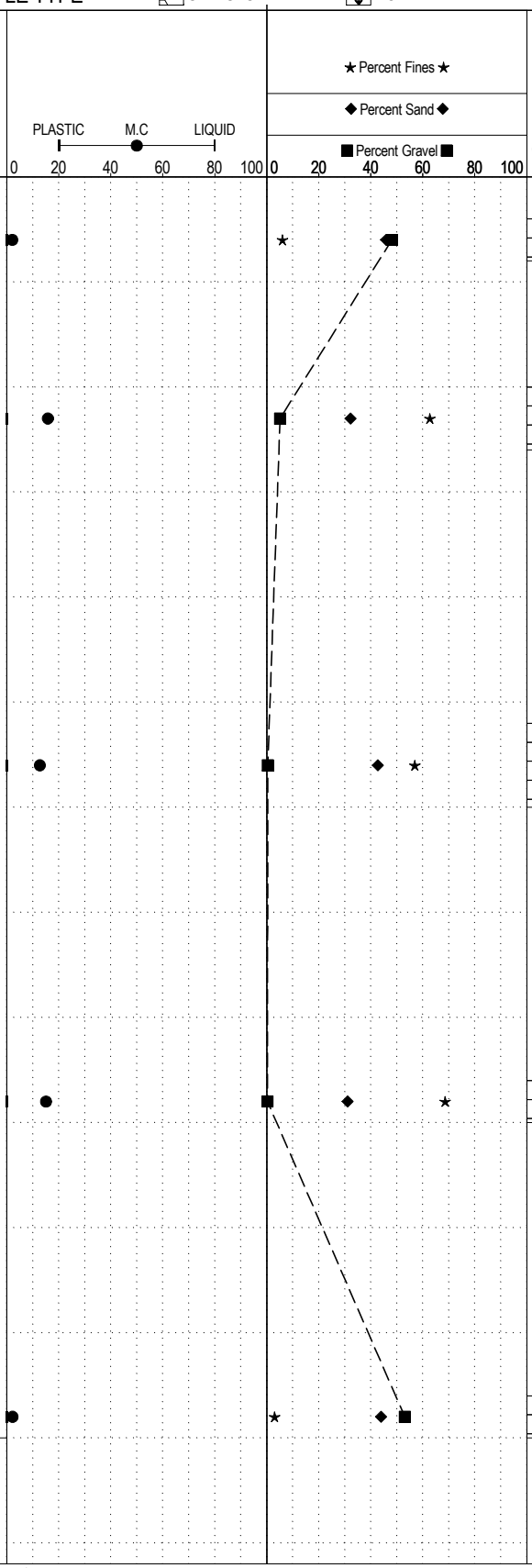
| SUBSURFACE EXPLORATION AND TEST REPORT | Alaska Highway #1 | SOURCE/TP#: **865-5305** |
|---|---|---|
| | Upper Liard Bridge Approaches, km 991 | PROJECT NO: 552-202021-0601-01-1 |
| Sonic Drill | Coordinates: Z630 Nm Em | ELEVATION: m |

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



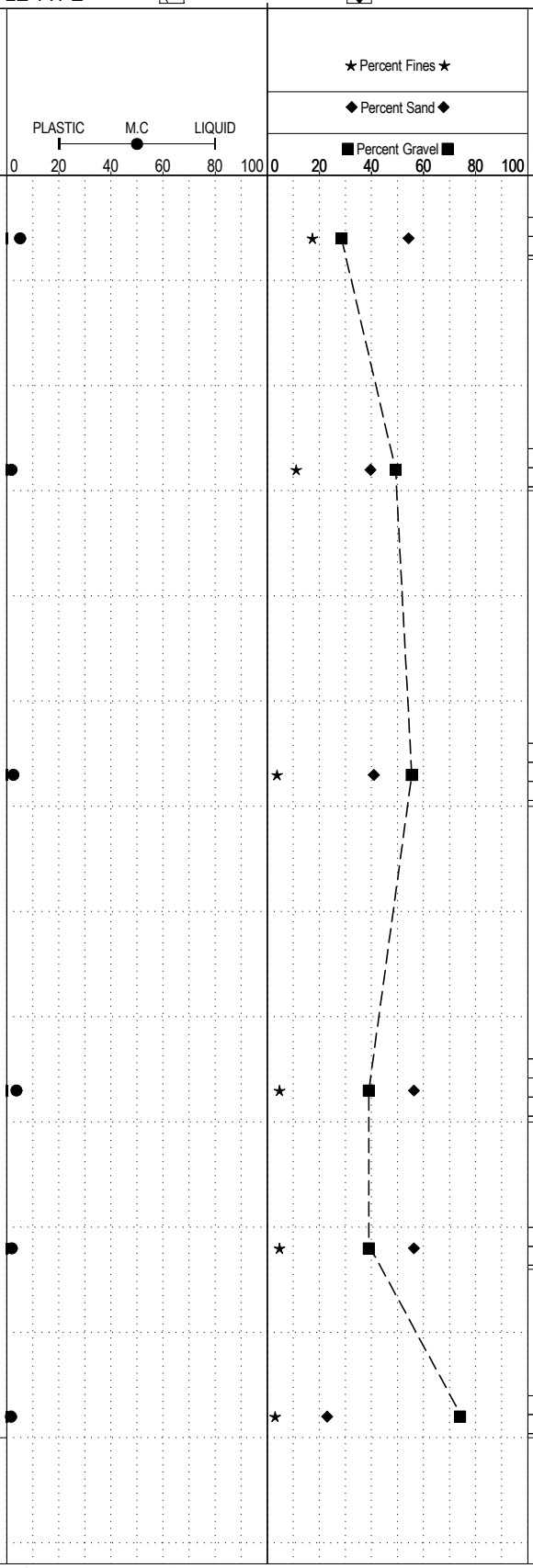

| Sample Type | Sample # | SOIL SYMBOL | DCPT/SPT Blows/30cm | SOIL DESCRIPTION | Depth (m) |
|---|---|---|---|---|---|
| | | | | POORLY GRADED GRAVEL with SILT and SAND<br>-Brown, damp, compact | |
| | 21 | GP-GM | | -Moist | |
| | | | | SANDY SILT<br>-Brown, moist, firm | 1 |
| | 22 | ML | | | 2 |
| | 23 | ML | | | 3 |
| | | | | -Stiff | 4 |
| | 24 | ML | | | 5 |
| | | | | POORLY GRADED GRAVEL with SAND<br>-Light brown, damp, dense | |
| | 25 | GP | | | 6 |
| | | | | END of HOLE | |

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

| LOGGED BY: | Termination Depth: 6m |
|---|---|
| COMPILED BY: | Complete: |
| REVIEWED BY: | Pit #: Page 1 of 1 |

| SUBSURFACE EXPLORATION AND TEST REPORT | Alaska Highway #1 | SOURCE/TP#: **865-5306** |
|---|---|---|
| | Upper Liard Bridge Approaches, km 991 | PROJECT NO: 552-202021-0601-01-1 |
| Sonic Drill | Coordinates: Z632 Nm Em | ELEVATION: m |

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




| ELEV. (m) | Sample Type | Sample # | SOIL SYMBOL | DCPT/SPT Blows/30cm | SOIL DESCRIPTION | Depth (m) |
|---|---|---|---|---|---|---|
| | | 26 | SM | | SILTY SAND with GRAVEL<br>-Dark brown, damp to moist, dense | |
| | | 27 | GW-GM | | WELL-GRADED GRAVEL with SILT and SAND<br>-Very light grey, dry, dense, rounded | 1 |
| | | | | | POORLY GRADED GRAVEL with SAND<br>-Damp, dense, rounded to sub-rounded | 2 |
| | | 28 | GP | | -Sub-angular | 3 |
| | | 29 | SP | | POORLY GRADED SAND with GRAVEL<br>-Brown, moist, compact<br>-Brown, damp | 4 |
| | | 30 | GP-GM | | | 5 |
| | | 31 | GW | | WELL-GRADED GRAVEL with SAND<br>-Light brown, dry, compact | 6 |
| | | | | | END of HOLE | |

