

SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5227			
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1			
Hitachi Ex200		Coordinates: Z08V N6746573m E373550m		ELEVATION: 843m			
SAMPLE TYPE		UNDISTURBED		DCPT			
		AUGER		BULK			
		SPT		CORE			
ELEV. (m)	★ Percent Fines★ ◆ Percent Sand◆ ■ Percent Gravel■		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
	PLASTIC      M.C      LIQUID 0      20      40      60      80      100						
842	●	★ ◆ ■	01	gp-gm		ORGANICS  POORLY GRADED GRAVEL with SILT and SAND -Light Brown, dry, loose -10-15% Cobbles  -Brown, damp -15-20% Cobbles	1
841	●	★ ◆ ■	02	gp-gm			2
840	●	★ ◆ ■	03	gw		WELL-GRADED GRAVEL with SAND -Brown -10-15% Cobbles	3
839	●	★ ◆ ■				END of HOLE -Target depth reached	4



SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5228			
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1			
Hitachi Ex200		Coordinates: Z08V N6746496m E373524m		ELEVATION: 741m			
SAMPLE TYPE		<input type="checkbox"/> UNDISTURBED <input type="checkbox"/> DCPT <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input checked="" type="checkbox"/> SPT <input type="checkbox"/> CORE					
ELEV. (m)	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <p>PLASTIC    M.C    LIQUID</p> <p>0    20    40    60    80    100</p> </div> <div style="text-align: center;"> <p>★ Percent Fines★</p> <p>◆ Percent Sand◆</p> <p>■ Percent Gravel■</p> <p>0    20    40    60    80    100</p> </div> </div>		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
740			04	gw		<p>ORGANICS</p> <p>WELL-GRADED GRAVEL with SAND</p> <p>-Light brown, dry, loose</p> <p>-10-15% Cobbles</p>	1
739			05	gw		<p>-Greyish brown, damp</p> <p>-5-10% Cobbles</p>	2
738						<p>POORLY GRADED SAND with SILT</p> <p>-Grey</p>	3
737			06	sp-sm		<p>END of HOLE</p> <p>-Target depth reached</p>	4
		Highways and Public Works Transportation Engineering Branch		LOGGED BY: G. Kennedy		Termination Depth: 4m	
				COMPILED BY: M. Jubinville		Complete: 8/19/2015	
				REVIEWED BY: R. Stilwell		Pit #: 115 A-11    Page 1 of 1	

SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5229			
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1			
Hitachi Ex200		Coordinates: Z08V N6746391m E373517m		ELEVATION: 729m			
SAMPLE TYPE		<input type="checkbox"/> UNDISTURBED <input type="checkbox"/> DCPT <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input checked="" type="checkbox"/> SPT <input type="checkbox"/> CORE					
ELEV. (m)	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>★ Percent Fines★</p> <p>◆ Percent Sand◆</p> <p>■ Percent Gravel■</p> </div> <div style="width: 45%;"> <p>Sample #</p> <p>SOIL SYMBOL</p> <p>DCPT/SPT Blows/30cm</p> </div> </div>		SOIL DESCRIPTION		Depth (m)		
	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>PLASTIC    M.C    LIQUID</p> <p>0    20    40    60    80    100</p> </div> <div style="width: 45%;"> <p>0    20    40    60    80    100</p> </div> </div>						
728	●	★◆	■	07	gm	ORGANICS	1
727	●	★	◆	08	gp-gm	SILTY GRAVEL with SAND -Light brown, dry, loose -5-10% Cobbles	2
726	●	★	◆	09	sp-sm	POORLY GRADED GRAVEL with SILT and SAND -Greyish brown, damp -10-15% Cobbles	3
725	●	★	◆			POORLY GRADED SAND with SILT and SAND -Grey	4
						END of HOLE -Target depth reached	




SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5230			
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1			
Hitachi Ex200		Coordinates: Z08V N6746289m E373520m		ELEVATION: 722m			
SAMPLE TYPE		UNDISTURBED		DCPT			
		AUGER		BULK			
		SPT		CORE			
ELEV. (m)	★ Percent Fines ★ ◆ Percent Sand ◆ ■ Percent Gravel ■		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
	PLASTIC      M.C      LIQUID 0      20      40      60      80      100						
721	●	★ ◆ ■	10	gp		ORGANICS	1
720	●	★ ◆ ■	11	gm		POORLY GRADED GRAVEL with SAND -Brownish orange, dry, loose -10-15% Cobbles	2
719						SILTY GRAVEL with SAND -Grey, damp, loose	3
718	▼ ●	★ ◆ ■	12	sp-sm		POORLY GRADED SAND with SILT and GRAVEL -Wet	4
						END of HOLE -Target depth reached	



SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5231			
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1			
Hitachi Ex200		Coordinates: Z08V N6746197m E373536m		ELEVATION: 715m			
SAMPLE TYPE		<input type="checkbox"/> UNDISTURBED <input type="checkbox"/> DCPT <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input checked="" type="checkbox"/> SPT <input type="checkbox"/> CORE					
ELEV. (m)	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <p>PLASTIC    M.C    LIQUID</p> <p>0    20    40    60    80    100</p> </div> <div style="text-align: center;"> <p>★ Percent Fines★</p> <p>◆ Percent Sand◆</p> <p>■ Percent Gravel■</p> <p>0    20    40    60    80    100</p> </div> </div>		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
714			13	gp-gm		<p>ORGANICS</p> <hr/> <p>POORLY GRADED GRAVEL with SILT and SAND</p> <ul style="list-style-type: none"> <li>-Brown, dry, loose</li> <li>-10-15% Cobbles</li> </ul>	1
713			14	gp		<p>POORLY GRADED GRAVEL with SAND</p> <ul style="list-style-type: none"> <li>-Greyish brown, damp</li> <li>-15-20% Cobbles</li> </ul>	2
712			15	gp			3
711						<p>END of HOLE</p> <ul style="list-style-type: none"> <li>-Target depth reached</li> </ul>	4
		Highways and Public Works Transportation Engineering Branch		LOGGED BY: G. Kennedy		Termination Depth: 4m	
				COMPILED BY: M. Jubinville		Complete: 8/19/2015	
				REVIEWED BY: R. Stilwell		Pit #: 115 A-11    Page 1 of 1	

SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5232			
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1			
Hitachi Ex200		Coordinates: Z08V N6746251m E373622m		ELEVATION: 703m			
SAMPLE TYPE		UNDISTURBED		DCPT			
		AUGER		BULK			
		SPT		CORE			
ELEV. (m)	★ Percent Fines★ ◆ Percent Sand◆ ■ Percent Gravel■		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
	PLASTIC      M.C      LIQUID 0      20      40      60      80      100						
702			16			ORGANICS	
						SANDY SILT -Orangeish brown, loose	
702			17	sp		POORLY GRADED SAND with GRAVEL -Greyish brown, damp, loose -10-15% Cobbles	1
701						SILTY SAND -few rocks	2
700			18	sm			3
699						END of HOLE -Target depth reached	4




SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5233			
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1			
Hitachi Ex200		Coordinates: Z08V N6746345m E373613m		ELEVATION: 607m			
SAMPLE TYPE		<input type="checkbox"/> UNDISTURBED <input type="checkbox"/> DCPT <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input checked="" type="checkbox"/> SPT <input type="checkbox"/> CORE					
ELEV. (m)	★ Percent Fines★ ◆ Percent Sand◆ ■ Percent Gravel■		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
	PLASTIC      M.C      LIQUID 0      20      40      60      80      100						
606			19	gm		ORGANICS  SILTY GRAVEL with SAND -Brown, damp, loose -5% Cobbles	1
605			20	gp		POORLY GRADED GRAVEL with SAND -Greyish brown -10-15% Cobbles	2
604							3
603			21	gp			4
						END of HOLE -Target depth reached	
 Highways and Public Works Transportation Engineering Branch		LOGGED BY: G. Kennedy		Termination Depth: 4m			
		COMPILED BY: M. Jubinville		Complete: 8/19/2015			
		REVIEWED BY: R. Stilwell		Pit #: 115 A-11		Page 1 of 1	

SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5234									
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1									
Hitachi Ex200		Coordinates: Z08V N6746389m E373704m		ELEVATION: 649m									
SAMPLE TYPE		UNDISTURBED		DCPT		AUGER		BULK		SPT		CORE	
ELEV. (m)	PLASTIC		M.C		LIQUID		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION		Depth (m)	
	0 20 40 60 80 100		0 20 40 60 80 100		0 20 40 60 80 100								
							22	sm		ORGANICS			
										SILTY SAND -Light brown, dry, loose			
648							23	gw		WELL-GRADED GRAVEL with SAND -Greyish brown, damp, loose -15-20% Cobbles	1		
647											2		
646											3		
645							24	ml		GRAVELLY SILT with SAND -Greyish brown, damp, loose -15-20% Cobbles			
										END of HOLE -Target depth reached	4		



SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5235			
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1			
Hitachi Ex200		Coordinates: Z08V N6746294m E373728m		ELEVATION: 652m			
SAMPLE TYPE		UNDISTURBED		DCPT			
		AUGER		BULK			
		SPT		CORE			
ELEV. (m)	★ Percent Fines★ ◆ Percent Sand◆ ■ Percent Gravel■		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
	PLASTIC      M.C      LIQUID 0      20      40      60      80      100						
651			25	gp-gm		ORGANICS  POORLY GRADED GRAVEL with SILT and SAND -Orange brown, dry, loose -5% Cobbles  WELL-GRADED GRAVEL with SAND -Greyish brown, damp, loose -15-20% Cobbles	1
650			26	gw			2
649			27	gw			3
648						END of HOLE -Target depth reached	4



SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5236				
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1				
Hitachi Ex200		Coordinates: Z08V N6746184m E373748m		ELEVATION: 649m				
SAMPLE TYPE		<input type="checkbox"/> UNDISTURBED <input type="checkbox"/> DCPT <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input checked="" type="checkbox"/> SPT <input type="checkbox"/> CORE						
ELEV. (m)	PLASTIC      M.C      LIQUID 0      20      40      60      80      100	★ Percent Fines ★ ◆ Percent Sand ◆ ■ Percent Grave ■		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
		0      20      40      60      80      100						
648				28	sm		ORGANICS  SILTY SAND -Grey  END of HOLE -Refusal, frozen	1
647								2
646								3
645								4
		Highways and Public Works Transportation Engineering Branch		LOGGED BY: G. Kennedy		Termination Depth: 4m		
				COMPILED BY: M. Jubinville		Complete: 8/19/2015		
				REVIEWED BY: R. Stilwell		Pit #: 115 A-11		Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5237			
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1			
Hitachi Ex200		Coordinates: Z08V N6746255m E373834m		ELEVATION: 661m			
SAMPLE TYPE		UNDISTURBED		DCPT			
		AUGER		BULK			
		SPT		CORE			
ELEV. (m)	★ Percent Fines★ ◆ Percent Sand◆ ■ Percent Gravel■		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
	PLASTIC      M.C      LIQUID 0      20      40      60      80      100						
660			29			ORGANICS	
						SANDY SILT -Orange brown, dry, loose	
659			30	gm		SILTY GRAVEL with SAND -Grey, damp, loose -10-15% Cobbles	1
							2
658			31	ml		SANDY SILT -Grey	
						POORLY GRADED GRAVEL with SILT and SAND -Grey, damp, loose -10-15% Cobbles	3
657			32	gp-gm			
						END of HOLE -Target depth reached	4



SUBSURFACE EXPLORATION AND TEST REPORT		Alaska Highway		SOURCE/TP#: 861-5238			
Source Motors		Marshall Creek, km 1561.0 LHS		PROJECT NO: 552-202101-1001-1-1			
Hitachi Ex200		Coordinates: Z08V N6746167m E373875m		ELEVATION: 658m			
SAMPLE TYPE		<input type="checkbox"/> UNDISTURBED <input type="checkbox"/> DCPT <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input checked="" type="checkbox"/> SPT <input type="checkbox"/> CORE					
ELEV. (m)	★ Percent Fines★ ◆ Percent Sand◆ ■ Percent Gravel■		Sample #	SOIL SYMBOL	DCPT/SPT Blows/30cm	SOIL DESCRIPTION	Depth (m)
	PLASTIC    M.C    LIQUID 0    20    40    60    80    100    0    20    40    60    80    100						
657	●	★ ◆ ■	33	gm		ORGANICS  SILTY GRAVEL with SAND -Light brown, damp, loose -5-10% Cobbles  POORLY GRADED GRAVEL with sILT and SAND -Dark brown, wet, loose -10-15% Cobbles	1
657	●	★ ◆ ■	34	gp-gm			
657	▼					END of HOLE -Water table	2
655							3
654							4



GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5227
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746573m E373550m	ELEVATION: 843m

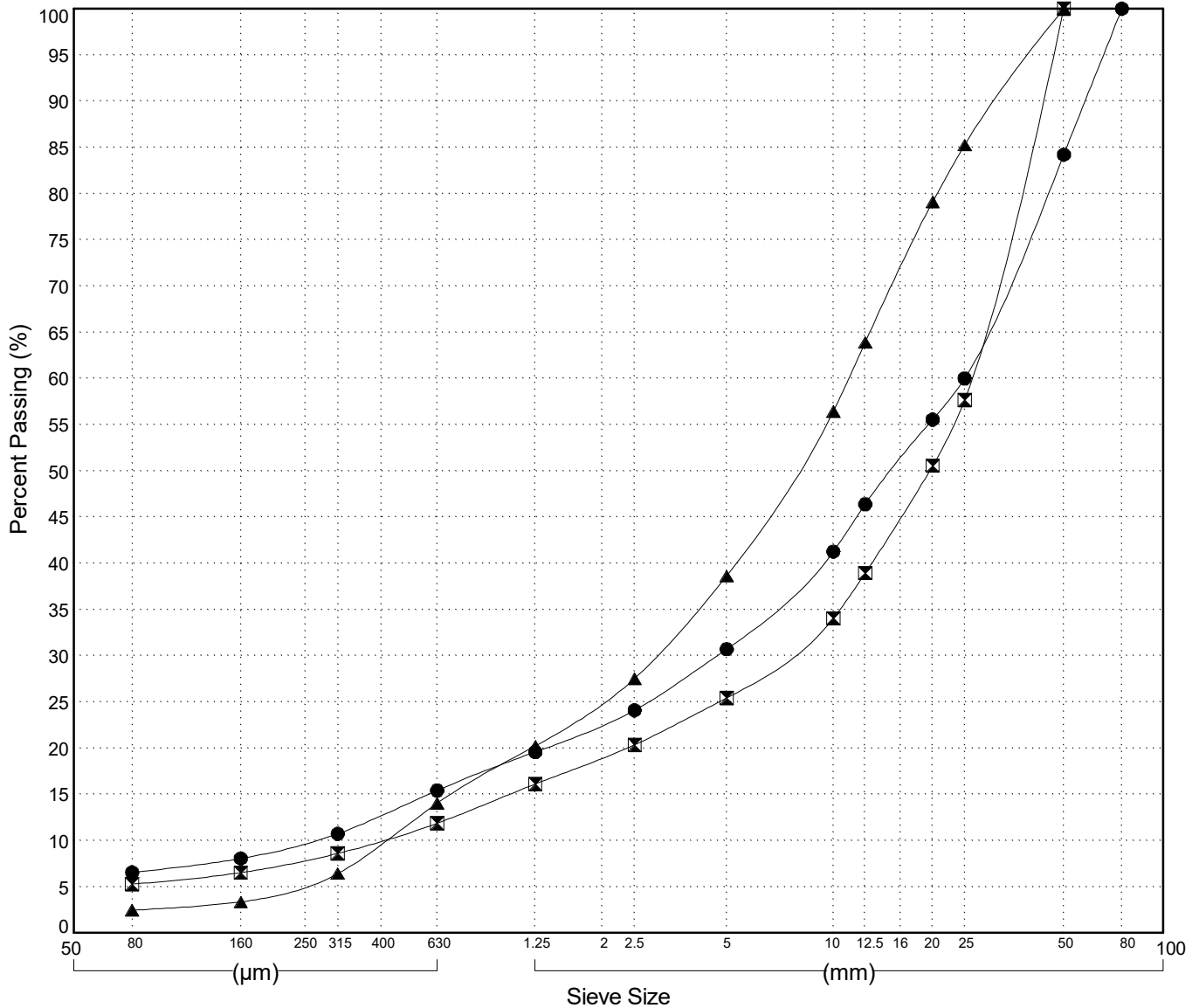
Master Revised July 2013

Field#	Lab#	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
● 01	300	0.2 to 0.6	POORLY GRADED GRAVEL with SILT and SAND(GP-GM)	1.9	NP	NP	NP	3.0	95.5
☒ 02	301	1.0 to 1.4	POORLY GRADED GRAVEL with SILT and SAND(GP-GM)	4.2	NP	NP	NP	4.5	61.3
▲ 03	302	3.2 to 3.6	WELL-GRADED GRAVEL with SAND(GW)	1.8	NP	NP	NP	1.7	25.5

Field#	Lab#	% PASSING	Sieve Size (mm)													% Breakdown			
			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	Gravel	Sand	Silt/Clay
● 01	300	100.0	100.0	100.0	84.2	60.0	55.6	46.4	41.3	30.7	24.1	19.6	15.4	10.7	8.1	6.6	69.3	24.2	6.6
☒ 02	301	100.0	100.0	100.0	57.6	50.6	38.9	34.1	25.4	20.4	16.1	11.9	8.6	6.5	5.3	74.6	20.1	5.3	
▲ 03	302	100.0	100.0	100.0	85.2	79.1	63.9	56.4	38.6	27.5	20.2	14.0	6.4	3.4	2.5	61.4	36.2	2.5	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5228
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746496m E373524m	ELEVATION: 741m

