

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
MATERIALS & TESTS UNIT
SOILS LABORATORY**

T. I. P. No. B-5018

REPORT ON SAMPLES OF SOILS FOR QUALITY

Project 42608.1.STI **County** HERTFORD **Owner** _____
Date: Sampled 4/28/09 **Received** 7/16/09 **Reported** 7/21/09
Sampled from BRIDGE **By** T BOTTOMS
Submitted by R L PRIVETTE T-5231 1995 Standard Specifications

757286 TO 757286

7/22/09

TEST RESULTS

| | | | | | | |
|--------------------|---|---------------|--|--|--|--|
| Proj. Sample No. | | ST-1 | | | | |
| Lab. Sample No. | | 757286 | | | | |
| Retained #4 Sieve | % | - | | | | |
| Passing #10 Sieve | % | 100 | | | | |
| Passing #40 Sieve | % | 100 | | | | |
| Passing #200 Sieve | % | 71 | | | | |

MINUS NO. 10 FRACTION

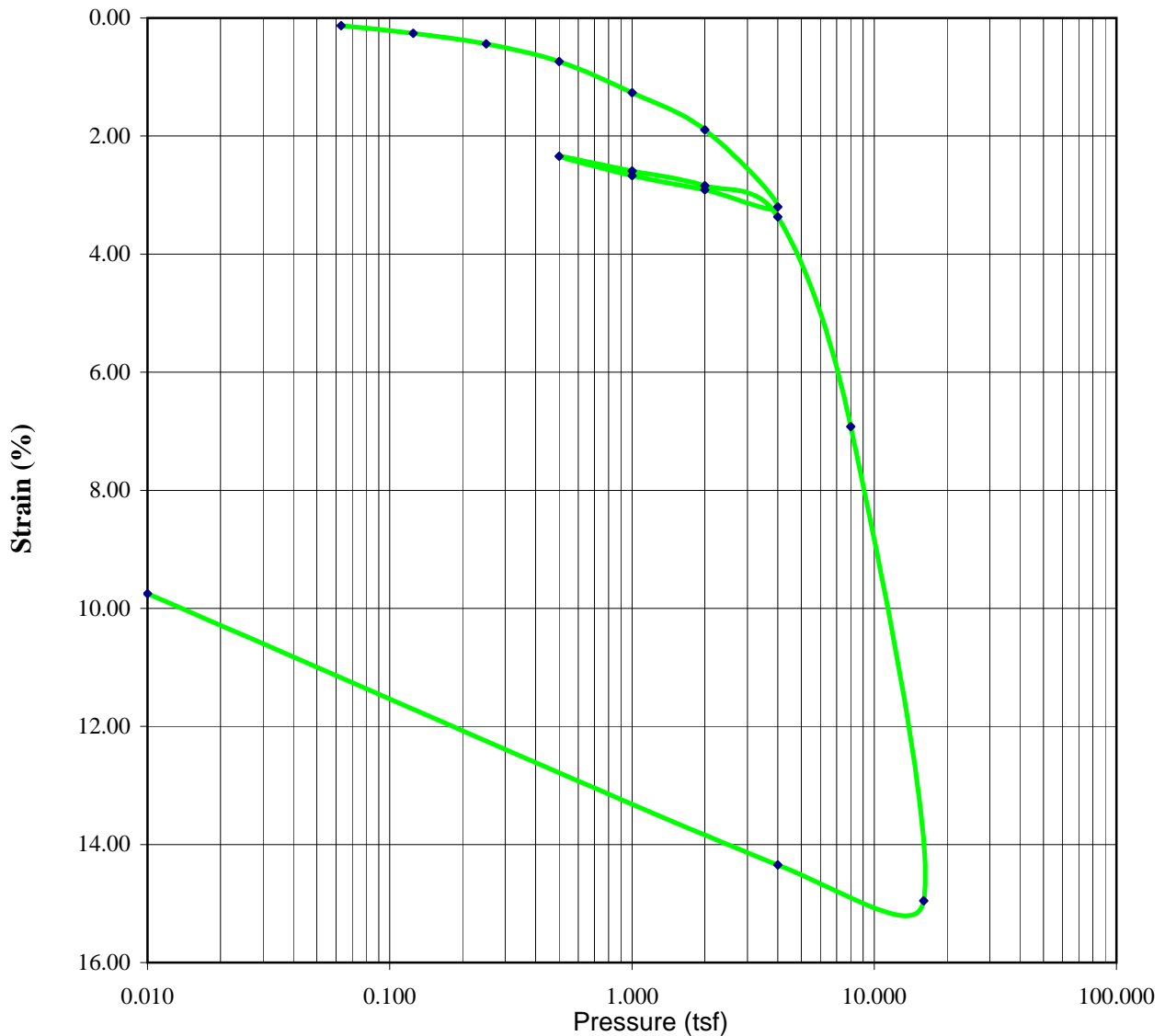
| | | | | | | |
|-----------------------|---|-------------|--|--|--|--|
| SOIL MORTAR - 100% | | | | | | |
| Coarse Sand Ret - #60 | % | 1.6 | | | | |
| Fine Sand Ret - #270 | % | 40.0 | | | | |
| Silt 0.05 - 0.005 mm | % | 32.1 | | | | |
| Clay < 0.005 mm | % | 26.3 | | | | |
| Passing #40 Sieve | % | - | | | | |
| Passing #200 Sieve | % | - | | | | |