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

| LOGGED BY: | Termination Depth: 6m |
|---|---|
| COMPILED BY: | Complete: |
| REVIEWED BY: | Pit #: Page 1 of 1 |

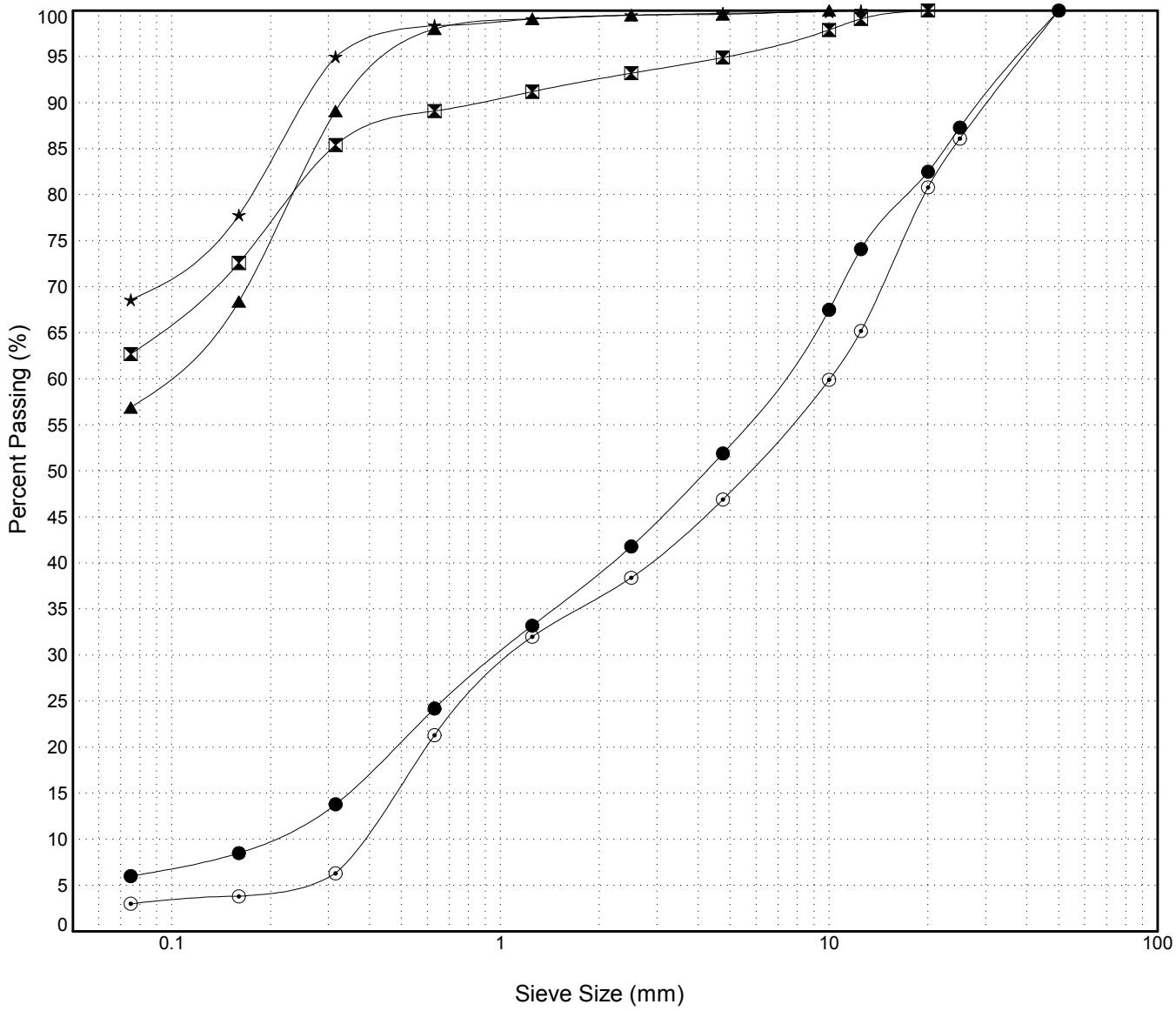
| GRAIN SIZE ANALYSIS | Upper Liard Bridge Approaches | SOURCE/TP#: **865-5305** |
|---|---|---|
| | km 991 | PROJECT NO: 552-202021-0601-01-1 |
| Sonic Drill | Coordinates:Z630 Nm Em | ELEVATION: m |