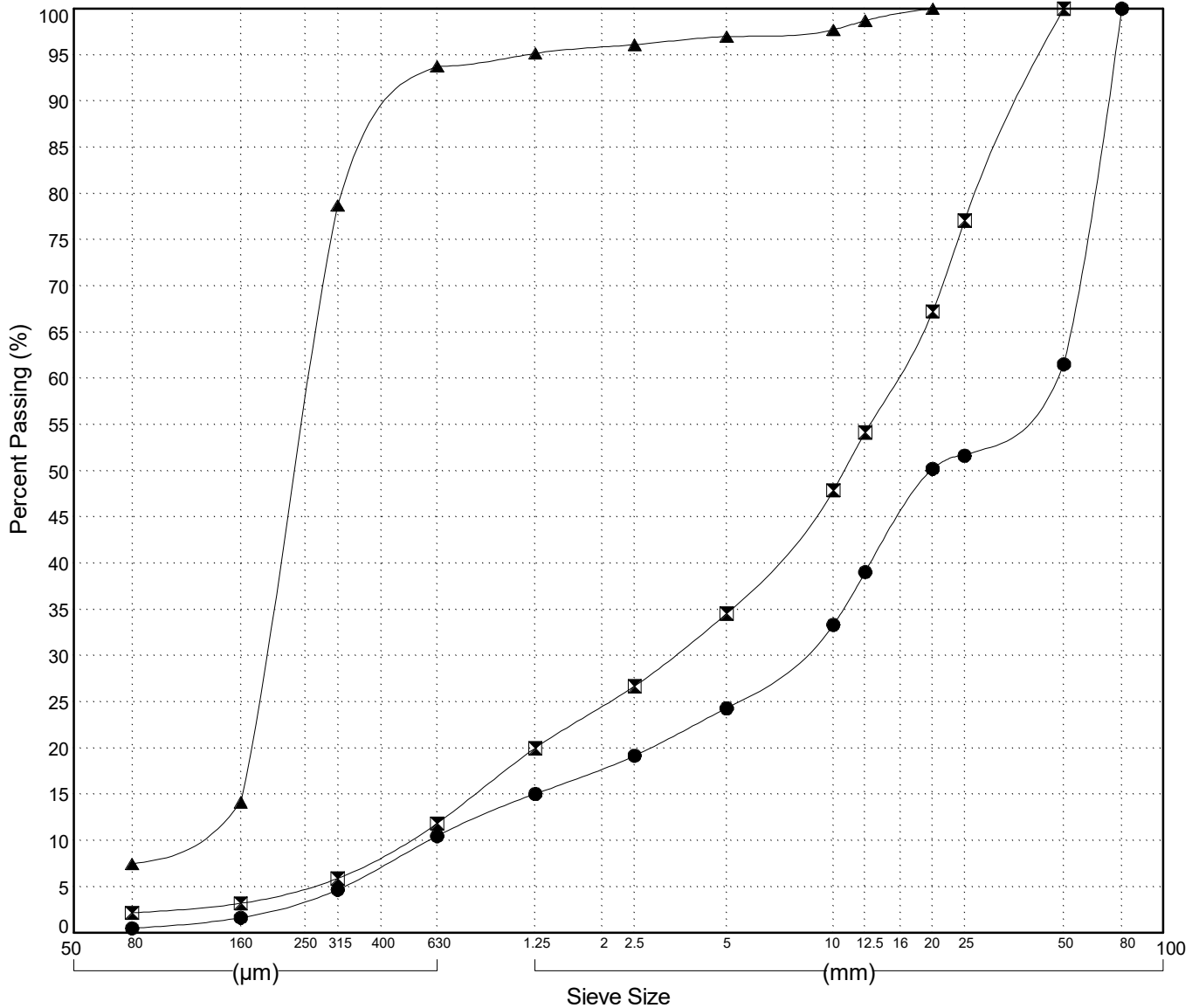
Master Revised July 2013

Field#	Lab#	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
● 04	303	0.4 to 0.8	WELL-GRADED GRAVEL with SAND(GW)	6.5	NP	NP	NP	2.2	75.6
☒ 05	304	1.4 to 1.8	WELL-GRADED GRAVEL with SAND(GW)	3.1	NP	NP	NP	1.4	30.4
▲ 06	305	3.2 to 3.6	POORLY GRADED SAND with SILT(SP-SM)	2.6	NP	NP	NP	1.4	2.6

Field#	Lab#	% PASSING	Sieve Size (mm)													% Breakdown		
			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	Gravel	Sand
● 04	303	100.0	100.0	61.5	51.6	50.2	39.0	33.3	24.3	19.2	15.1	10.5	4.7	1.7	0.5	75.7	23.8	0.5
☒ 05	304	100.0	100.0	100.0	77.1	67.2	54.2	47.9	34.6	26.7	20.0	11.9	5.9	3.2	2.2	65.4	32.4	2.2
▲ 06	305	100.0	100.0	100.0	100.0	98.7	97.7	97.0	96.1	95.2	93.8	78.7	14.2	7.5	3.0	89.5	7.5	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5229
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746391m E373517m	ELEVATION: 729m

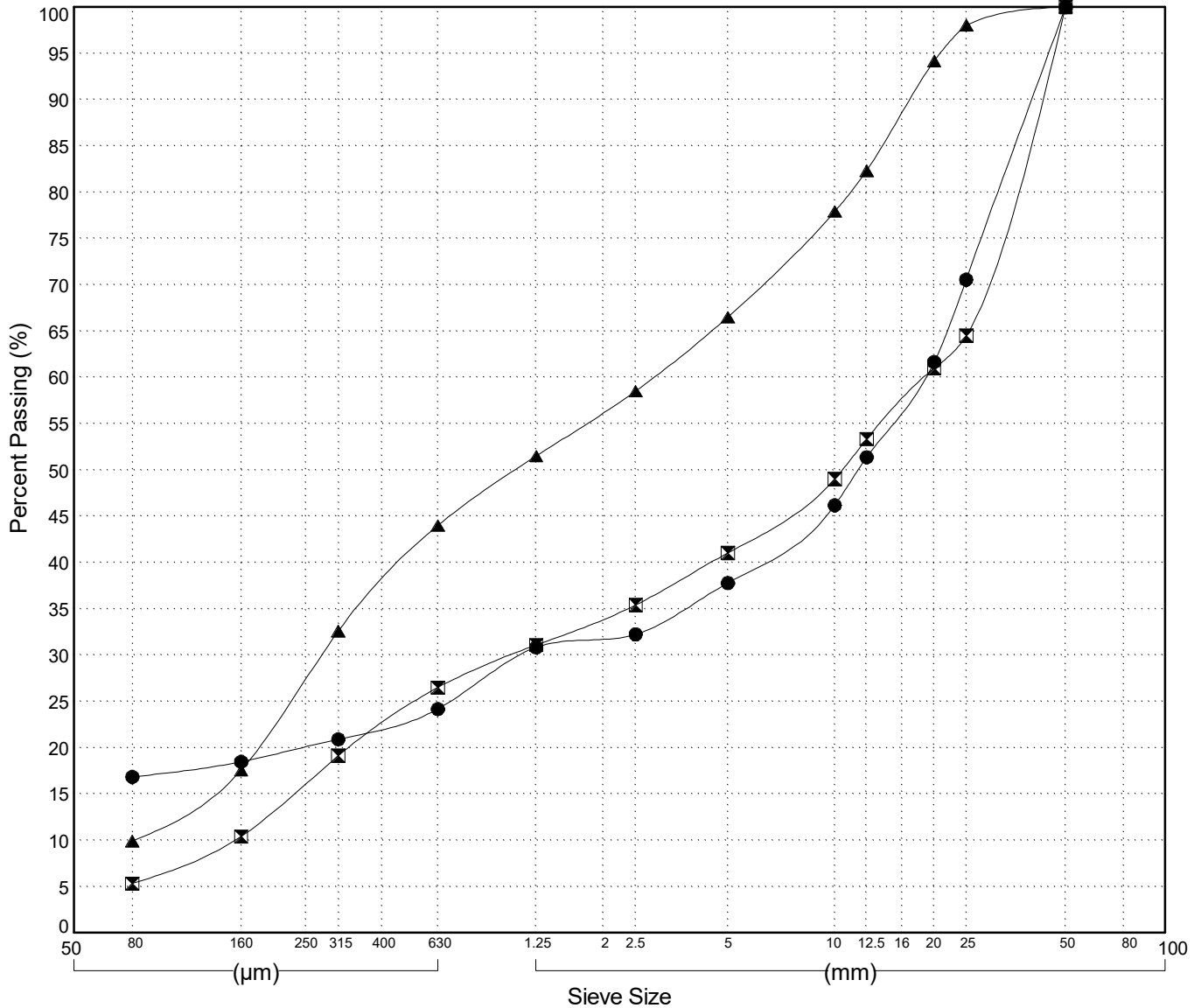
Master Revised July 2013

Field#	Lab#	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
● 07	306	0.4 to 0.8	SILTY GRAVEL with SAND(GM)	3.2	NP	NP	NP		
☒ 08	307	1.6 to 2.0	POORLY GRADED GRAVEL with SILT and SAND(GP-GM)	4.5	NP	NP	NP	0.4	125.1
▲ 09	308	3.0 to 3.4	POORLY GRADED SAND with SILT and GRAVEL(SP-SM)	4.3	NP	NP	NP	0.4	37.2

