CONSTRUCTION LEADERS

| LETTER OF TRANSMITTAL | | | |
|---|---|---|---|
| DATE: | **March 13, 2015** | PCL JOB NO: | **5515002** |
| ATTN: | **Chris Barker** | TRANSMITTAL NO: | **038** |

To: **State of Vermont Agency of Transportation**
One National Life Drive

(802) 828-0053

Re: Hartford Lateral Slide
Project No.: IM 091-2(79)
Contract ID.: 12A132 County: Windsor PCL FILE NO: 5515002-24

WE ARE SENDING X Attached ____ Under separate cover via **Email & SP** the following:
____ Shop drawings ____ Prints ____ Plans ____ Samples X Specifications
____ Copy of Letter ____ Change Order X Other

| COPIES | SPEC. | REVISION | DESCRIPTION |
|---|---|---|---|
| **1** | **704.06** | | **Dense Graded Crushed Stone** |
| **1** | **704.08** | | **Granular Backfill for Structures** |
| | | | |
| | | | |
| | | | |
| | | | |

TRANSMITTED for as checked below:

X For approval ____ Approved as submitted ____ Resubmit 1 Copies for approval
____ For your use ____ Approved as noted ____ Submit ____ Copies for distribution
____ As requested ____ Returned for corrections ____ Return ____ Corrected prints
____ For review and comment

***Remarks:***

Attached are sieve and proctor reports for dense graded crushed stone & granular backfill for structures.

Please return an email of this approved submittal to Erich Heymann (ewheymann@pcl.com) and Jeremy Mackling (jmackling@pcl.com).

We request the review and return of this submittal within 7 days. Please advise if this request cannot be met so we can plan accordingly.

By: **Erich Heymann,** Project Engineer

3810 Northdale Blvd., Suite 200; Tampa, FL • (813) 264-9500 • (813) 264-6689 (fax)

COPY TO: Project Files

CONSTRUCTION LEADERS

# SUBMITTAL NO. : 24
## Sieve and Proctor Reports

| Item No. | Specification | Description |
|---|---|---|
| 1 | 704.06 | Dense Graded Crushed Stone |
| 2 | 704.08 | Granular Backfill for Structures |

