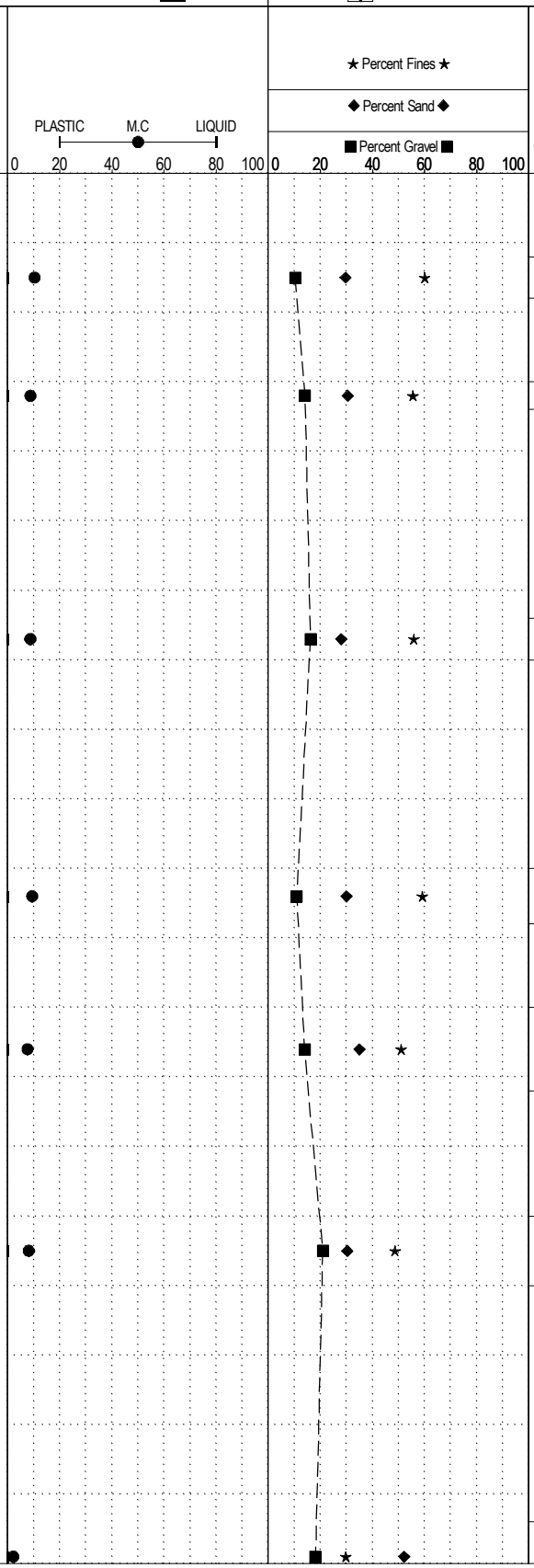
SUBSURFACE EXPLORATION AND TEST REPORT	N. Canol	SOURCE/TP#: **855-5126**
Darkside Drilling	Deep Creek Bridge Abutments, km 255,	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates: Z08V N6882856m E653984m	ELEVATION: m

SAMPLE TYPE: RETURN | DCPT | AUGER | BULK | SPT | CORE



Sample Type	Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
				SANDY SILT -Dark Grey -Frozen, difficult drilling -Cobble between 0.5 and 0.8m	
	01	ML		-Medium dark grey, friable	1
	02	ML		-Unfrozen	2
	03	ML		more than 15% fine gravel	3
	04	ML		-Less gravel -Damp, stiff	4
	05	ML			5
					6
				SILTY SAND with GRAVEL -Loose -Grinding in cobbles	7
	06	SM			8
					9
	07	SM			

Yukon **Highways and Public Works**
Transportation Engineering Branch

LOGGED BY: R.Stilwell	Termination Depth: 17.7m
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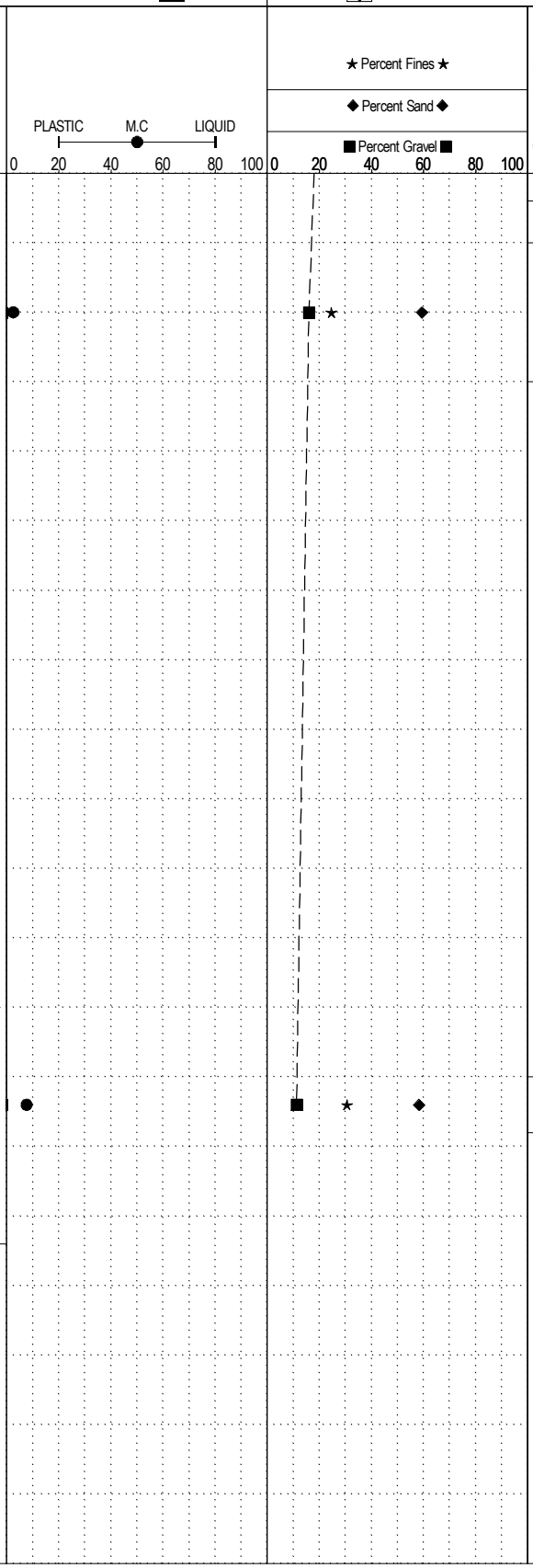
SUBSURFACE EXPLORATION AND TEST REPORT	N. Canol	SOURCE/TP#: **855-5126**
Darkside Drilling	Deep Creek Bridge Abutments, km 255,	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates: Z08V N6882856m E653984m	ELEVATION: m