Field#	Lab#	% PASSING	Sieve Size (mm)													% Breakdown				
			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	Gravel	Sand	Silt	Clay
● 07	306	100.0	100.0	100.0	100.0	70.6	61.6	51.4	46.2	37.8	32.2	30.8	24.2	20.9	18.5	16.8	62.2	20.9	16.8	
☒ 08	307	100.0	100.0	100.0	64.5	61.0	53.3	49.0	41.0	35.4	31.1	26.5	19.1	10.4	5.3		59.0	35.7	5.3	
▲ 09	308	100.0	100.0	100.0	98.0	94.1	82.3	77.9	66.5	58.5	51.5	44.0	32.6	17.6	9.9		33.5	56.6	9.9	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5230
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746289m E373520m	ELEVATION: 722m

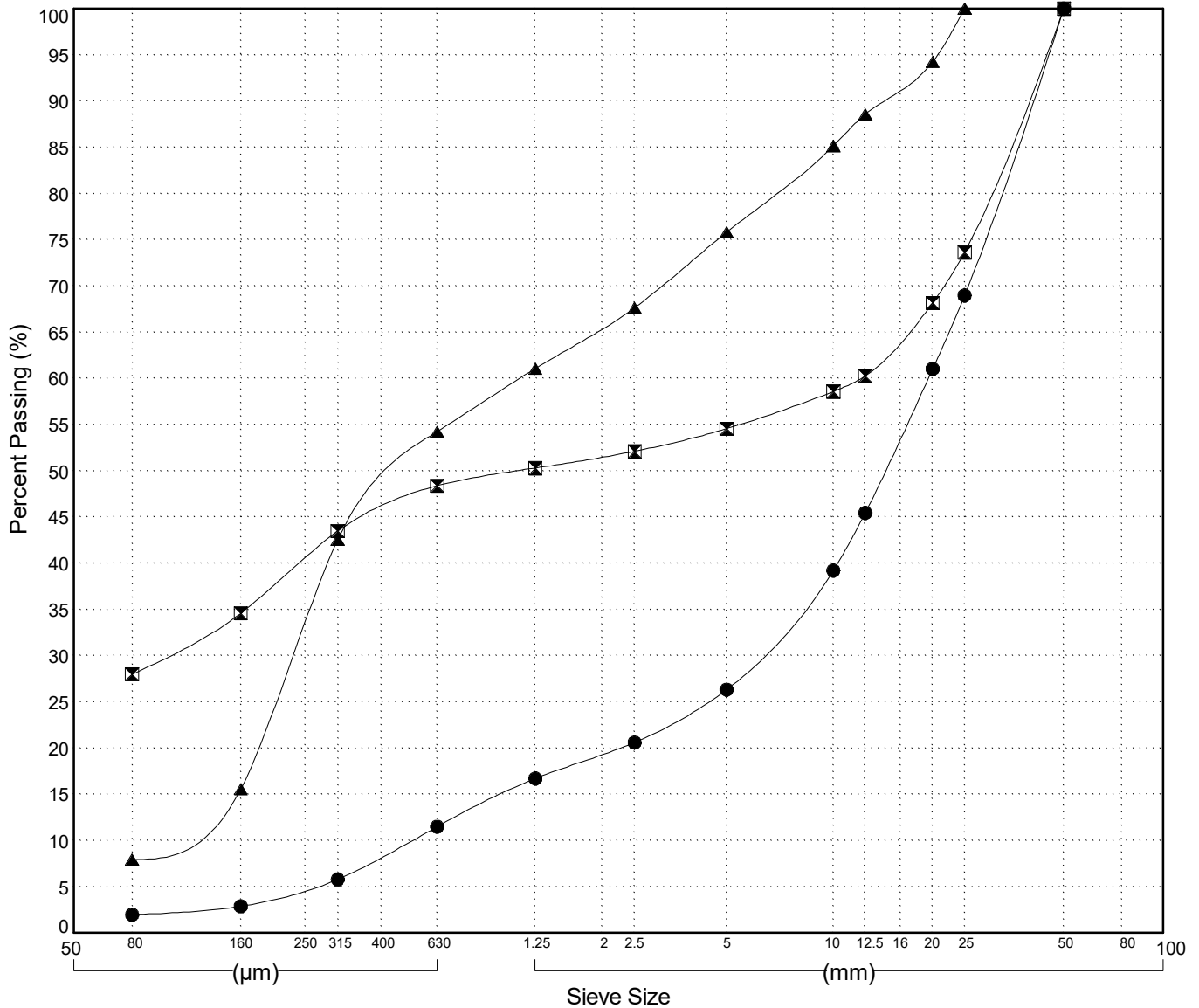
Master Revised July 2013

Field#	Lab#	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
● 10	309	0.3 to 0.7	POORLY GRADED GRAVEL with SAND(GP)	3.9	NP	NP	NP	3.4	36.9
☒ 11	310	1.6 to 2.0	SILTY GRAVEL with SAND(GM)	10.3	NP	NP	NP		
▲ 12	311	3.4 to 3.8	POORLY GRADED SAND with SILT and GRAVEL(SP-SM)	7.3	NP	NP	NP	0.5	12.2

Field#	Lab#	% PASSING	Sieve Size (mm)														% Breakdown		
			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	Gravel	Sand	Silt/Clay
● 10	309	100.0	100.0	100.0	100.0	69.0	61.0	45.4	39.2	26.3	20.6	16.7	11.5	5.8	2.9	2.0	73.7	24.3	2.0
☒ 11	310	100.0	100.0	100.0	73.6	68.2	60.3	58.6	54.6	52.1	50.3	48.4	43.5	34.6	28.0		45.4	26.6	28.0
▲ 12	311	100.0	100.0	100.0	100.0	94.3	88.6	85.2	75.8	67.6	61.1	54.2	42.5	15.6	8.0		24.2	67.8	8.0

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5231
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746197m E373536m	ELEVATION: 715m

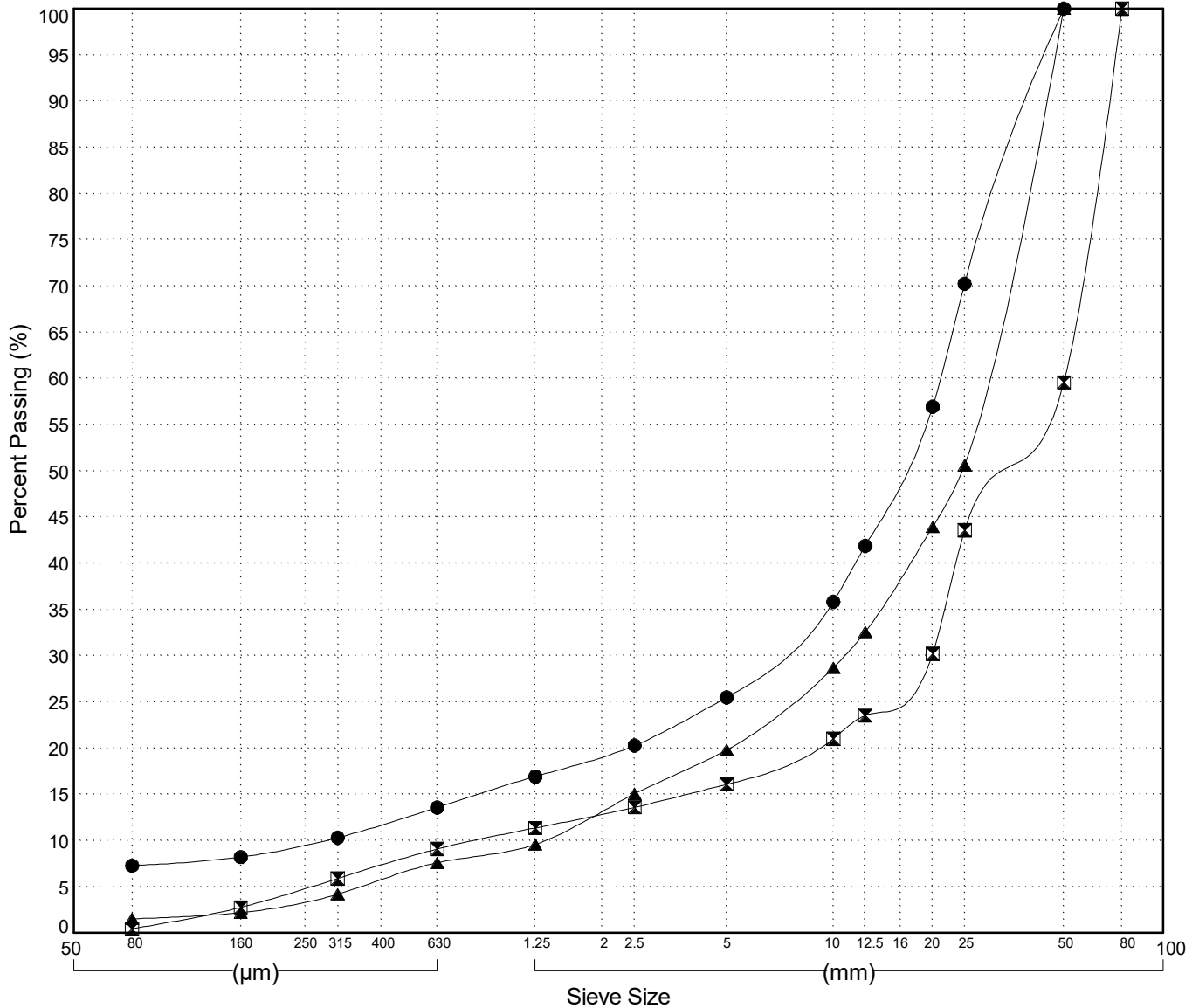
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Field#	Lab#	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
● 13	313	0.3 to 0.7	POORLY GRADED GRAVEL with SILT and SAND(GP-GM)	3.0	NP	NP	NP	7.2	73.9
☒ 14	314	1.2 to 1.6	POORLY GRADED GRAVEL with SAND(GP)	3.0	NP	NP	NP	9.3	60.5
▲ 15	315	3.4 to 3.8	POORLY GRADED GRAVEL with SAND(GP)	1.8	NP	NP	NP	3.1	21.6

Field#	Lab#	% PASSING	Sieve Size (mm)													% Breakdown				
			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	Gravel	Sand	Silt	Clay
● 13	313	100.0	100.0	100.0	100.0	70.2	56.9	41.9	35.8	25.5	20.3	16.9	13.6	10.3	8.2	7.3	74.5	18.2	7.3	
☒ 14	314	100.0	100.0	59.6	43.6	30.2	23.5	21.0	16.1	13.6	11.4	9.1	5.9	2.8	0.5	83.9	15.6	0.5		
▲ 15	315	100.0	100.0	100.0	50.6	43.9	32.6	28.7	19.8	15.1	9.6	7.6	4.2	2.2	1.5	80.2	18.3	1.5		

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse

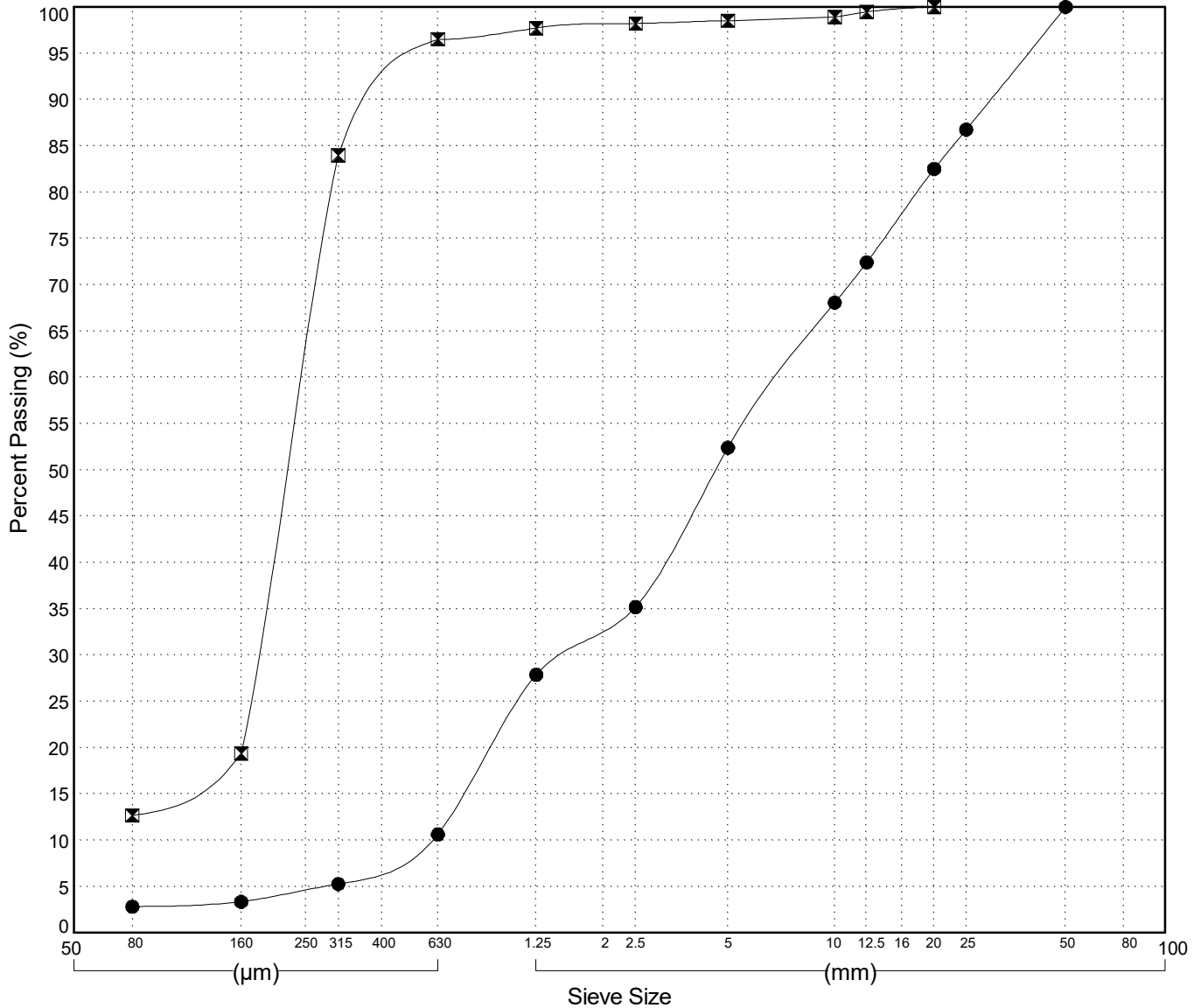


GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5232
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746251m E373622m	ELEVATION: 703m

Master Revised July 2013

Field#	Lab#	Depth	Classification	%H <sub>2</sub> O	LL	PL	PI	C <sub>c</sub>	C <sub>u</sub>											
● 17	316	0.9 to 1.2	POORLY GRADED SAND with GRAVEL(SP)	3.0	NP	NP	NP	0.6	11.8											
☒ 18	317	2.4 to 2.8	SILTY SAND(SM)	9.5	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	
● 17	316	100.0	100.0	100.0	86.7	82.5	72.4	68.1	52.4	35.2	27.9	10.6	5.3	3.4	2.8	47.6	49.6	2.8		
☒ 18	317	100.0	100.0	100.0	100.0	100.0	99.5	98.9	98.5	98.2	97.7	96.5	84.0	19.4	12.7	1.5	85.8	12.7		

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5233
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746345m E373613m	ELEVATION: 607m

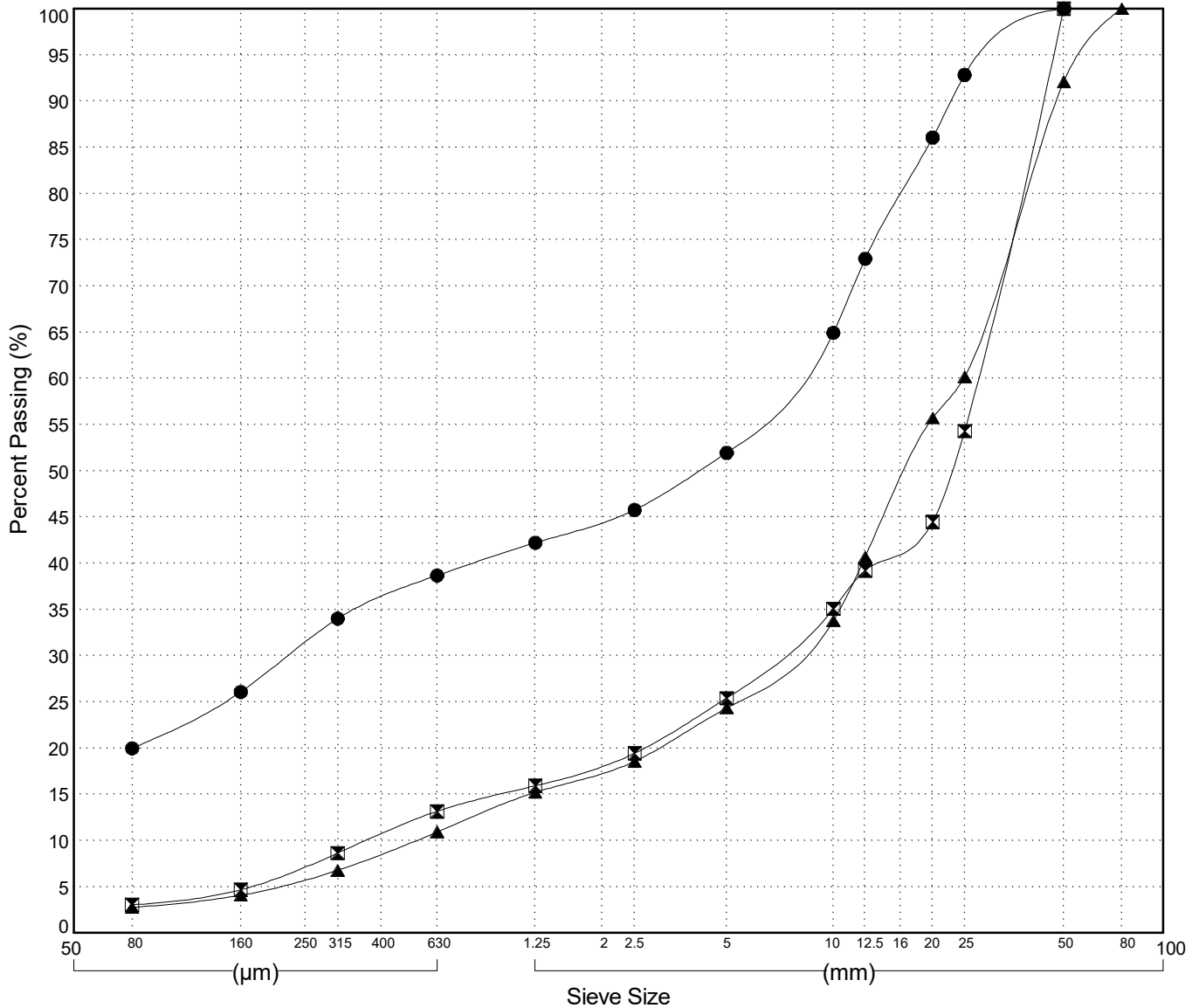
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Field#	Lab#	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
● 19	318	0.3 to 0.7	SILTY GRAVEL with SAND(GM)	9.0	NP	NP	NP		
☒ 20	319	1.0 to 1.4	POORLY GRADED GRAVEL with SAND(GP)	2.5	NP	NP	NP	4.3	70.4
▲ 21	320	3.4 to 3.8	POORLY GRADED GRAVEL with SAND(GP)	3.9	NP	NP	NP	4.1	46.0

Field#	Lab#	% PASSING	Sieve Size (mm)													% Breakdown			
			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	Gravel	Sand	Clay
● 19	318	100.0	100.0	100.0	100.0	92.8	86.1	72.9	64.9	51.9	45.8	42.2	38.7	34.0	26.1	20.0	48.1	32.0	20.0
☒ 20	319	100.0	100.0	100.0	54.3	44.5	39.2	35.1	25.4	19.4	15.9	13.2	8.7	4.7	3.0		74.6	22.4	3.0
▲ 21	320	100.0	100.0	92.1	60.2	55.7	40.7	33.8	24.3	18.6	15.2	10.9	6.8	4.1	2.8		75.7	21.6	2.8

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5234
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746389m E373704m	ELEVATION: 649m

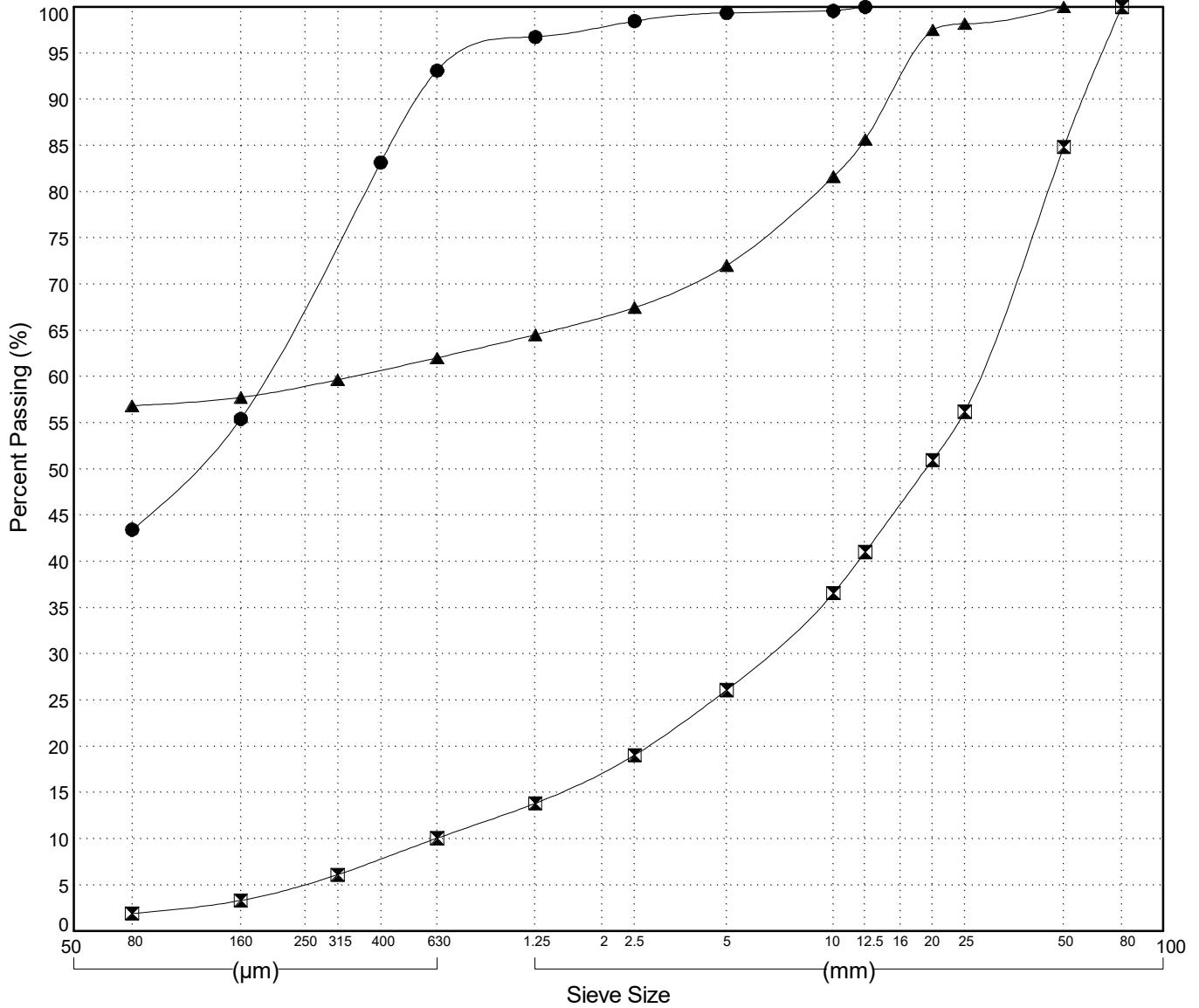
Master Revised July 2013

Field#	Lab#	Depth	Classification	%H <sub>2</sub> O	LL	PL	PI	C <sub>c</sub>	C <sub>u</sub>
● 22	321	0.2 to 0.6	SILTY SAND(SM)	6.6	NP	NP	NP		
☒ 23	322	0.9 to 1.2	WELL-GRADED GRAVEL with SAND(GW)	3.0	NP	NP	NP	2.3	44.0
▲ 24	323	3.6 to 4.0	GRAVELLY SILT with SAND(ML)	3.0	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
● 22	321	100.0	100.0	100.0	100.0	100.0	100.0	99.6	99.4	98.5	96.7	93.1	74.7	55.4	43.4	0.6	55.9	43.4	
☒ 23	322	100.0	100.0	84.8	56.2	51.0	41.0	36.6	26.1	19.1	13.8	10.1	6.1	3.3	1.9	73.9	24.2	1.9	
▲ 24	323	100.0	100.0	100.0	98.2	97.5	85.7	81.6	72.0	67.5	64.5	62.0	59.7	57.8	56.9	28.0	15.2	56.9	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5235
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746294m E373728m	ELEVATION: 652m

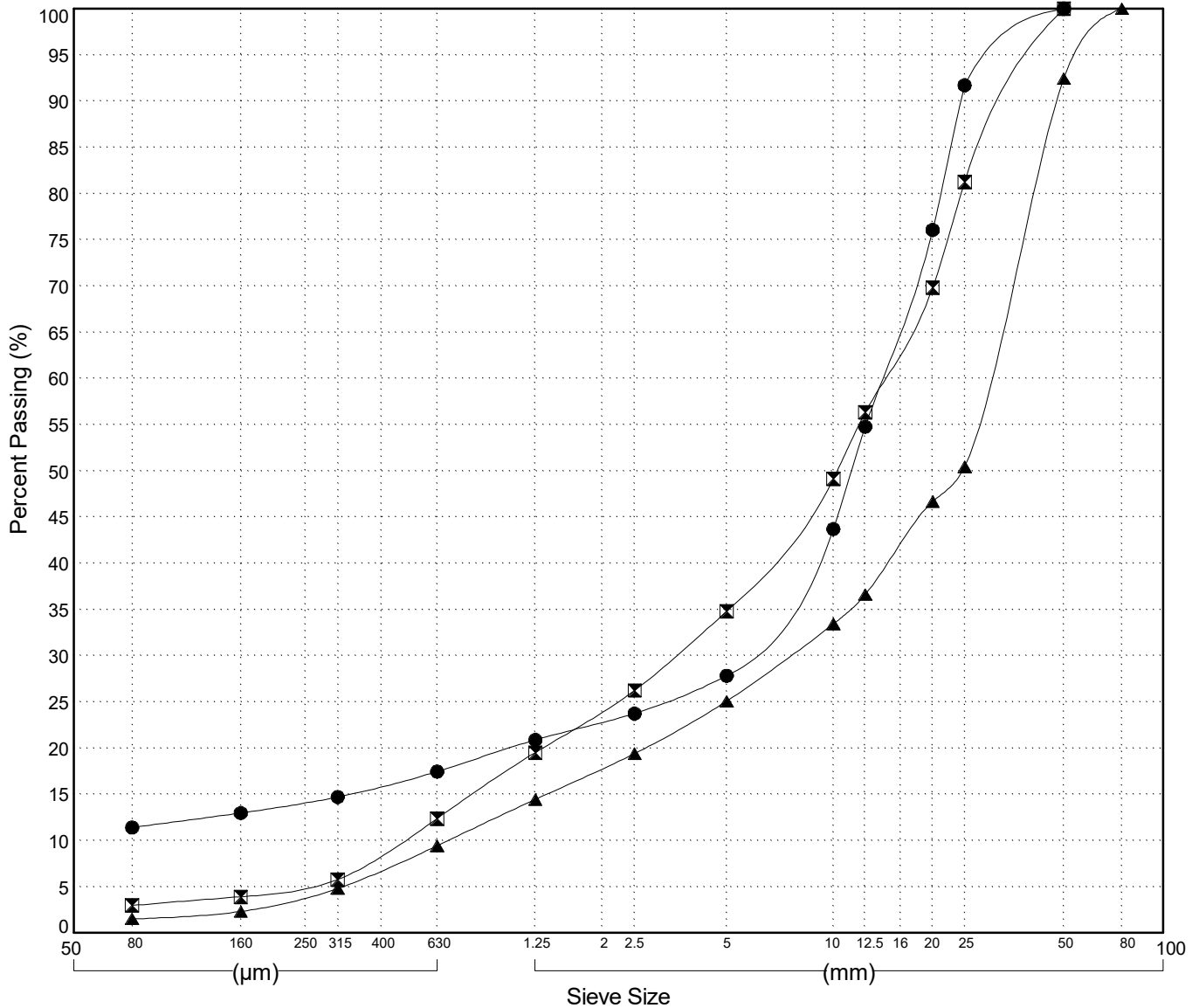
Master Revised July 2013

Field#	Lab#	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
● 25	324	0.3 to 0.6	POORLY GRADED GRAVEL with SILT and SAND(GP-GM)	2.9	NP	NP	NP	52.3	372.3
☒ 26	325	1.0 to 1.4	WELL-GRADED GRAVEL with SAND(GW)	2.1	NP	NP	NP	1.6	29.0
▲ 27	326	3.4 to 3.8	WELL-GRADED GRAVEL with SAND(GW)	2.1	NP	NP	NP	2.7	43.0

Field#	Lab#	% PASSING	Sieve Size (mm)													% Breakdown			
			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	Gravel	Sand	Silt / Clay
● 25	324	100.0	100.0	100.0	100.0	91.7	76.1	54.8	43.7	27.8	23.7	20.9	17.5	14.7	13.0	11.4	72.2	16.4	11.4
☒ 26	325	100.0	100.0	100.0	81.3	69.8	56.3	49.1	34.8	26.2	19.5	12.4	5.8	3.9	3.0		65.2	31.8	3.0
▲ 27	326	100.0	100.0	92.4	50.4	46.7	36.6	33.4	25.1	19.4	14.4	9.4	4.8	2.3	1.5		74.9	23.5	1.5

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse

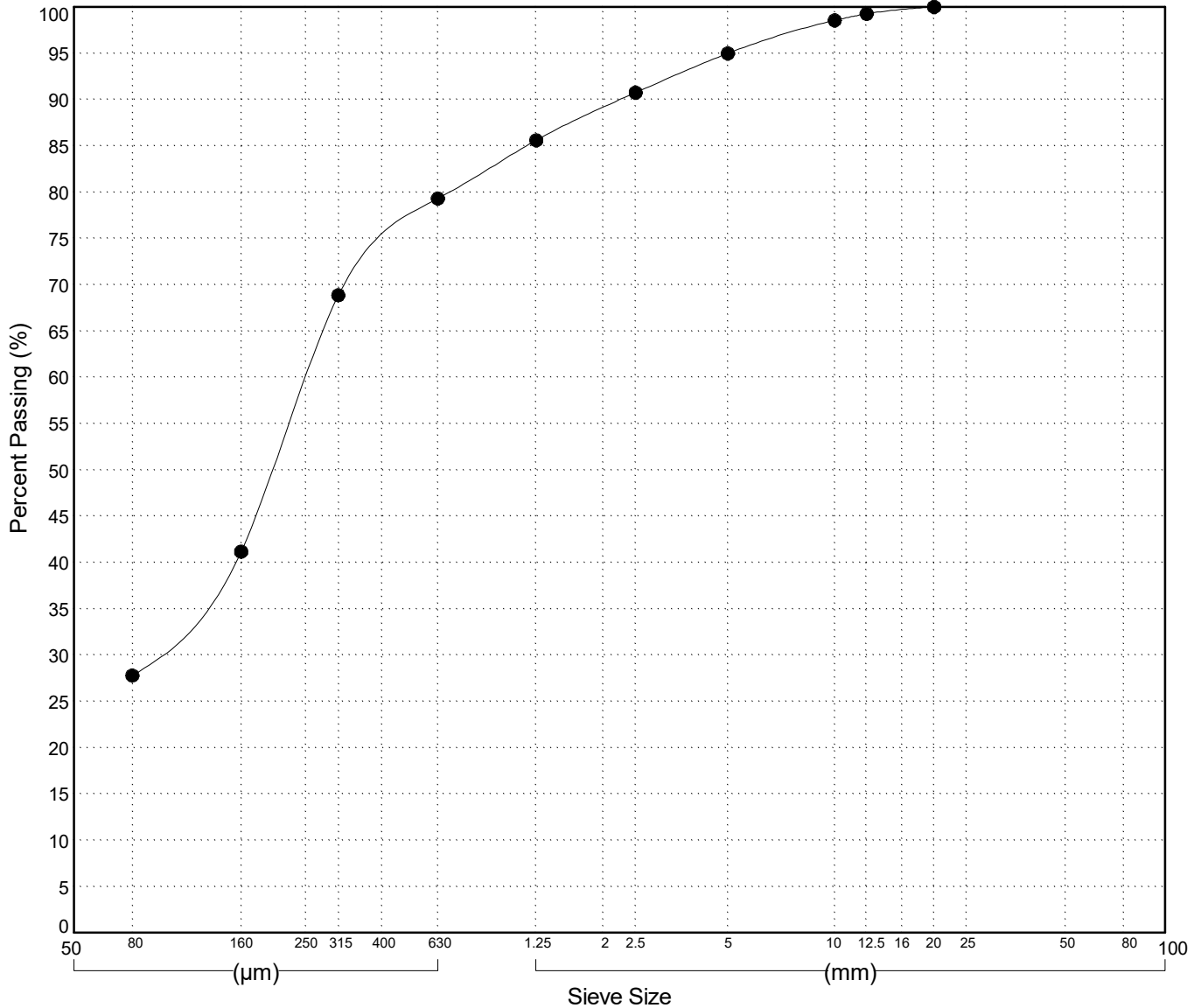


GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5236
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746184m E373748m	ELEVATION: 649m

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Field#	Lab#	Depth	Classification											%H <sub>2</sub> O	LL	PL	PI	Cc	Cu			
● 28	327	0.3 to 0.6	SILTY SAND(SM)											15.6	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					
● 28	327	% PASSING	100.0	100.0	100.0	100.0	100.0	99.2	98.5	95.0	90.7	85.6	79.3	68.9	41.2	27.8	5.0	67.2	27.8			

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5237
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746255m E373834m	ELEVATION: 661m

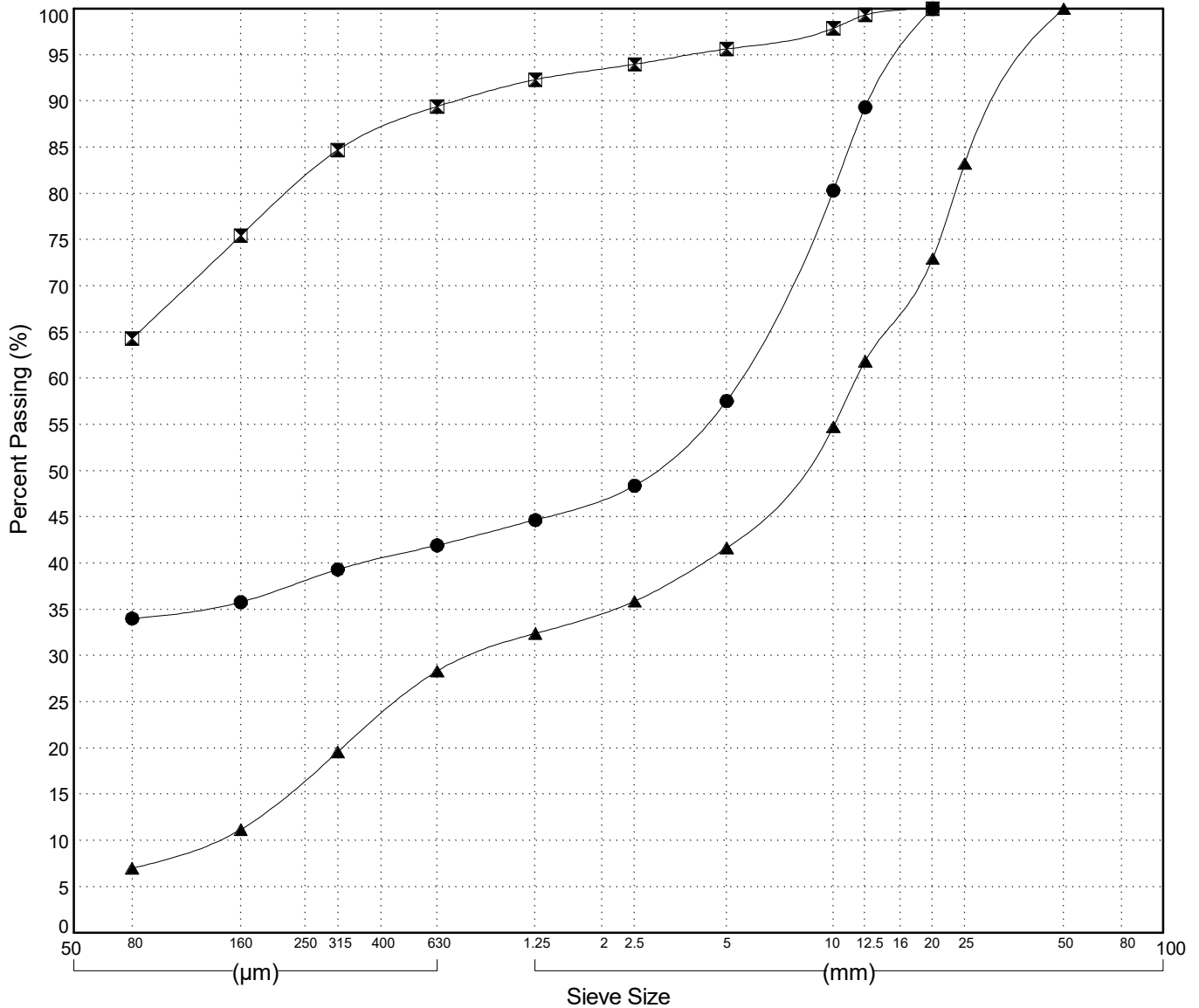
Master Revised July 2013

Field#	Lab#	Depth	Classification	%H2O	LL	PL	PI	Cc	Cu
● 30	329	1.0 to 1.4	SILTY GRAVEL with SAND(GM)	2.1	NP	NP	NP		
☒ 31	330	2.4 to 2.8	SANDY SILT(ML)	4.1	NP	NP	NP		
▲ 32	331	3.3 to 3.6	POORLY GRADED GRAVEL with SILT and SAND(GP-GM)	2.2	NP	NP	NP	0.5	91.3

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													
● 30	329	100.0	100.0	100.0	100.0	100.0	89.3	80.3	57.6	48.4	44.7	41.9	39.3	35.8	34.0	42.4	23.5	34.0	
☒ 31	330	100.0	100.0	100.0	100.0	100.0	99.3	97.9	95.6	94.0	92.3	89.4	84.7	75.4	64.3	4.4	31.3	64.3	
▲ 32	331	100.0	100.0	100.0	83.2	73.0	61.9	54.8	41.7	35.9	32.4	28.3	19.6	11.2	7.0	58.3	34.7	7.0	

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



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Transportation Engineering Branch

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COMPILED BY: M. Jubinville  
REVIEWED BY: R. Stilwell

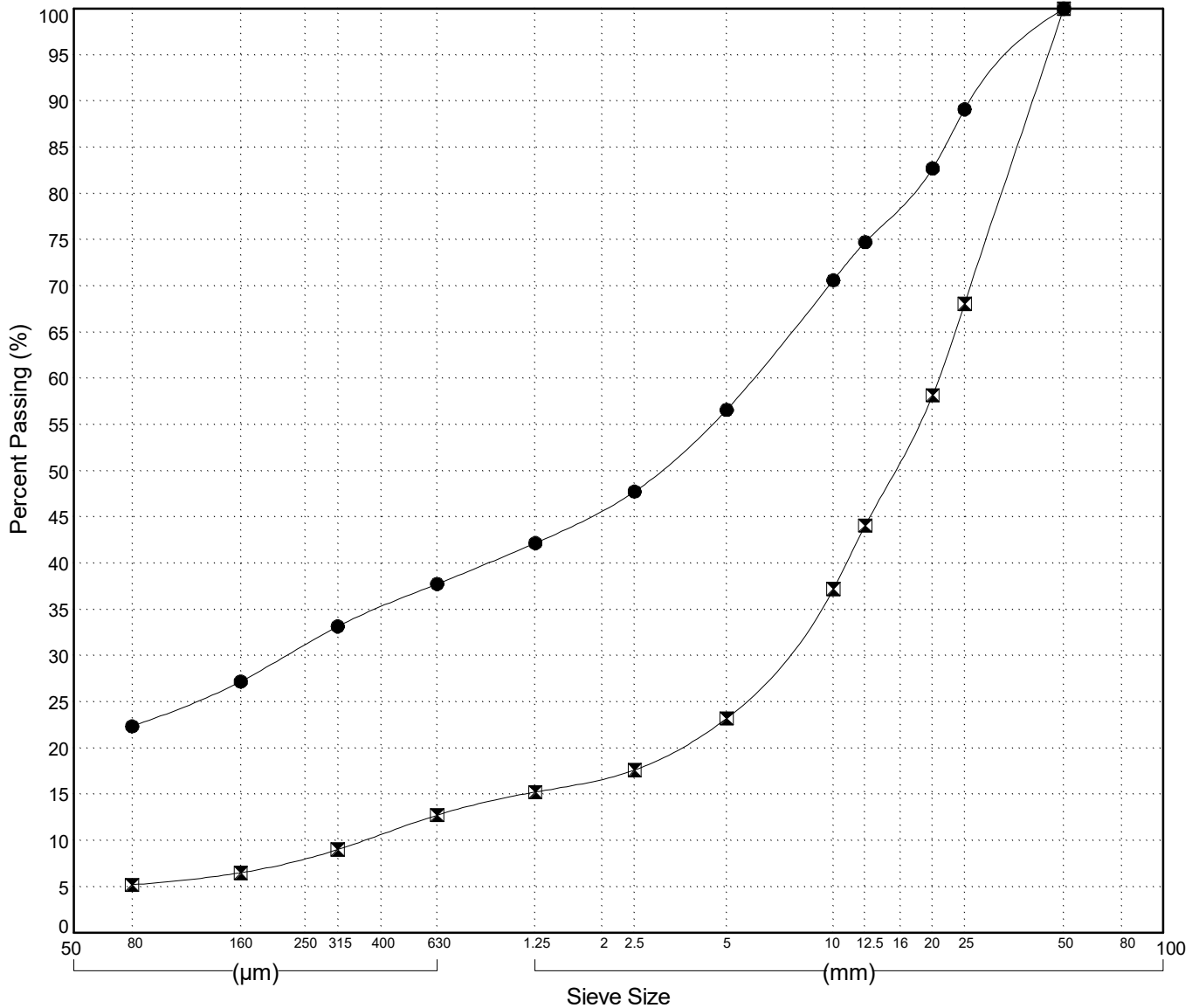
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Complete: 8/19/2015

GRAIN SIZE ANALYSIS	Marshall Creek	SOURCE/TP#: 861-5238
Source Motors	km 1561.0 LHS	PROJECT NO: 552-202101-1001-1-1
Hitachi Ex200	Coordinates: Z08V N6746167m E373875m	ELEVATION: 658m

Master Revised July 2013

Field#	Lab#	Depth	Classification	%H <sub>2</sub> O	LL	PL	PI	C <sub>c</sub>	C <sub>u</sub>											
● 33	332	0.3 to 0.6	SILTY GRAVEL with SAND(GM)	10.3	NP	NP	NP													
☒ 34	333	1.4 to 1.8	POORLY GRADED GRAVEL with SILT and SAND(GP-GM)	5.3	NP	NP	NP	5.9	55.2											
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				
● 33	332	100.0	100.0	100.0	89.1	82.7	74.7	70.6	56.6	47.8	42.2	37.8	33.2	27.2	22.4	Gravel	Sand	Silt	Clay	
☒ 34	333	100.0	100.0	100.0	68.1	58.2	44.1	37.2	23.2	17.6	15.2	12.8	9.0	6.5	5.2	76.8	18.0	5.2		

Silt	Sand			Gravel	
	Fine	Medium	Coarse	Fine	Coarse



Highways and Public Works  
Transportation Engineering Branch

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COMPILED BY: M. Jubinville  
REVIEWED BY: R. Stilwell

Pit # 115 A-11  
Complete: 8/19/2015