

4825 Convair Drive, Suite 17; Carson City, Nevada 89706
 Telephone (775) 771-9233; appliedeng@pyramid.net

July 21, 2020

Class A Backfill Bedding Sand

The following laboratory test results have been determined on the Class A Backfill Bedding Sand sample that was dropped off at our office on July 17, 2020 from Al's Plumbing and Excavation Upper Quarry Pit in Carson City, Nevada. The sample was tested in accordance with the ASTM C136 test procedure for Sieve Analysis, ASTM D4318 for Plasticity Index and ASTM D1557 for Maximum Density and Optimum Moisture determinations.

The results were compared to the application gradation requirements for a Class A Backfill Bedding Sand as presented within Section 200.03.02 of the Standard Specifications for Public Works Construction, 2016 Edition. The following results were obtained:

| <u>Sieve Size</u> | <u>Al's Plumbing Pit % Passing</u> | <u>Class A Backfill Bedding Sand</u> |
|-------------------|--|--|
| 3/8-inch | 100 | 100 |
| No. 4 | 96.8 | 90-100 |
| No. 16 | 53.1 | ---- |
| No. 40 | 30.3 | ---- |
| No. 50 | 24.4 | 10-40 |
| No. 100 | 15.0 | 3-20 |
| No. 200 | 8.8 | 0-15 |
| Liquid Limit | Non-Plastic | |
| Plasticity Index | Non-Plastic | |

Maximum Density (pcf): 130.0 pcf @ 8.5% optimum moisture

Based upon our laboratory test results obtained the submitted Class A Backfill Bedding Sand sample from Al's Plumbing and Excavation Upper Quarry Pit in Carson City, Nevada complies with the intent of the applicable gradation and plasticity requirements for a Class A Backfill Bedding Sand as presented within the Standard Specifications for Public Works Construction, 2016 Edition.

We trust this provides the information needed at this time. However, if you require additional information or have any questions, please contact our office at your earliest convenience.

Sincerely,

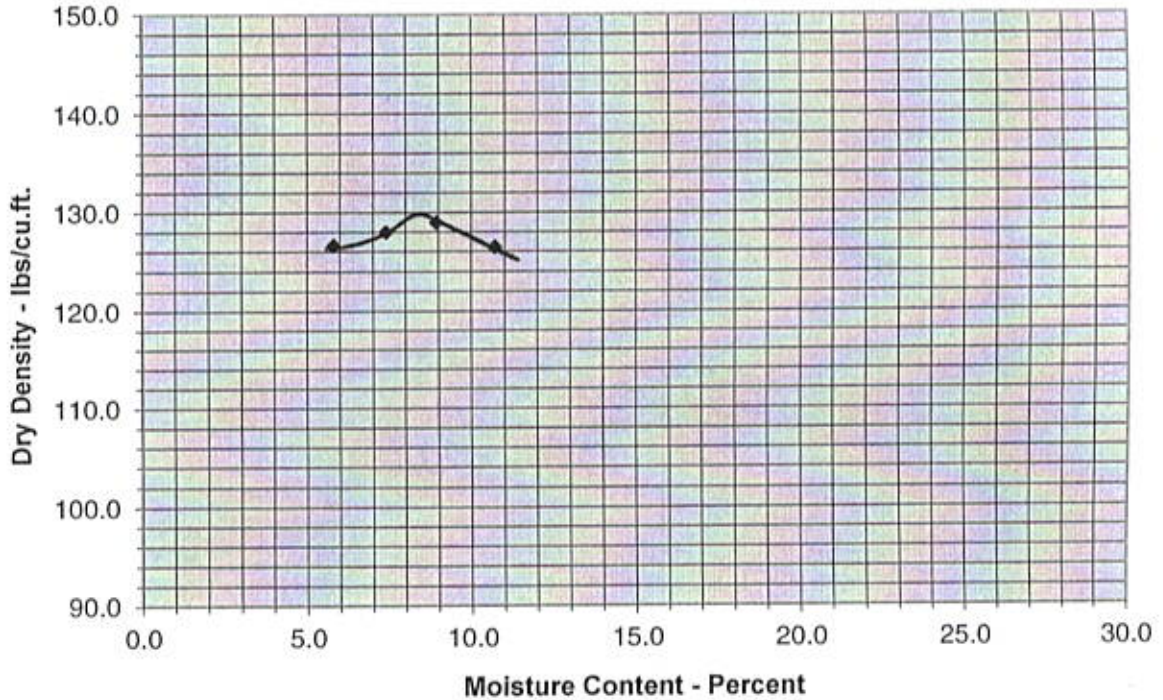
Gary L. Hopper, P.E.
 Principal Engineer



COMPACTION - MOISTURE DENSITY REPORT

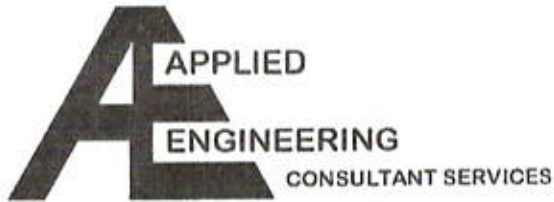
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|-----------------------------|----------------------------------|------------------------|------------|
| PROJECT NAME: | Al's Excavation Aggregate Pit | PROJECT NUMBER: | 125-422-20 |
| Material Source: | Goni Pit Upper Quarry | Date tested: | 7/21/2020 |
| Soil Classification: | Brn Silty Sand (DG) Bedding Sand | Lab Number: | L05-20 |

MOISTURE DENSITY CURVE



| | | | | | | |
|------------------------|--------|--------|--------|--------|--|--|
| Water Added Percent | 2% | 4.0% | 6.0% | 8.0% | | |
| Wt. of Wet Soil & Mold | 6232 | 6284 | 6330 | 6323 | | |
| | 4204 | 4204 | 4204 | 4204 | | |
| Wt. of Wet Soil | 2028 | 2080 | 2126 | 2119 | | |
| Vol of Soil Sample | 4.47 | 4.58 | 4.68 | 4.67 | | |
| Wet Density | 134.0 | 137.4 | 140.5 | 140.0 | | |
| Container No. | | | | | | |
| Wt. of Wet Soil & Tare | 2406.4 | 2392.6 | 2432.9 | 2446.8 | | |
| Wt. of Dry Soil & Tare | 2295.8 | 2250 | 2259.5 | 2241.9 | | |
| Wt. of Water | 110.6 | 142.6 | 173.4 | 204.9 | | |
| Wt. of Tare | 390.5 | 321.5 | 318.0 | 329.1 | | |
| Wt. of Dry Soil | 1905.3 | 1928.5 | 1941.5 | 1912.8 | | |
| Water Content | 5.8 | 7.4 | 8.9 | 10.7 | | |
| Dry Unit Weight | 126.7 | 128.0 | 129.0 | 126.5 | | |

| | | |
|---|---|-------|
| Maximum Dry Density | 130.0 pcf | |
| Optimum Moisture Content | 8.5% _m | |
|  | COMPACTION - MOISTURE DENSITY REPORT | |
| | Tested by: G Hopper | PLATE |
| | Checked by: G Hopper | |
| Date: 7/21/2020 | | |



4825 Convair Drive, Suite 17; Carson City, Nevada 89706
 Telephone (775) 888-9939

March 15, 2019

Structural Fill Materials

The following laboratory test results have been determined on the on-site soil sample which we received on March 06, 2019 from the AI's Excavating and Grading Carson Quarry Upper Materials Pit in Carson City, Nevada. The sample was tested in accordance with the ASTM C136 test procedure for Sieve Analysis determinations.

| <u>Sieve Size</u> | <u>% Passing</u> |
|-------------------|------------------|
| 4 inch | ---- |
| 3 ½ inch | ---- |
| 3 inch | ---- |
| 2 ½ inch | 100.0 |
| 2 inch | 92.4 |
| 1 ½ inch | 92.4 |
| 1 inch | 90.8 |
| ¾ inch | 89.2 |
| ½ inch | 88.7 |
| ⅜ inch | 86.9 |
| No. 4 | 73.4 |
| No. 8 | 55.1 |
| No. 10 | 51.2 |
| No. 16 | 40.2 |
| No. 30 | 29.1 |
| No. 40 | 24.2 |
| No. 50 | 20.1 |
| No. 60 | 18.3 |
| No. 100 | 13.2 |
| No. 200 | 7.4 |
| Liquid Limit | Non-Plastic |
| Plasticity Index | Non-Plastic |

Maximum Density: 134.0 pcf @ 7.5% optimum moisture

We trust this provides the information needed at this time. However, if you require additional information or have any questions, please contact our office at your earliest convenience.