SAMPLE TYPE: RETURN | DCPT | AUGER | BULK | SPT | CORE



ELEV. (m)	Sample Type	Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
		07	SM		-White, stiff -Drilling rock for 0.5m, 15000'lbs torque -Sample is mostly rock dust and fragments -Friable -Medium grey -Changed to rock bit in this length	
		08	SM		-Sample Contaminated by soil in upper stratum	11
						12
					-Dense -Some Gravel comming up hole, new broken angular and dusty. -Possibly broken rock or gravel seam	13
						14
					-Dark grey -Hard Drilling	15
▼						16
		09	SM		-Very dense, wet sample contaminated by material from upper stratum -Less gravel	17
					END of HOLE -Refusal	18
						19

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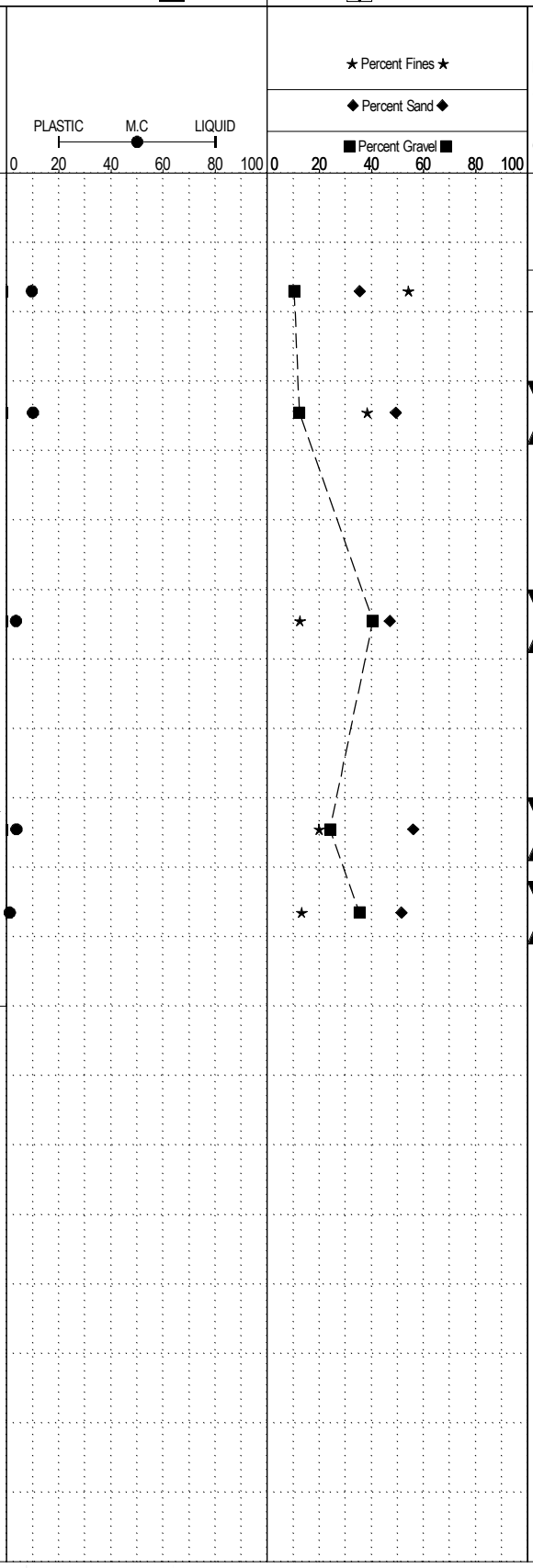
LOGGED BY: R.Stilwell	Termination Depth: 17.7m
COMPILED BY: R.Stilwell	Complete: 3/6/2015 5:30:00 PM
REVIEWED BY:	Pit #: Page 2 of 2

SUBSURFACE EXPLORATION AND TEST REPORT	N. Canol	SOURCE/TP#: **855-5127**
Darkside Drilling	Deep Creek Bridge Abutments, km 255,	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates: Z08V N6882852m E653926m	ELEVATION: m

SAMPLE TYPE: RETURN | DCPT | AUGER | BULK | SPT | CORE



Sample Type	Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
				SANDY SILT -Dusky brown, moist, very dense	0
	10	ML			1
				SILTY SAND -Grayish brown, moist, very dense -Rounded pebbles comming up auger -Freshly fractured material comming up auger	2
	11	SM	48		3
				SILTY SAND with GRAVEL -Moderate Brown - Transition to light grey, fractured rock at 3.15m -Transition to meidum dark grey at 3.3m	4
	12	SM	63		
	13	SM	155	-Light grey, pulverized rock. -Highly weathered	5
	14	SM	251	-White, pulverized rock. -Lots of rock dust.	6
				END of HOLE -Refusal	7
					8
					9

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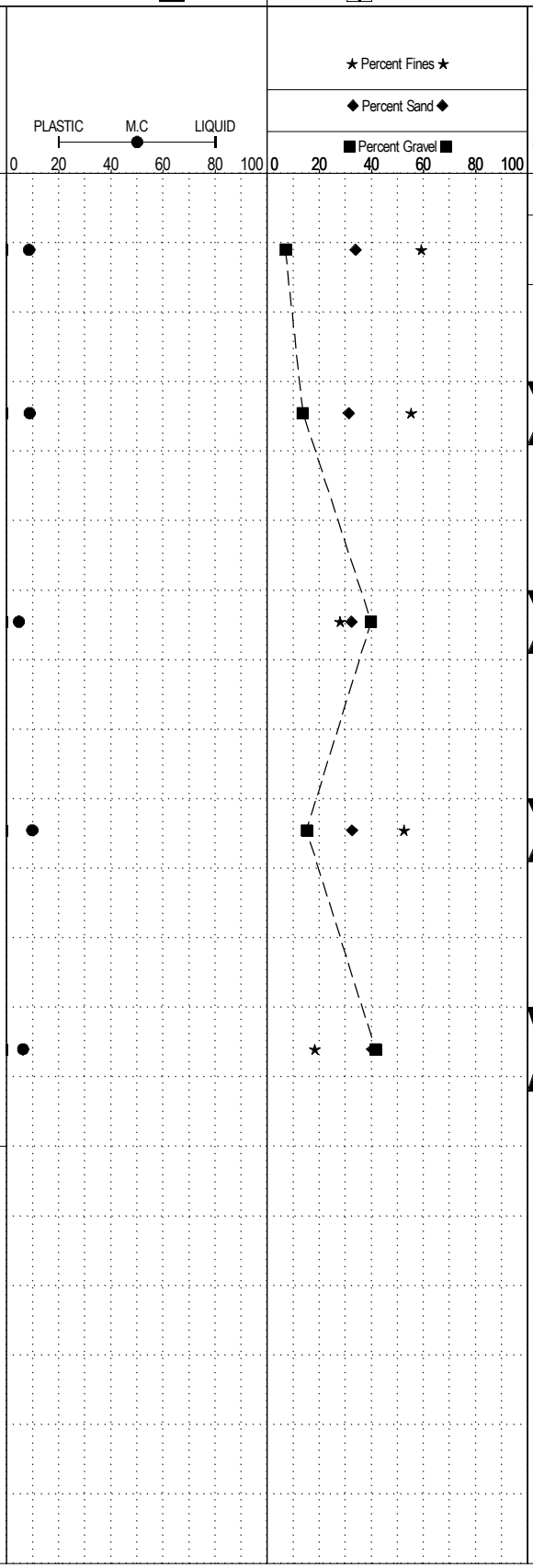
LOGGED BY: R.Stilwell	Termination Depth: 6m
COMPILED BY: R.Stilwell	Complete: 3/7/2015 3:15:00 PM
REVIEWED BY:	Pit #: Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT	N. Canol	SOURCE/TP#: **855-5128**
Darkside Drilling	Deep Creek Bridge Abutments, km 255,	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates: Z08V N6882837m E653917m	ELEVATION: m

SAMPLE TYPE: RETURN | DCPT | AUGER | BULK | SPT | CORE



Sample Type	Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
				SANDY SILT - Dusky brown, surfacing material and fill	0
	15	ML			1
	16	ML	48	-Frozen, no visable ice, friable -Seasonal frost	2
				-Bottom of road bed SILTY GRAVEL with SAND -Dusky brown, damp, loose, -Unfrozen	3
	18	GM	5		4
				SANDY SILT with GRAVEL -Light rock, fractured rock, most, rock dust, fresh fracture faces	5
	17	ML	30		6
				SILTY GRAVEL with SAND -Moderate yellow brown, damp, dense -Light grey, fractured rock, dense at bottom	
	19	GM	178	END of HOLE -Refusal	7
					8
					9

Yukon **Highways and Public Works**
Transportation Engineering Branch

LOGGED BY: R.Stilwell	Termination Depth: 7m
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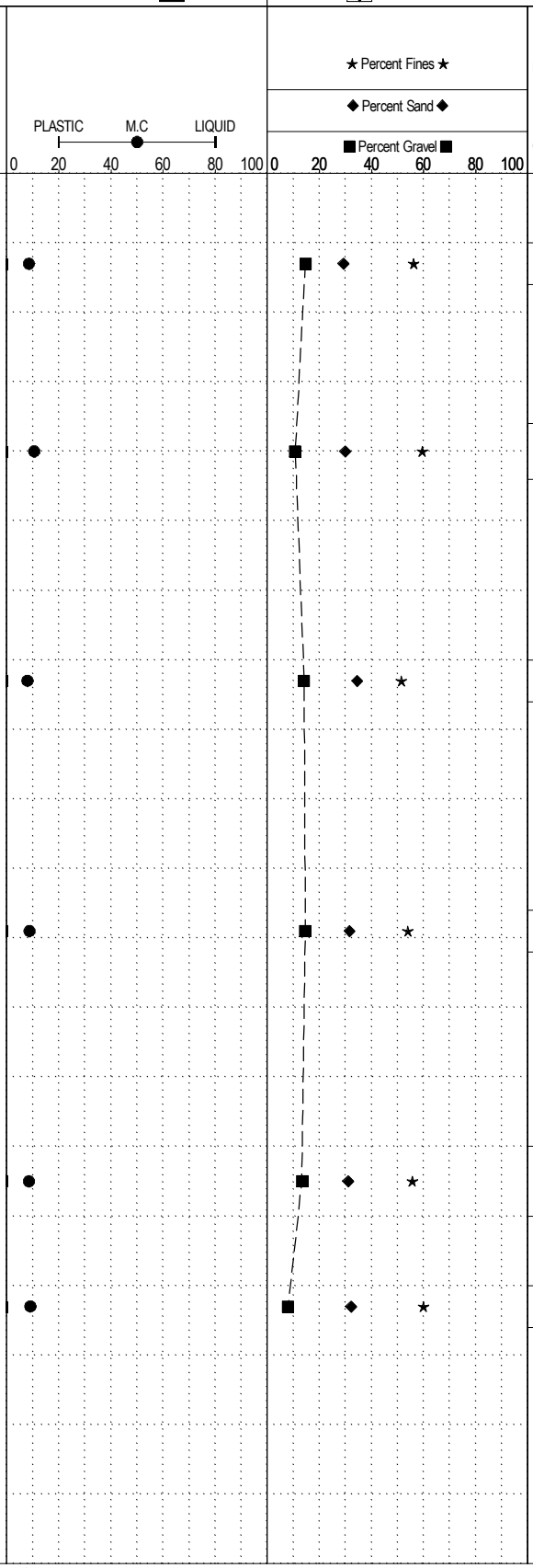
REVIEWED BY:	Pit #: Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT	N. Canol	SOURCE/TP#: **855-5129**
Darkside Drilling	Deep Creek Bridge Abutments, km 255,	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates: Z08V N6882788m E653927m	ELEVATION: m

SAMPLE TYPE: RETURN | DCPT | AUGER | BULK | SPT | CORE



Sample Type	Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
				SANDY SILT -Dusky brown -Frozen, cobble at 1.4m	
	20	ML			1
	21	ML		-Unfrozen, damp, firm	2
				-Moist, stiff	3
	22	ML		-Some grinding	4
					5
	23	ML		-Basal Till, no grinding	6
	24	ML		-Rounded to sub rounded gravels, firm, damp -Easy drilling, cohesive materials. Damp Basal Till	7
	25	ML			8
				-Material transitions from basal till to cobbles, no return	9

Yukon **Highways and Public Works**
Transportation Engineering Branch

LOGGED BY: R.Stilwell	Termination Depth: 10.5m
COMPILED BY: R.Stilwell	Complete: 3/9/2015 1:00:00 PM
REVIEWED BY:	Pit #:

SUBSURFACE EXPLORATION AND TEST REPORT	N. Canol	SOURCE/TP#: **855-5129**
Darkside Drilling	Deep Creek Bridge Abutments, km 255,	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates: Z08V N6882788m E653927m	ELEVATION: m

SAMPLE TYPE ■ RETURN ⇩ DCPT ◧ AUGER 〓 BULK ⧓ SPT ▮ CORE

ELEV. (m)	PLASTIC M.C LIQUID 0 20 40 60 80 100	★ Percent Fines ★ ◆ Percent Sand ◆ ■ Percent Gravel ■ 0 20 40 60 80 100	Sample Type	Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
							-Very difficult drilling, no return	
							END of HOLE -Refusal	11 12 13 14 15 16 17 18 19

Yukon **Highways and Public Works**
Transportation Engineering Branch

LOGGED BY: R.Stilwell	Termination Depth: 10.5m
COMPILED BY: R.Stilwell	Complete: 3/9/2015 1:00:00 PM
REVIEWED BY:	Pit #:

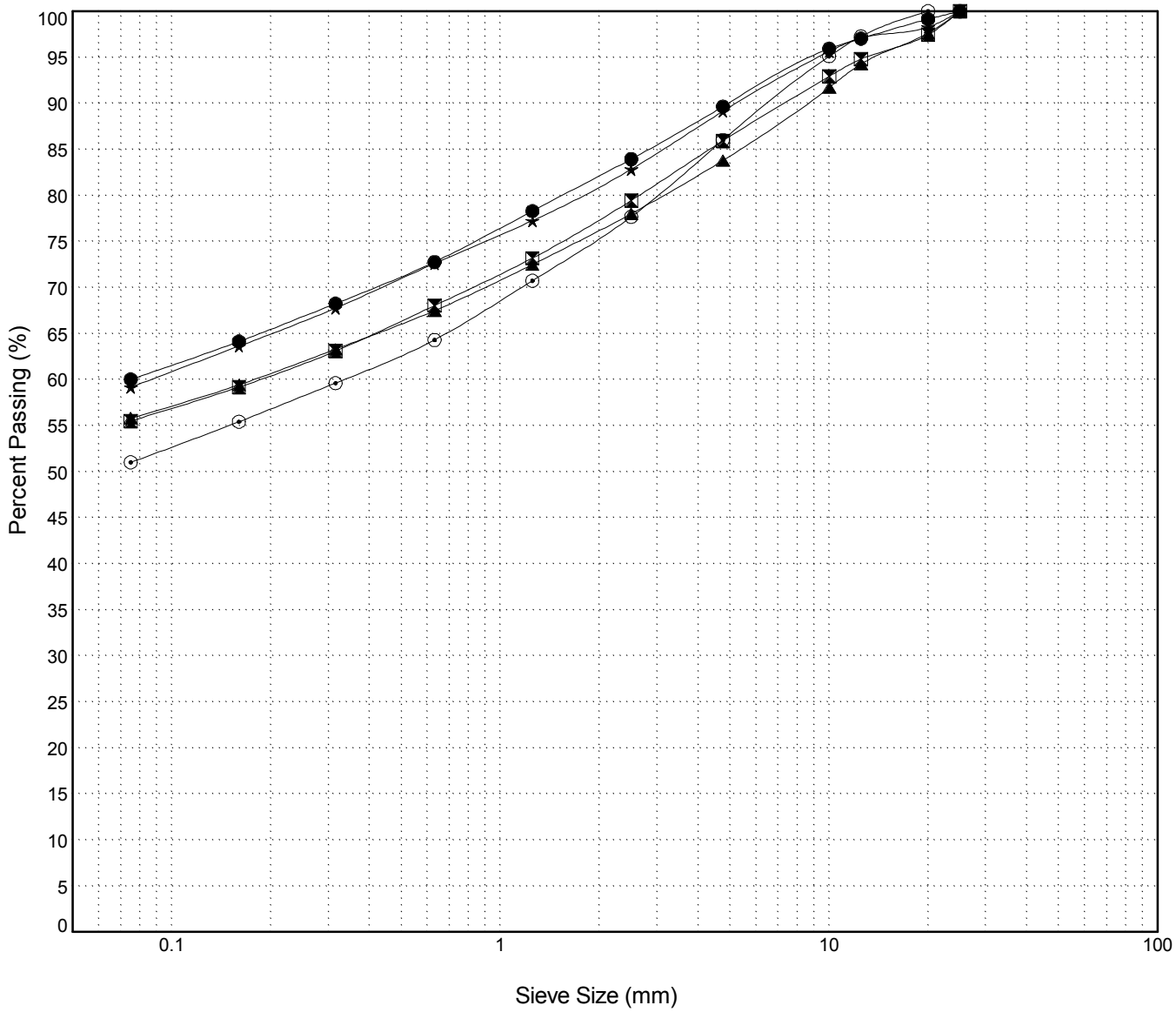
GRAIN SIZE ANALYSIS	Deep Creek Bridge Abutments	SOURCE/TP#: **855-5126**
Darkside Drilling	km 255	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates:Z08V N6882856m E653984m	ELEVATION: m

Master Revised July 2013

	Field #	Lab #	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
●	01	1096	0.6 to 0.9	SANDY SILT(ML)	**10.3**	NP	NP	NP		
⊠	02	1097	1.5 to 1.7	SANDY SILT(ML)	**8.7**	NP	NP	NP		
▲	03	1098	3.2 to 3.5	SANDY SILT with GRAVEL(ML)	**8.7**	NP	NP	NP		
★	04	1099	5.0 to 5.4	SANDY SILT(ML)	**9.3**	NP	NP	NP		
⊙	05	1100	6.0 to 6.6	SANDY SILT(ML)	**7.6**	NP	NP	NP		

	Field #	Lab #		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	%Breakdown Gravel	Sand	Silt	Clay
●	01	1096	%PASSING	100.0	100.0	100.0	100.0	99.1	97.0	95.9	89.6	83.9	78.3	72.8	68.2	64.1	60.0	**10.4**	**29.6**	**60.0**	
⊠	02	1097		100.0	100.0	100.0	100.0	97.4	94.8	92.9	85.9	79.4	73.2	68.0	63.1	59.2	55.5	**14.1**	**30.4**	**55.5**	
▲	03	1098		100.0	100.0	100.0	100.0	97.6	94.3	91.7	83.8	78.0	72.5	67.5	63.3	59.4	55.8	**16.2**	**28.0**	**55.8**	
★	04	1099		100.0	100.0	100.0	100.0	98.3	97.1	95.6	89.1	82.8	77.2	72.6	67.8	63.6	59.2	**10.9**	**30.0**	**59.2**	
⊙	05	1100		100.0	100.0	100.0	100.0	100.0	97.3	95.1	86.0	77.7	70.7	64.3	59.6	55.4	51.0	**14.0**	**35.0**	**51.0**	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



Yukon	Highways and Public Works Transportation Engineering Branch	LOGGED BY: R.Stilwell	Pit #:
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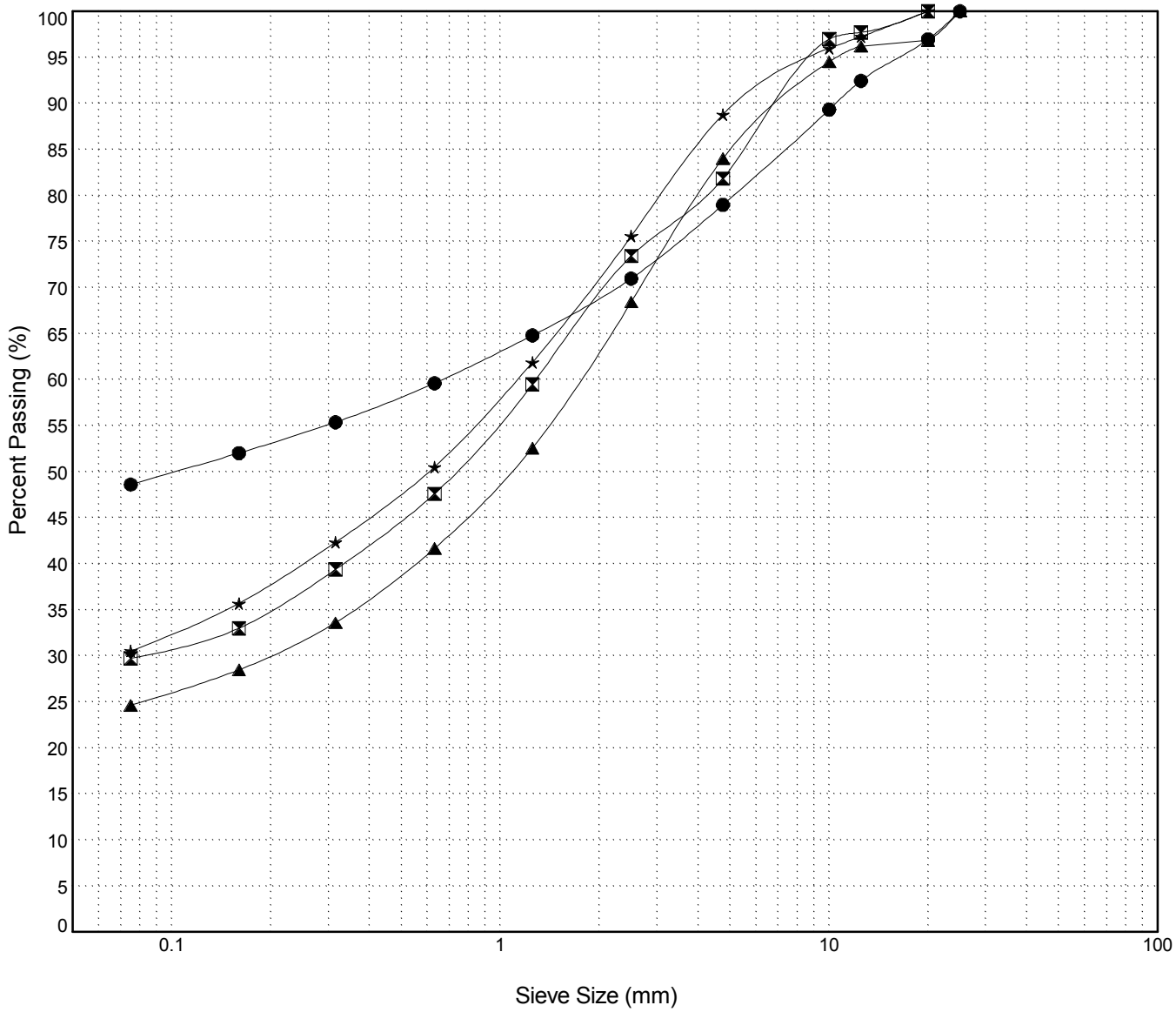
GRAIN SIZE ANALYSIS	Deep Creek Bridge Abutments	SOURCE/TP#: **855-5126**
Darkside Drilling	km 255	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates:Z08V N6882856m E653984m	ELEVATION: m

Master Revised July 2013

	Field #	Lab #	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
●	06	1101	7.5 to 8.0	SILTY SAND with GRAVEL(SM)	**8.1**	NP	NP	NP		
⊠	07	1102	9.7 to 10.2	SILTY SAND with GRAVEL(SM)	**2.1**	NP	NP	NP		
▲	08	1103	10.5 to 11.5	SILTY SAND with GRAVEL(SM)	**2.5**	NP	NP	NP		
★	09	1104	16.5 to 16.9	SILTY SAND(SM)	**7.6**	NP	NP	NP		

	Field #	Lab #		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	%Breakdown Gravel	Sand	Silt	Clay
●	06	1101	%PASSING	100.0	100.0	100.0	100.0	96.9	92.4	89.3	79.0	71.0	64.8	59.6	55.4	52.0	48.6	**21.0**	**30.4**	**48.6**	
⊠	07	1102		100.0	100.0	100.0	100.0	100.0	97.7	97.0	81.8	73.4	59.5	47.6	39.4	33.0	29.7	**18.2**	**52.1**	**29.7**	
▲	08	1103		100.0	100.0	100.0	100.0	96.8	96.2	94.5	84.0	68.4	52.6	41.7	33.6	28.5	24.6	**16.0**	**59.4**	**24.6**	
★	09	1104		100.0	100.0	100.0	100.0	100.0	97.2	96.0	88.8	75.6	61.9	50.5	42.3	35.7	30.5	**11.2**	**58.2**	**30.5**	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