| | | | | | | |
|-----------------------|----|------------------|--|--|--|--|
| L. L. | | 42 | | | | |
| P. I. | | 23 | | | | |
| AASHTO Classification | | A-7-6(15) | | | | |
| Station | | | | | | |
| OFFSET | | 7 LT | | | | |
| LOCATION | | EB1-A | | | | |
| Depth (Ft) | | 40.70 | | | | |
| | to | 42.70 | | | | |

cc: R L PRIVETTE
CHRIS CHEN
STEVE WIRTH
Soils File

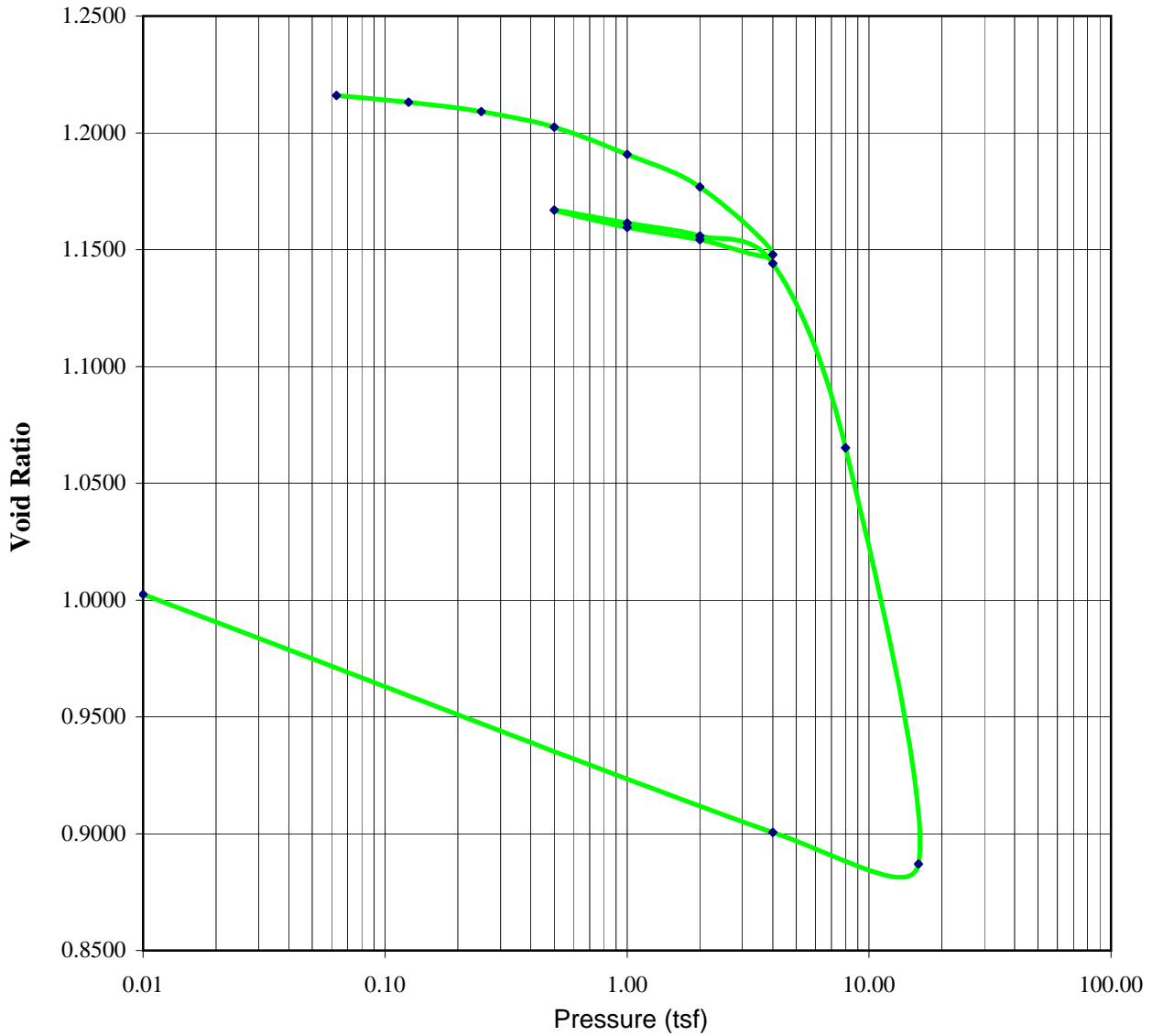
Soils Engineer

Consolidation Test Test Results



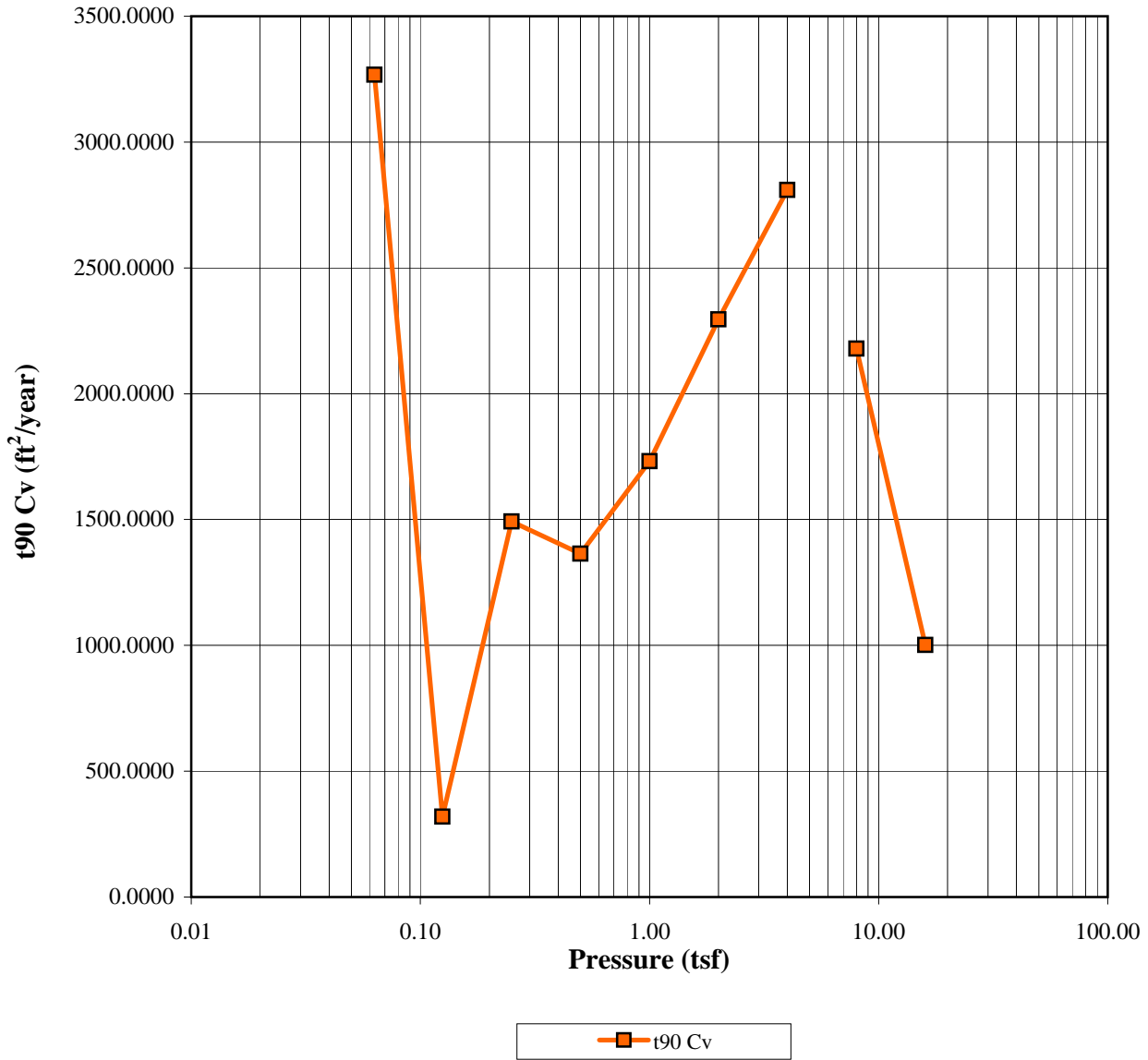
| | | | | | |
|------------------------------------|-----------------------|--------------|-------------------------------------------------------------------|-------------|-------------------|
| | Before | After | Liquid Limits: | 0 | Test Date: |
| Moisture (%): | 43.77 | 38.71 | Plastic Limits: | 0 | |
| Dry Density (pcf): | 75.65 | 83.82 | Plasticity Index (%): | 0 | |
| Saturation (%): | 96.67 | 103.97 | | | |
| Void Ratio: | 1.2188 | 1.0024 | Specific Gravity: | 2.685 | Measured |
| Soil Description: Gray Clay | | | | | |
| Project Number: | 42608.1.ST1 | | Depth: | 40.7-42.7ft | |
| Sample Number: | ST-1 (B-5018) | | Boring Number: | | |
| Project: | T-5231 | | Remarks: Solid Height 0.4530 inches Est. Blows/ft= 3 | | |
| Client: | | | | | |
| Location: | Hertford Co. Sta. N/A | | | | |