Sincerely,

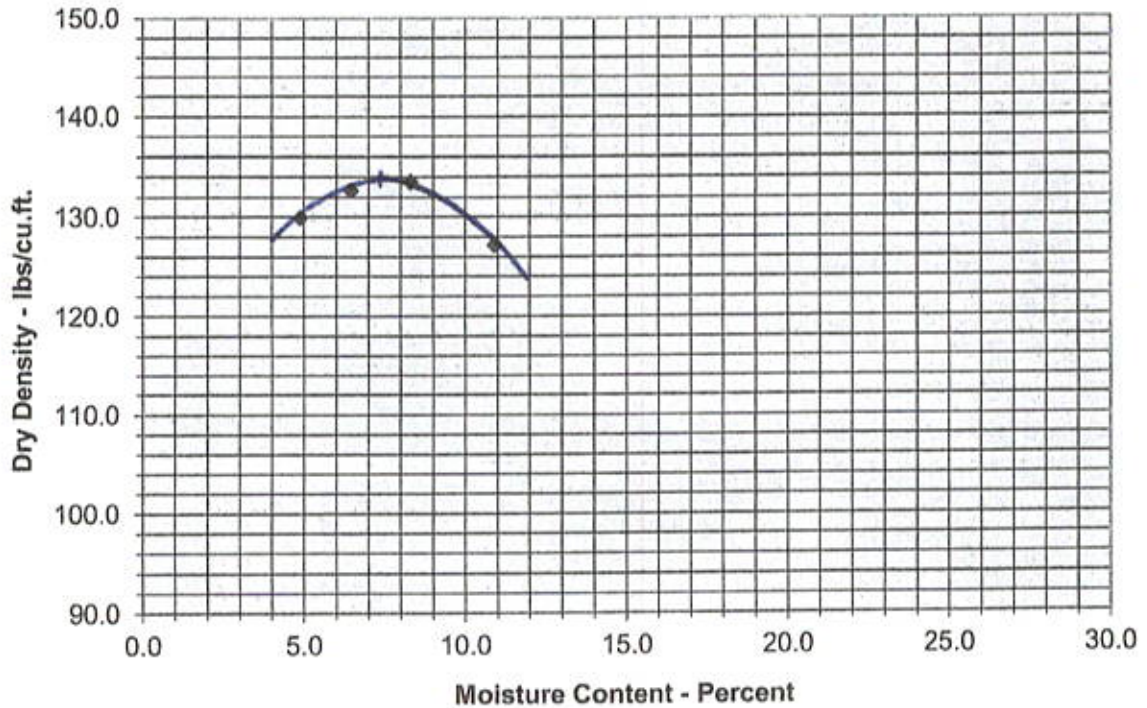
Gary L. Hopper, P.E.
 Principal Engineer



COMPACTION - MOISTURE DENSITY REPORT

| | | | |
|-----------------------------|-----------------------------------|------------------------|---------------------|
| PROJECT NAME: | Al's Excavation Materials Pit | PROJECT NUMBER: | 125-422-19 |
| Material Source: | Upper Quarry Bank Sample Pit Run | Date tested: | 3/15/2019 |
| Soil Classification: | Brown Silty Sands W/ Gravels (DG) | Lab Number: | L02-19(lg) Al's Pit |

MOISTURE DENSITY CURVE



| Water Added Percent | 3% | 5% | 7% | 9% |
|------------------------|--------|--------|--------|--------|
| Wt. of Wet Soil & Mold | 11102 | 11270 | 11384 | 11265 |
| Wt. of Mold | 6460 | 6460 | 6460 | 6460 |
| Wt. of Wet Soil | 4642 | 4810 | 4924 | 4805 |
| Vol of Soil Sample | 10.22 | 10.59 | 10.85 | 10.58 |
| Wet Density | 136.3 | 141.2 | 144.6 | 141.1 |
| Container No. | | | | |
| Wt. of Wet Soil & Tare | 2552.9 | 2594 | 2594.4 | 2598.2 |
| Wt. of Dry Soil & Tare | 2449.4 | 2456 | 2420 | 2368.6 |
| Wt. of Water | 103.5 | 138 | 174.4 | 229.6 |
| Wt. of Tare | 330.0 | 318.3 | 321.5 | 262.9 |
| Wt. of Dry Soil | 2119.4 | 2137.7 | 2098.5 | 2105.7 |
| Water Content | 4.9 | 6.5 | 8.3 | 10.9 |
| Dry Unit Weight | 129.9 | 132.7 | 133.5 | 127.2 |



| | | |
|--------------------------|-------------------|--|
| Maximum Dry Density | 134.0pcf | Brown Silty Sands W/ Gravels (Decomposed Granite) Non- Plastic |
| Optimum Moisture Content | 7.5% _m | |

| | | | |
|--|---|--|-------|
| | COMPACTION - MOISTURE DENSITY REPORT | | PLATE |
| | Tested by: G Hopper | | |
| | Checked by: G Hopper | | |
| | Date: 3/15/2019 | | |