Highways and Public Works **Transportation Engineering Branch**	LOGGED BY: R.Stilwell	Pit #:
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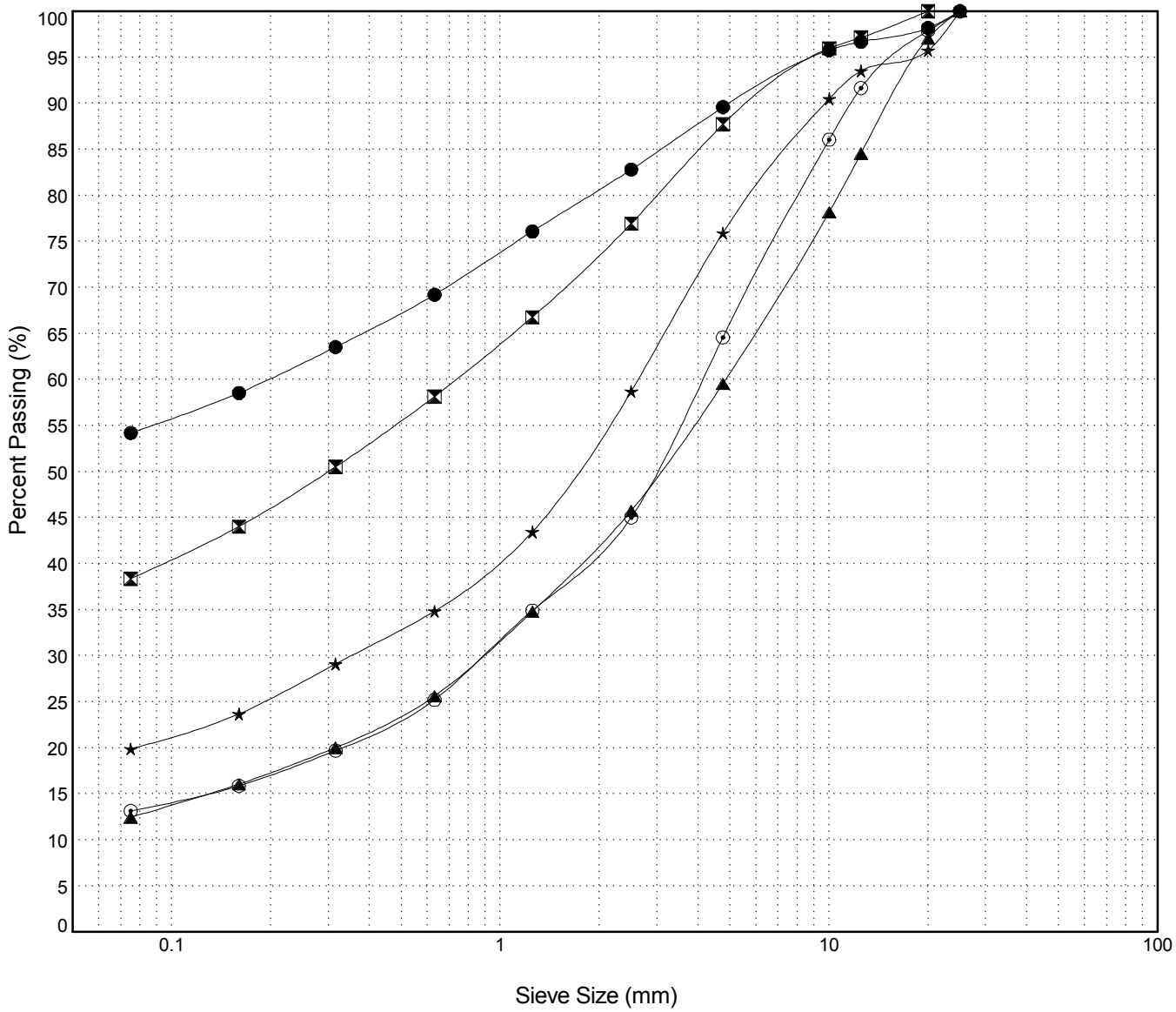
GRAIN SIZE ANALYSIS	Deep Creek Bridge Abutments	SOURCE/TP#: **855-5127**
Darkside Drilling	km 255	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates:Z08V N6882852m E653926m	ELEVATION: m

Master Revised July 2013

	Field #	Lab #	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
●	10	1105	0.7 to 1.0	SANDY SILT(ML)	**9.6**	NP	NP	NP		
⊠	11	1106	1.5 to 2.0	SILTY SAND(SM)	**10.0**	NP	NP	NP		
▲	12	1107	3.0 to 3.5	SILTY SAND with GRAVEL(SM)	**3.5**	NP	NP	NP	3.5	108.2
★	13	1108	4.5 to 4.7	SILTY SAND with GRAVEL(SM)	**3.7**	NP	NP	NP		
⊙	14	1109	5.1 to 5.5	SILTY SAND with GRAVEL(SM)	**1.1**	NP	NP	NP		

	Field #	Lab #	% 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	%Breakdown Gravel	Sand	Silt	Clay
●	10	1105		100.0	100.0	100.0	100.0	98.2	96.7	95.8	89.6	82.8	76.1	69.2	63.5	58.5	54.2	**10.4**	**35.4**	**54.2**	
⊠	11	1106		100.0	100.0	100.0	100.0	100.0	97.1	96.0	87.7	76.9	66.8	58.2	50.5	44.0	38.4	**12.3**	**49.3**	**38.4**	
▲	12	1107		100.0	100.0	100.0	100.0	97.1	84.5	78.2	59.5	45.8	34.8	25.6	20.0	16.1	12.5	**40.5**	**47.1**	**12.5**	
★	13	1108		100.0	100.0	100.0	100.0	95.8	93.5	90.5	75.9	58.7	43.5	34.8	29.1	23.7	19.9	**24.1**	**56.0**	**19.9**	
⊙	14	1109		100.0	100.0	100.0	100.0	97.9	91.7	86.1	64.6	45.0	34.9	25.2	19.7	15.9	13.2	**35.4**	**51.4**	**13.2**	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



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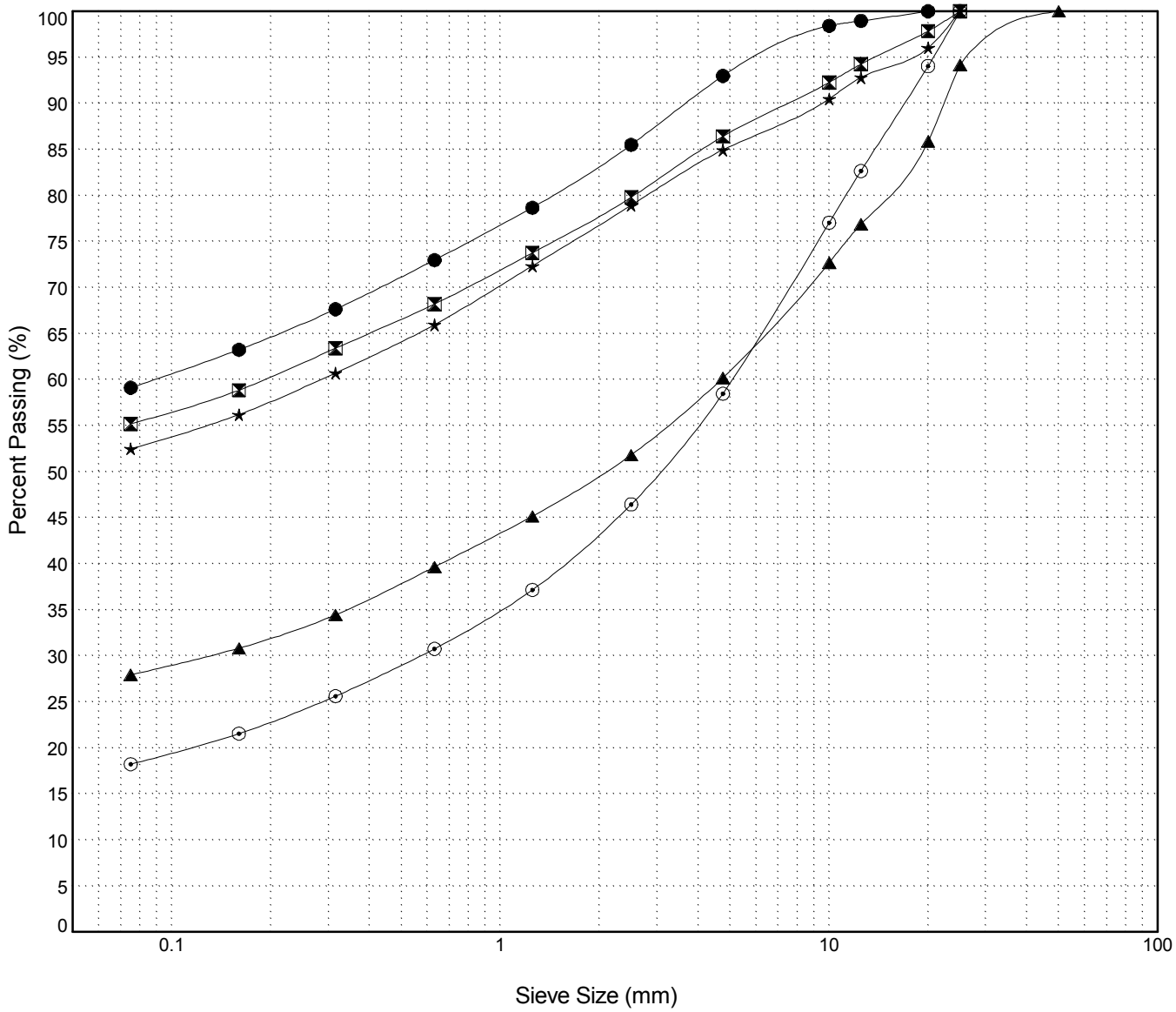
GRAIN SIZE ANALYSIS	Deep Creek Bridge Abutments	SOURCE/TP#: **855-5128**
Darkside Drilling	km 255	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates:Z08V N6882837m E653917m	ELEVATION: m

Master Revised July 2013

	Field #	Lab #	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
●	15	1110	0.3 to 0.8	SANDY SILT(ML)	**8.5**	NP	NP	NP		
⊠	16	1111	1.5 to 2.0	SANDY SILT(ML)	**8.8**	NP	NP	NP		
▲	18	1112	3.0 to 3.5	SILTY GRAVEL with SAND(GM)	**4.6**	NP	NP	NP		
★	17	1113	4.5 to 5.0	SANDY SILT with GRAVEL(ML)	**9.8**	NP	NP	NP		
⊙	19	1114	6.0 to 6.6	SILTY GRAVEL with SAND(GM)	**6.2**	NP	NP	NP		

	Field #	Lab #		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	%Breakdown Gravel	Sand	Silt	Clay
●	15	1110	%PASSING	100.0	100.0	100.0	100.0	100.0	98.9	98.4	93.0	85.5	78.7	73.0	67.6	63.2	59.1	**7.0**	**33.9**	**59.1**	
⊠	16	1111		100.0	100.0	100.0	100.0	97.8	94.3	92.3	86.4	79.8	73.7	68.2	63.4	58.8	55.2	**13.6**	**31.2**	**55.2**	
▲	18	1112		100.0	100.0	100.0	94.2	85.9	76.9	72.7	60.2	51.8	45.1	39.6	34.4	30.8	27.9	**39.8**	**32.2**	**27.9**	
★	17	1113		100.0	100.0	100.0	100.0	96.0	92.8	90.5	84.9	78.9	72.3	66.0	60.7	56.2	52.5	**15.1**	**32.5**	**52.5**	
⊙	19	1114		100.0	100.0	100.0	100.0	94.0	82.6	77.0	58.5	46.4	37.1	30.8	25.6	21.5	18.2	**41.5**	**40.2**	**18.2**	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



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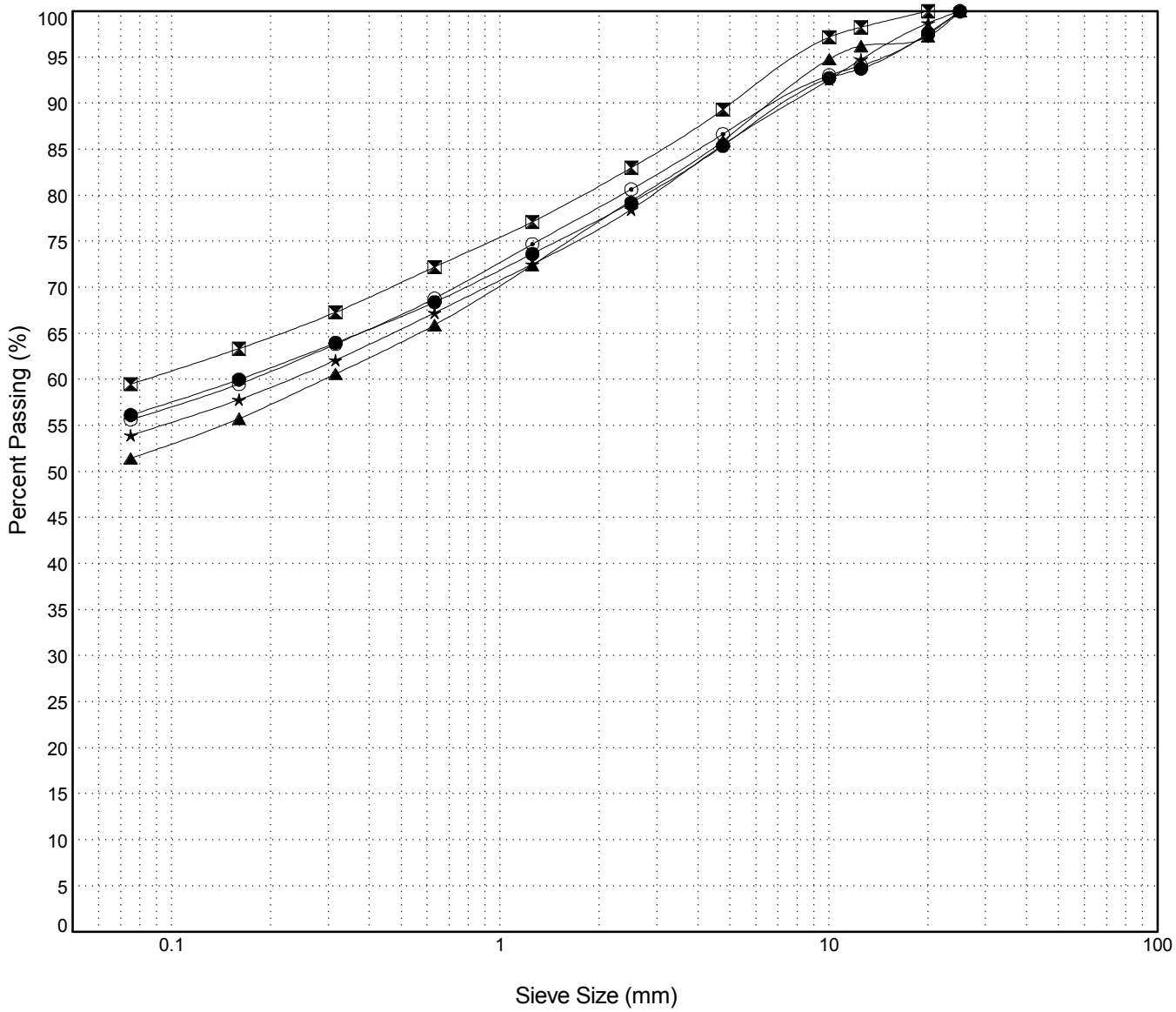
GRAIN SIZE ANALYSIS	Deep Creek Bridge Abutments	SOURCE/TP#: **855-5129**
Darkside Drilling	km 255	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates:Z08V N6882788m E653927m	ELEVATION: m

Master Revised July 2013

	Field #	Lab #	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
●	20	1115	0.5 to 0.8	SANDY SILT(ML)	**8.5**	NP	NP	NP		
⊠	21	1116	1.8 to 2.2	SANDY SILT(ML)	**10.5**	NP	NP	NP		
▲	22	1117	3.5 to 3.8	SANDY SILT(ML)	**7.9**	NP	NP	NP		
★	23	1118	5.3 to 5.6	SANDY SILT(ML)	**8.7**	NP	NP	NP		
⊙	24	1119	7.0 to 7.5	SANDY SILT(ML)	**8.5**	NP	NP	NP		

	Field #	Lab #		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	%Breakdown Gravel	Sand	Silt	Clay
●	20	1115	%PASSING	100.0	100.0	100.0	100.0	97.6	93.8	92.7	85.4	79.2	73.7	68.4	64.0	60.0	56.1	**14.6**	**29.2**	**56.1**	
⊠	21	1116		100.0	100.0	100.0	100.0	100.0	98.3	97.2	89.3	83.0	77.1	72.2	67.3	63.3	59.5	**10.7**	**29.8**	**59.5**	
▲	22	1117		100.0	100.0	100.0	100.0	97.3	96.2	94.8	85.9	79.4	72.4	65.9	60.6	55.8	51.4	**14.1**	**34.5**	**51.4**	
★	23	1118		100.0	100.0	100.0	100.0	98.7	94.8	92.6	85.5	78.5	72.5	67.2	62.1	57.8	54.0	**14.5**	**31.5**	**54.0**	
⊙	24	1119		100.0	100.0	100.0	100.0	97.5	94.1	93.0	86.7	80.6	74.7	68.8	63.9	59.5	55.7	**13.3**	**31.0**	**55.7**	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



Highways and Public Works **Transportation Engineering Branch**	LOGGED BY: R.Stilwell	Pit #:
	COMPILED BY: R.Stilwell	Complete: 3/9/2015 1:00:00 PM
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GRAIN SIZE ANALYSIS	Deep Creek Bridge Abutments	SOURCE/TP#: **855-5129**
Darkside Drilling	km 255	PROJECT NO: 552 202188 3509 0663-3
B61 150mm	Coordinates:Z08V N6882788m E653927m	ELEVATION: m

Master Revised July 2013

	Field #	Lab #	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
●	25	1120	8.0 to 8.3	SANDY SILT(ML)	**9.0**	NP	NP	NP		

	Field #	Lab #		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	%Breakdown Gravel	Sand	Silt	Clay
●	25	1120	%PASSING	100.0	100.0	100.0	100.0	100.0	98.2	97.7	92.0	85.6	79.4	74.1	68.6	64.0	59.9	**8.0**	**32.1**	**59.9**	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse