

**PROJECT:** O'BRIEN FISH PASSAGE  
**PROJECT NO.:** 20-110-01  
**CLIENT:** MSB  
**SAMPLE NO.:** 23P1056  
**LOCATION:** STOCKPILE

**DATE TAKEN:** 5/29/2023  
**DATE TESTED:** 6/1/2023  
**TESTED BY:** DEM  
**REVIEWED BY:** JAB  
**DESCRIPTION:** K&H TOPSOIL

**SIEVE ANALYSIS TEST**

(ASTM D422)

| Sieve Size | Diameter (mm) | Total % Passing |
|------------|---------------|-----------------|
| 6"         | 152.4         |                 |
| 4"         | 100.0         |                 |
| 3"         | 76.2          |                 |
| 2"         | 50.8          |                 |
| 1"         | 25.4          |                 |
| 3/4"       | 19.0          | 100             |
| 1/2"       | 12.7          | 99              |
| 3/8"       | 9.5           | 99              |
| #4         | 4.75          | 92              |
| #10        | 2.00          | 82              |
| #20        | 0.85          | 71              |
| #40        | 0.425         | 48              |
| #60        | 0.25          | 34              |
| #100       | 0.15          | 27              |
| #200       | 0.075         | 21.6            |

**% Gravel:** 8.2  
**% Sand:** 70.2  
**% Fines:** 21.6  
**D60:** 0.64  
**D30:** 0.19  
**D10:**  
**Cu:**  
**Cc:**  
**%.02 mm:**  
**% Moisture:** 20.6  
**Fine Modulus:**

(ASTM D4318)

**Liquid Limit:**  
**Plastic Limit:**  
**Plastic Index:**

(ASTM C127)

**Bulk SpG:**  
**SSD SpG:**  
**Apparent SpG:**  
**% Absorption:**

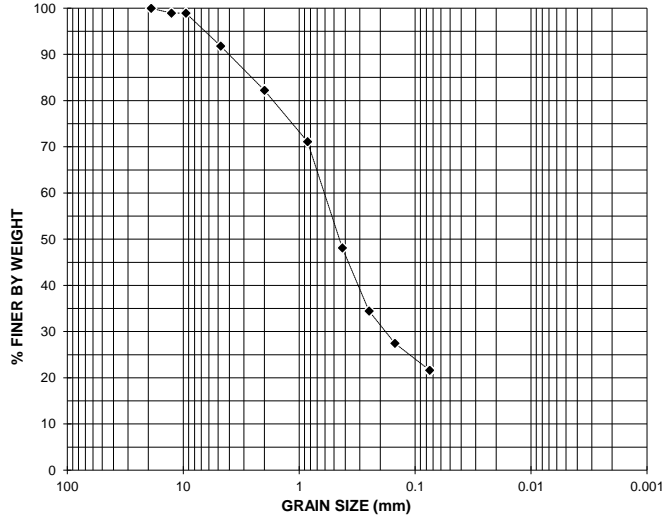
(ASTM C128)

**Bulk SpG:**  
**SSD SpG:**  
**Apparent SpG:**  
**% Absorption:**

(ASTM D1557)

**Dry Den (U):**  
**Dry Den (C):**  
**M% (U):**  
**M% (C):**  
**SpG (assumed):**  
**M-D Test Method:**

**GRAIN SIZE DISTRIBUTION**

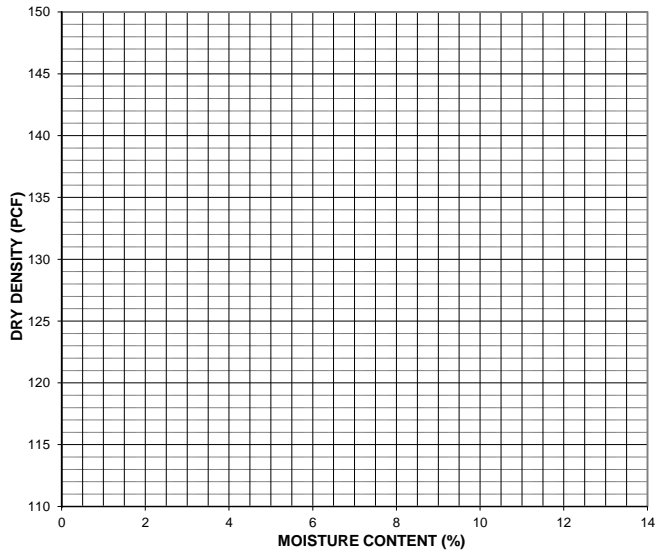


**HYDROMETER TEST**

(ASTM D422)

| Elapsed Time (min) | Diameter (mm) | Total % Passing |
|--------------------|---------------|-----------------|
| 0                  |               |                 |
| 0.5                |               |                 |
| 1                  |               |                 |
| 2                  |               |                 |
| 5                  |               |                 |
| 8                  |               |                 |
| 15                 |               |                 |
| 30                 |               |                 |
| 60                 |               |                 |
| 250                |               |                 |
| 1459               |               |                 |
| 2750               |               |                 |

**MOISTURE-DENSITY RELATIONSHIP**



**CLASSIFICATION:** Silty Sand  
**USC:** SM  
**FROST CLASS:**

Remarks: **LOI = 7.3%**

JOHN A. BUZDOR, P.E. 6/14/2023