Master Revised July 2013

| | Field # | Lab # | Depth | Classification | %H2O | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | 21 | 391 | 0.2 to 0.4 | POORLY GRADED GRAVEL with SILT and SAND(GP-GM) | **2.1** | NP | NP | NP | 0.7 | 36.1 |
| ⊠ | 22 | 392 | 1.0 to 1.3 | SANDY SILT(ML) | **15.8** | NP | NP | NP | | |
| ▲ | 23 | 393 | 2.6 to 3.0 | SANDY SILT(ML) | **12.7** | NP | NP | NP | | |
| ★ | 24 | 394 | 4.3 to 4.5 | SANDY SILT(ML) | **15.1** | NP | NP | NP | | |
| ⊙ | 25 | 395 | 5.8 to 6.0 | POORLY GRADED GRAVEL with SAND(GP) | **2.2** | NP | NP | NP | 0.3 | 26.9 |

| | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ● | 21 | 391 | | 100.0 | 100.0 | 100.0 | 87.3 | 82.5 | 74.1 | 67.5 | 51.9 | 41.8 | 33.2 | 24.2 | 13.8 | 8.5 | 6.0 | **48.1** | **45.9** | **6.0** | |
| ⊠ | 22 | 392 | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.1 | 97.9 | 94.9 | 93.2 | 91.2 | 89.1 | 85.4 | 72.6 | 62.7 | **5.1** | **32.2** | **62.7** | |
| ▲ | 23 | 393 | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.6 | 99.5 | 99.1 | 98.0 | 89.1 | 68.4 | 56.9 | **0.4** | **42.7** | **56.9** | |
| ★ | 24 | 394 | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.9 | 99.7 | 99.5 | 99.1 | 98.4 | 95.0 | 77.8 | 68.6 | **0.3** | **31.1** | **68.6** | |
| ⊙ | 25 | 395 | | 100.0 | 100.0 | 100.0 | 86.1 | 80.8 | 65.2 | 59.9 | 46.9 | 38.4 | 32.0 | 21.3 | 6.3 | 3.8 | 3.0 | **53.1** | **43.9** | **3.0** | |

| Silt | Sand | | | Gravel | |
|---|---|---|---|---|---|
| | Fine | Medium | Coarse | Fine | Coarse |




| | | |
|---|---|---|
| Yukon **Highways and Public Works** **Transportation Engineering Branch** | LOGGED BY: | Pit #: |
| | COMPILED BY: | Complete: |
| | REVIEWED BY: | Page 1 of 1 |

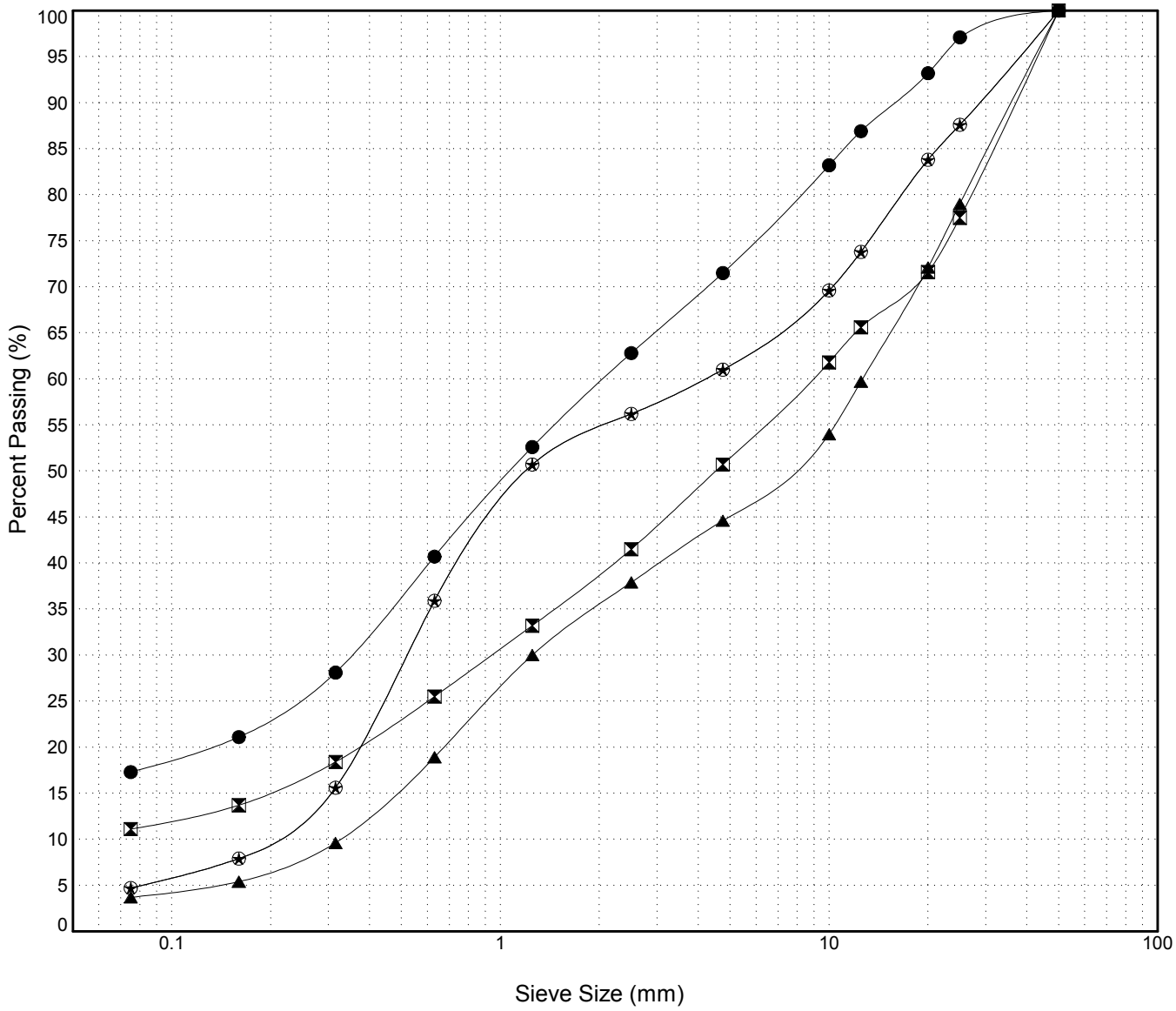
| GRAIN SIZE ANALYSIS | Upper Liard Bridge Approaches | SOURCE/TP#: **865-5306** |
|---|---|---|
| | km 991 | PROJECT NO: 552-202021-0601-01-1 |
| Sonic Drill | Coordinates:Z632 Nm Em | ELEVATION: m |

Master Revised July 2013

| | Field # | Lab # | Depth | Classification | %H2O | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | 26 | 396 | 0.2 to 0.4 | SILTY SAND with GRAVEL(SM) | **5.1** | NP | NP | NP | | |
| ⊠ | 27 | 397 | 1.3 to 1.5 | WELL-GRADED GRAVEL with SILT and SAND(GW-GM) | **1.8** | NP | NP | NP | 1.8 | 162.8 |
| ▲ | 28 | 398 | 2.7 to 3.0 | POORLY GRADED GRAVEL with SAND(GP) | **2.5** | NP | NP | NP | 0.4 | 39.0 |
| ★ | 29 | 399 | 4.2 to 4.5 | POORLY GRADED SAND with GRAVEL(SP) | **3.7** | NP | NP | NP | 0.3 | 21.6 |
| ⊙ | 30 | 400 | 5.0 to 5.2 | POORLY GRADED SAND with GRAVEL(SP) | **1.9** | NP | NP | NP | 0.3 | 21.6 |

| | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ● | 26 | 396 | %PASSING | 100.0 | 100.0 | 100.0 | 97.1 | 93.2 | 86.9 | 83.2 | 71.5 | 62.8 | 52.6 | 40.7 | 28.1 | 21.1 | 17.3 | **28.5** | **54.2** | **17.3** | |
| ⊠ | 27 | 397 | | 100.0 | 100.0 | 100.0 | 77.5 | 71.6 | 65.6 | 61.8 | 50.7 | 41.5 | 33.2 | 25.5 | 18.4 | 13.7 | 11.1 | **49.3** | **39.6** | **11.1** | |
| ▲ | 28 | 398 | | 100.0 | 100.0 | 100.0 | 79.0 | 72.1 | 59.7 | 54.0 | 44.6 | 37.9 | 30.0 | 18.9 | 9.6 | 5.4 | 3.7 | **55.4** | **40.9** | **3.7** | |
| ★ | 29 | 399 | | 100.0 | 100.0 | 100.0 | 87.6 | 83.8 | 73.8 | 69.6 | 61.0 | 56.2 | 50.7 | 35.9 | 15.6 | 7.9 | 4.7 | **39.0** | **56.3** | **4.7** | |
| ⊙ | 30 | 400 | | 100.0 | 100.0 | 100.0 | 87.6 | 83.8 | 73.8 | 69.6 | 61.0 | 56.2 | 50.7 | 35.9 | 15.6 | 7.9 | 4.7 | **39.0** | **56.3** | **4.7** | |

| Silt | Sand | | | Gravel | |
|---|---|---|---|---|---|
| | Fine | Medium | Coarse | Fine | Coarse |



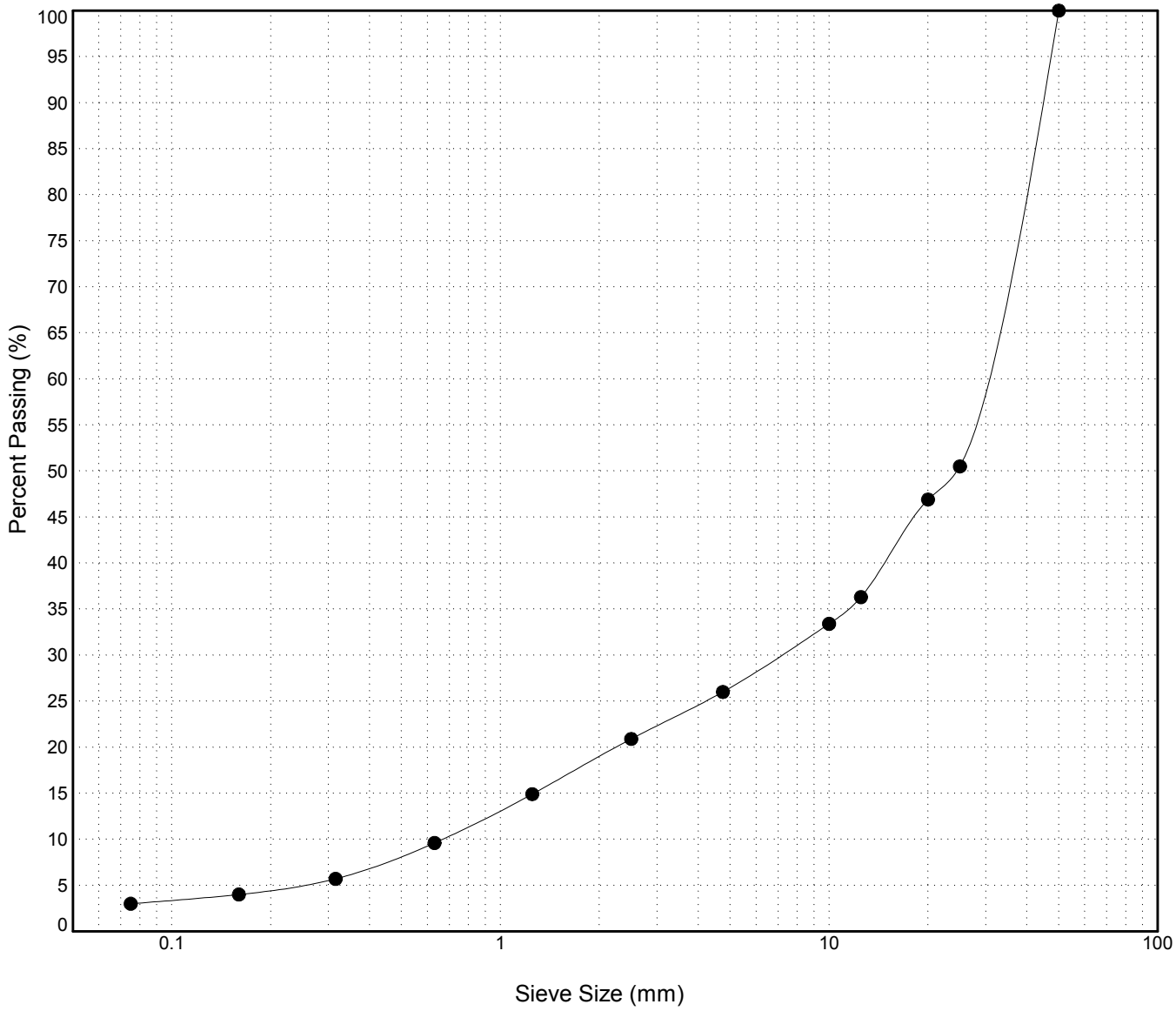
| GRAIN SIZE ANALYSIS | Upper Liard Bridge Approaches | SOURCE/TP#: **865-5306** |
|---|---|---|
| | km 991 | PROJECT NO: 552-202021-0601-01-1 |
| Sonic Drill | Coordinates:Z632 Nm Em | ELEVATION: m |

Master Revised July 2013

| | Field # | Lab # | Depth | Classification | %H2O | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | 31 | 401 | 5.8 to 6.0 | WELL-GRADED GRAVEL with SAND(GW) | **1.6** | NP | NP | NP | 2.7 | 43.0 |

| | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ● | 31 | 401 | %PASSING | 100.0 | 100.0 | 100.0 | 50.5 | 46.9 | 36.3 | 33.4 | 26.0 | 20.9 | 14.9 | 9.6 | 5.7 | 4.0 | 3.0 | **74.0** | **23.0** | **3.0** | |

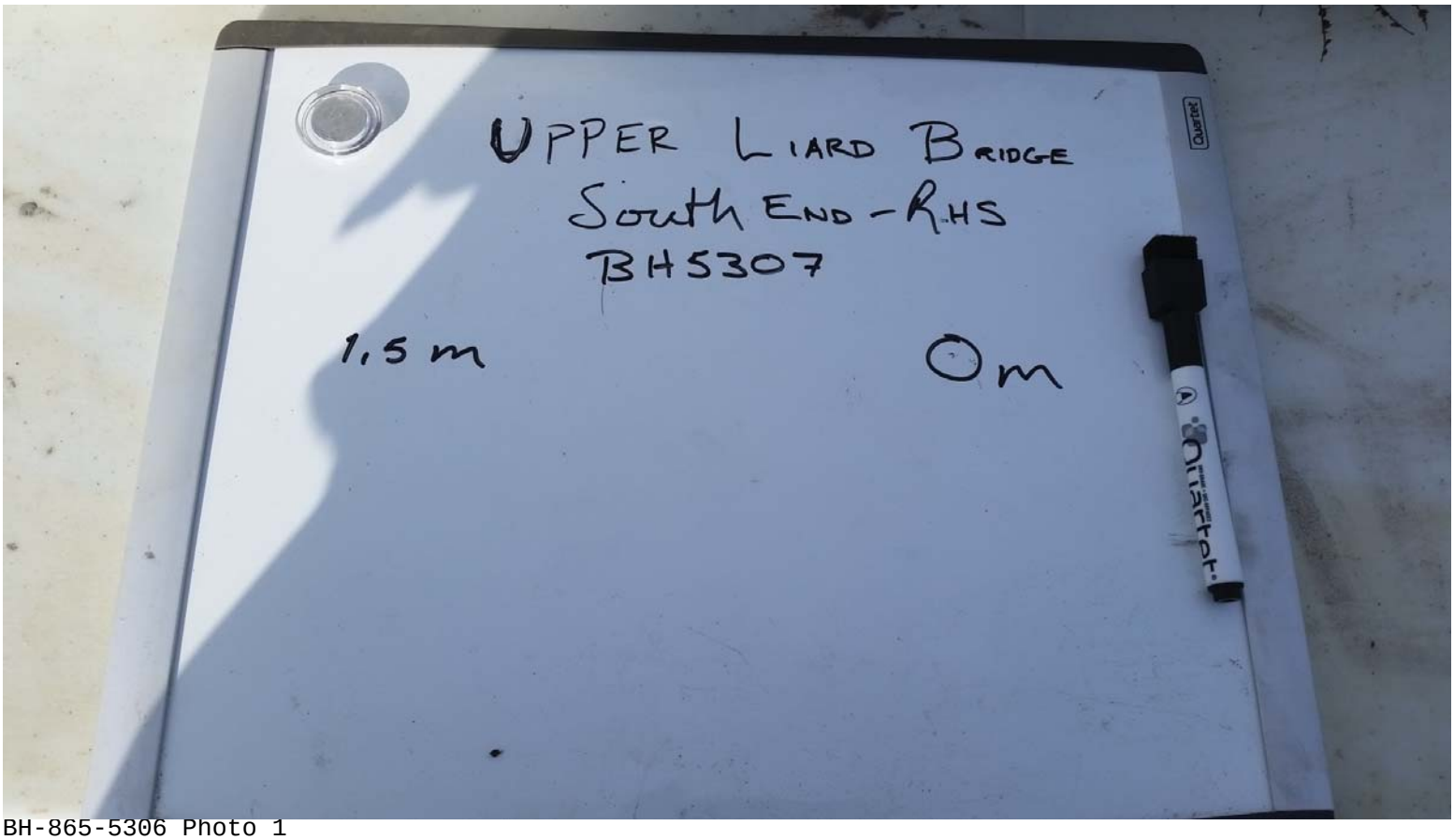
| Silt | Sand | | | Gravel | |
|---|---|---|---|---|---|
| | Fine | Medium | Coarse | Fine | Coarse |



BH-865-5305 Photo 1

BH-865-5305 Photo 2


BH-865-5305 Photo 3




BH-865-5306 Photo 1

BH-865-5306 Photo 2

BH-865-5306 Photo 2

BH-865-5306 Photo 2