***PROJECT:***
**HARTFORD LATERAL SLIDE**
**PROJECT NO.: IM 091-2(79)**
**CONTRACT ID.: 12A132**

***OWNER:***
**STATE OF VERMONT AGENCY OF TRANSPORTATION**

***ENGINEER OF RECORD:***
**STATE OF VERMONT AGENCY OF TRANSPORTATION**

***CONTRACTOR:***
**PCL CIVIL CONSTRUCTORS, INC.**

**MARCH 13, 2015**

3810 Northdale Blvd., Suite 200; Tampa, FL • (813) 264-9500 • (813) 264-6689 (fax)

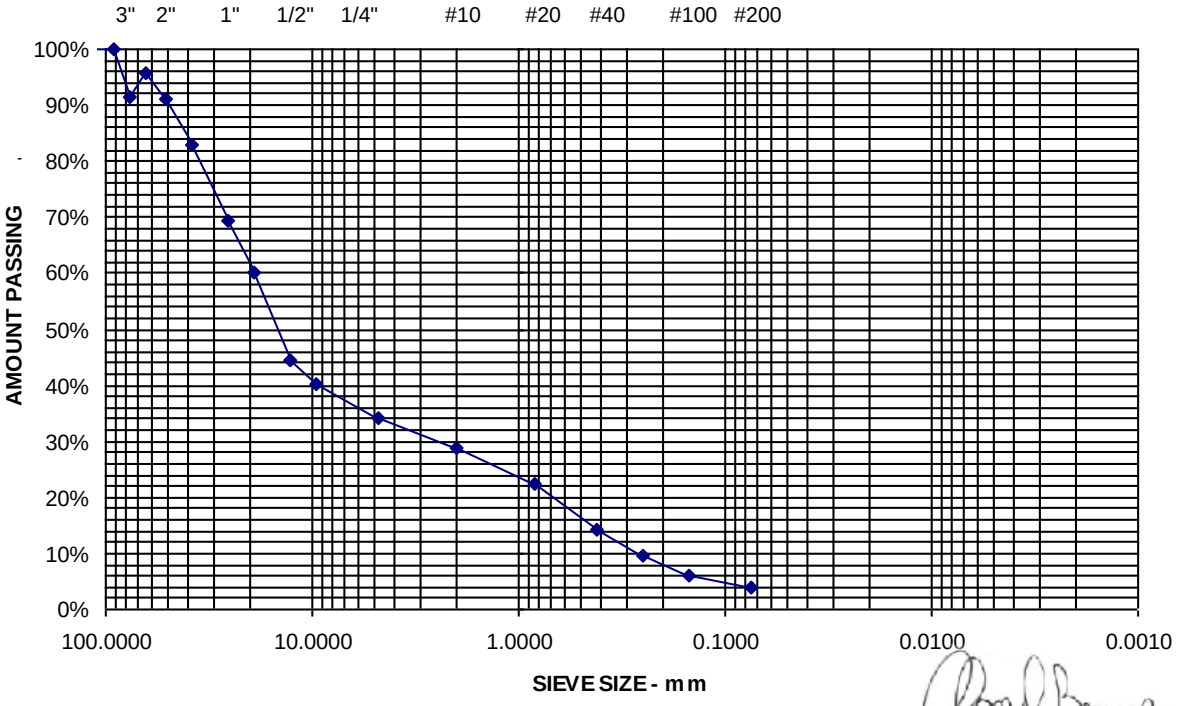
# Report of Gradation

ASTM C-117 & C-136

| | | | |
|---|---|---|---|
| Project Name | HARTFORD VT - I-91 LATERAL SLIDE BRIDGES - CONSTRUCTION MATERIALS TESTING SERVICES | Project Number | 14-1181.1 |
| Client | BAZIN BROTHERS TRUCKING, INC. | Lab ID | 464W |
| Material Type | 3" DENSE GRADED CRUSHED STONE | Date Received | 3/5/2015 |
| Material Source | TWIN STATE S&G | Date Completed | 3/7/2015 |
| | | Tested By | PETER PHELAN |

| STANDARD DESIGNATION (mm/µm) | SIEVE SIZE | AMOUNT PASSING (%) | VTRANS 704.06, DGCS, SUBBASE SPECIFICATIONS (%) |
|---|---|---|---|
| 150 mm | 6" | 100 | |
| 90 mm | 3-1/2" | 100 | 100 - 100 |
| 75 mm | 3" | 92 | 90 - 100 |
| 63 mm | 2-1/2" | 96 | |
| 50 mm | 2" | 91 | 74 - 100 |
| 38.1 mm | 1-1/2" | 83 | |
| 25.0 mm | 1" | 69 | 50 - 80 |
| 19.0 mm | 3/4" | 60 | |
| 12.5 mm | 1/2" | 44 | 30 - 60 |
| 9.5 mm | 3/8" | 40 | |
| 4.75 mm | No. 4 | 34 | 15 - 40 |
| 2.00 mm | No. 10 | 29 | |
| 850 um | No. 20 | 22 | |
| 425 um | No. 40 | 14 | |
| 250 um | No. 60 | 10 | |
| 150 um | No. 100 | 6 | |
| 75 um | No. 200 | 3.9 | 0.0 - 6.0 |

SAMPLE MEETS SPECIFICATION




Comments

Alan I. Brown

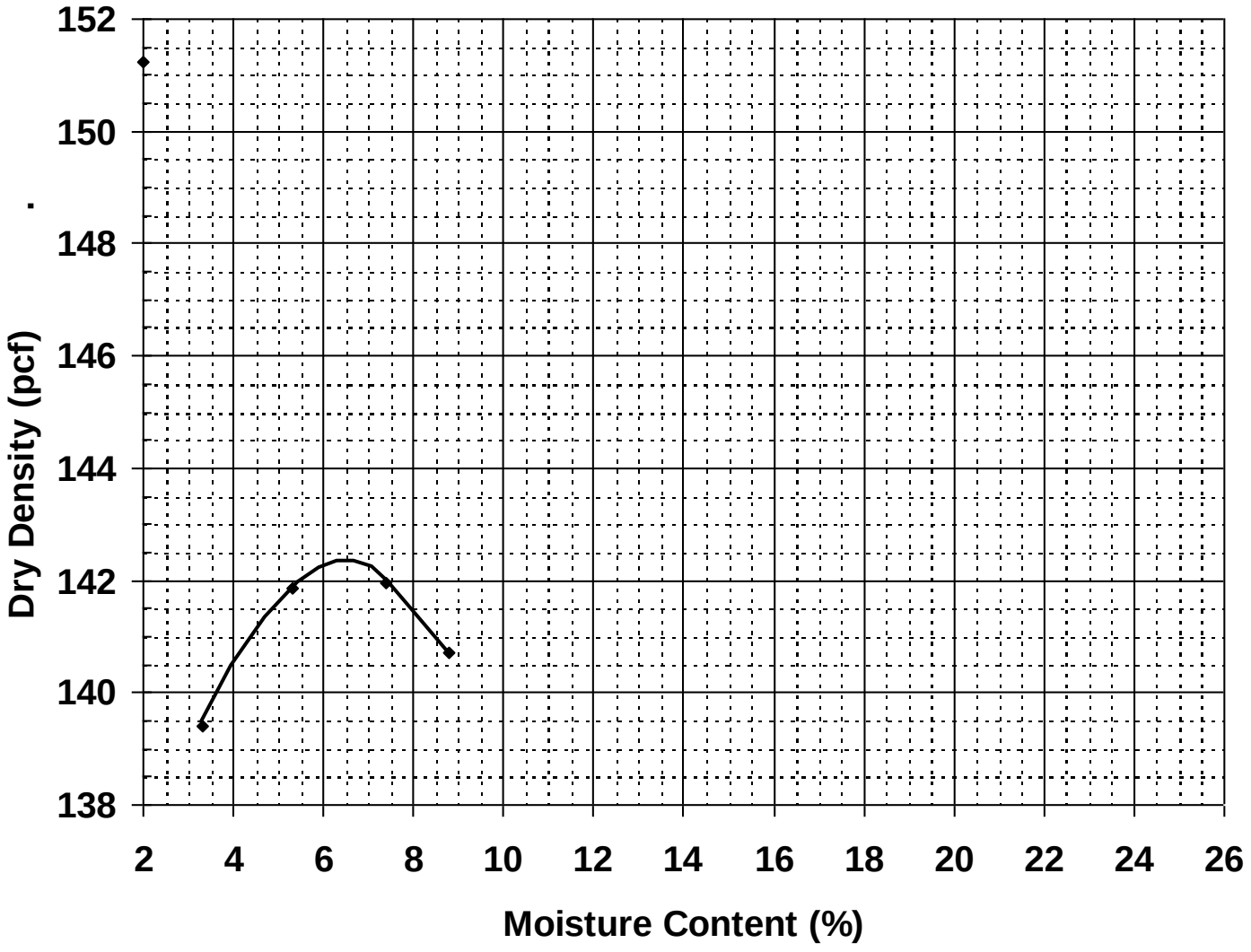
186 S. Main Street, White River Junction, VT 05001 • Tel (802) 281-4559 • www.swcole.com

# Report of Moisture-Density

**Method ASTM D-1557 MODIFIED Procedure C**

| | | | |
|---|---|---|---|
| Project Name | HARTFORD VT - I-91 LATERAL SLIDE BRIDGES - CONSTRUCTION MATERIALS TESTING SERVICES | Project Number | 14-1181.1 |
| Client | BAZIN BROTHERS TRUCKING, INC. | Lab ID | 464W |
| Material Type | 3" DENSE GRADED CRUSHED STONE | Date Received | 3/5/2015 |
| Material Source | TWIN STATE S&G | Date Completed | 3/9/2015 |
| | | Tested By | PETER PHELAN |

## Moisture-Density Relationship Curve




| | |
|---|---|
| Maximum Dry Density (pcf) | 142.5 |
| Optimum Moisture Content (%) | 6.1 |
| Percent Oversized | 30.0% |

| | |
|---|---|
| Corrected Dry Density (pcf) | **146.6** |
| Corrected Moisture Content (%) | **4.9** |

Comments

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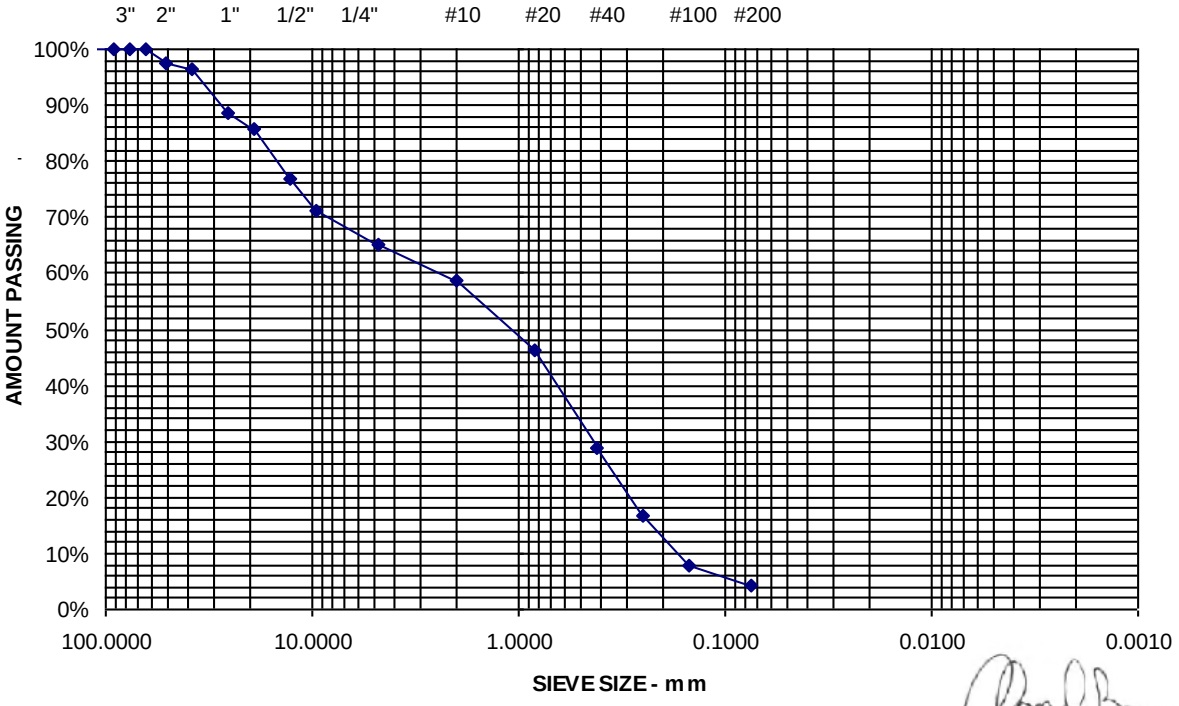
# Report of Gradation

ASTM C-117 & C-136

| | | | |
|---|---|---|---|
| Project Name | HARTFORD VT - I-91 LATERAL SLIDE BRIDGES - CONSTRUCTION MATERIALS TESTING SERVICES | Project Number | 14-1181.1 |
| Client | BAZIN BROTHERS TRUCKING, INC. | Lab ID | 465W |
| Material Type | 3" SCREENED GRAVEL | Date Received | 3/5/2015 |
| Material Source | TWIN STATE S&G | Date Completed | 3/7/2015 |
| | | Tested By | PETER PHELAN |

| STANDARD DESIGNATION (mm/µm) | SIEVE SIZE | AMOUNT PASSING (%) | VTRANS 704.08A, GRANULAR BF FOR STRUCTURES SPECIFICATIONS (%) |
|---|---|---|---|
| 150 mm | **6"** | **100** | |
| 90 mm | **3-1/2"** | **100** | |
| 75 mm | **3"** | **100** | **0 - 100** |
| 63 mm | **2-1/2"** | **100** | |
| 50 mm | **2"** | **98** | |
| 38.1 mm | **1-1/2"** | **96** | |
| 25.0 mm | **1"** | **89** | |
| 19.0 mm | **3/4"** | **86** | |
| 12.5 mm | **1/2"** | **77** | |
| 9.5 mm | **3/8"** | **71** | |
| 4.75 mm | **No. 4** | **65** | **45 - 75** |
| 2.00 mm | **No. 10** | **59** | |
| 850 um | **No. 20** | **46** | |
| 425 um | **No. 40** | **29** | |
| 250 um | **No. 60** | **17** | |
| 150 um | **No. 100** | **8** | **0 - 12** |
| 75 um | **No. 200** | **4.3** | **0.0 - 6.0** |

**SAMPLE MEETS SPECIFICATION**




Comments

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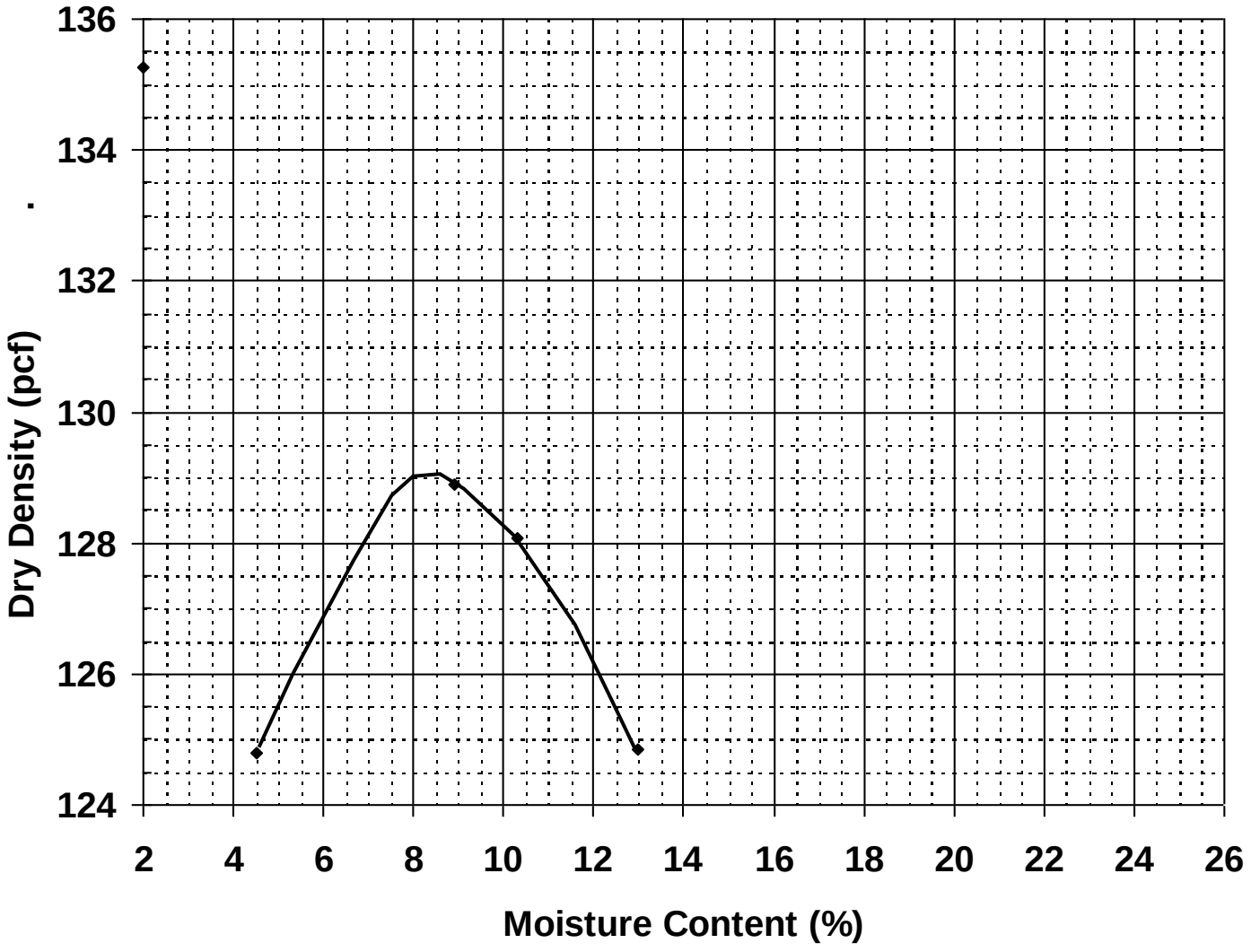


| | |
|---|---|
| Maximum Dry Density (pcf) | 129 |
| Optimum Moisture Content (%) | 8.7 |
| Percent Oversized | 14.2% |

| | |
|---|---|
| Corrected Dry Density (pcf) | **132.4** |
| Corrected Moisture Content (%) | **7.7** |

Comments

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