportation Engineering

LOGGED BY: G.C.

COMPLETION DEPTH: 5.0 m

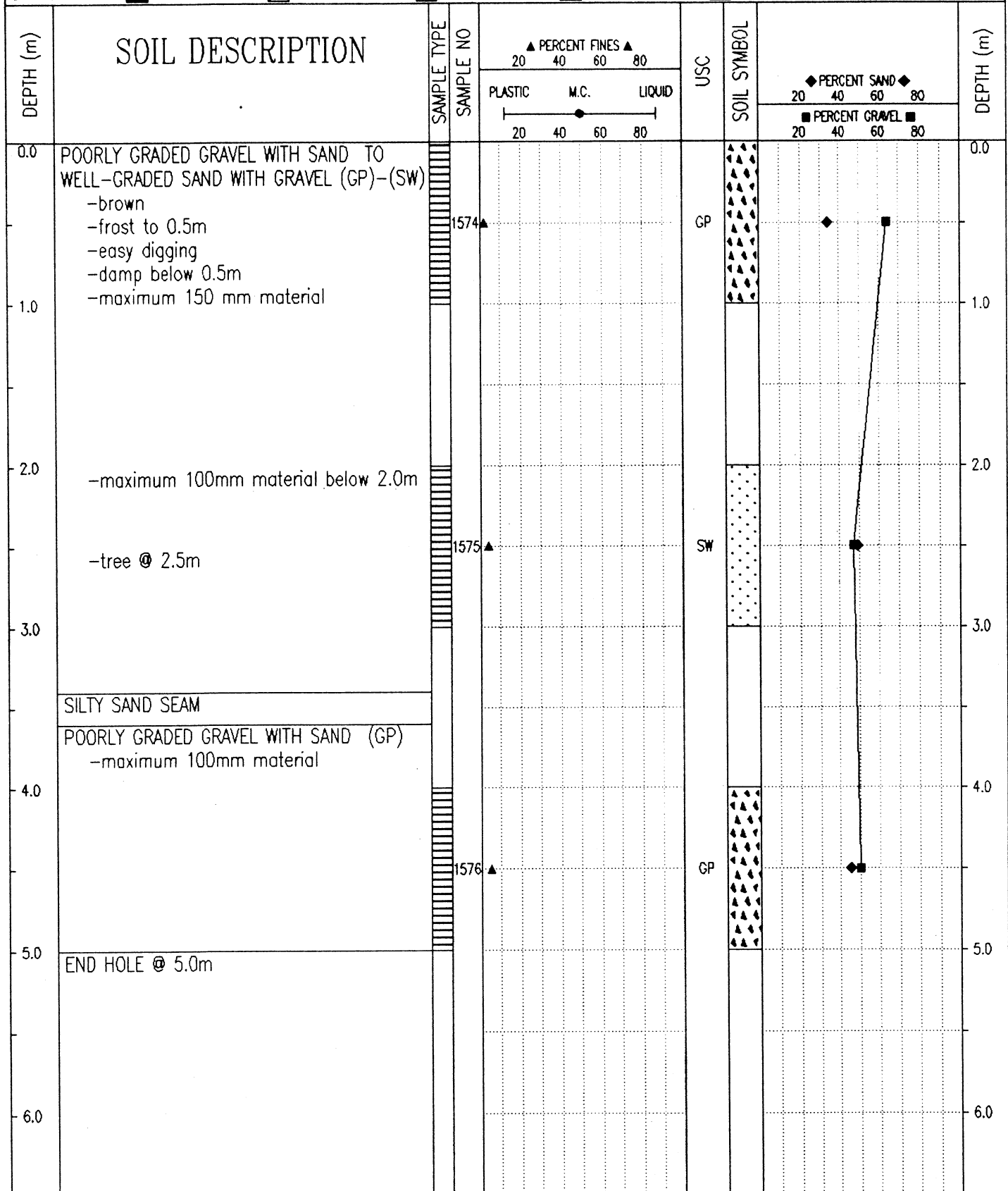
REVIEWED BY:

COMPLETE: 01/11/19

Fig. No:

Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1700
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6789631N / 620740E	ELEVATION: 0.00 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Government of Yukon
Transportation Engineering

LOGGED BY: G.C.

COMPLETION DEPTH: 5.0 m

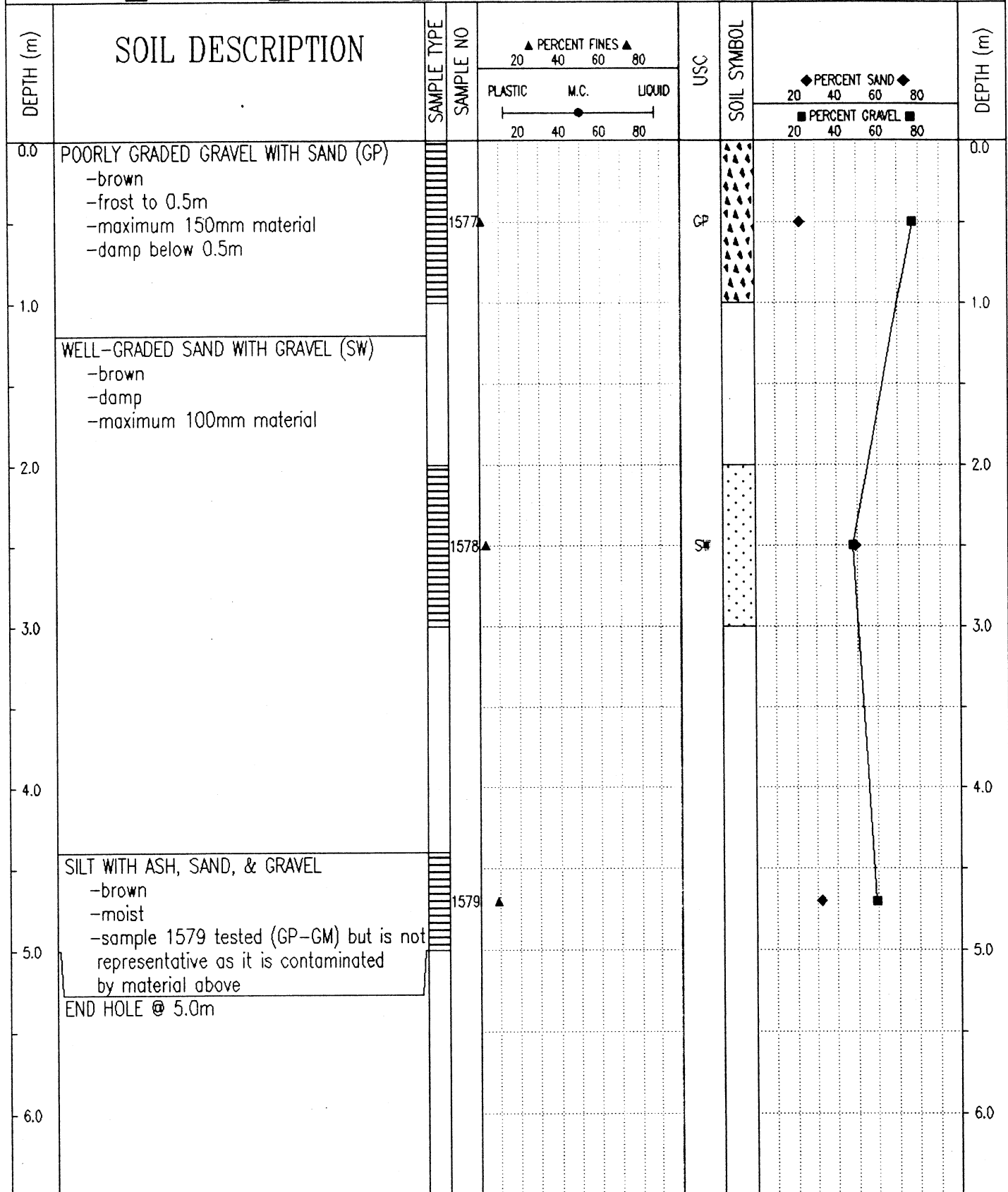
REVIEWED BY:

COMPLETE: 01/11/19

Fig. No:

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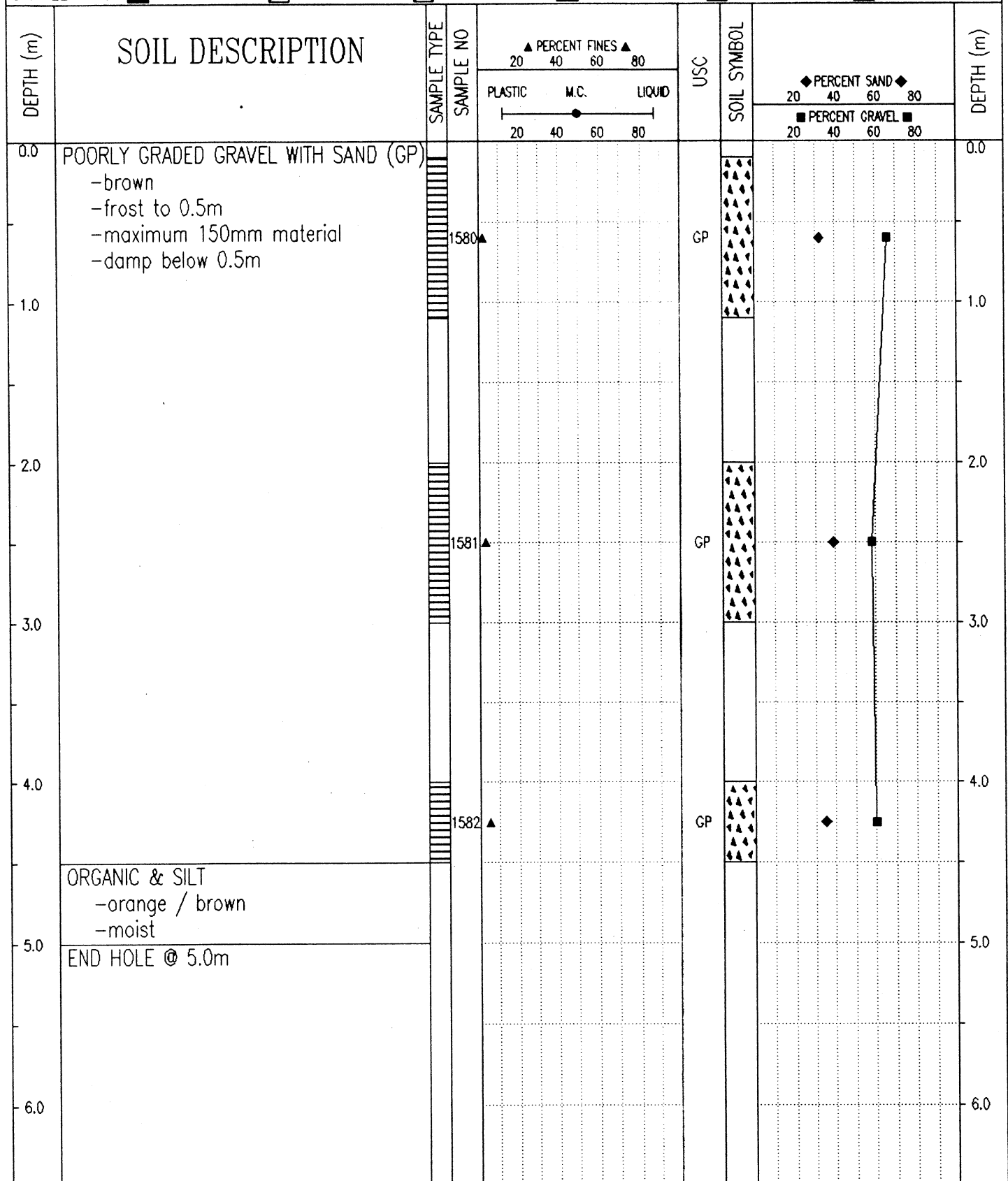
SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1701
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6789499N / 620642E	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE	



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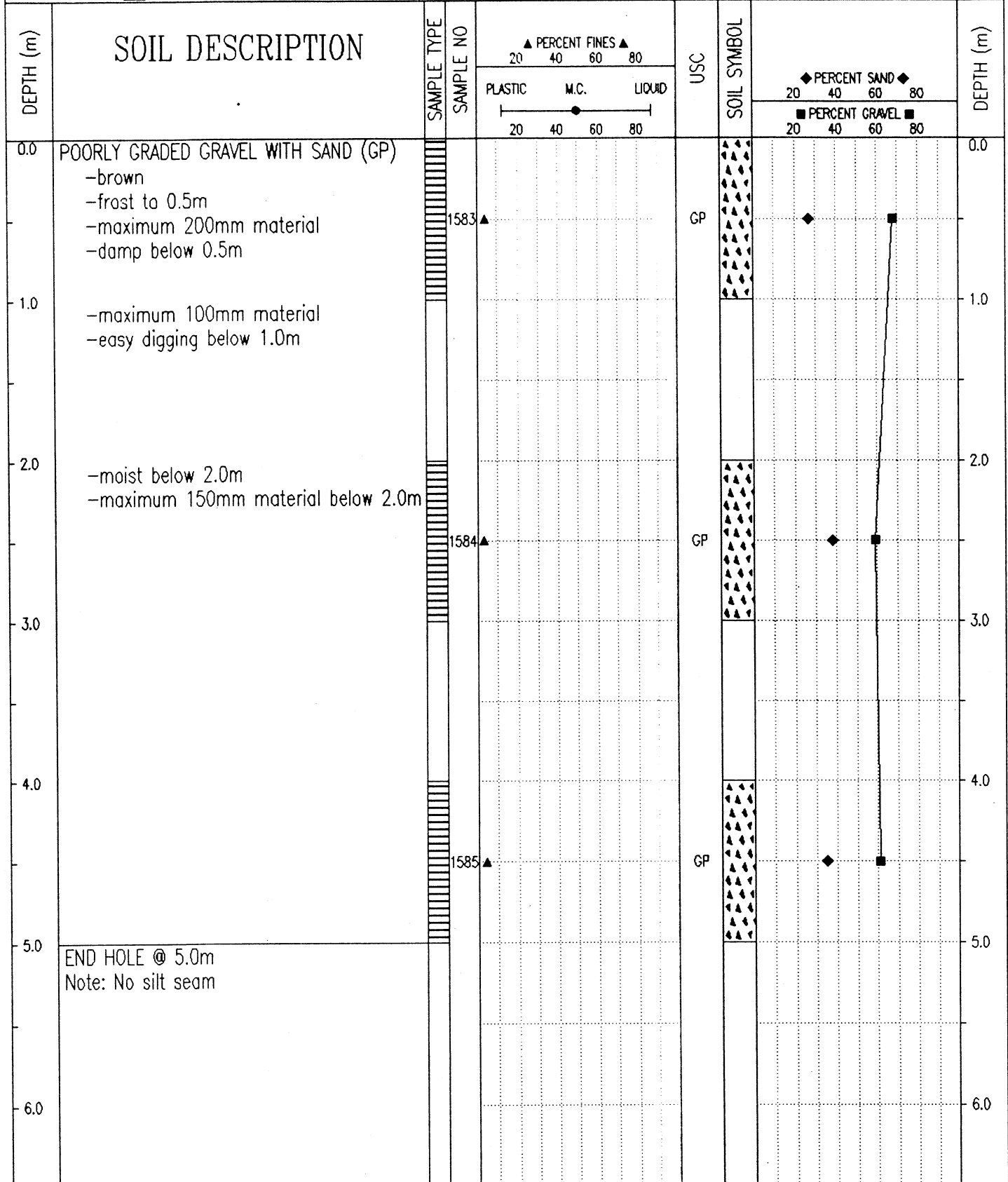
LOGGED BY: G.C.	COMPLETION DEPTH: 5.0 m
REVIEWED BY:	COMPLETE: 01/11/19
Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1702
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6789353N / 620538E	ELEVATION: 0.00 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN	<input checked="" type="checkbox"/> S.P.T.	<input checked="" type="checkbox"/> AUGER
	<input type="checkbox"/> BULK	<input type="checkbox"/> TUBE
		<input type="checkbox"/> CORE



Government of Yukon Transportation Engineering	LOGGED BY: G.C.	COMPLETION DEPTH: 5.0 m
	REVIEWED BY:	COMPLETE: 01/11/19
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1703
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6789203N / 620435E	ELEVATION: 0.00 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Government of Yukon
Transportation Engineering

LOGGED BY: G.C.

COMPLETION DEPTH: 5.0 m

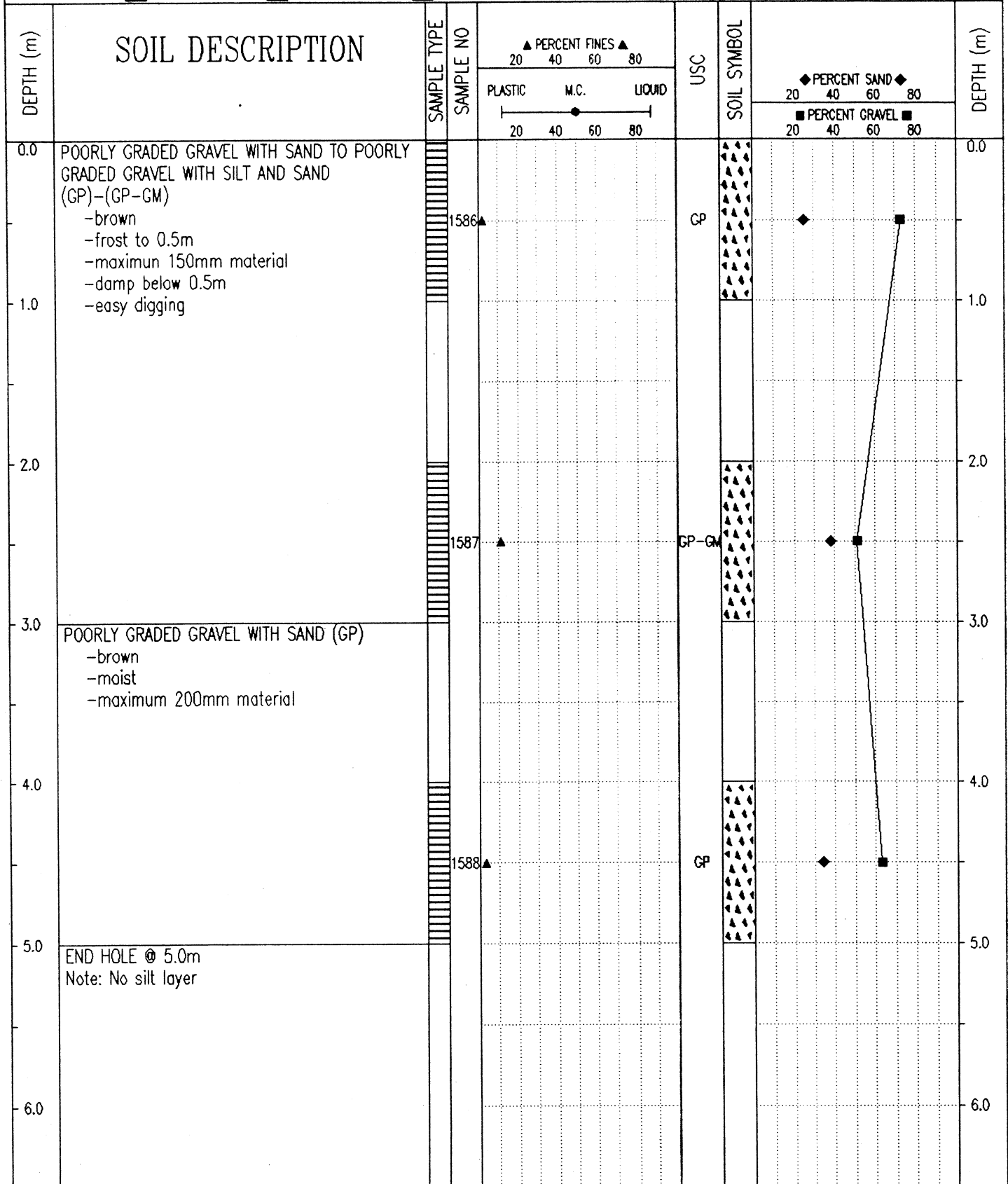
REVIEWED BY:

COMPLETE: 01/11/19

Fig. No:

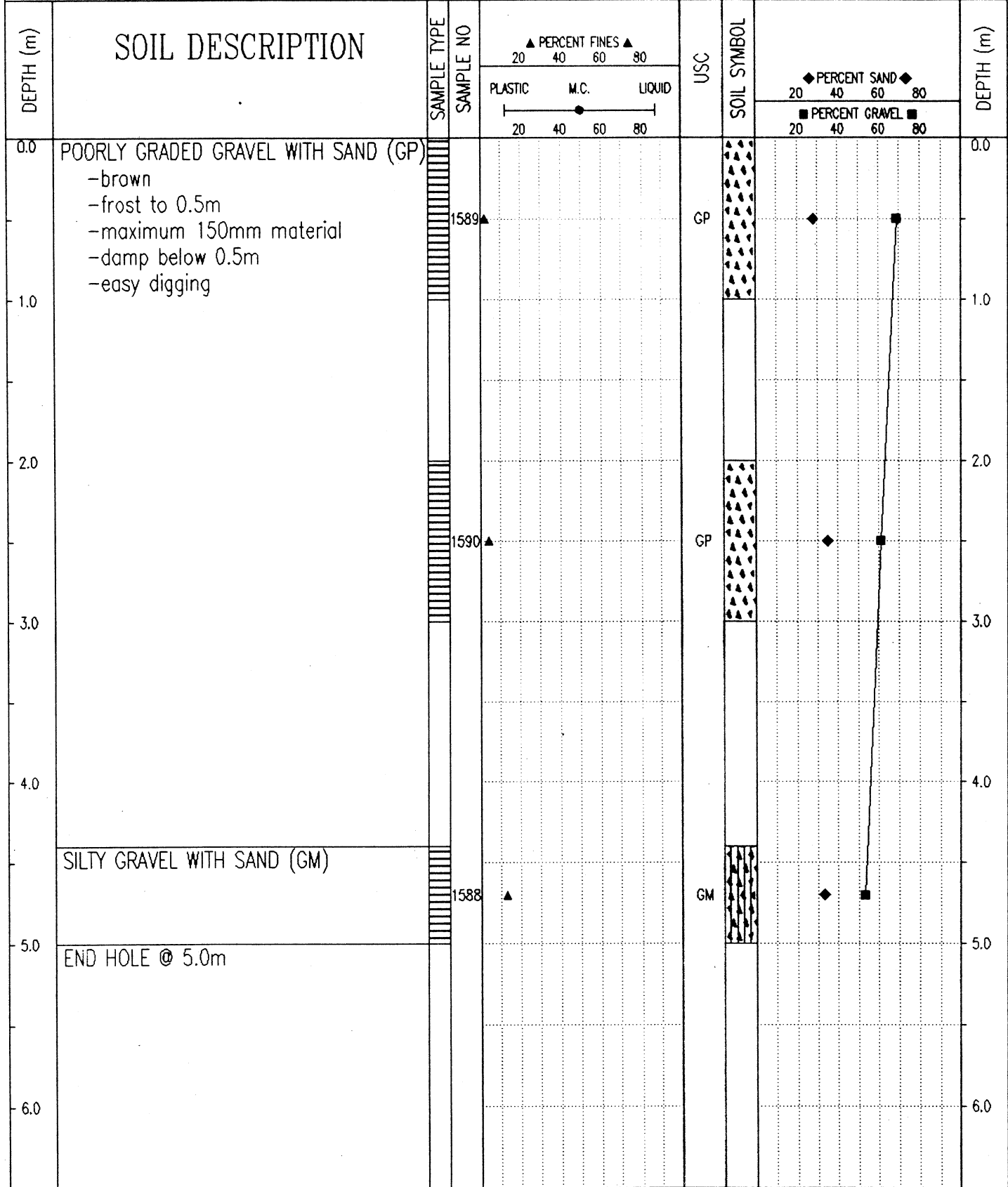
Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1704
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6789113N / 620362E	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input checked="" type="checkbox"/> RETURN	<input checked="" type="checkbox"/> S.P.T.
	<input checked="" type="checkbox"/> AUGER	<input type="checkbox"/> BULK
	<input type="checkbox"/> TUBE	<input type="checkbox"/> CORE



Government of Yukon Transportation Engineering	LOGGED BY: G.C. REVIEWED BY: Fig. No:	COMPLETION DEPTH: 5.0 m COMPLETE: 01/11/19 Page 1 of 1
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SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1705
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6788960N / 620275E	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE	

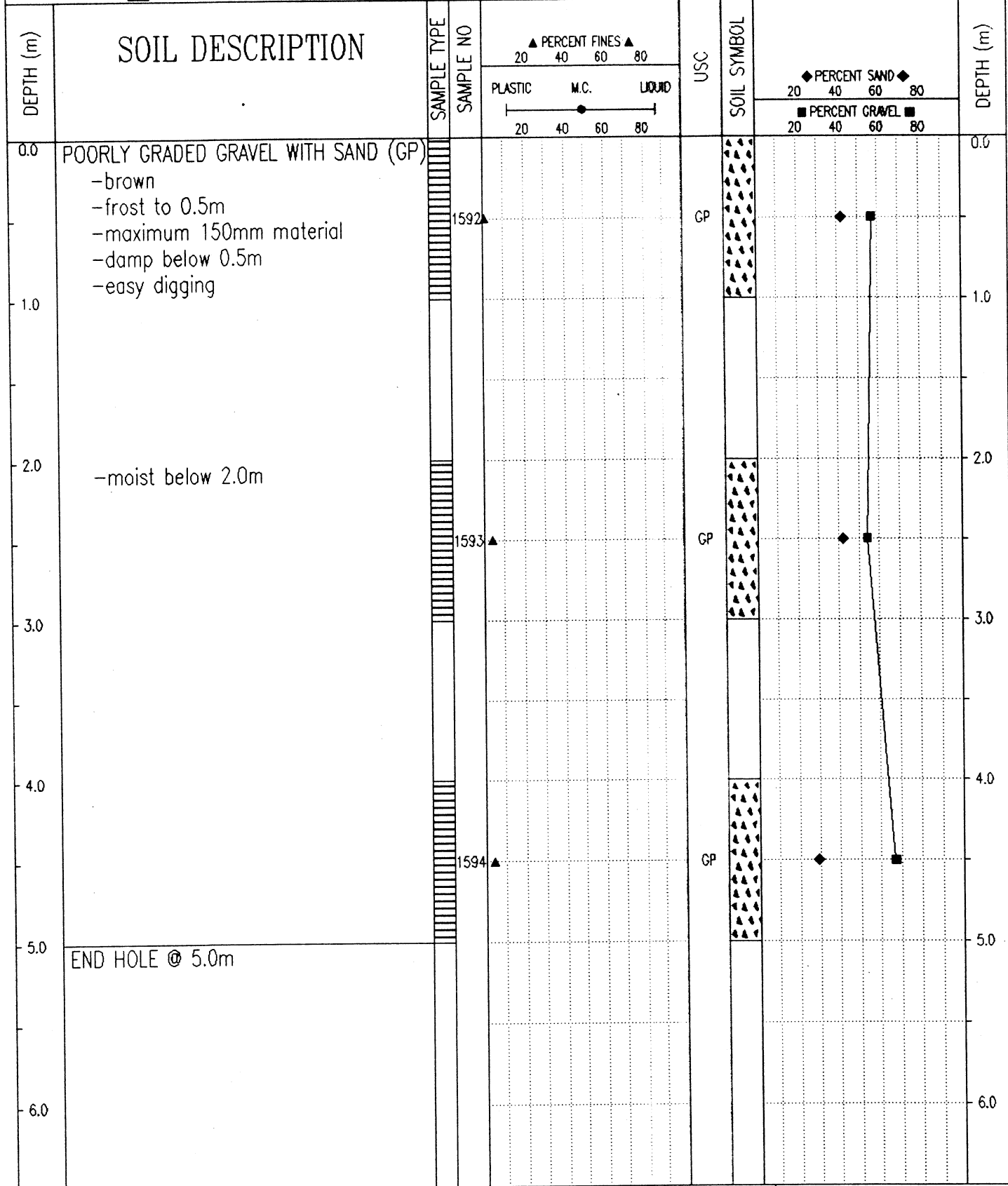


Government of Yukon
Transportation Engineering

LOGGED BY: G.C.
REVIEWED BY:
Fig. No:

COMPLETION DEPTH: 5.0 m
COMPLETE: 01/11/19

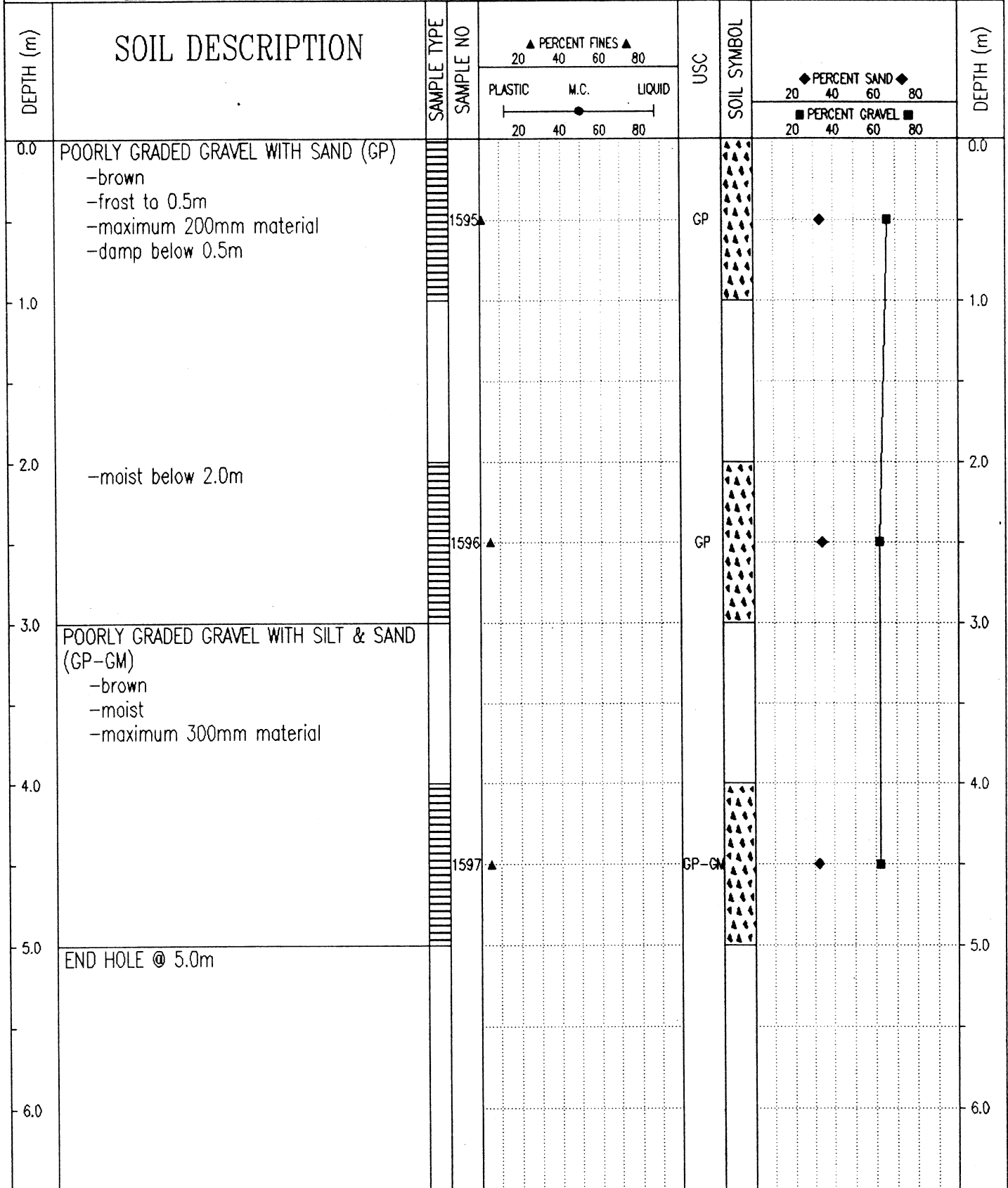
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ENGINEERING CAPITAL		BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR		LOCATION: 6788843N / 620185E	ELEVATION: 0.00 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE			



Government of Yukon
Transportation Engineering

LOGGED BY: G.C.	COMPLETION DEPTH: 5.0 m
REVIEWED BY:	COMPLETE: 01/11/19
Fig. No:	Page 1 of 1

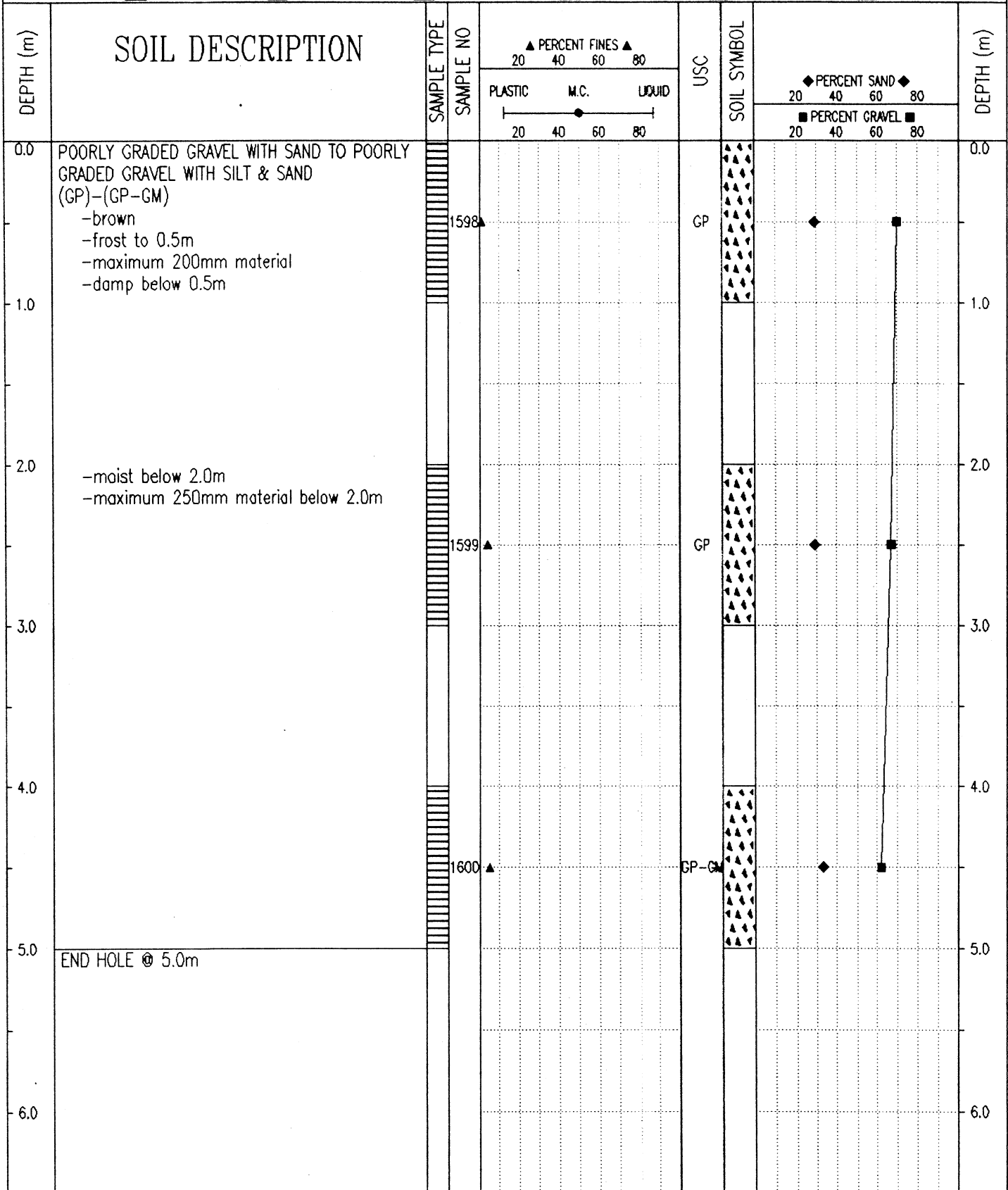
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ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6788713N / 620090E	ELEVATION: 0.00 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Government of Yukon
Transportation Engineering

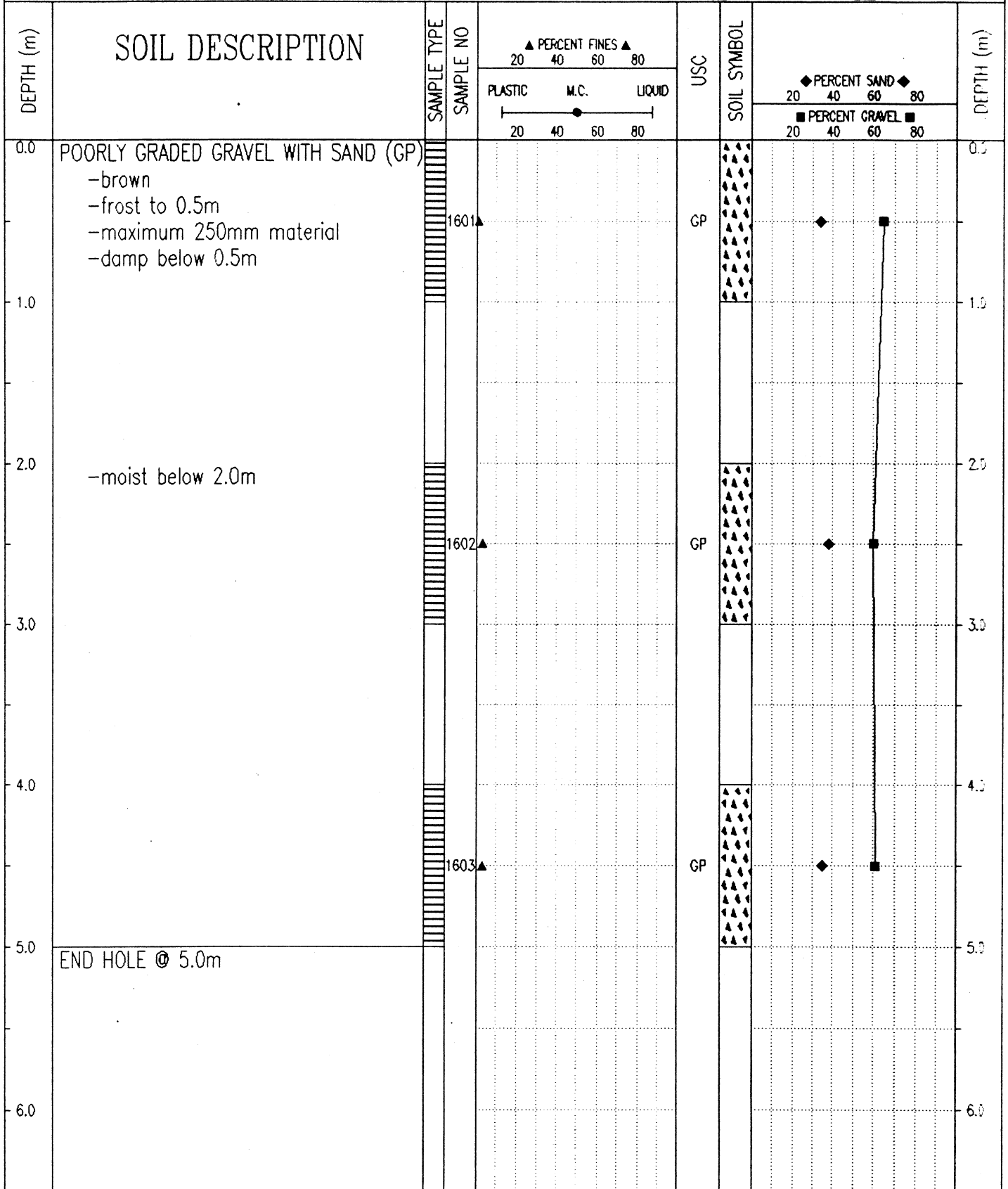
LOGGED BY: G.C.	COMPLETION DEPTH: 5.0 m
REVIEWED BY:	COMPLETE: 01/11/19
Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1708
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6788600N / 619943E	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input checked="" type="checkbox"/> RETURN	<input checked="" type="checkbox"/> S.P.T.
	<input checked="" type="checkbox"/> AUGER	<input type="checkbox"/> BULK
	<input type="checkbox"/> TUBE	<input type="checkbox"/> CORE



Government of Yukon Transportation Engineering	LOGGED BY: G.C.	COMPLETION DEPTH: 5.0 m
	REVIEWED BY:	COMPLETE: 01/11/19
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1709
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6788512N / 619768E	ELEVATION: 0.00 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

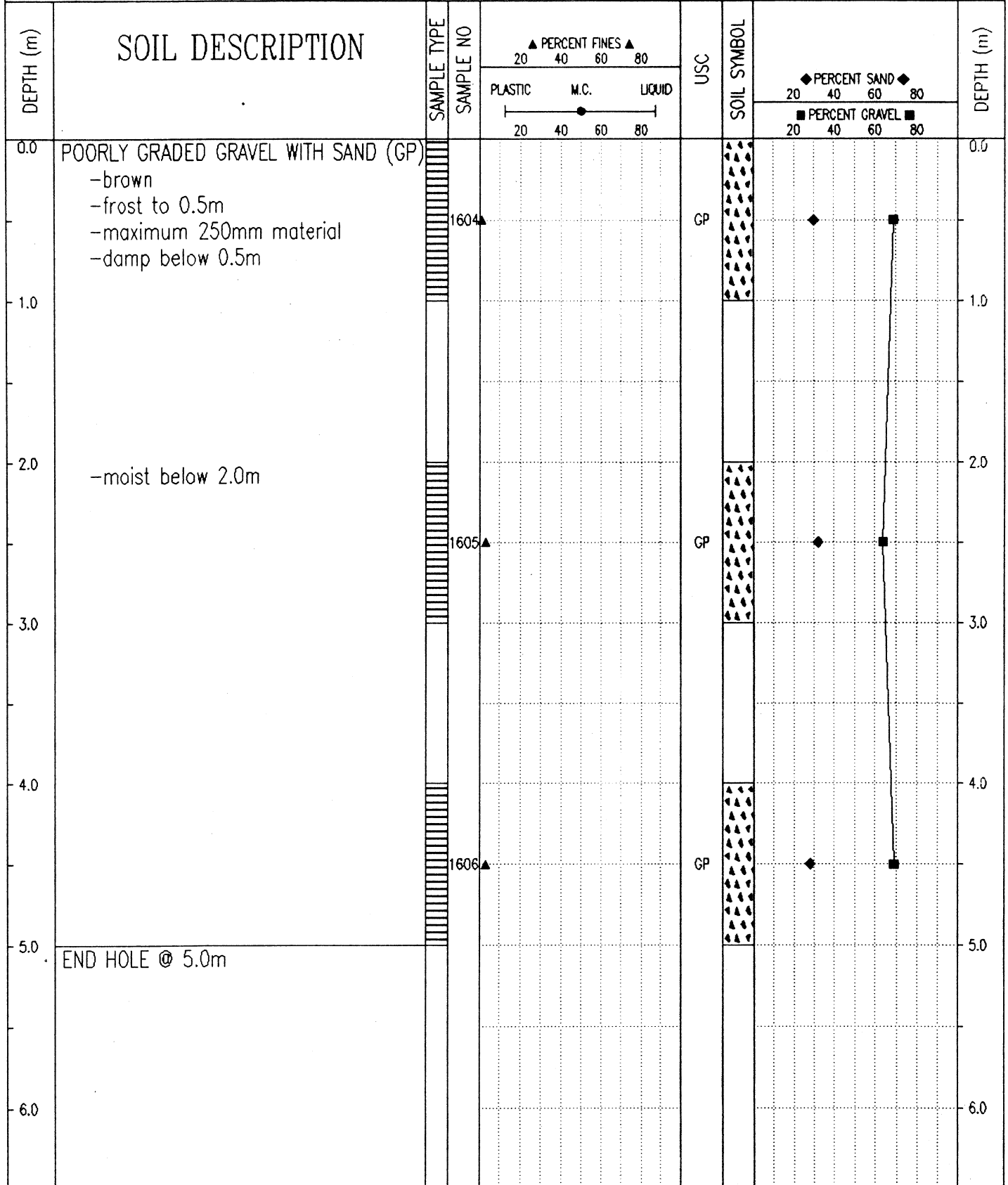


Government of Yukon
Transportation Engineering

LOGGED BY: G.C.
REVIEWED BY:
Fig. No:

COMPLETION DEPTH: 5.0 m
COMPLETE: 01/11/19

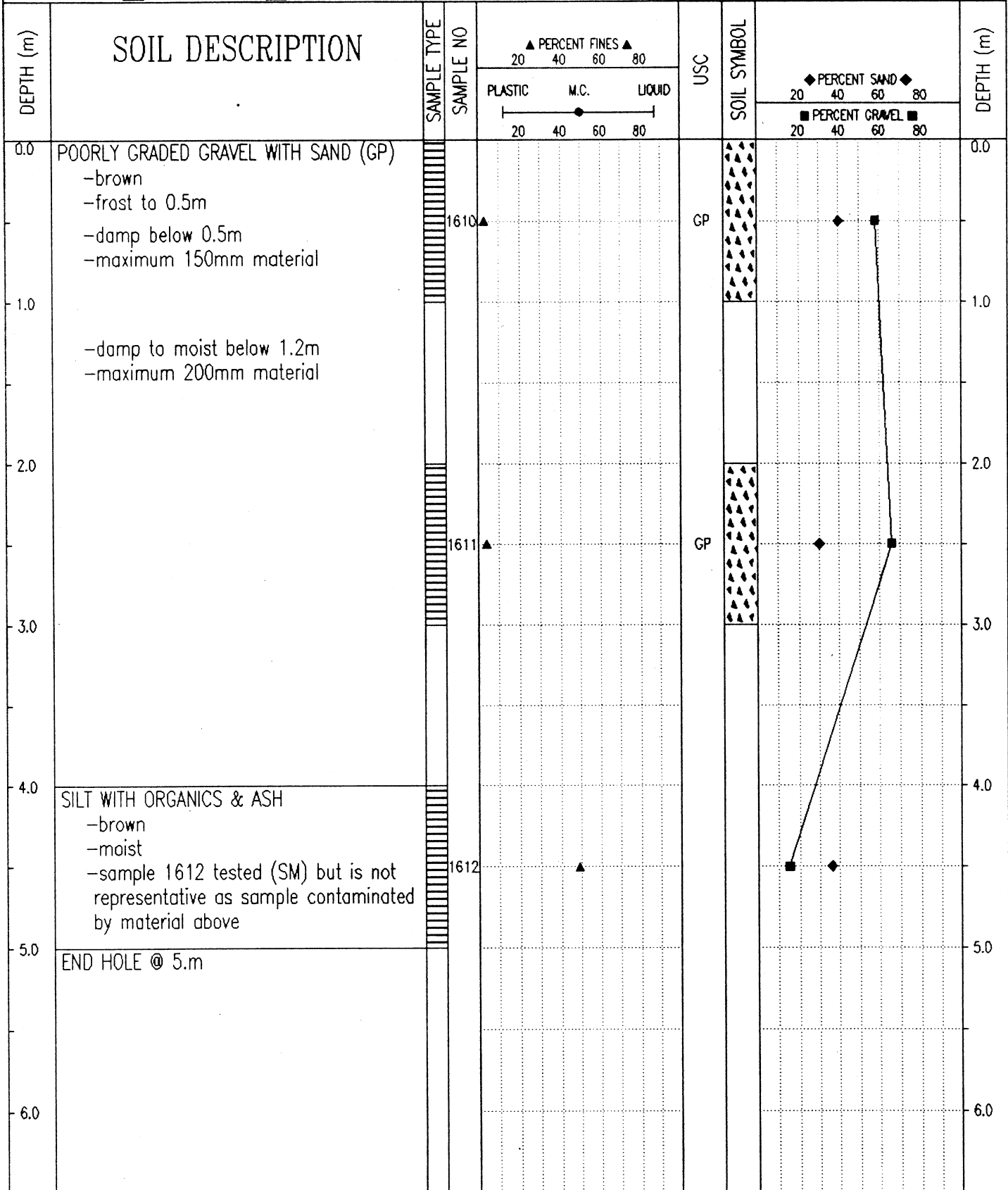
SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1710
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6788443N / 619629E	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input checked="" type="checkbox"/> RETURN	<input checked="" type="checkbox"/> S.P.T.
	<input checked="" type="checkbox"/> AUGER	<input type="checkbox"/> BULK
	<input type="checkbox"/> TUBE	<input type="checkbox"/> CORE



Government of Yukon Transportation Engineering	LOGGED BY: G.C.	COMPLETION DEPTH: 5.0 m
	REVIEWED BY:	COMPLETE: 01/11/19
	Fig. No:	Page 1 of 1

SUBSURFACE EXPLORATION & TESTING REPORT.		SHAKWAK SEG 11		TEST PIT NO: 630-1711						
ENGINEERING CAPITAL		BOCK'S BROOK		Project No: 092-202101-0361						
CAT 320L EXCAVATOR		LOCATION: 6789962N / 621010E		ELEVATION: 0.00 (m)						
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE										
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	SOIL SYMBOL	◆ PERCENT SAND ◆		DEPTH (m)
				PLASTIC	M.C.			LIQUID	PERCENT GRAVEL ■	
0.0	WELL-GRADED SAND WITH GRAVEL (SW) -brown -frost to 0.5m -maximum 150mm material -damp below 0.5m		1607▲			SW			0.0	
2.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -moist -maximum 200mm material		1608▲			GP			2.0	
5.0	END HOLE @ 5.0m Note: No silt seam or water, Test hole downstream side of Hwy.		1609▲			GP			5.0	
6.0									6.0	
Government of Yukon Transportation Engineering				LOGGED BY: G.C. REVIEWED BY: Fig. No:		COMPLETION DEPTH: 5.0 m COMPLETE: 01/11/19 Page 1 of 1				

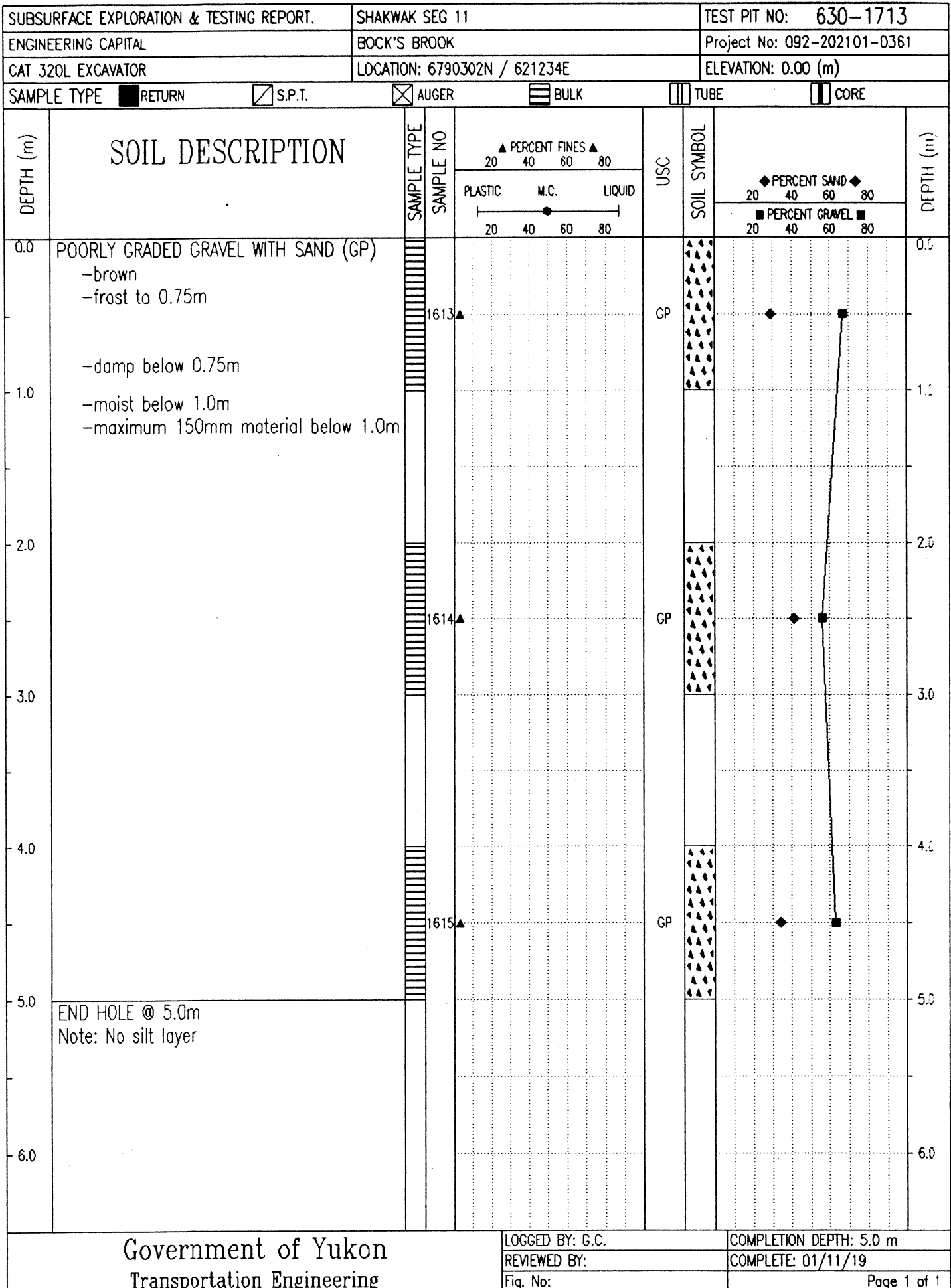
SUBSURFACE EXPLORATION & TESTING REPORT.	SHAKWAK SEG 11	TEST PIT NO: 630-1712
ENGINEERING CAPITAL	BOCK'S BROOK	Project No: 092-202101-0361
CAT 320L EXCAVATOR	LOCATION: 6790137N / 621115E	ELEVATION: 0.00 (m)
SAMPLE TYPE	<input checked="" type="checkbox"/> RETURN	<input checked="" type="checkbox"/> S.P.T.
	<input checked="" type="checkbox"/> AUGER	<input type="checkbox"/> BULK
	<input type="checkbox"/> TUBE	<input type="checkbox"/> CORE



Government of Yukon
Transportation Engineering

LOGGED BY: G.C.
REVIEWED BY:
Fig. No:

COMPLETION DEPTH: 5.0 m
COMPLETE: 01/11/19
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**Km 1738.8 LHS Alaska Highway
(Bocks Brook)**

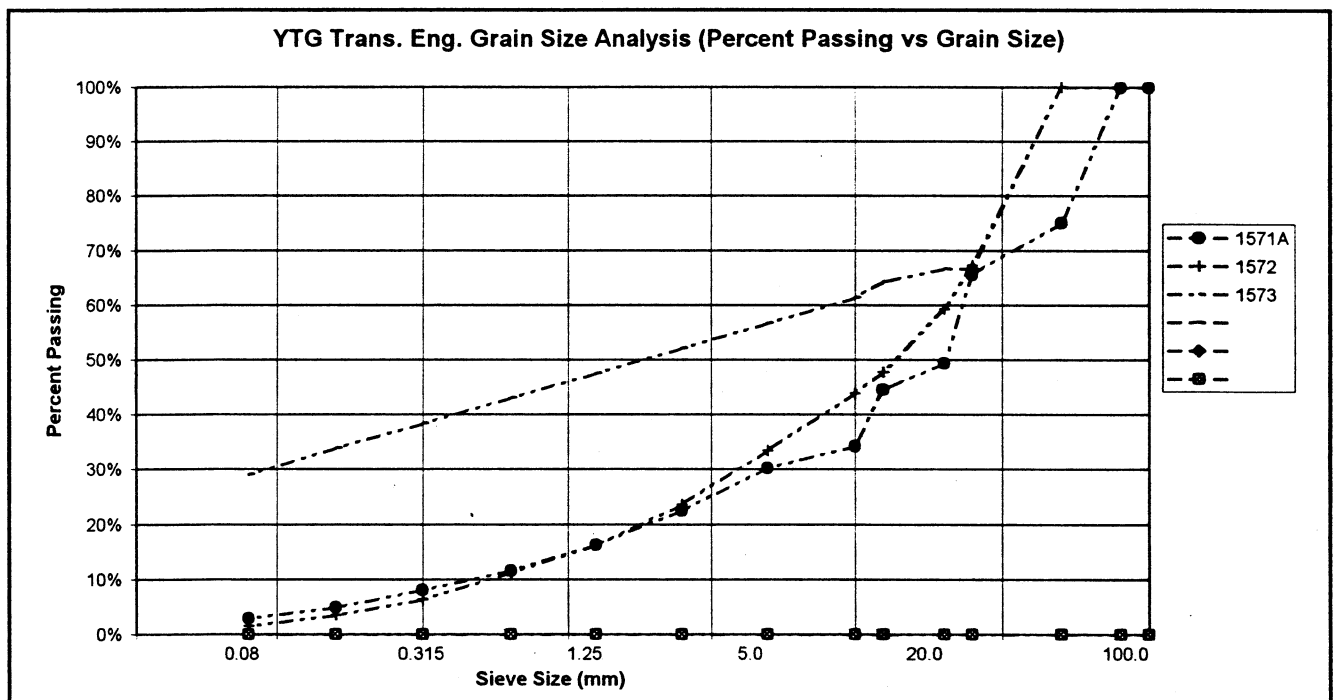
**2001
Pit Run Sample Results**

PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 620871E / 6789790N
 LOGGED BY: G.C.

HOLE No.: 630-1699

DATE COMP: 2001/11/19

FIELD NO:	1571A	1572	1573		
LAB NO:	2461	2462	2463		
DEPTH:	0.5-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	75%	100%	100%		
25.0	66%	67%	67%		
20.0	49%	59%	67%		
12.5	45%	48%	64%		
10.0	34%	44%	61%		
5.0	30%	33%	57%		
2.5	22%	24%	52%		
1.25	16%	16%	48%		
0.630	12%	11%	43%		
0.315	8%	6%	38%		
0.160	5%	3%	34%		
0.080	3%	2%	29%		
M.C. (%):					
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:	70	67	43		
% SAND:	27	32	28		
% FINES:	3	2	29		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	SILTY GRAVEL WITH SAND (GM)		

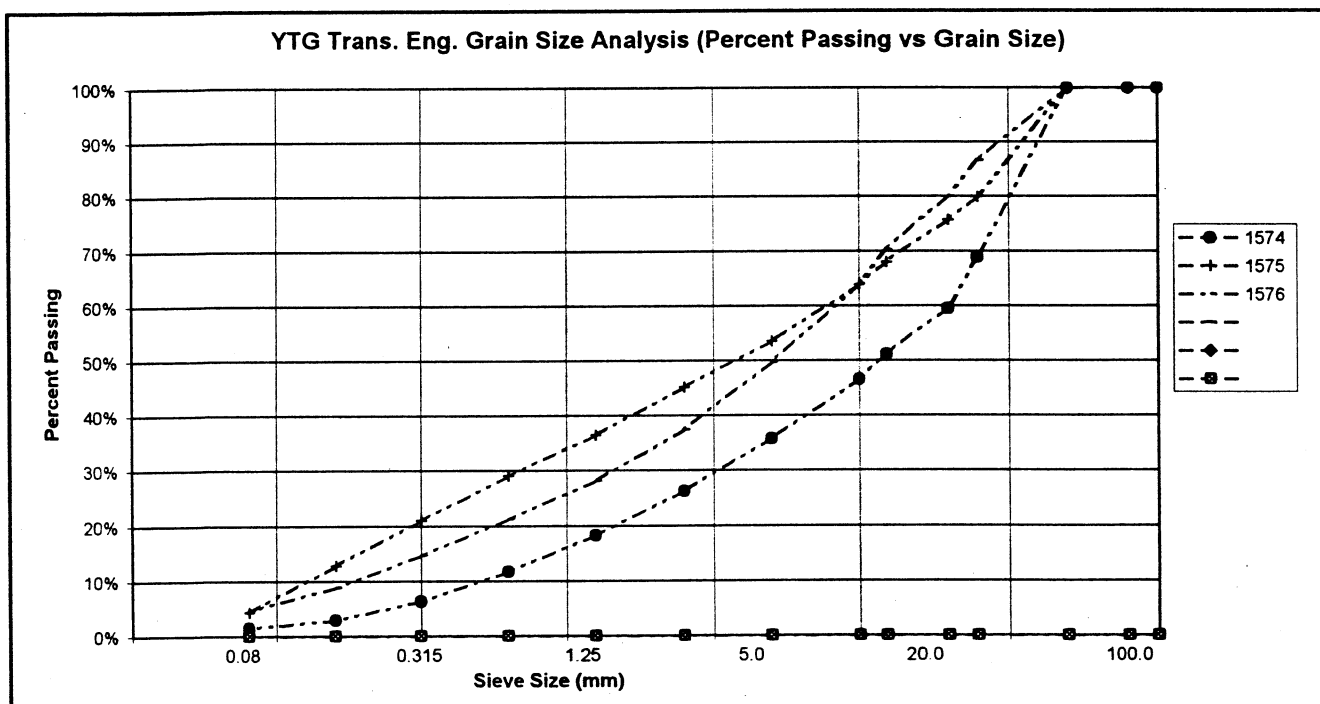


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 620740E / 6789631N
 LOGGED BY: G.C.

HOLE No.: 630-1700

DATE COMP: 2001/11/19

FIELD NO:	1574	1575	1576		
LAB NO:	2464	2465	2466		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
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	69%	80%	87%		
20.0	60%	76%	80%		
12.5	51%	68%	70%		
10.0	47%	64%	64%		
5.0	36%	53%	50%		
2.5	26%	45%	37%		
1.25	18%	37%	28%		
0.630	12%	29%	21%		
0.315	6%	21%	15%		
0.160	3%	13%	9%		
0.080	2%	4%	5%		
M.C.(%):					
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	47	50		
% SAND:	34	49	45		
% FINES:	2	4	5		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED SAND WITH GRAVEL (SW)	POORLY GRADED GRAVEL WITH SAND (GP)		

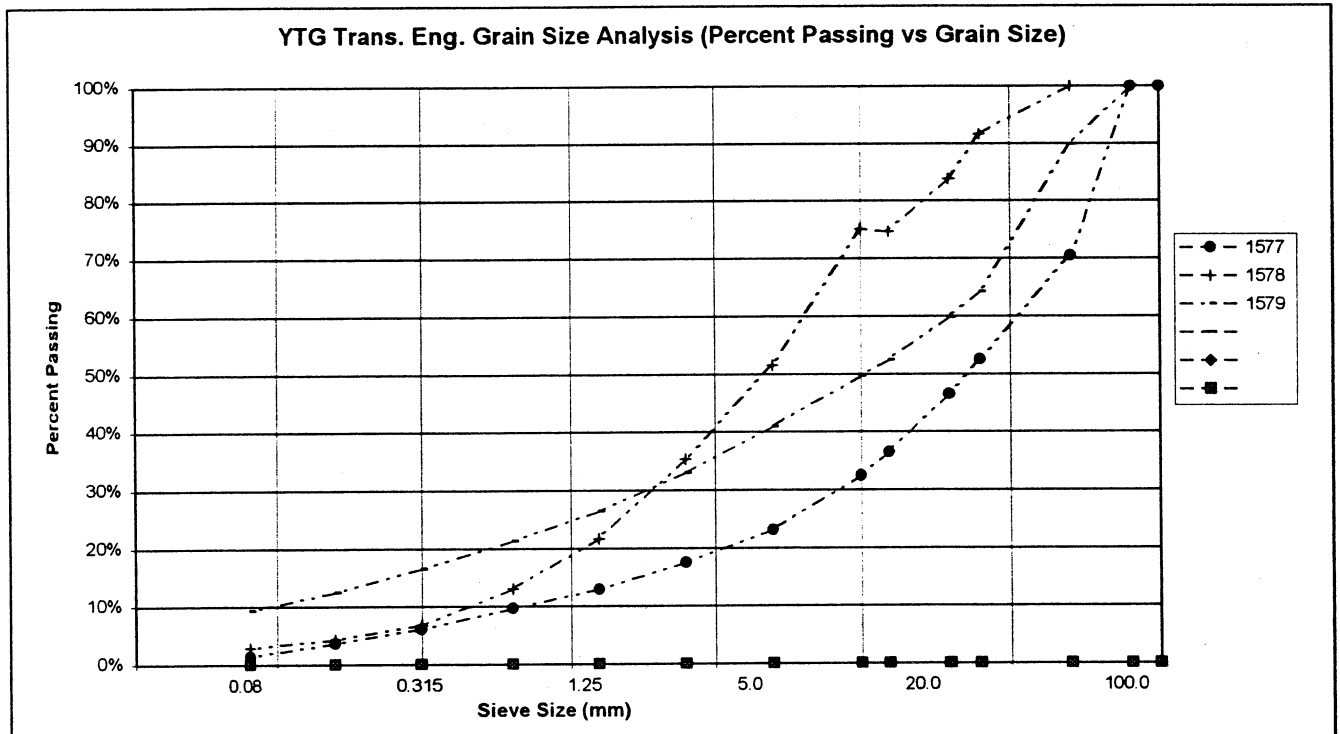


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 620642E / 6789499N
 LOGGED BY: G.C.

HOLE No.: 630-1701

DATE COMP: 2001/11/19

FIELD NO:	1577	1578	1579		
LAB NO:	2467	2468	2469		
DEPTH:	0.0-1.0	2.0-3.0	4.4-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	70%	100%	90%		
25.0	52%	92%	64%		
20.0	46%	84%	60%		
12.5	37%	75%	52%		
10.0	32%	75%	50%		
5.0	23%	52%	41%		
2.5	17%	35%	33%		
1.25	13%	22%	26%		
0.630	10%	13%	21%		
0.315	6%	7%	17%		
0.160	4%	4%	12%		
0.080	1%	3%	9%		
M.C.(%):					
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:	77	48	59		
% SAND:	22	49	32		
% FINES:	1	3	9		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	WELL-GRADED SAND WITH GRAVEL (SW)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)		

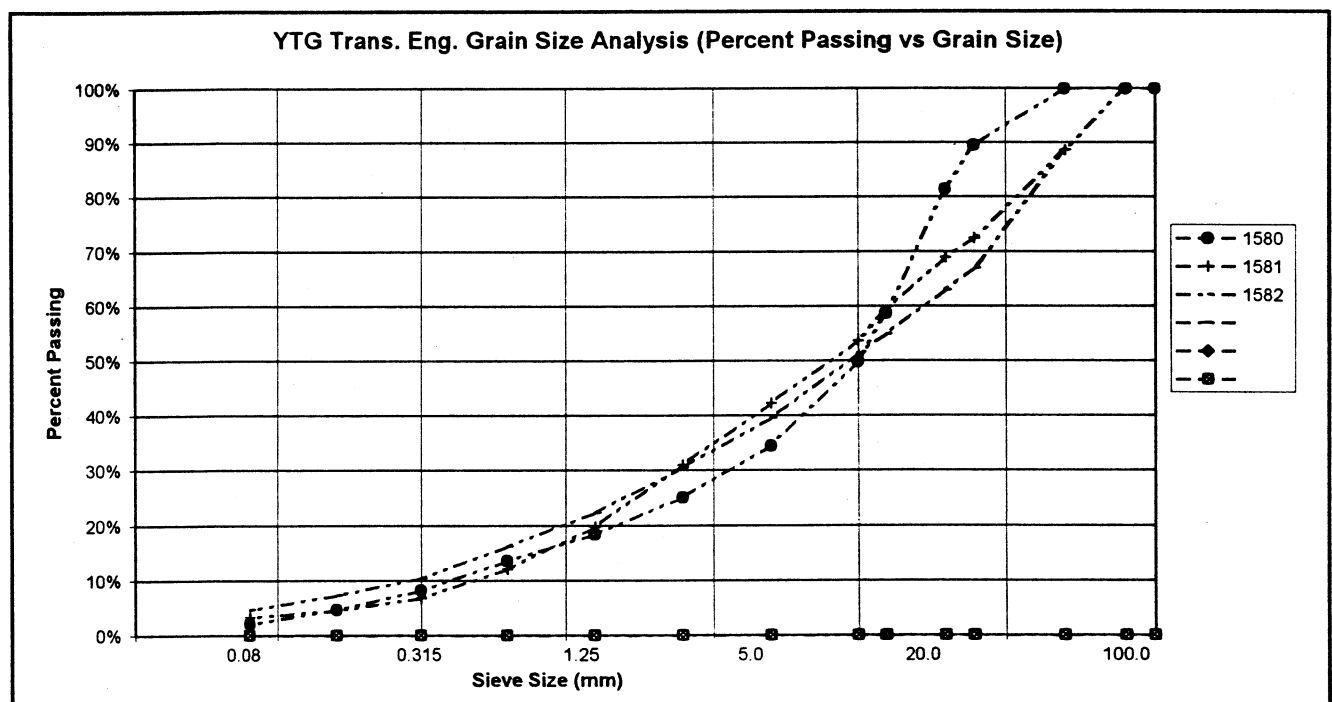


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 620538E / 6789353N
 LOGGED BY: G.C.

HOLE No.: 630-1702

DATE COMP: 2001/11/19

FIELD NO:	1580	1581	1582		
LAB NO:	2470	2471	2472		
DEPTH:	0.0-1.0	2.0-3.0	4.0-4.5		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	100%	89%	89%		
25.0	90%	72%	67%		
20.0	81%	69%	63%		
12.5	59%	59%	55%		
10.0	50%	54%	51%		
5.0	34%	42%	40%		
2.5	25%	31%	31%		
1.25	18%	20%	22%		
0.630	14%	12%	16%		
0.315	8%	7%	10%		
0.160	5%	5%	7%		
0.080	2%	3%	5%		
M.C.(%):					
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:	66	58	60		
% SAND:	32	39	35		
% FINES:	2	3	5		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

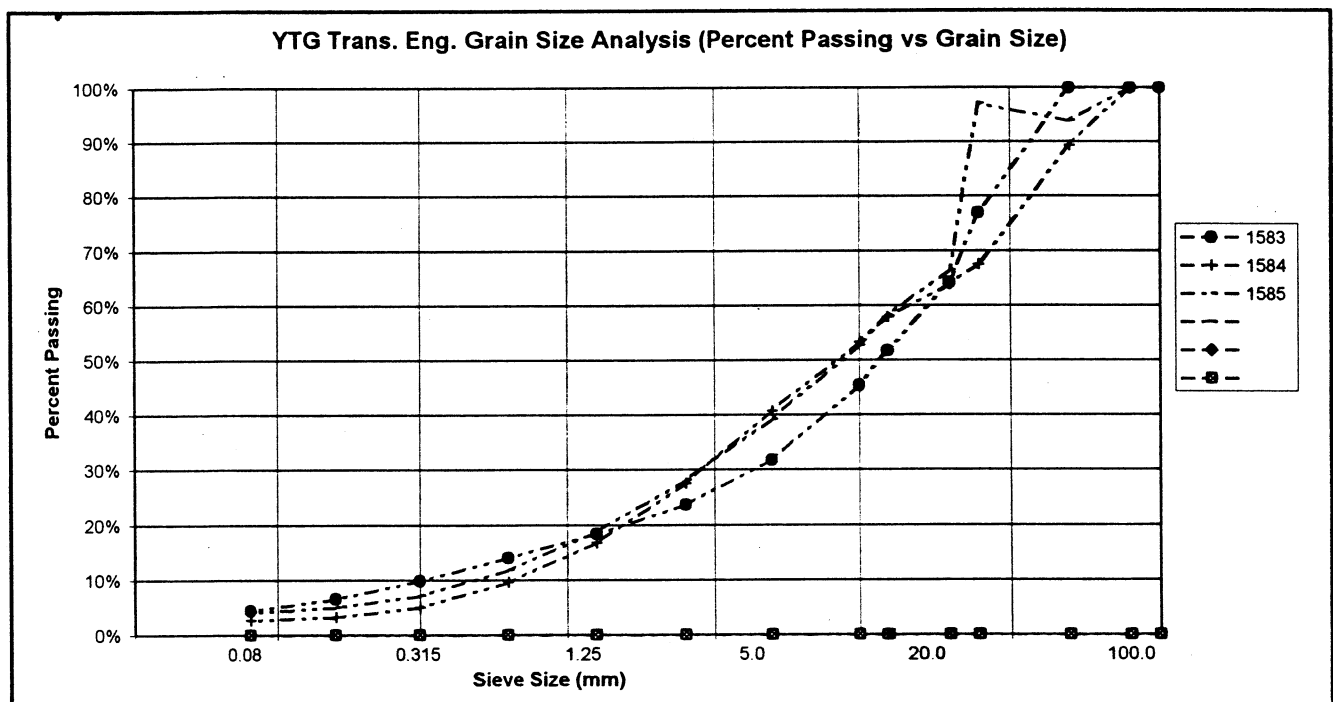


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 620435E / 6789203N
 LOGGED BY: G.C.

HOLE No.: 630-1703

DATE COMP: 2001/11/19

FIELD NO:	1583	1584	1585		
LAB NO:	2473	2474	2475		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	100%	89%	94%		
25.0	77%	67%	97%		
20.0	64%	64%	66%		
12.5	52%	58%	58%		
10.0	45%	53%	53%		
5.0	32%	41%	39%		
2.5	24%	28%	28%		
1.25	18%	17%	19%		
0.630	14%	10%	12%		
0.315	10%	5%	7%		
0.160	7%	3%	5%		
0.080	4%	3%	4%		
M.C.(%):					
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:	68	59	61		
% SAND:	27	38	35		
% FINES:	4	3	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

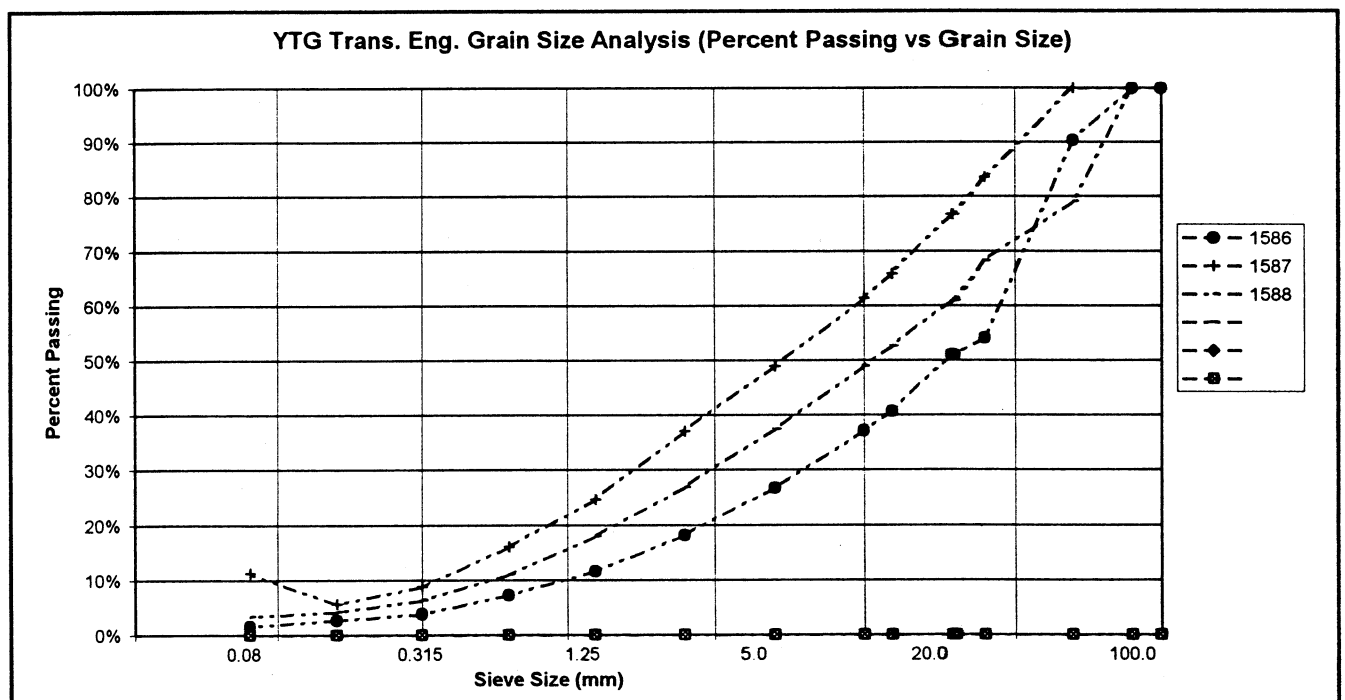


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 620362E / 6789113N
 LOGGED BY: G.C.

HOLE No.: 630-1704

DATE COMP: 2001/11/19

FIELD NO:	1586	1587	1588		
LAB NO:	2476	2477	2478		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	90%	100%	79%		
25.0	54%	84%	68%		
20.0	51%	77%	61%		
12.5	41%	66%	53%		
10.0	37%	61%	49%		
5.0	27%	49%	37%		
2.5	18%	37%	27%		
1.25	12%	25%	18%		
0.630	7%	16%	11%		
0.315	4%	9%	6%		
0.160	3%	6%	4%		
0.080	2%	11%	3%		
M.C.(%):					
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:	73	51	63		
% SAND:	25	38	34		
% FINES:	2	11	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)	POORLY GRADED GRAVEL WITH SAND (GP)		

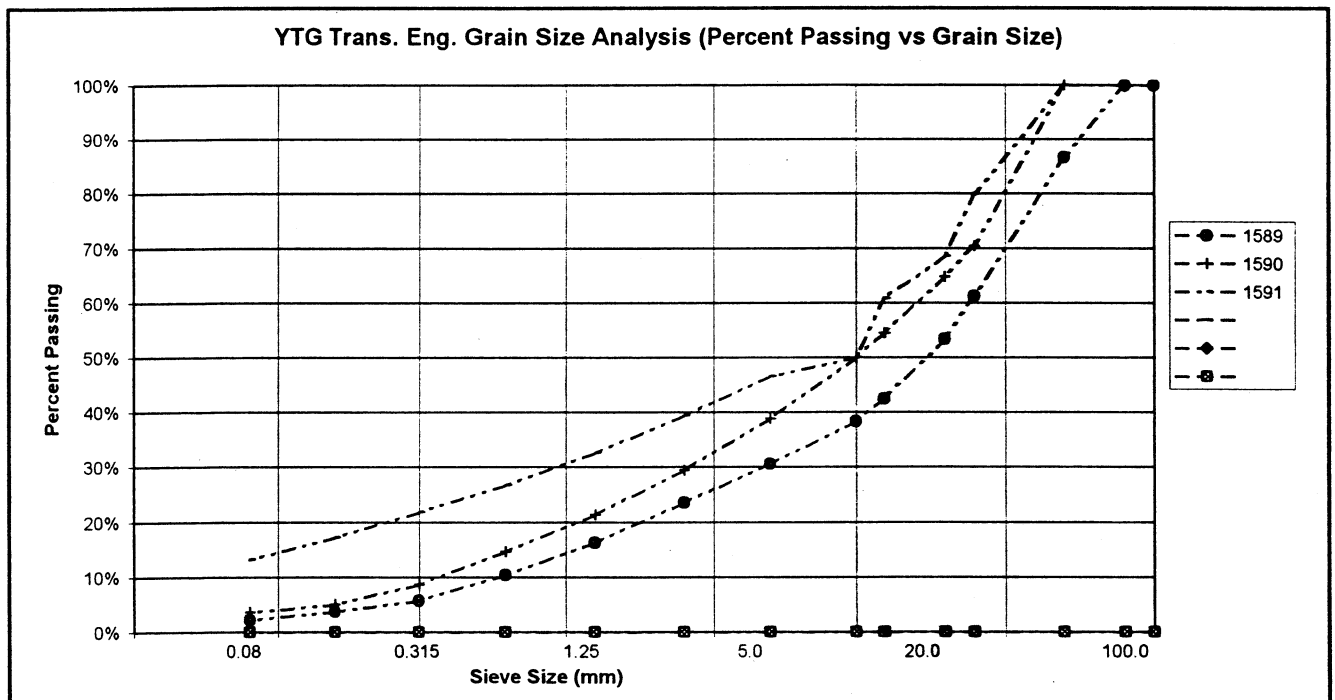


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 620275E / 6788960N
 LOGGED BY: G.C.

HOLE No.: 630-1705

DATE COMP: 2001/11/19

FIELD NO:	1589	1590	1591		
LAB NO:	2479	2480	2481		
DEPTH:	0.0-1.0	2.0-3.0	4.4-4.5		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	87%	100%	100%		
25.0	61%	70%	80%		
20.0	53%	65%	69%		
12.5	42%	54%	61%		
10.0	38%	50%	50%		
5.0	31%	39%	47%		
2.5	24%	29%	39%		
1.25	16%	21%	33%		
0.630	10%	15%	27%		
0.315	6%	9%	22%		
0.160	4%	5%	17%		
0.080	2%	4%	13%		
M.C.(%):					
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:	69	61	53		
% SAND:	28	35	33		
% FINES:	2	4	13		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	SILTY GRAVEL WITH SAND (GM)		

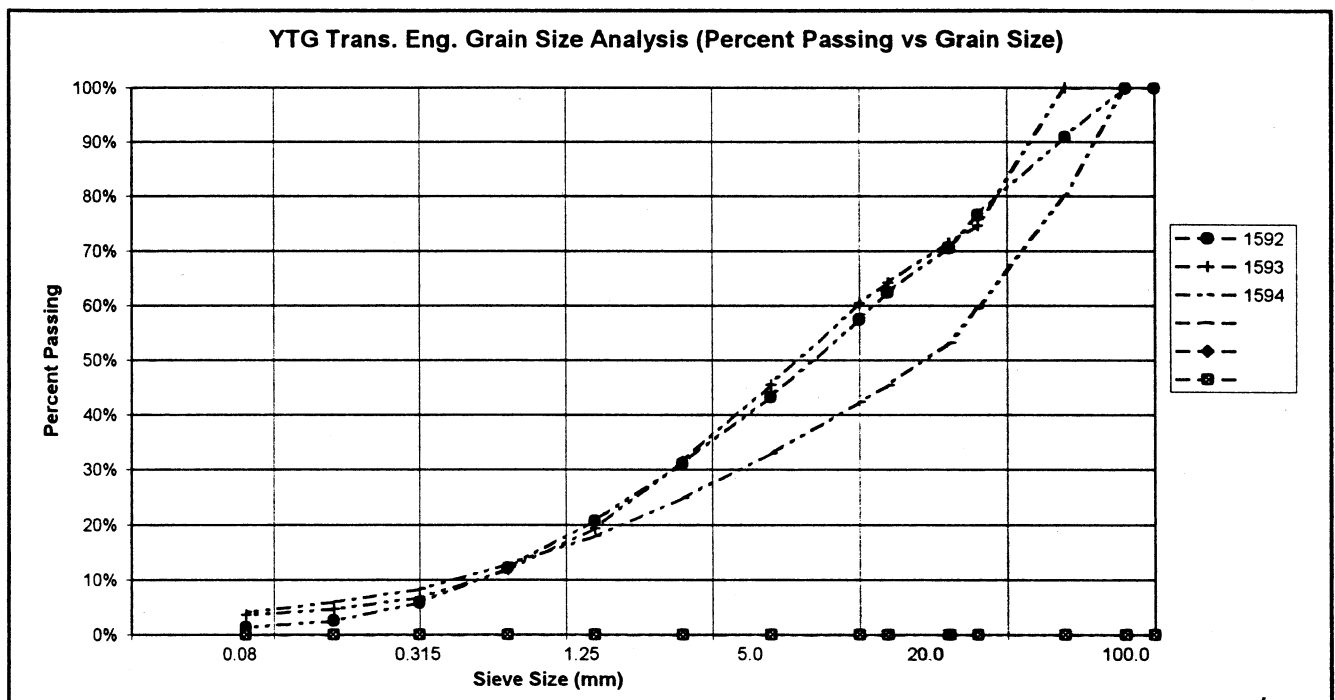


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 620185E / 6788843N
 LOGGED BY: G.C.

HOLE No.: 630-1706

DATE COMP: 2001/11/19

FIELD NO:	1592	1593	1594		
LAB NO:	2482	2483	2484		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	91%	100%	80%		
25.0	77%	75%	59%		
20.0	71%	71%	53%		
12.5	62%	64%	45%		
10.0	57%	60%	42%		
5.0	43%	46%	33%		
2.5	31%	32%	25%		
1.25	21%	19%	18%		
0.630	12%	12%	13%		
0.315	6%	7%	8%		
0.160	3%	5%	6%		
0.080	1%	4%	4%		
M.C.(%):					
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:	57	54	67		
% SAND:	42	42	29		
% FINES:	1	4	4		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

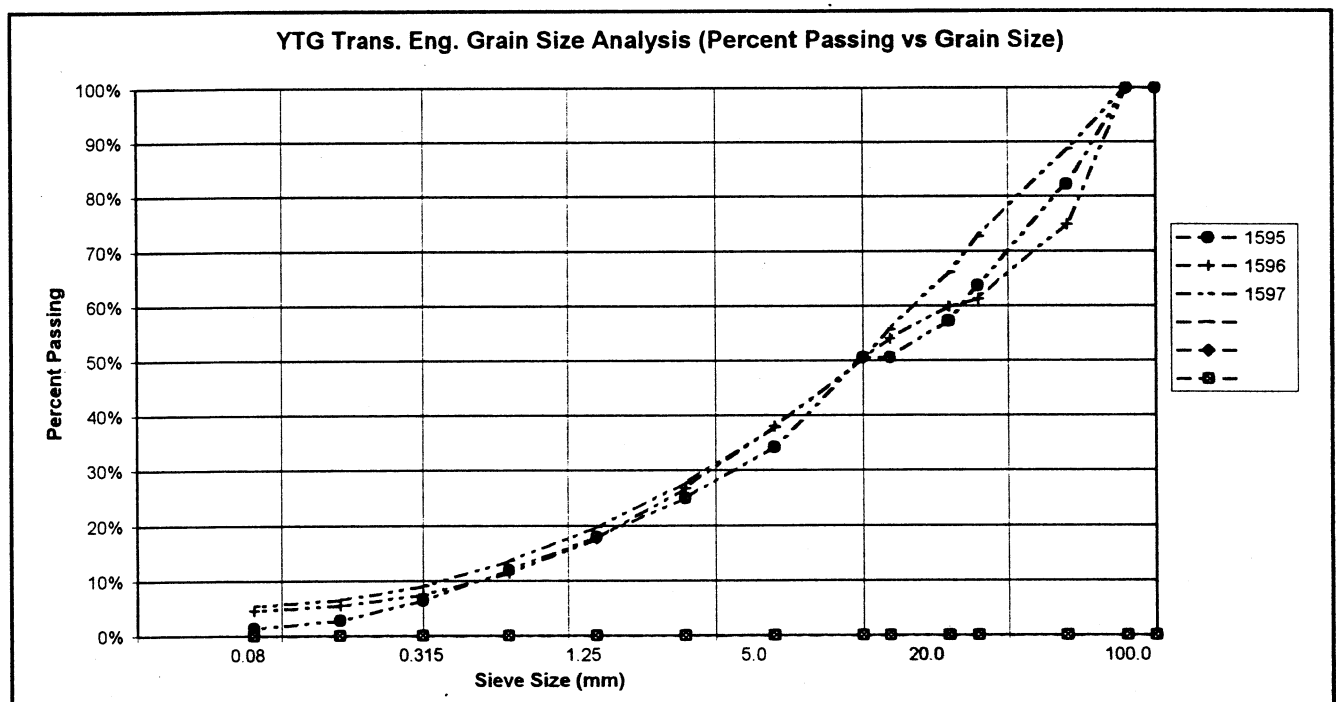


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 620090E / 6788713N
 LOGGED BY: G.C.

HOLE No.: 630-1707

DATE COMP: 2001/11/20

FIELD NO:	1595	1596	1597		
LAB NO:	2485	2486	2487		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	82%	75%	89%		
25.0	64%	61%	73%		
20.0	57%	60%	66%		
12.5	51%	54%	56%		
10.0	51%	50%	50%		
5.0	34%	38%	38%		
2.5	25%	27%	28%		
1.25	18%	18%	20%		
0.630	12%	11%	14%		
0.315	6%	7%	9%		
0.160	3%	6%	7%		
0.080	1%	5%	5%		
M.C.(%):					
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:	66	62	62		
% SAND:	33	34	32		
% FINES:	1	5	5		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)		

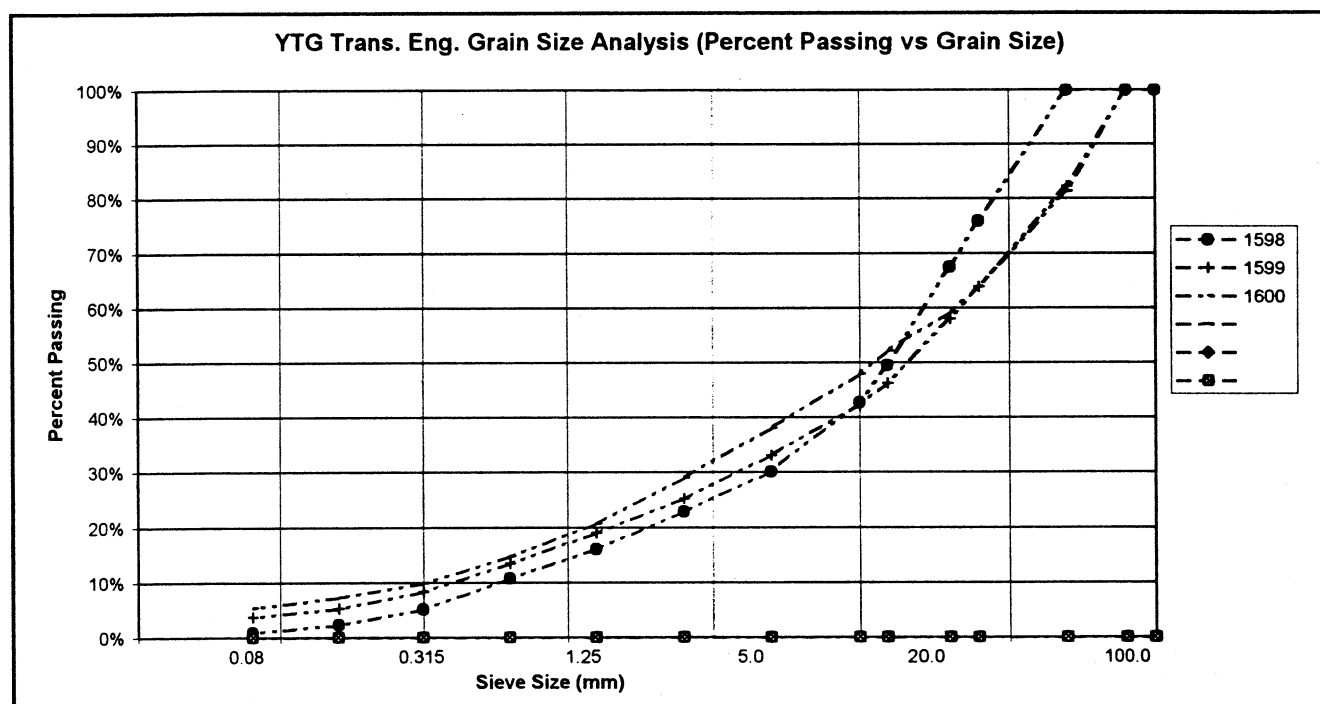


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 619943E / 8788600N
 LOGGED BY: G.C.

HOLE No.: 630-1708

DATE COMP: 2001/11/20

FIELD NO:	1598	1599	1600		
LAB NO:	2488	2489	2490		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	100%	82%	81%		
25.0	76%	64%	64%		
20.0	67%	58%	59%		
12.5	50%	46%	52%		
10.0	43%	42%	48%		
5.0	30%	33%	38%		
2.5	23%	25%	29%		
1.25	16%	19%	21%		
0.630	11%	13%	15%		
0.315	5%	8%	10%		
0.160	2%	5%	7%		
0.080	1%	4%	5%		
M.C.(%):					
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:	70	67	62		
% SAND:	29	29	33		
% FINES:	1	4	5		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SILT & SAND (GP-GM)		

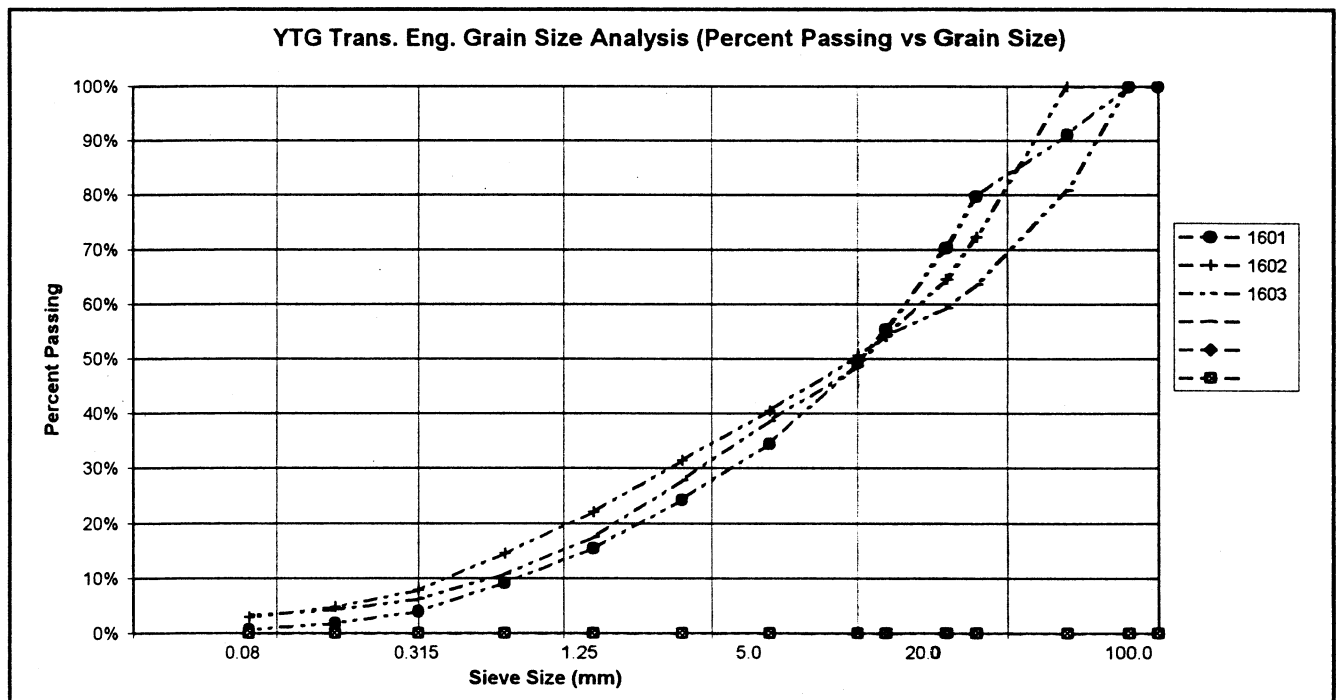


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 619768E / 6788512 N
 LOGGED BY: G.C.

HOLE No.: 630-1709

DATE COMP: 2001/11/20

FIELD NO:	1601	1602	1603		
LAB NO:	2491	2492	2493		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	91%	100%	81%		
25.0	80%	72%	64%		
20.0	70%	65%	59%		
12.5	55%	54%	54%		
10.0	49%	51%	49%		
5.0	35%	40%	39%		
2.5	24%	31%	28%		
1.25	16%	22%	17%		
0.630	9%	15%	11%		
0.315	4%	8%	6%		
0.160	2%	5%	4%		
0.080	1%	3%	3%		
M.C.(%):					
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:	65	60	61		
% SAND:	34	38	35		
% FINES:	1	3	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

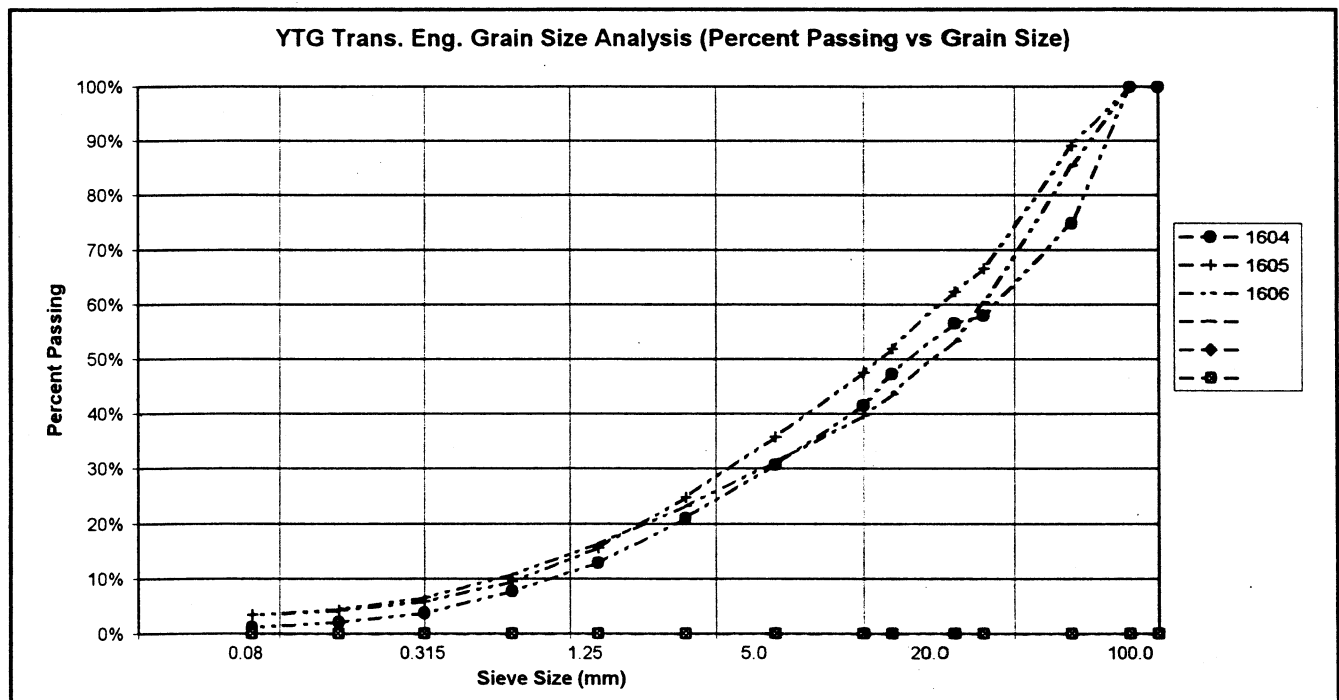


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 619629E / 6788443N
 LOGGED BY: G.C.

HOLE No.: 630-1710

DATE COMP: 2001/11/20

FIELD NO:	1604	1605	1606		
LAB NO:	2794	2495	2496		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	75%	89%	85%		
25.0	58%	67%	60%		
20.0	57%	62%	53%		
12.5	47%	52%	44%		
10.0	42%	48%	40%		
5.0	31%	36%	31%		
2.5	21%	25%	23%		
1.25	13%	16%	16%		
0.630	8%	10%	11%		
0.315	4%	6%	7%		
0.160	2%	4%	4%		
0.080	1%	3%	3%		
M.C.(%):					
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:	69	64	69		
% SAND:	30	32	28		
% FINES:	1	3	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

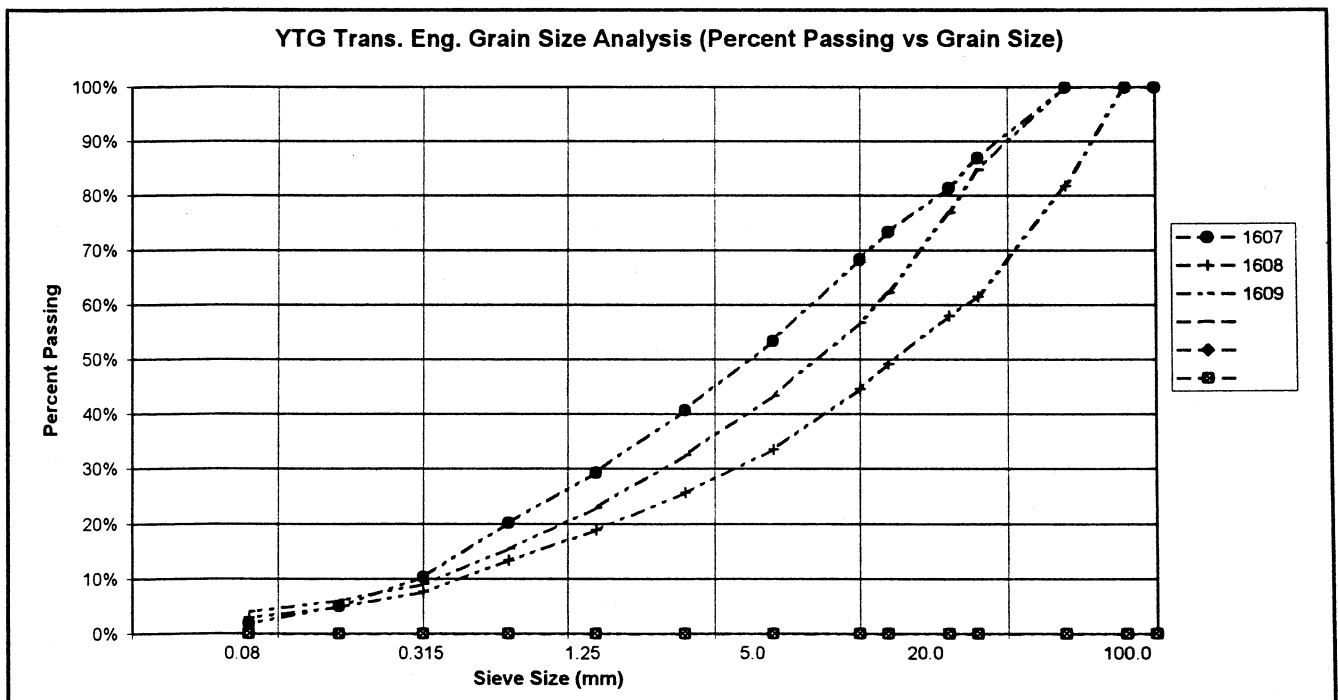


PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 621010E / 6789962N
 LOGGED BY: G.C.

HOLE No.: 630-1711

DATE COMP: 2001/11/20

FIELD NO:	1607	1608	1609		
LAB NO:	2797	2498	2499		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
50.0	100%	82%	100%		
25.0	87%	61%	85%		
20.0	81%	58%	77%		
12.5	73%	49%	62%		
10.0	68%	45%	57%		
5.0	53%	34%	43%		
2.5	41%	26%	33%		
1.25	29%	19%	23%		
0.630	20%	13%	16%		
0.315	10%	8%	9%		
0.160	5%	5%	6%		
0.080	2%	3%	4%		
M.C.(%):					
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	66	57		
% SAND:	52	31	39		
% FINES:	2	3	4		
CLASSIFICATION	WELL-GRADED SAND WITH GRAVEL (SW)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

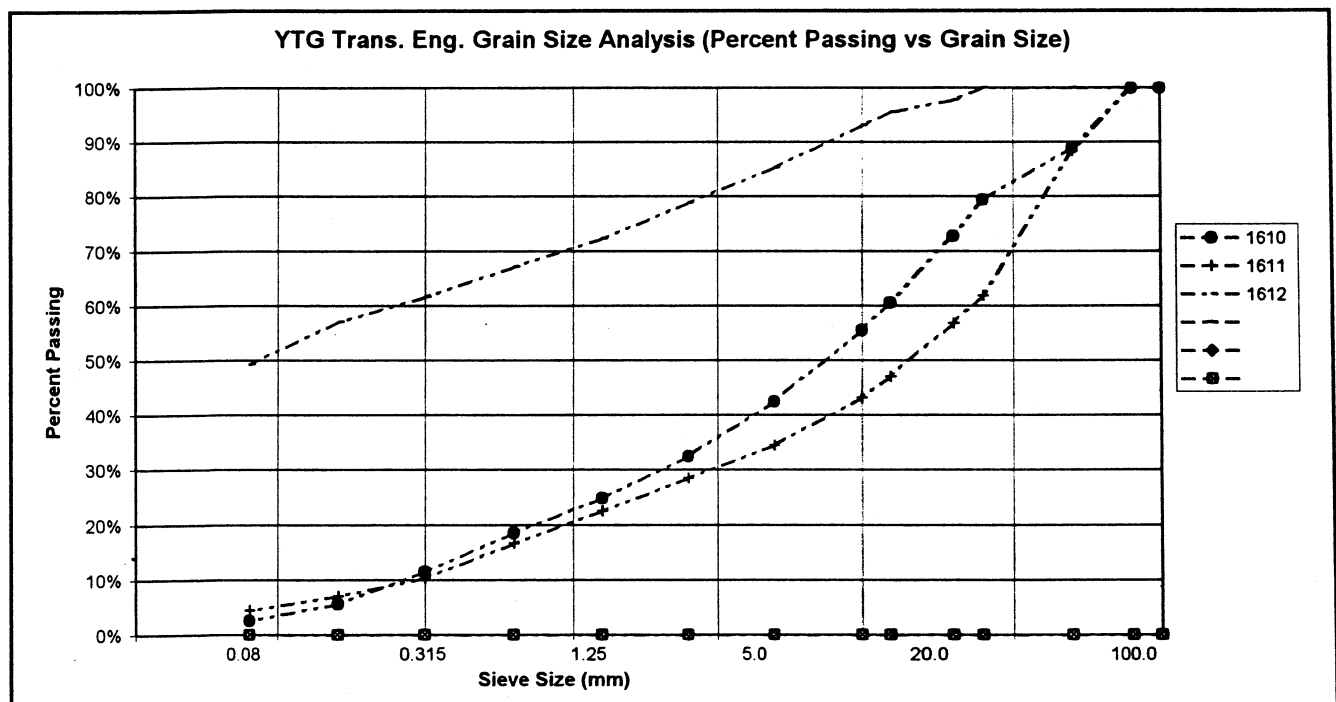


PROJECT NUMBER: 092-202101-0381-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 621115E / 6790137N
 LOGGED BY: G.C.

HOLE No.: 630-1712

DATE COMP: 2001/11/20

FIELD NO:	1610	1611	1612		
LAB NO:	2500	2501	2502		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
SIEVE SIZE	PERCENT PASSING	PERCENT PASSING	PERCENT PASSING		
100.0	100%	100%	100%		
80.0	100%	100%	100%		
60.0	89%	88%	100%		
25.0	79%	62%	100%		
20.0	73%	57%	98%		
12.5	61%	47%	96%		
10.0	55%	43%	93%		
5.0	42%	34%	85%		
2.5	33%	29%	79%		
1.25	25%	23%	72%		
0.630	19%	17%	67%		
0.315	12%	10%	62%		
0.160	6%	7%	57%		
0.080	3%	4%	49%		
M.C.(%):					
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	66	15		
% SAND:	40	30	36		
% FINES:	3	4	49		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	SILTY SAND (SM)		



PROJECT NUMBER: 092-202101-0361-1
 CLIENT: ENGINEERING CAPITAL
 PROJECT NAME: SHAKWAK SEG 11
 PROJECT LOCATION: BOCKS BROOK
 DRILL UNIT: CAT 320L EXCAVATOR
 HOLE LOCATION: 621234E / 6790302N
 LOGGED BY: G.C.

HOLE No.: 630-1713

DATE COMP: 2001/11/20

FIELD NO:	1613	1614	1615		
LAB NO:	2503	2504	2505		
DEPTH:	0.0-1.0	2.0-3.0	4.0-5.0		
TYPE:	BULK	BULK	BULK	BULK	
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	70%	81%	62%		
20.0	59%	76%	60%		
12.5	49%	64%	53%		
10.0	44%	58%	47%		
5.0	33%	44%	37%		
2.5	25%	32%	29%		
1.25	19%	23%	21%		
0.630	15%	16%	14%		
0.315	11%	10%	8%		
0.160	7%	6%	5%		
0.080	3%	3%	3%		
M.C.(%):					
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:	67	56	63		
% SAND:	29	41	34		
% FINES:	3	3	3		
CLASSIFICATION	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)	POORLY GRADED GRAVEL WITH SAND (GP)		