Consolidation Test Test Results



| | | | | | |
|---------------------------|-----------------------|--------------|-------------------------------------------------------------------|-------------|-------------------|
| | Before | After | Liquid Limits: | 0 | Test Date: |
| Moisture (%): | 43.77 | 38.71 | Plastic Limits: | 0 | |
| Dry Density (pcf): | 75.65 | 83.82 | Plasticity Index (%): | 0 | |
| Saturation (%): | 96.67 | 103.97 | | | |
| Void Ratio: | 1.2188 | 1.0024 | Specific Gravity: | 2.685 | Measured |
| Soil Description: | Gray Clay | | | | |
| Project Number: | 42608.1.ST1 | | Depth: | 40.7-42.7ft | |
| Sample Number: | ST-1 (B-5018) | | Boring Number: | | |
| Project: | T-5231 | | Remarks: Solid Height 0.4530 inches Est. Blows/ft= 3 | | |
| Client: | | | | | |
| Location: | Hertford Co. Sta. N/A | | | | |

Consolidation Test Test Results



| | | | | | |
|---------------------------|-----------------------|--------------|------------------------------|-------------|-------------------------------------------------------------------|
| | Before | After | Liquid Limits: | 0 | Test Date: |
| Moisture (%): | 43.77 | 38.71 | Plastic Limits: | 0 | |
| Dry Density (pcf): | 75.65 | 83.82 | Plasticity Index (%): | 0 | |
| Saturation (%): | 96.67 | 103.97 | | | |
| Void Ratio: | 1.2188 | 1.0024 | Specific Gravity: | 2.685 | Measured |
| Soil Description: | Gray Clay | | | | |
| Project Number: | 42608.1.ST1 | | Depth: | 40.7-42.7ft | Remarks: Solid Height 0.4530 inches Est. Blows/ft= 3 |
| Sample Number: | ST-1 (B-5018) | | Boring Number: | | |
| Project: | T-5231 | | | | |
| Client: | | | | | |
| Location: | Hertford Co. Sta. N/A | | | | |

Consolidation Test Results Summary

Project: T-5231
Location: Hertford Co. Sta. N/A
Job Number: T-5231

Project Number: 42608.1.ST1

Sample Number: ST-1 (B-5018)
Boring Number:
Depth: 40.7-42.7ft
Sample Type: Undisturbed

Soil Description:
 Gray Clay
Remarks:
 Solid Height 0.4530 inches Est. Blows/ft= 3

Test Number:
Test Date:

| Index | Load Sequence (tsf) | Cummulative Change in Height (in) | Specimen Height (in) | Height of Void (in) | Vertical Strain (%) | Void Ratio | t90 Fitting Time (min) | t50 Fitting Time (min) | t90 Cv (ft2/year) | t50 Cv (ft2/year) |
|-------|---------------------|-----------------------------------|----------------------|---------------------|---------------------|------------|------------------------|------------------------|-------------------|-------------------|
| 0 | 0.000 | 0.0000 | 1.0038 | 0.5514 | 0.00 | 1.2188 | 0.000 | | 0.000 | |
| 1 | 0.063 | 0.0013 | 1.0025 | 0.5501 | 0.13 | 1.2160 | 0.238 | | 3267.538 | |
| 2 | 0.125 | 0.0026 | 1.0012 | 0.5488 | 0.26 | 1.2131 | 2.430 | | 319.201 | |
| 3 | 0.250 | 0.0044 | 0.9994 | 0.5470 | 0.44 | 1.2091 | 0.518 | | 1492.031 | |
| 4 | 0.500 | 0.0074 | 0.9964 | 0.5440 | 0.74 | 1.2025 | 0.563 | | 1364.545 | |
| 5 | 1.000 | 0.0127 | 0.9911 | 0.5387 | 1.27 | 1.1908 | 0.439 | | 1731.407 | |
| 6 | 2.000 | 0.0190 | 0.9848 | 0.5324 | 1.89 | 1.1768 | 0.327 | | 2294.971 | |
| 7 | 4.000 | 0.0321 | 0.9717 | 0.5193 | 3.20 | 1.1479 | 0.260 | | 2810.088 | |
| 8 | 2.000 | 0.0292 | 0.9746 | 0.5222 | 2.91 | 1.1543 | 0.000 | | 0.000 | |
| 9 | 1.000 | 0.0268 | 0.9770 | 0.5246 | 2.67 | 1.1596 | 0.000 | | 0.000 | |
| 10 | 0.500 | 0.0235 | 0.9803 | 0.5279 | 2.34 | 1.1669 | 0.000 | | 0.000 | |
| 11 | 1.000 | 0.0260 | 0.9778 | 0.5254 | 2.59 | 1.1614 | 0.000 | | 0.000 | |
| 12 | 2.000 | 0.0285 | 0.9753 | 0.5229 | 2.84 | 1.1558 | 0.000 | | 0.000 | |
| 13 | 4.000 | 0.0338 | 0.9700 | 0.5176 | 3.37 | 1.1441 | 0.000 | | 0.000 | |
| 14 | 8.000 | 0.0695 | 0.9343 | 0.4819 | 6.92 | 1.0652 | 0.310 | | 2178.913 | |
| 15 | 16.000 | 0.1501 | 0.8537 | 0.4013 | 14.95 | 0.8871 | 0.563 | | 1001.684 | |
| 16 | 4.000 | 0.1440 | 0.8598 | 0.4074 | 14.35 | 0.9005 | 0.000 | | 0.000 | |
| 17 | 0.010 | 0.0979 | 0.9059 | 0.4535 | 9.75 | 1.0024 | 0.000 | | 0.000 | |

Tested By:

Checked By:

Consolidation Test
Consolidation Specimen Information

Project: T-5231 **Project Number:** 42608.1.ST1
Location: Hertford Co. Sta. N/A
Job Number: T-5231 **Test Date:**

Sample Number: ST-1 (B-5018) **Soil Description:**
Boring Number: Gray Clay
Depth: 40.7-42.7ft **Remarks:**
Sample Type: Undisturbed Solid Height 0.4530 inches Est. Blows/ft= 3

Test Number:
Liquid Limit: 0.0000 **Initial Void Ratio:** 1.2188 **Initial Height (in):** 1.0038
Plastic Limit: 0.0000 **Plasticity Index (%):** 0.0000 **Initial Diameter (in):** 2.4966
Specific Gravity: 2.6850 **Weight of Ring (g):** 111.0400
Measured

| Parameters | Initial Specimen | Final Specimen |
|------------------------------|------------------|----------------|
| Moist Weight + Container (g) | 140.29 | 135.35 |
| Dry Soil + Container (g) | 97.58 | 97.58 |
| Weight of Container (g) | 0.00 | 0.00 |
| Moisture Content (%) | 43.77 | 38.71 |
| Void Ratio | 1.2188 | 1.0024 |
| Saturation (%) | 96.67 | 103.97 |
| Dry Density (pcf) | 75.65 | 83.82 |

Tested By:

Checked By: