STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
CONSTRUCTION

STANDARD OPERATING PROCEDURES MANUAL

CARSON CITY, NEVADA
NOVEMBER, 2011

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
CONSTRUCTION DIVISION

STANDARD OPERATING PROCEDURES MANUAL

CARSON CITY, NEVADA
October 1, 2014

TABLE OF CONTENTS
NUMERICAL SEQUENCE
FORM NUMBERS

TABLE OF CONTENTS
NUMERICAL SEQUENCE
FORM NUMBERS

TABLE OF CONTENTS
NUMERICAL SEQUENCE
FORM NUMBERS

STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

TRANSMITTAL FOR ASPHALT SAMPLES

Contract No. ..... Project No.....Field No.....

County .....Highway .....Milepost.....

Type of Asphalt ....Producer .....

Shipping Point ..... Actual Tonnage .....

Refinery Ticket No.....Weight Ticket No. .....

Tank Car/Truck/Trailer No. .....Contractor .....

Sampled by ..... Date Sampled .....

Observed by .....

District No. .....APO No.....

Emulsion Field Viscosity .....Tested by .....

TRANSMITTAL TO BE FASTENED TO SAMPLE CONTAINER WITH MASKING TAPE

NDOT 020-016 (Rev. 2-10)

STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

TRANSMITTAL FOR ASPHALT SAMPLES

A. Contract No. …**3925**…….. **B.** Project No. …..**SI-0035(119)**…… **C.** Field No…..**1**……..

D. County ……..**Washoe**…… **E.** Highway ……..**I-80**……. **F.** Milepost…**10.50**……

G. Type of Asphalt ……..**PG64-28NV**……..… **H.** Producer ……**Paramount Fernley**……

I. Shipping Point ……**Fernley Nevada**……..…… **J.** Actual Tonnage ……..…**25.00**…..……

K. Refinery Ticket No. ……..…**N/A**…… **L.** Weight Ticket No. ……**N/A**……..……

M. Tank Car/Truck/Trailer No. ……..…**N/A**..…… **N.** Contractor ...**Granite Construction**……

O. Sampled by ..…**Fred Grimes - Contractor**…..… **P.** Date Sampled ……**06/06/2014**……..

Q. Observed by ……..……..……**Joe Bob**……

R. District No..……**N/A**…….. **S.** APO No. ……**N/A**……..

T. Emulsion Field Viscosity ……**N/A**…….. **U.** Tested by ……..……**N/A**……..

TRANSMITTAL TO BE FASTENED TO SAMPLE CONTAINER WITH MASKING TAPE

NDOT 020-016 (Rev. 2-10)

020-016 Rev. 02/10

TRANSMITTAL FOR ASPHALT SAMPLES

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
B -	Project number for the material being tested, found in the Contract Plans or Special Provisions (EX. SI-0035(119))
C -	Field number for this particular sample in numerical order (EX. 1)
D -	County in which the sample is being used (EX. Washoe)
E -	Highway where the sample is being used (EX. I. 80)
F -	Milepost where the sample is being used (EX. 10.50)
G -	Type of asphalt being sampled (EX.PG64-28NV)
H -	Producer that is actually manufacturing the asphalt (EX. Paramount Fernley) NOTE: Not where the material is stored
I -	Shipping point where the asphalt was produced (EX. Fernley Nevada)
J -	Actual tonnage that this sample represents (EX. 25 tons) NOTE: There shall be one sample for every 25 tons of asphalt used, for 35.7 tons of asphalt used in a day; two samples shall be taken, one representing 25 tons and one representing 10.7 tons.
K -	Refinery ticket number, not applicable to hotplant asphalt samples (EX. N/A)
L -	Weight Ticket number, not applicable to hotplant asphalt samples (EX. N/A)
M -	Tank Car/Truck/Trailer Number, not applicable to hotplant asphalt samples (EX. N/A)
N -	Prime contractor awarded the contract (EX. Granite Construction)
O -	Name of the contractor's representative that sampled the asphalt at the hotplant (Ex. Fred Grimes - Contractor)
P -	Date the sample was taken (EX. 06/06/2014)
Q -	NDOT representative who observed the sample being taken (EX. Joe Bob) NOTE: If you did not observe the sampling being taken, write "Not observed"

020-016 Rev. 02/10

TRANSMITTAL FOR ASPHALT SAMPLES

LINE	EXPLANATION OF NEEDED INFORMATION
R -	Not applicable to hotplant asphalt samples
S -	Not applicable to hotplant asphalt samples
T -	Not applicable to hotplant asphalt samples
U -	Not applicable to hotplant asphalt samples

NOTES:

1. Fold transmittal in half with the writing inside and attach with 2 small strips of masking tape. Seal transmittal in plastic envelope in case of inclement weather.

2. Make sure outside of sample container is clean, DO NOT use any chemicals to clean the sample container. If sample container is not clean, have contractor take another sample.

3. Samples should be submitted ASAP to the Materials Lab, but no longer that 7 days.

STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

TRANSMITTAL FOR ASPHALT SAMPLES

Contract No. ..... Project No.....Field No.....

County .....Highway .....Milepost.....

Type of Asphalt .....Producer .....

Shipping Point ..... Actual Tonnage .....

Refinery Ticket No.....Weight Ticket No. .....

Tank Car/Truck/Trailer No. .....Contractor .....

Sampled by ..... Date Sampled .....

Observed by .....

District No. .....APO No.....

Emulsion Field Viscosity .....Tested by .....

TRANSMITTAL TO BE FASTENED TO SAMPLE CONTAINER WITH MASKING TAPE

NDOT 020-016 (Rev. 2-10)

STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

TRANSMITTAL FOR ASPHALT SAMPLES

A. Contract No. …**3925**…….. **B.** Project No. …..**SI-0035(119)**…… **C.** Field No…...**1**…..…

D. County ……..…**Washoe**…… **E.** Highway …….**I-80**……. **F.** Milepost…….**10.50**..……..

G. Type of Asphalt ……..**LMCRS-2h**..……..… **H.** Producer ……**Idaho Asphalt**…..……

I. Shipping Point ……..……**Nampa Idaho**..……..…… **J.** Actual Tonnage ……**35.7**……..……

K. Refinery Ticket No. ….**00125695**…….…… **L.** Weight Ticket No….**6526108**…..…..

M. Tank Car/Truck/Trailer No. …**456/456B**……..…… **N.** Contractor ....**Granite Construction**….

O. Sampled by ..…**Sam Weist - Truck Driver**…... **P.** Date Sampled …..…**06/06/2014**……

Q. Observed by ……..……**Joe Bob**……

R. District No.……..……2..…….. **S.** APO No. ……**N/A**……..

T. Emulsion Field Viscosity ……**254**…..…….. **U.** Tested by ……..…**Joe Bob**……

TRANSMITTAL TO BE FASTENED TO SAMPLE CONTAINER WITH MASKING TAPE

NDOT 020-016 (Rev. 2-10)

020-016 Rev. 02/10

TRANSMITTAL FOR ASPHALT SAMPLES

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
B -	Project number for the material being tested, found in the Contract Plans or Special Provisions (EX. SI-0035(119))
C -	Field number for this particular sample in numerical order (EX. 1)
D -	County in which the sample is being used (EX. Washoe)
E -	Highway where the sample is being used (EX. I-80)
F -	Milepost where the sample is being used (EX. 10.50)
G -	Type of asphalt being sampled (EX. LMCRS-2h)
H -	Producer that is actually manufacturing the asphalt (EX. Idaho Asphalt) NOTE: Not where the material is stored
I -	Shipping Point where the asphalt was produced and is being shipped from (EX. Nampa Idaho)
J -	Actual tonage that this sample represents (EX. 35.7 tons) NOTE: Obtain a sample from the truck and trailer, test both the truck and trailer then submit one sample (either truck or trailer) to the Materials Lab for further testing
K -	Same as Bill of Lading Number provided by the delivery driver or contractor (EX. 00125695)
L -	Found on weigh scale certificate provided by the delivery driver or contractor (EX. 6526108)
M -	Found on the Bill of Lading provided by the delivery driver or contractor (EX. 456/456B)
N -	Prime contractor awarded the contract (EX. Granite Construction)
O -	Name of the certified truck driver who sampled the oil from the truck (Ex. Sam Weist - Truck Driver)
P -	Date the sample was taken (EX. 6/6/2014)

020-016 Rev. 02/10

TRANSMITTAL FOR ASPHALT SAMPLES

LINE	EXPLANATION OF NEEDED INFORMATION
Q -	Person who observed the sample being taken (EX. Joe Bob) NOTE: If you did not observe the sampling being taken, write not observed
R -	District where the sample is being used (EX. 2)
S -	Maintenance Division to fill out
T -	Emulsion field viscosity from Test Method Nev. T759 performed before the truck driver offloads the material on the jobsite (EX. 254) NOTE: Use the viscosity number for the same sample that is being submitted to the Materials Division
U -	Printed first and last name of the certified tester who completed the test (EX. Joe Bob)

NOTES:

1. When submitting a sample of diluted emulsion, you must indicate dilution ratio on Line G (EX. 60/40)

2. Fold transmittal in half with the writing inside and attach with 2 small strips of masking tape. Seal transmittal in plastic envelope in case of inclement weather.

3. Make sure outside of sample container is clean, DO NOT use any chemicals to clean the sample container. If sample container is not clean, have contractor take another sample.

4. Samples shall be submitted ASAP to the Materials Lab. Samples must be tested within 14 days of sample date. If samples are received after the 14 days they can not be tested since they have exceeded their shelf life.

STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

TRANSMITTAL FOR CONCRETE SAMPLES

(circle all units used)

County _____ Contract _____

Station / Structure No. / Item Constructed _____

Date placed _____ Time placed _____

Mix Design No.(s) _____ Class of concrete _____

Project specified strength _____ psi (Mpa) Mix design strength _____ psi (Mpa)

Cylinder Set No. _____

Brand of cement _____ Type _____

Source of water _____

Source of fine aggregate _____

Source of coarse aggregate _____

Source of fly ash _____

lbs (kg) of cement as batched _____ per yd^3 (m^3)

lbs (kg) of fly ash as batched _____ per yd^3 (m^3)

lbs (kg) of fine agg. as batched _____ per yd^3 (m^3)

lbs (kg) of coarse agg. as batched _____ per yd^3 (m^3)

Total mixing water gals (L) _____ per yd^3 (m^3)

Water cement ratio as batched _____ Concrete temp _____ ˚F (˚C)

Slump _____ inches (mm) Unit weight _____ lbs/ft^3 (kg/m^3)

Slump _____ inches (mm) after addition of super plasticize % Air _____

Brand of air entraining agent used _____

Brand of water reducer used _____

Brand of super plasticizer _____

Other additive(s) used _____

Break at _____

Sampled by _____

Concrete supplied by _____

Remarks _____

NDOT 020-017 (Rev. 3/08)

STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

TRANSMITTAL FOR CONCRETE SAMPLES

(circle all units used)

A. County Lyon B. Contract 3925

C. Station / Structure No. / Item Constructed

Sta "X" 7 + 22 rt. - N/A - **Barrier Rail**

D. Date placed 7/12/2010 E. Time placed 7:00 am

F. Mix Design No.(s) SDA145 G. Class of concrete DA Mod

H. Project specified strength 4000 (psi) (Mpa) I. Mix design strength 4000 (psi) (Mpa)

J. Cylinder Set No. 30

K. Brand of cement Lehigh Southwest L. Type Nevada Type II

M. Source of water Domestic

N. Source of fine aggregate Spanish Springs Pit

O. Source of coarse aggregate Spanish Springs Pit

P. Source of fly ash Bridger

Q. (lbs) (kg) of cement as batched 553 per (yd^3) (m^3)

R. (lbs) (kg) of fly ash as batched 160 per (yd^3) (m^3)

S. (lbs) (kg) of fine agg. as batched 1347 per (yd^3) (m^3)

T. (lbs) (kg) of coarse agg. as batched 1627 per (yd^3) (m^3)

U. Total mixing water gals (L) 24 per (yd^3) (m^3)

V. Water cement ratio as batched .28 W. Concrete temp 77 (°F) (°C)

X. Slump 4 (inches) (mm) Y. Unit weight 142.0 (lbs/ft^3) (kg/m^3)

Z. Slump N/A inches (mm) after addition of super plasticize AA. % Air 6.0

BB. Brand of air entraining agent used **MBAE90**

CC. Brand of water reducer used Polyheed 997

DD. Brand of super plasticizer N/A

EE. Other additive(s) used Delvo

FF. Break at 1 @ 7, 1 @ 14 and 3 @ 28

GG. Sampled by Dexter Grant

HH. Concrete supplied by American Ready Mix

II. Remarks Field tests meet specs.

NDOT 020-017 (Rev. 3/08)

020-017 Rev. 03/08

TRANSMITTAL FOR CONCRETE SAMPLES

LINE	EXPLANATION OF NEEDED INFORMATION
A -	County in which the sample was taken (EX. Lyon)
B -	Contract number for the material being tested, found in the Contract Plans or Special Provisions etc. (EX. 3925)
C -	Station/Structure No./Item Constructed, approximate sample location found in the Contract Plans or jobsite survey stakes (EX. "X" 7 + 22 RT.); the number of the structure that is being worked on, found in the Contract Plans (EX. N/A); item being constructed, (found in the Contract Plans) (EX. Barrier Rail)
D -	Date the sample was taken (EX. 07/12/2010)
E -	Time the sample was taken (EX. 7:00 am)
F -	Mix Design number that the sample represents (mix design approved by the Materials Division) (EX. SDA145)
G -	Class of Concrete, found in the Standard Specifications, Special Provisions, or Contract Plans (EX. DA Mod)
H -	Project specified strength, found in the Standard Specifications, Special Provisions, or Contract Plans and is written in Mpa if the contract is metric or psi if the contract is english (EX. 4000 psi) **NOTE**: If the mix design specifies 4000 psi then the specified strength has to meet 4000 psi even if the barrier rail only has to meet a 3000 psi
I -	Mix design strength specified on the mix design (EX. 4000 psi)
J -	Set number and the number of cylinders in the set (EX. Set 30, 5 of 5 cylinders) **NOTE:** Cylinders are consecutively numbered by mix design
K -	Brand of cement, found on the approved mix design (EX. Lehigh Southwest)
L -	Type of cement, found on the approved mix design (EX. Nevada Type II)
M -	Source of water, found on the approved mix design (EX. Domestic) normally domestic or city, however the mix design should be checked in case a selected source is being used

020-017 Rev. 03/08

TRANSMITTAL FOR CONCRETE SAMPLES

LINE	EXPLANATION OF NEEDED INFORMATION
N -	Source of fine aggregate, found on the approved mix design from Materials Division (EX. Spanish Springs Pit)
O -	Source of coarse aggregate, found on the approved mix design from Materials Division (EX. Spanish Springs Pit)
P -	Source of fly ash, found on the approved mix design from Materials Division (EX. Bridger)
Q -	Total weight of cement (found on delivery ticket) divided by m^3 or yds^3 of total concrete batched (found on delivery ticket) (EX. 5530 lbs / 10 yds^3 = 553 lbs per yd^3)
R -	Total weight of fly ash (found on delivery ticket) divided by m^3 or yds^3 of total concrete batched (found on delivery ticket) (EX. 1600 lbs / 10 yds^3 = 160 lbs per yd^3)
S -	Total weight of fine aggregate (found on delivery ticket) divided by m^3 or yds^3 of total concrete batched (found on delivery ticket) (EX. 13470 lbs / 10 yds^3 = 1347 lbs per yds^3)
T-	Total weight of coarse aggregate (found on delivery ticket) divided by m^3 or yds^3 of total concrete batched (found on delivery ticket) (EX. 16270 lbs / 10 yds^3 = 1627 lbs per yd^3)
U -	Total weight of water (found on delivery ticket) divided by m^3 or yds^3 of total concrete batched, (found on delivery ticket) **NOTE**: If water has been indicated in lbs on delivery ticket, divide by 8.33 (weight of one gallon of water) then divide by the total m^3 or yds^3 of concrete batched (EX. 1999 lbs / 8.33 = 240 / 10 yds^3 = 24 gals per yd^3)
V -	Water cement ratio, Line U (total mixing water in gallons) x 8.33 (weight of 1 gallon of water) = 200 lbs of water; Line Q (lbs of cement batched) + Line R (lbs of fly ash batched) / weight of water = water cement ratio (EX. 24 x 8.33 = 200 lbs, (200 / 553) + 160 = .28) **NOTE:** Refer to the Standard Specifications, Special Provisions, and mix design for the allowable tolerances on the water cement ratio
W -	Temperature of the concrete, per Test Method Nev. T440 (EX. 77°F)
X -	Slump results from Test Method Nev. T438 performed at time of sampling **NOTE:** Perform slump prior to the addition of plasticizer, if applicable (EX. 4)
Y -	Unit weight results from Test Method Nev. T435, performed at time of sampling **NOTE:** Perform unit weight test after the addition of plasticizer, if applicable (EX. 142.0)

020-017 Rev. 03/08

TRANSMITTAL FOR CONCRETE SAMPLES

LINE	EXPLANATION OF NEEDED INFORMATION
Z -	Slump after plasticizer, results from Test Method Nev. T438, performed at time of sampling **NOTE:** Perform slump test after the addition of plasticizer, if applicable (EX. N/A)
AA -	Air results from Test Method Nev. T435, performed at time of sampling (EX. 6.0) **NOTE:** Perform air test performed after the addition of plasticizer, if applicable
BB -	Air entraining agent, found on mix design approved by Materials Division (EX. MBAE90)
CC -	Water reducer, found on mix design approved by Materials Division (EX. Polyheed 997)
DD -	Super plasticizer, found on mix design approved by Materials Division **NOTE:** Total of liters or ounces used divided by the m^3 or yds^3 of total concrete batched (EX. N/A)
EE -	Other additives, found on mix design approved by Materials Division (EX. Delvo)
FF -	Cylinder break schedule, check the Special Provisions for the correct days to break (usually 1 @ 7days, 1 @ 14 days and 3 @ 28 days) **NOTE:** Construction Manual only only requires 3 @ 28 days, however 5 cylinders are usually completed
GG -	Sampled by, print first and last name of the tester or testers who actually fabricated the cylinders (EX. Dexter Grant)
HH -	Concrete supplier that supplies the actual concrete being tested (EX. American Ready Mix)
II -	Remarks, anything that needs to be documented (EX. Field tests meet specs.)

NOTES:

1. Line F (Mix Design No.) - Prior to any concrete placement, review the Mix Design approved by the Materials Division.

2. Line X (Slump before plasticizer) - If you have additives which are introduced in the field, you need to have a slump prior to the addition of those additives.

020-017 Rev. 03/08

TRANSMITTAL FOR CONCRETE SAMPLES

LINE	EXPLANATION OF NEEDED INFORMATION
4.	Line Z (Slump after plasticizer) - If additives are not introduced in the field, this line will be N/A.
5.	Line FF (Break at) - The break days must be reported or the strength tests will not be performed.

020-018

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
MATERIAL DIVISION

TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS

E.A. or Contract No……Test No. or Sample No……
Material description……Batch No……
Location or source of sample……
Primary contractor……
Producer……
Limits of work represented by sample……
……
Quantity and Depth represented……
Material is to be used for……
……
Tests needed on this material……
Type and grade of asphalt to be used……
Asphalt producer……
Bin percentages……
Bitumen Ratio (Target)……..(Actual)……..Lab mix design No. (BF)……
Remarks……
……
……
Sampled by (*Please Print*)……
Date sampled……Date Shipped……

Resident Engineer signature for mix design submittal:
…… Signed……

Distribution: White and Canary, to be inserted in plastic envelope and submitted with sample; Pink, sender's copy

(NSPO) Rev. 7-12 (O) 4179

020-018

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
MATERIAL DIVISION

TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS

A. E.A. of Contract No……..…**3925**……..……**B**. Test No. or Sample No.…….**T-1-1**…..……
C. Material description……**Type 1B Aggregate Base**……..…**D**. Batch No.…..…N/A.……
E. Location or source of sample……..**Granite Lockwood Stockpile**……
F. Primary contractor……..……**Granite Construction**……..……
G. Producer……**Granite Construction**..……..……
H. Limits of work represented by sample……..……**As Per Plans**……..……..……..
……
I. Quantity and Depth represented……**25,000 tons**……..……..
J. Material is to be used for……**Type 1B Aggregate Base**……..……
……..……
K. Tests needed on this material……**Source Requirement Tests**……..……
L. Type and grade of asphalt to be used……..**N/A**……
M. Asphalt producer…….……**N/A**……..……..
N. Bin Percentages……..**N/A**……..……..
O. Bitumen Ratio (Target)……**N/A**……..(Actual)……**N/A**……..**P**. Lab mix design No. (BF)……**N/A**.……
Q. Remarks……**Tests meet specs for Sieve, P.I., L.L**……..……..……
James Fred (Granite Construction Co.) and Jerry Pine (NDOT R.E.) notified of results……..……
……
R. Sampled by (*Please Print*)……..…**John Jones**……
S. Date sampled……**12/16/13**……..**T**. Date Shipped……**12/17/13**……..

U. Resident Engineer signature for mix design submittal:
……..……**N/A**……..…… **V**. Signed……..……..…*John Jones*…..……..……

Distribution: White and Canary, to be inserted in plastic envelope and submitted with sample; Pink, sender's copy

(NSPO) Rev. 7-12 (O) 4179

020-018 Rev. 07/12

TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (Ex. 3925)
B -	Acceptance test number for that particular test (Ex.T-1-1 T= Acceptance 1 = test, first acceptance test of the day, 1 = number of days material has been tested) **NOTE:** This is not the working day number
C -	Material type as specified in Standard Specifications, Contract Plans or Special Provisions (Ex. Type 1B Base Aggregate)
D -	N/A
E -	Location (Station) where sample was obtained. Or if sample was taken from the pit name of pit and from area taken. (Ex. Granite Lockwood Stockpile.)
F -	Prime Contractor awarded the contract. (Ex. Granite Construction)
G -	Contractor who produced and/or crushed the material. (Ex. Granite Construction)
H-	Limits of work represented by sample (Ex. As per plans)
I -	Total quantity of material that will be represented by this submittal (Ex. 25,000 tons)
J -	Whatever the contractor will be using the material for. (Ex. Type 1B Aggregate Base)
K -	Stated in the Standard Specifications, or Special Provisions (Ex. Source requirement tests)
L -	N/A
M -	N/A
N -	N/A
O -	N/A

020-018 Rev. 07/12

TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS

LINE	EXPLANATION OF NEEDED INFORMATION
P -	N/A
Q -	Remarks, anything that needs to be documented (Ex. Tests meet specs. for sieve, P.I., L.L. James Fred (Granite Construction Co.) and Jerry Pine (NDOT R.E.) notified of results.
R -	Sampled By, print first and last name of the tester or testers who sampled the material (Ex. John Jones)
S -	Date the sample was taken (Ex. 12/16/2013)
T-	Date the sample left your possession (Ex. 12/17/2013)
U -	N/A
V -	Signature of person responsible for sampling, testing and submitting the sample (Ex. John Jones)

020-018

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
MATERIAL DIVISION

TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS

E.A. or Contract No……Test No. or Sample No……..……..……
Material description……..…Batch No.……..……
Location or source of sample……
Primary contractor……
Producer……..……
Limits of work represented by sample……..……..
……
Quantity and depth represented……..
Material is to be used for……
……
Tests needed on this material……..……
Type and grade of asphalt to be used……
Asphalt producer……..……..
Bin percentages……..
Bitumen Ratio (Target)……..(Actual)……..Lab mix design No. (BF)……
Remarks……
……
……
Sampled by (*Please Print*)……
Date sampled……Date Shipped……..

Resident Engineer signature for mix design submittal:
…… Signed……..

Distribution: White and Canary, to be inserted in plastic envelope and submitted with sample; Pink, sender's copy

(NSPO) Rev. 7-12 (O) 4179

020-018

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
MATERIAL DIVISION

TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS

A. E.A. of Contract No……..…**3925**……..……**B**. Test No. or Sample No.……**T-1-2**……..…..
C. Material description……**PBS Type 2C with RAP**……..…**D**. Batch No.……**N/A**…….……
E. Location or source of sample……..**"L"~155+25, #2 Lane, 1st Lift**……..……
F. Primary contractor……**Granite Construction**……..……
G. Producer……**Granite Construction**..……
H. Limits of work represented by sample……**As Per Plans**……..……..……..
……
I. Quantity and Depth represented……..…10**,000 tons**……..……..
J. Material is to be used for……**Mainline Paving of PBS Type 2C W/Rap**……..……
……
K. Tests needed on this material……..…..**Stability and Air Voids**……..……..……
L. Type and grade of asphalt to be used……..**PG64-28NV**……..……
M. Asphalt producer……..……**Paramount Fernley**..……..……..
N. Bin Percentages…**1"=25%, 1/2"=12%, 3/8"=10%, crushed fines=28%, Wads. Sand=10%, R.A.P.=15%**…..
O. Bitumen Ratio (Target)……**5.2%**……..(Actual)……**5.0%**……..**P**. Lab mix design No. ……..**BF10-15**…….……
Q. Remarks…**Sieve was out of spec on #10 sieve. James Fred (Granite Construction) and Jerry Pine** ...
(NDOT R.E.) notified of results..……
…..……
R. Sampled by (*Please Print*)……..…**John Jones**……
S. Date sampled……**12/16/13**……..**T**. Date Shipped……**12/17/13**……..

U. Resident Engineer signature for mix design submittal:
……..……**N/A**..……..…… **V**. Signed……..…*John Jones*……..……..

Distribution: White and Canary, to be inserted in plastic envelope and submitted with sample; Pink, sender's copy

(NSPO) Rev. 7-12 (O) 4179

020-018 Rev. 07/12

TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (Ex. 3925)
B -	Acceptance test number for that particular test (Ex.T-1-2 T= Acceptance test, 1 = first acceptance test of the day, 2 = number of days material has been tested) **NOTE:** This is not the working day number
C -	Material type as specified in the Standard Specifications, Contract Plans or Special Provisions (Ex. PBS Type 2C with Rap)
D -	N/A
E -	Location (Station) where sample was obtained from; route and milepost, station, etc.. (Ex. "L"~ 155+25, #2 lane, 1st lift)
F -	Prime Contractor awarded the contract (Ex. Granite Construction)
G -	Contractor producing the Plantmix (Ex. Granite Construction)
H -	Limits of work represented by sample (Ex. As per plans)
I -	Total quantity of material that will be represented by this submittal (Ex. 10,000 tons)
J -	Whatever the contractor will be using the material for (Ex. Mainline Paving PBS Type 2C/W Rap)
K -	Stated in the Standard Specifications, or Special Provisions (Ex. Stability and Air Voids)
L -	As stated in the Standard Specifications, Special Provisions, or mix design (Ex. PG64-28NV)
M -	Company that is actually producing the asphalt (Ex. Paramount Fernley) **NOTE:** Not where it is stored

020-018 Rev. 07/12

TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS

LINE	EXPLANATION OF NEEDED INFORMATION
N -	Percentages of each stockpile should be taken from the most current JMF or Mix Design (Ex. 1"=25%, 1/2"=12%, 3/8"=10%, crushed fines = 28%, Wads. Sand=10%, RAP=15%
O -	(Target) bitumen ratio from Mix Design or JMF (Ex. 5.2%) (Actual) bitumen ratio are results from Test Method Nev. T761
P -	Mix design number found on the mix design from the Materials Lab (Ex. BF10-15)
Q -	Anything that needs to be documented (Ex. Sieve was out of spec on the #10 sieve. James Fred (Granite Construction) and Jerry Pine (NDOT R.E.) notified of results.
R -	Sampled by, print first and last name of the tester or testers who completed the test (Ex. John Jones)
S -	Date the sample was taken (Ex. 12/16/13)
T-	Date the sample left your possession (Ex. 12/17/2013)
U -	N/A (NOTE: Only needed when submitting a mix design)
V -	Signature of person responsible for sampling, testing and submitting the sample (Ex. John Jones)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR GAUGE / SAND CONE CHECK TEST FORM

Date _____ Contract No. _____
Material Type _____ Nuclear Set No. _____
Material Source _____

CORRELATION DATA

Correlation Date	
Moisture Offset (MCF)	
Wet Density Offset	

SINGLE CHECK TEST *(Every 10 Acceptance Tests With Offsets Enabled)*

Test No.	Sand Cone Wet Density	Nuclear Gauge Wet Density	Difference (±)

Maximum Deviation:
(± 0.032 Mg/m^3 or ± 2.0 pcf Allowable) _____

HARVARD MINIATURE COMPACTION TEST RESULTS *(Every 10 Acceptance Tests)*

Test No.	
H.M.C.T., Dry = d Mg/m^3 (pcf)	
Total Sample, Approx. Opt. Moisture	
Appar. Spec. Grav. + 4.75 mm (+ No. 4)	
Dec. Equiv. Of % + 4.75 mm (+ No. 4)	
Calculated Max. Density Mg/m^3 (pcf)	

Remarks: _____

Tested By: _____ Resident Engineer: _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR GAUGE / SAND CONE CHECK TEST FORM

A. Date	**7/12/2010**	**D.** Contract No.	**3925**
B. Material Type	**Granular Backfill**	**E.** Nuclear Set No.	**33**
C. Material Source	**Cinderlite - Goni Pit**		

CORRELATION DATA

F. Correlation Date	**7/1/2010**
G. Moisture Offset (MCF)	**+ 6.55**
H. Wet Density Offset	**+ 2.3**

SINGLE CHECK TEST *(Every 10 Acceptance Tests With Offsets Enabled)*

I. Test No.	**J.** Sand Cone Wet Density	**K.** Nuclear Gauge Wet Density	**L.** Difference (±)
60-SB-90	**129.2**	**141.9**	**- 12.7 pcf**

M. Maximum Deviation:
(± 0.032 Mg/m^3 or ± 2.0 pcf Allowable) **- 12.7 pcf**

HARVARD MINIATURE COMPACTION TEST RESULTS *(Every 10 Acceptance Tests)*

N. Test No.	**60-SB-90**
O. H.M.C.T., Dry = d Mg/m^3 (pcf)	**118.2**
P. Total Sample, Approx. Opt. Moisture	**12.1**
Q. Appar. Spec. Grav. + 4.75 mm (+ No. 4)	**2.450**
R. Dec. Equiv. Of % + 4.75 mm (+ No. 4)	**0.167**
S. Calculated Max. Density Mg/m^3 (pcf)	**124.3**

T. Remarks: **Check test did not meet Maximum Deviation spec., and is no longer valid. Will have to re-correlate the moisture density gauge. Contractor - Jim John and NDOT R.E. Bob Black notified of results.**

U. Tested By: **Tyler James**

V. Resident Engineer: *Bob Black*

040-003 Rev. 03/09

NUCLEAR GAUGE / SAND CONE CHECK TEST FORM

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Date the sample was taken (EX. 7/12/2010)
B -	Material type as specified, found in the Standard Specifications, Contract Plans, or Special Provisions (EX. Granular Backfill)
C -	Material source that the material was produced (EX. Cinderlite - Goni Pit)
D -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
E -	Nuclear set number assigned to the moisture density gauge that is used for testing the material (EX. 33) **NOTE:** If there is no set number, use the serial number on the back of the moisture density gauge
F -	Correlation date will be the original date that the moisture density gauge correlation was performed on this material (EX. 07/01/2010)
G -	Moisture offset (MCF) that was established during the original moisture density gauge correlation (EX. + 6.55)
H -	Wet density offset that was established during the original moisture density gauge correlation (EX. + 2.3)
I -	Test number for this particular test. First number is the number of tests ran on this material; the code for the type of material being tested (found in the Construction Manual); and percent of compaction (found in the Standard Specifications or Special Provisions) (EX. 60-SB-90) **NOTE:** The only codes used for compactions are found in the Construction Manual unless approved by the Construction Office, Quality Assurance Section
J -	Sand cone wet density determined using Test Method Nev. T102, from NDOT form 040-004 line no. 14 (EX. 129.2)
K -	Nuclear gauge wet density determined using Test Method Nev. T103, from NDOT form 040-007, average of wet density (EX. 141.9)
L -	Difference, Line J (sand cone wet density) - Line K (nuclear gauge wet density) = Line L (difference) (EX. 129.2 - 141.9 = - 12.7 pcf)

040-003 Rev. 03/09

NUCLEAR GAUGE / SAND CONE CHECK TEST FORM

LINE	EXPLANATION OF NEEDED INFORMATION
M -	Maximum deviation, place Line L (difference ±) in this area, if the number is less than ± 0.032 Mg/m3 (± 2.0 pcf), then continue to use this moisture density gauge correlation (EX. - 12.7 pcf) If not, re-correlation will be required
N -	Test number for this particular test. First number is the number of tests ran on this material; the code for the type of material being tested (found in the Construction Manual); and percent of compaction (Standard Specifications or Special Provisions) (EX. 60-SB-90) **NOTE:** The only codes used for compactions are found in the Construction Manual unless approved by the Construction Office, Quality Assurance Section
O -	H.M.C.T., Dry - new result from the Harvard Miniature Compaction Test established using Test Method Nev. T101, from NDOT form 040-004, the highest dry density determined by Test Method Nev. T101 (EX. 118.2)
P -	Total Sample, Approximate Optimum Moisture using Test Method Nev. T102, from NDOT form 040-004, line No. 16 (EX. 12.1)
Q -	Apparent Specific Gravity + 4.75 mm (+ No. 4), from Test Method Nev. T104, from NDOT form 040-004 line No. 22 or 23 (EX. 2.450)
R -	Decimal Equivalent of % + 4.75 mm (+ No. 4) using Nevada Test Method T102, from NDOT form 040-004 line No. 25 (EX. 0.167)
S -	Calculated Maximum Density using Test Method Nev. T102, from NDOT form 040-004 Line Number 28 (EX. 124.3)
T-	Remarks, anything that needs to be documented (EX. The test did or didn't meet specifications and who was notified of the results etc.)
U -	Tested by, print first and last name of the tester or testers who completed the test (EX. Tyler James)
V -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Bob Black)

040-003 Rev. 03/09

NUCLEAR GAUGE / SAND CONE CHECK TEST FORM

LINE	EXPLANATION OF NEEDED INFORMATION

NOTES:

1. If the maximum deviation specification has been met, then continue to use the gauge correlation with the new Harvard Miniature Compaction results, from the new Check Test. If the maximum deviation specification does not meet, do not use that gauge correlation anymore. A new gauge correlation will be required, or use the referee method using Test Method Nev. T102.

2. If the Check Test does not meet the maximum deviation specification and a new correlation is required, it is permissible to use the failing Check Test as part of the new correlation.

3. Even though the Check Tests are required every tenth acceptance test, this is a minimum only and if anything is suspect additional Check Tests may be required.

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR GAUGE / SAND CONE CHECK TEST FORM

Date _____ Contract No. _____
Material Type _____ Nuclear Set No. _____
Material Source _____

CORRELATION DATA

Correlation Date	
Moisture Offset (MCF)	
Wet Density Offset	

SINGLE CHECK TEST *(Every 25 Acceptence Tests with Offsets Enabled)*

Test No.	Sand Cone Wet Density	Nuclear Gauge Wet Density	Difference (±)

Maximum Deviation:
(± 0.032 Mg/m^3 or ± 2.0 lb/ft^3 Allowable) _____

MODIFIED PROCTOR COMPACTION TEST RESULTS *(Every 25 Acceptance Tests)*

Test No.	
Maximum Dry Density = (d) Mg/m^3 (lb/ft^3)	
Optimum Moisture %	

(if applicable)

Corr. Max. Dry Density = (D) Mg/m^3 (lb/ft^3)	
Corr. Optimum Moisture %	

Remarks: _____

Tested By: _____ Resident Engineer: _____

NDOT
040-003
Rev. 07/14

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR GAUGE / SAND CONE CHECK TEST FORM

A. Date	**7/12/2010**	**D.** Contract No.	**3925**
B. Material Type	**Granular Backfill**	**E.** Nuclear Set No.	**33**
C. Material Source	**Cinderlite - Goni Pit**		

CORRELATION DATA

F. Correlation Date	**7/1/2010**
G. Moisture Offset (MCF)	**+ 6.55**
H. Wet Density Offset	**+ 2.3**

SINGLE CHECK TEST *(Every 25 Acceptence Tests with Offsets Enabled)*

I. Test No.	**J.** Sand Cone Wet Density	**K.** Nuclear Gauge Wet Density	**L.** Difference (±)
60-SB-90	**129.2**	**141.9**	**- 12.7 pcf**

M. Maximum Deviation:
(± 0.032 Mg/m^3 or ± 2.0 lb/ft^3 Allowable) **- 12.7 pcf**

MODIFIED PROCTOR COMPACTION TEST RESULTS *(Every 25 Acceptance Tests)*

N. Test No.	**60-SB-90**
O. Maximum Dry Density = (d) Mg/m^3 (lb/ft^3)	**118.2**
P. Optimum Moisture %	**12.1**

(if applicable)

Q. Corr. Max. Dry Density = (D) Mg/m^3 (lb/ft^3)	**124.3**
R. Corr. Optimum Moisture %	**10.9**

S. Remarks: **Check test failed to meet the maximum deviation tolerances and is no longer valid.**
Re-correlation of the moisture density gauge will be necessary. RE and Contractor notified

T. Tested By: **Leonard Cooper** **U.** Resident Engineer: **Howard Koothrappali**

040-003 Rev. 07/14

NUCLEAR GAUGE / SAND CONE CHECK TEST FORM

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Date the sample was taken (ex. 7/12/2010)
B -	Material Type, as specified in the Contract Plans, or Special Provisions (ex. Granular Backfill)
C -	Material Source, where the material was produced (ex. Cinderlite - Goni Pit)
D -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (ex. 3925)
E -	Gauge Set number, assigned to the moisture density gauge that is used for testing the material (ex. 33) **NOTE:** Consultants shall use the serial number found on the back of the gauge
F -	Correlation Date, will be the original date that the moisture density gauge correlation was performed on this material (ex. 07/1/2010)
G -	Moisture Offset (MCF), that was established during the original moisture density gauge correlation (ex. + 6.55)
H -	Wet Density Offset, that was established during the original moisture density gauge correlation (ex. + 2.3)
I -	Test No., actual test number for this particular test. 60 is the number of tests ran on that material, SB represents the material being tested (refer to the Construction Manual for coding) and 90 is the minimum percent compaction required (Standard Specifications or Special Provisions) (ex. 60-SB-90)
J -	Sand Cone Wet Density, determined per Test Method Nev. T102, from NDOT form 040-069 (ex. 129.2)
K -	Nuclear Gauge Wet Density, determined per Test Method Nev. T103, from NDOT form 040-007, average of wet density (ex. 141.9)
L -	Difference (±), Line J (Sand Cone Wet Density) - Line K (Nuclear Gauge Wet Density) = Line L (Difference (±)) (ex. 129.2 - 141.9 = - 12.7 pcf)
M -	Maximum Deviation, place Line L (Difference (±)) in this location, if the number is within ± 0.032 Mg/m3 (± 2.0 pcf), continue to use this moisture density gauge correlation (ex. - 12.7 pcf) If tolerances exceed, re-correlation shall be required

040-003 Rev. 07/14

NUCLEAR GAUGE / SAND CONE CHECK TEST FORM

LINE	EXPLANATION OF NEEDED INFORMATION
N -	Test No., actual test number for this particular test. 60 is the number of tests ran on that material, SB represents the material being tested (refer to the Construction Manual for coding) and 90 is the minimum percent compaction required (Standard Specifications or Special Provisions) (ex. 60-SB-90)
O -	Maximum Dry Density = (d) Mg/m³ (lb/ft³), the highest dry density as established per Test Method Nev. T108 from NDOT form 040-069 (ex. 118.2)
P -	Optimum Moisture %, as established per Test Method Nev. T108 from NDOT form 040-069 (ex. 12.1)
Q -	Corr. Max. Dry Density = (D) Mg/m³ (lb/ft³), as established per test Method Nev. T108 from NDOT form 040-069 (ex. 124.3)
R -	Corr. Optimum Moisture %, as established per Test Method Nev. T108 from NDOT form 040-069 (ex. 10.9)
S-	Remarks, anything that needs to be documented (ex. Check test failed to meet the maximum deviation tolerances and is no longer valid. Re-correlation of the moisture density gauge will be necessary. RE and Contractor notified)
T -	Tested By, printed first and last name of the tester or testers who completed the test (ex. Leonard Cooper)
U -	Resident Engineer, or Assistant Resident Engineer signature on that specific crew verifying the accuracy of the reported results. (ex. Howard Koothrappali)

NOTES:

1. If the maximum deviation specification is within tolerances, continue to use the gauge correlation using the new Proctor Curve Compaction and Check Test results.
If the maximum deviation specification exceeds tolerances, re-correlation shall be required or use the referee method using Test Method Nev. T102.

2. If the Check Test exceeds the maximum deviation specification and a new correlation is to be determined, it is permissible to use the failing Check Test as part of the new correlation process.

3. Even though the Check Tests are required every twenty-five acceptance test, this is a minimum only and if anything is suspect additional Check Tests may be required.

STATE OF NEVADA DEPARTMENT OF TRANSPORTATION

COMPACTION REPORT

Contract No. _____
Date _____

Test Hole No. (code)			
Station			
Distance to Centerline			
Embankment Depth			
Type of Material			
Compaction Equipment			

SAND VOLUME DATA

1. Initial Weight of Sand	kg (lbs)			
2. Weight of Residue	kg (lbs)			
3. Weight of Sand Used, 1 - 2	kg (lbs)			
4. Sand Density	Mg/m^3 (pcf)			
5. Vol. Hole + Cone + Plate, 3 / 4	m^3 x 1000 (ft^3)			
6. Vol. of Cone + Plate	m^3 x 1000 (ft^3)			
7. Vol. of Hole, 5 - 6	m^3 x 1000 (ft^3)			

EXCAVATED SAMPLE

		Part (g)	Total kg(lbs)	Part (g)	Total kg(lbs)	Part (g)	Total kg(lbs)
8. Wet Weight	g						
9. Dry Weight	g						
10. Weight of Water, 8 - 9	g						
11. % Moisture (10 / 9)100							
12. Dry Weight + 4.75 mm (+ #4)	g						
13. Dry Weight - 4.75 mm (- #4)	g						
14. FIELD DENSITY WET, 8 Total / 7	Mg/m^3 (pcf)						
15. FIELD DENSITY DRY, [14 / (100 + % MOISTURE)]100	Mg/m^3 (pcf)						

DATA FOR THE CALCULATED MAXIMUM DENSITY DETERMINATION NEV T101

Harvard Miniature Curve Test on - 4.75 mm (- #4)

Note: For Metric, grams / 62.4 = Mg/m^3
For English, grams = pcf

	Wet	Dry	%M	Wet	Dry	%M	Wet	Dry	%M
1.									
2.									
3.									
4.									
5.									

16. Total Sample, approx. Opt. Moisture [(1 - P) x 2] + [P x Test Opt. Moist.] _____ _____ _____

Apparent Specific Gravity Test, G, Nev. T104

17. Wt. of Aggregate, (4.75 mm to 37.5 mm)(#4 to 1.5") = A					
18. Wt. of Pycnometer = p					
19. (Wt. of Pyc. + Water) - p = M	M =		M =		M =
20. (Wt. of Pyc., Water, Aggregate) - (p + A) = M_1	M_1 =		M_1 =		M_1 =
21. Wt. of Water Recovered from Pyc. = M_2	M_2 =		M_2 =		M_2 =
22. If $M_1 - M_2 \leq 14$ g, G = A / (M - M_1)					
23. If $M_1 - M_2 > 14$ g, G = A / [(M - M_1) + 0.5 ($M_1 - M_2$ - 14)]					
24. Constant, K, (.90 Metric) (56.16 English)					
25. Decimal Equiv. of % + 4.75 mm (+ #4), (1 - P) = 12 / 9					
26. Decimal Equiv. of % - 4.75 mm (- #4), P = 13 / 9					
27. H.M.C.T., Dry = d	Mg/m^3 (pcf)				
28. CALCULATED MAX. DENSITY D = GK (1- P) + Pd (1.03)	Mg/m^3 (pcf)				
29. % COMPACTION = (15 / 28)100					

REMARKS: _____

TESTED BY: _____ RESIDENT ENGINEER: _____

STATE OF NEVADA DEPARTMENT OF TRANSPORTATION

COMPACTION REPORT

A. Contract No. **3925**
B. Date **7/12/2010**

C. Test Hole No. (code)	**60-SB-90 (English)**			
D. Station	**"X" 7 + 22**			
E. Distance to Centerline	**2.0' Rt.**			
F. Embankment Depth	**2 ft**			
G. Type of Material	**Granular Backfill**			
H. Compaction Equipment	**Vibratory Roller**			

SAND VOLUME DATA

I. 1. Initial Weight of Sand	kg (lbs)	**50.0**		
J. 2. Weight of Residue	kg (lbs)	**18.1**		
K. 3. Weight of Sand Used, 1 - 2	kg (lbs)	**31.9**		
L. 4. Sand Density	Mg/m^3 (pcf)	**84.6**		
M. 5. Vol. Hole + Cone + Plate, 3 /	m^3 x 1000 (ft^3)	**0.377**		
N. 6. Vol. of Cone + Plate	m^3 x 1000 (ft^3)	**0.199**		
O. 7. Vol. of Hole, 5 - 6	m^3 x 1000 (ft^3)	**0.178**		

EXCAVATED SAMPLE

		Part (g)	Total kg (lbs)	Part (g)	Total kg(lbs)	Part (g)	Total kg(lbs)
P. 8. Wet Weight	g	**2587**	**23.0**				
Q. 9. Dry Weight	g	**2389**					
R. 10. Weight of Water, 8 - 9	g	**198**					
S. 11. % Moisture (10 / 9)100		**8.3 %**					
T. 12. Dry Weight + 4.75 mm (+ #4)	g	**400**					
U. 13. Dry Weight - 4.75 mm (- #4)	g	**1989**					
V. 14. FIELD DENSITY WET, 8 Total / 7	Mg/m^3 (pcf)	**129.2**					
W. 15. FIELD DENSITY DRY, [14 / (100 + % MOISTURE)]100	Mg/m^3 (pcf)	**119.3**					

DATA FOR THE CALCULATED MAXIMUM DENSITY DETERMINATION NEV T101

Harvard Miniature Curve Test on - 4.75 mm (- #4)

Note: For Metric, grams / 62.4 = Mg/m^3
For English, grams = (pcf)

		Wet	Dry	%M	Wet	Dry	%M	Wet	Dry	%M
X.	1.	**129.2**	**115.9**	**11.5**						
	2.	**<134.9**	**118.2**	**14.1>**						
	3.	***132.4**	**114.5**	**15.6**						
	4.									
	5.	***failed to gain 1.4 g**								

Y. 16. Total Sample, approx. Opt. Moisture [(1 - P) x 2] + [P x Test Opt. Moist.] **12.1 %**

Apparent Specific Gravity Test, G, Nev. T104

Z. 17. Wt. of Aggregate, (4.75 mm to 37.5 mm)(#4 to 1.5") = A	**500**					
AA. 18. Wt. of Pycnometer = p	**438**					
BB. 19. (Wt. of Pyc. + Water) - p = M	**1455**	M = **1017**		M =		M =
CC. 20. (Wt. of Pyc., Water, Aggregate) - (p + A) = M_1	**1755**	M_1 = **817**		M_1 =		M_1 =
DD. 21. Wt. of Water Recovered from Pyc. = M_2	**794**	M_2 = **794**		M_2 =		M_2 =
EE. 22. If $M_1 - M_2 \leq 14$ g, G = A / (M - M_1)						
FF. 23. If $M_1 - M_2 > 14$ g, G = A / [(M - M_1) + 0.5 ($M_1 - M_2$ - 14	**2.44**					
GG. 24. Constant, K, (.90 Metric) (56.16 English)	**56.16**					
HH. 25. Decimal Equiv. of % + 4.75 mm (+ #4), (1 - P) = 12 /	**0.167**					
II. 26. Decimal Equiv. of % - 4.75 mm (- #4), P = 13 / 9	**0.833**					
JJ. 27. H.M.C.T., Dry = d Mg/m^3 (pcf)	**118.2**					
KK. 28. CALCULATED MAX. DENSITY D = GK (1- P) + Pd (1.03) Mg/m^3 (pcf)	**124.3**					
LL. 29. % COMPACTION = (15 / 28)100	**96 %**					

MM. REMARKS **Test on the culvert pipe met specs. Jim John (Contractor) and Bob Black (NDOT R.E.) notified of results.**

NN. TESTED BY **Tyler James**

OO. RESIDENT ENGINEER: *Bob Black*

040-004 Rev. 11/08

COMPACTION REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
A -	Contract number for the material being tested, found in the contract plans or special provisions (EX. 3925)
B -	Date the sample was taken (EX. 7/12/2010)
C -	Test Hole No., actual test number for this particular test. (EX. 60-SB-90) 60 is the number of tests ran on that material, SB represents the material being tested (refer to the Construction Manual for coding) and 90 is the minimum percent compaction required (Standard Specifications or Special Provisions) (Ex. 60-SB-90)
D -	Station, approximate sample location, found in the Contract Plans or on the jobsite survey stakes (EX. "X" 7 + 22)
E -	Distance to Centerline, distance right or left of centerline that the compaction sample was taken (EX. 2.0' Rt.)
F -	Embankment Depth, depth at which the compaction sample was taken (EX. 2' from fin. grade) (Depth may also be found on the slope stakes or by using the elevation)
G -	Type of Material as specified, found in the contract plans or special provisions (EX. Granular Backfill)
H -	Compaction Equipment, type of equipment used to compact the material (EX. Vibratory Roller)
I -	Initial Weight of Sand in pounds or kilograms used to fill the test hole and cone (EX. 50.0) **NOTE:** Minimum of 50 lb needed
J -	Weight of residue remaining in the bucket after the test hole and cone are filled (EX. 18.1)
K -	Line I (Initial Weight of Sand) - Line J (Weight of Residue) = Line K (Weight of Sand Used)(EX. 50.0 - 18.1 = 31.9)
L -	Sand density is established per Test Method Nev. T102 during sand calibration, and reported on NDOT form 040-068 NOTE: Sand density number may change each time the sand is calibrated or re-calibrated (EX. 84.6)
M -	Line K (Weight of Sand Used) / Line L (Sand Density) = Line M (Vol. Hole + Cone + Plate) (EX. 31.9 / 84.6 = 0.377)

040-004 Rev. 11/08

COMPACTION REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
N -	Volume of the cone and plate is established per Test Method Nev. T102 (EX. 0.199)
O -	Line M (Vol. Hole + Cone + Plate) - Line N (Vol. of Cone + Plate) = Line O (Vol. of Hole) (EX. 0.377 - 0.199 = 0.178 (minimum volume of hole 0.15)) **NOTE:** If the test hole is less than 4.2 (Metric) or 0.15 (English), the test is invalid and another test shall be performed immediately
P -	**Wet Weight (left side)** - representative split of the entire sample excavated from the test hole **Total Wet Weight (right side) -** entire sample excavated from the test hole per Test Method Nev. T102 (EX. 2587 g / 23.0 lb)
Q -	Dry Weight of sample after all moisture has been removed, per Test Method Nev. T112 (EX. 2389)
R -	Weight of Water, Line P (Wet Weight) - Line Q (Dry Weight) = Line R (Weight of Water) (EX. 2587 - 2389 = 198)
S -	% Moisture, Line R (Weight of Water) / Line Q (Dry Weight) x 100 = Line S (% Moisture)(EX. (198 / 2389) X 100 = 8.3%)
T -	Dry Weight + 4.75 mm (+ # 4), dry weight of sample (from Line R) after being screened over the No. + 4.75 mm (+ # 4) sieve and being washed per Test Method Nev. T102 (EX. 400) **NOTE:** Line T (Dry Weight + 4.75 mm (+ # 4)) + Line U (Dry Weight - 4.75mm (- # 4)) = Line Q (Dry Weight)
U -	Dry Weight - 4.75 mm (- # 4), Dry Weight of sample (from Line R) after being screened over the No. - 4.75 mm (- # 4) sieve, per Test Method Nev. T102 (EX. 1989) **NOTE:** Line T (Dry Weight + 4.75 mm (No. 4)) + Line U (Dry Weight - 4.75mm (No. 4)) = Line Q (Dry Weight)
V -	Field Density Wet, Line P (Total Wet Weight) / Line O (Vol. Of hole) = Line V (Field Density Wet) (EX. 23.0 / 0.178 = 129.2)
W -	Field Density Dry, [Line V (Field Density Wet) / (100 + Line S (% Moisture))] x 100 = Density Wet)Density Dry) (EX. [129.2 / (100 + 8.3)] X 100 = 119.3)
X -	Harvard Miniature Curve Test, curve is based on a fraction of the total weight material, excavated from the test hole passing the No. 4.75 mm (No. 4) sieve, per Test Method Nev. T101 (EX. #1 = ((134.9 - 118.2) / 118.2)) x 100 = 14.1%)

040-004 Rev. 11/08

COMPACTION REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
Y -	Total Sample, Approx. Opt. Moisture, [Line HH (Dec. Equiv. of % + 4.75 mm (+ # 4) x 2] + [Line II (Dec. Equiv. of % - 4.75 mm (- # 4) x Line X (Test Optimum Moisture)] = Line Y (Total Sample, Approx. Opt. Moist.) EX. ((0.167 x 2) + (.833 x 14.1)) = 12.1%)
Z -	Weight of Aggregate (# 4 to 1.5"), dry weight of No. + 4.75 mm (+ # 4) of the test sample shall be 500 g per Test Method Nev. T104 (EX. 500)
AA -	Weight of dry Pycnometer with lid, clean and dry, per Test Method Nev. T104 (EX. 438)
BB -	(Wt. Of Pyc. + Water) - p, per Test Method Nev. T104 (EX. 1455 M = 1017 (Line BB (Weight of Pyc. + Water) - Line AA (Pyc.) = M)
CC -	(Wt. Of Pyc., Water, Aggregate - (p + A)) = M_1, per Test Method Nev. T104 (EX. 1755 M_1 = 817 [(Line CC (Wt. of Pyc. + Water + Agg.)] - [Line AA (Wt. of Pyc.) + Line Z (Wt. of Agg.)] = M_1) **NOTE:** Make sure Pycnometer is not leaking
DD -	(Wt. Of Water Recovered from Pyc.), per Test Method Nev. T104, (EX. 794 M_2 = 794 Weight from Line DD)
EE -	If $M_1 - M_2 < 14$ g, $G = A / (M - M_1)$ then use this formula (EX. 817 - 794 = 23 this exceeds 14 g use formula on Line FF)
FF -	If $M_1 - M_2 > 14$ g then use this formula $G = A / [(M - M_1) + 0.5 (M_1 - M_2 - 14)]$ (EX. G = 500 / [(1017 - 817) + 0.5 (817 - 794 - 14)] = 2.44
GG -	Constant, k, (.90 Metric) (56.16 English) (**Metric Number** is .90, since 90% of the specific gravity of + # 4 material equates to 90% of 1 ft^3 of water) (**English Number** 56.16 comes from 62.4 (1lb/ft^3 of water) x .90 = 56.16)
HH -	Decimal Equiv. of % + 4.75 mm (+ # 4), 1 - P, Line T (Dry Weight of % + 4.75 mm (+ # 4)) / Line Q (Dry Weight) = Line HH (EX. 400 / 2389 = 0.167) **NOTE:** Line HH (Dec. Equiv. of % + 4.75 mm (+ # 4)) + Line II (Dec. Equiv. of % - 4.75 mm (- # 4)) = 1.0 (this shall always occur)
II -	Line U (Dry Weight - 4.75 mm (- # 4)) / Line Q (Dry Weight)= Line JJ (EX. 1989 / 2389 = 0.833) Note: Line HH (Dec. Equiv. of % + 4.75 mm (+ # 4)) + Line II (Dec. Equiv. of % - 4.75 mm (- # 4)) = 1.0 (**this shall always occur**)

040-004 Rev. 11/08

COMPACTION REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
JJ -	H.M.C.T., Dry, Line X (highest dry density per Test Method Nev. T101) becomes Line JJ (EX. 118.2 = 118.2)
KK -	CALCULATED MAX. DENSITY, [Line FF (Appr. Specific Gravity) x Line GG (Constant)] x Line HH (Dec. Equiv. of % + 4.75 mm (+ # 4) + [Line II (Dec. Equiv. of % - 4.75 mm (- # 4)) x Line JJ (H.M.C.T., Dry)] x 1.03 (Constant) (EX. (2.44 x 56.16 x 0.167) + (0.833 x 118.2 x 1.03) = 124.3) **NOTE:** 1.03 comes from the 3% correction from the California Impact Tube Method
LL -	% Compaction, (Line W (Field Density Dry) / Line KK (Calculated Max. Density) x 100 = Line LL (% Compaction) (Ex. (119.3 / 124.3 x 100 = 96%)
MM -	Remarks, Anything that needs to be documented (EX. Test on the culvert pipe met specs. Jim John (contractor) and Bob Black (NDOT R.E.) notified of results)
NN -	Print first and last name of the tester or testers who completed the test (EX. Tyler James)
OO -	Resident Engineer or Assistant R.E. signature on that specific crew (EX. Bob Black)

NOTES:

1. If 50 g or more is retained on the No. 4 sieve from the entire bucket of material obtained from the test hole, 500 g shall be obtained to complete this test. If 500 g is not obtained from the entire test hole bucket go back to the test hole and obtain more material until 500 g is obtained for Test Method Nev. T104. If there is less than 50 g retained on the No. 4 sieve enter a zero for the apparent specific gravity value and Test Method Nev. T104 shall not be required.

2. Calibrate the volume of the cone and measuring vessel (hat) annually per Test Method Nev. T102.

3. Test Method Nev. T101 and T104 shall be run concurrently at every twenty compaction test.

4. Circle the appropriate units being used.

STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

FIELD SAND EQUIVALENT WORKSHEET

DATE: ______________________ CONTRACT: ______________________

TESTER: ______________________ MATERIAL TYPE: ______________________

TEST NO. ______________

CLAY READING ________
SAND READING ________ ________ S.E.

CLAY READING ________
SAND READING ________ ________ S.E.

CLAY READING ________
SAND READING ________ ________ S.E.

AVERAGE VALUES: ________ S.E.

TEST NO. ______________

CLAY READING ________
SAND READING ________ ________ S.E.

CLAY READING ________
SAND READING ________ ________ S.E.

CLAY READING ________
SAND READING ________ ________ S.E.

AVERAGE VALUES: ________ S.E.

TEST NO. ______________

CLAY READING ________
SAND READING ________ ________ S.E.

CLAY READING ________
SAND READING ________ ________ S.E.

CLAY READING ________
SAND READING ________ ________ S.E.

AVERAGE VALUES: ________ S.E.

TEST NO. ______________

CLAY READING ________
SAND READING ________ ________ S.E.

CLAY READING ________
SAND READING ________ ________ S.E.

CLAY READING ________
SAND READING ________ ________ S.E.

AVERAGE VALUES: ________ S.E.

Resident Engineer: ______________________________

NDOT
040-006
Rev. 11/07

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

FIELD SAND EQUIVALENT WORKSHEET

A. DATE:	**07/12/2010**	**C.** CONTRACT:	**3925**
B. TESTER:	**Joe Tester**	**D.** MATERIAL TYPE:	**Concrete Sand**

E. TEST NO. **T-1-113**

F.	CLAY READING	**4.6**	**H.** ~~82.6~~ **83**	S.E.
G.	SAND READING	**3.8**		
I.	CLAY READING	**4.4**	**K.** ~~81.8~~ **82**	S.E.
J.	SAND READING	**3.6**		
L.	CLAY READING	**4.3**	**N.** ~~81.4~~ **82**	S.E.
M.	SAND READING	**3.5**		
O.	AVERAGE VALUES:		~~82.3~~ **83**	S.E.

TEST NO. ____________

CLAY READING			S.E.
SAND READING			
CLAY READING			S.E.
SAND READING			
CLAY READING			S.E.
SAND READING			
AVERAGE VALUES:			S.E.

TEST NO. ____________

CLAY READING			S.E.
SAND READING			
CLAY READING			S.E.
SAND READING			
CLAY READING			S.E.
SAND READING			
AVERAGE VALUES:			S.E.

TEST NO. ____________

CLAY READING			S.E.
SAND READING			
CLAY READING			S.E.
SAND READING			
CLAY READING			S.E.
SAND READING			
AVERAGE VALUES:			S.E.

P. Resident Engineer: *Bob Resident*

NDOT
040-006
Rev. 11/07

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-006 Rev. 11/07

FIELD SAND EQUIVALENT WORKSHEET

LINE	EXPLANATION OF NEEDED MATERIAL
A -	Date the sample was taken (EX. 07/12/2010)
B -	Print first and last name of the tester or testers who completed the test (EX. Joe Tester)
C -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
D -	Material Type as specified, found in the Contract Plans or Special Provisions (EX. Concrete Sand)
E -	Test number for this particular test (EX. T-1-113, T = acceptance test; 1 = first acceptance test of the day; 113 = number of days the material has been tested **NOTE:** Test number shall correlate to the sieve being performed
F -	Clay reading, level of clay suspension at the end of test specimen no. 1, per Test per Test Method Nev. T227 (EX. 4.6)
G -	Sand reading, level of sand using the weighted foot assembly, for test specimen no. 1 per Test Method Nev. T227 (EX. 13.8 (reading) - 10" (per Test Method Nev. T227) = 3.8 (sand reading)
H -	S.E., (Line G (sand reading) / Line F (clay reading)) x 100 = Line H (S.E.) (EX. (3.8 / 4.6) x 100 = 82.6 = 83.0) **NOTE:** Always round this number up to the next whole number
I-	Clay reading, level of clay suspension at the end of test specimen no. 2, per Test Method Nev. T227 (EX. 4.4)
J -	Sand reading, level of sand using the weighted foot assembly, for test specimen no. 2 per Test Method Nev. T227 (EX. 13.6 (reading) - 10" (per Test Method Nev. T227) = 3.6 (sand reading)
K -	S.E., (Line J (sand reading) / Line I (clay reading)) x 100 = Line K (S.E.) (EX. (3.6 / 4.4) x 100 = 81.8 = 82.0) **NOTE:** Always round this number up to the next whole number
L -	Clay reading, level of clay suspension at the end of test specimen, per Test Method Nev. T227 (EX. 4.3)

040-006 Rev. 11/07

FIELD SAND EQUIVALENT WORKSHEET

LINE	EXPLANATION OF NEEDED MATERIAL
M -	Sand reading, level of sand using the weighted foot assembly for test specimen no. 3, per Test Method Nev. T227 (EX. 13.5 (reading) - 10" (per Test Method Nev. T227) = 3.5 (sand reading)
N -	S.E., (Line M (sand reading) / Line L (clay reading)) x 100 = Line N (S.E.) (EX. (3.5 / 4.3) x 100 = 81.4 = 82.0) **NOTE:** Always round this number up to the next whole number
O -	Average value is the average of the three whole S.E. numbers recorded to the tenth. Cross out and record to the whole number. Line H (S.E.)+ Line K (S.E.) + Line N (S.E.) = Line O (Average Values) (EX. (83 + 82 + 82) / 3 = 82.3 = 83.0) **NOTE:** Always round this number up to the next whole number
P -	Resident Engineer or the Assistant Resident Engineer signature on that specific crew (EX. Bob Resident)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR COMPACTION REPORT FOR SOILS AND AGGREGATES

Standard Counts	
Density	Moisture

Contract No. _____
Date _____
Nuclear Set No. _____
Correlation Date _____

Test Number			
Station			
Distance to Centerline			
Embankment Depth			
Type of Material			
Compaction Equipment			

WET DENSITY

Probe Depth			
Counts	—	—	—
Wet Density #1 Mg/m^3 (pcf)			
Wet Density #2 Mg/m^3 (pcf)			
Wet Density #3 Mg/m^3 (pcf)			
Wet Density #4 Mg/m^3 (pcf)			
Average Wet Density Mg/m^3 (pcf)			

MOISTURE AND MOISTURE %

Counts	—		—		—	
Moisture #1 Mg/m^3 (pcf) / M %						
Moisture #2 Mg/m^3 (pcf) / M %						
Moisture #3 Mg/m^3 (pcf) / M %						
Moisture #4 Mg/m^3 (pcf) / M %						
Avg. Moisture Mg/m^3 (pcf) / Avg. M %						

CORRELATION DATA

Moisture Offset (MCF)			
Wet Density Offset			

HARVARD MINIATURE COMPACTION TEST RESULTS

H.M.C.T., Dry = d Mg/m^3 (pcf)			
Total Sample, Approx. Opt. Moisture			
Appar. Spec. Grav. + 4.75 mm (+ No. 4)			
Dec. Equiv. of % + 4.75 mm (+ No. 4)			
Calculated Max. Density Mg/m^3 (pcf)			

DRY DENSITY

Dry Density #1 Mg/m^3 (pcf)			
Dry Density #2 Mg/m^3 (pcf)			
Dry Density #3 Mg/m^3 (pcf)			
Dry Density #4 Mg/m^3 (pcf)			
Average Dry Density Mg/m^3 (pcf)			
% Compaction Average			
Accepted or Rejected			

Remarks: _____

Tested By: _____ Resident Engineer: _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR COMPACTION REPORT FOR SOILS AND AGGREGATES

Standard Counts	
Density	Moisture
A. 2202	**B. 1070**

C - Contract No. **3925**
D - Date **7-12-2010**
E - Nuclear Set No. **33**
F - Correlation Date **7-1-2010**

G -	Test Number	**60-SB-90**					
H -	Station	**"X" 7 + 22**					
I -	Distance to Centerline	**3.0 ft Lt.**					
J -	Embankment Depth	**2.0 ft below fin. grade**					
K -	Type of Material	**Granular Backfill**					
L -	Compaction Equipment	**Wacker**					
	WET DENSITY						
M -	Probe Depth	**4 in.**					
N -	**Counts**	**2164 — 2205**		—		—	
O -	Wet Density #1 Mg/m^3 (pcf)	**141.9**					
P -	Wet Density #2 Mg/m^3 (pcf)	**141.8**					
Q -	Wet Density #3 Mg/m^3 (pcf)						
R -	Wet Density #4 Mg/m^3 (pcf)						
S -	Average Wet Density Mg/m^3 (pcf)	**141.9**					
	MOISTURE AND MOISTURE %						
T -	**Counts**	**231 — 241**		—		—	
U -	Moisture #1 Mg/m^3 (pcf) / M %	**13.6**	**12.4**				
V -	Moisture #2 Mg/m^3 (pcf) / M %	**13.8**	**13.0**				
W -	Moisture #3 Mg/m^3 (pcf) / M %						
X -	Moisture #4 Mg/m^3 (pcf) / M %						
Y -	Avg. Moisture Mg/m^3 (pcf) / Avg. M %	**13.7**	**12.7**				
	CORRELATION DATA						
Z -	Moisture Offset (MCF)	**+ 6.55**					
AA -	Wet Density Offset	**+ 2.3**					
	HARVARD MINIATURE COMPACTION TEST RESULTS						
BB -	H.M.C.T., Dry = d Mg/m^3 (pcf)	**118.2**					
CC -	Total Sample, Approx. Opt. Moisture	**12.1**					
DD -	Appar. Spec. Grav. + 4.75 mm (+ No. 4)	**2.450**					
EE -	Dec. Equiv. of % + 4.75 mm (+ No. 4)	**0.167**					
FF -	Calculated Max. Density Mg/m^3 (pcf)	**124.3**					
	DRY DENSITY						
GG -	Dry Density #1 Mg/m^3 (pcf)	**120.5**					
HH -	Dry Density #2 Mg/m^3 (pcf)	**121.2**					
II -	Dry Density #3 Mg/m^3 (pcf)						
JJ -	Dry Density #4 Mg/m^3 (pcf)						
KK -	Average Dry Density Mg/m^3 (pcf)	**120.9**					
LL -	% Compaction Average	**97 %**					
MM -	Accepted or Rejected	**A**					

NN - Remarks: **Culvert pipe met specs, 207.03.01, inspector and contractor notified of results.**

OO - Tested By: **Tyler James**

PP - Resident Engineer: *Jon Peters*

NDOT
040-007
Rev. 03/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-007 Rev. 03/09

NUCLEAR COMPACTION REPORTS FOR SOILS AND AGGREGATES

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Density standard counts (EX. 2202) **NOTE:** Standard counts on the gauge that are determined at the beginning of each shift
B -	Moisture standard counts (EX. 1070) **NOTE:** Standard counts on the gauge that are determined at the beginning of each shift
C -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
D -	Date the sample was taken (EX. 7-12-2010)
E -	Nuclear set number that identifies the nuclear density gauge that was used for this test (EX. Set # 33)
F -	Correlation Date, actual date nuclear density gauge was correlated per Test Method Nev. T103 (EX. 7-01-10)
G -	Test number for this particular test. (EX. 60-SB-90) 60 is the number of tests ran on this material, SB represents the type of material being tested (Refer to the Construction Manual for coding) and 90 is the minimum percent compaction required (Refer to the Standard Specifications or Special Provisions)
H -	Station, approximate sample location, found in the Contract Plans or on the jobsite survey stakes (EX. "X" 7 + 22)
I -	Distance to Centerline, distance right or left of centerline that the compaction test was taken (EX. 3.0 ft lt.)
J -	Embankment Depth, depth at which the compaction test was taken (EX. 2.0 ft below fin. grade) (Depth can also be found on slope stakes or by using the elevation)
K -	Type of Material as specified, found in the Contract Plans or Special Provisions (EX. Granular Backfill)
L -	Compaction Equipment, type of equipment used to compact the material (EX. Wacker)
M -	Probe Depth, depth at which the probe was set at to take this test (EX. 4 in.)

040-007 Rev. 03/09

NUCLEAR COMPACTION REPORTS FOR SOILS AND AGGREGATES

LINE	EXPLANATION OF NEEDED INFORMATION
N -	Counts, density counts for first and second reading (Press "shift button" and "counts button" after each shot to access the density counts) If there is a difference greater than 6% of the average (between the counts) then two additional tests will need to be taken immediately. The difference between the counts cannot be greater than the average of the counts. Multiplied by 0.06, equals the maximum allowable. (EX. 2164 - 2205 = 41 2164 + 2205 = 4369 / 2 = 2184.5 = 2185 x .06 = 131.1 = 131 (maximum allowable), Since 41 is less than 131, this test will not need four nuke shots. If it were to exceed the 131 maximum allowable then two additional shots shall be taken. When four shots are needed you do not need to write the counts down for shots three and four.
O -	Wet Density # 1, reading obtained from the gauge (EX. 141.9)
P -	Wet Density # 2, reading obtained from the gauge (EX. 141.8)
Q -	Wet Density # 3, reading obtained from the gauge (Only necessary if the wet counts are not within 6% rule per Test Method Nev. T103) (EX. N/A)
R -	Wet Density # 4, reading obtained from the gauge (Only necessary if the wet counts are not within 6% rule per Test Method T103) (EX. N/A)
S -	Average Wet Density, average of all wet density readings from the gauge Line O (Wet Density) + Line P (Wet Density) / 2 = Line S (Average Wet Density) (EX. 141.9 + 141.8) = 283.7 / 2 = 141.85 = 141.9)
T -	Moisture counts for first and second reading. (Press "shift button" and "counts button" after each shot to access the density counts) If there is a difference greater than 6% of the average (between the counts) then two additional tests will need to be taken immediately. The difference between the counts cannot be greater than the average of the counts. Multiplied by 0.06, equals the maximum allowable. (EX. 231 - 241 = 10 231 + 241 = 472 / 2 = 236 x .06 = 14.16 = 14 (maximum allowable) Since 10 is less than 14, this test will not need four nuke shots. If it were to exceed the 14 (maximum allowable), then two additional shots shall be taken. When four shots are needed you do not need to write the counts down for shots three and four. (**NOTE:** It will usually be the moisture counts that do not meet the 6% rule)
U -	Moisture # 1 with two moisture numbers obtained from the gauge, the first value is the moisture reading the second value is the moisture %. (EX. 13.6 is the moisture reading and 12.4 is the moisture percent)

NUCLEAR COMPACTION REPORTS FOR SOILS AND AGGREGATES

LINE	EXPLANATION OF NEEDED INFORMATION
V -	Moisture # 2 with two moisture numbers obtained from the gauge. The first value is the moisture reading and the second value is the moisture %. (EX. 13.8 is the moisture reading and 13.0 is the moisture percent)
W -	Moisture # 3 with two moisture readings obtained from the gauge (Only necessary if the counts are not within the 6% rule per Test Method Nev. T103) (EX. N/A)
X -	Moisture # 4 with two moisture readings obtained from the gauge (Only necessary if the counts are not within the 6% rule per Test Method Nev. T103) (EX. N/A)
Y -	Average Moisture, average of the moisture readings and % moistures. (Line U (Moisture) + Line V (Moisture)) / 2 = Line Y (Avg. Moisture) (EX. 13.6 + 13.8 = 27.4 / 2 = 13.7 12.4 + 13.0 = 25.4 / 2 = 12.7)
Z -	Moisture Offset, number established from the gauge correlation, completed on NDOT Form 040-026 (EX. + 6.55)
AA -	Wet Density Offset, number established from the gauge correlation, completed on NDOT form 040-026 (EX. + 2.3)
BB -	H.M.C.T., Dry, number established from the gauge correlation, completed on NDOT form 040-026 until a check test is required, then the number will come from NDOT form 040-003. (EX. 118.2)
CC -	Total Sample, Approx. Opt. Moisture, number established from the gauge correlation, completed on NDOT form 040-026 until a check test is required, then the number will come from NDOT form 040-003. (EX. 12.1)
DD -	Appar. Spec. Grav., Number established from the gauge correlation, completed on NDOT form 040-026 until a check test is required, then the number will come from NDOT form 040-003. (EX. 2.450)
EE -	Dec. Equiv. Of % + 4.75 mm (+ # 4) Number established from the gauge correlation, completed on NDOT form 040-026 until a check test is required, then the number will come from NDOT form 040-003. (EX. 0.167)
FF -	Calculated Max. Density, number established from the gauge correlation, completed on form 040-026 until a check test is required, then the number will come from NDOT form 040-003. (EX. 124.3)

040-007 Rev. 03/09

NUCLEAR COMPACTION REPORTS FOR SOILS AND AGGREGATES

LINE	EXPLANATION OF NEEDED INFORMATION
GG -	Dry Density # 1 obtained from the gauge. (EX. 120.5)
HH -	Dry Density # 2 obtained from the gauge. (EX. 121.2)
II -	Dry Density # 3 obtained from the gauge if the wet density counts or moisture counts exceed the 6% rule per Test Method Nev. T103. (EX. N/A)
JJ -	Dry Density # 4 obtained from the gauge if the wet density counts or moisture counts exceed the 6% rule per Test Method Nev. T103. (EX. N/A)
KK -	Average of Dry Density, Line GG (Dry Density) + Line HH (Dry Density) / 2 = Line KK (Average Dry Density) (EX. 120.5 + 121.2 = 241.7 / 2 = 120.9)
LL -	% Compaction Average, (Line KK (Average Dry Density) / Line FF (Calculated Max. Density)) x 100 = Line LL (% Compaction Average) EX. (120.9 / 124.3) x 100 = 97% Compaction) NOTE: If compaction result fails, all failures shall be circled in red
MM -	Accepted or Rejected, if material passes compaction spec. write an "A" for accept, If material does not pass spec. write "R" for reject
NN -	Remarks, anything that needs to be documented (EX. Culvert pipe met specs. 207.03.01, inspector and contractor notified of results)
OO -	Tested by, print first and last name of the tester or testers who completed the test (EX. Tyler James)
PP -	Resident Engineer or Assistant Resident Engineer signature on that specific crew

NOTES:

1. Any vertical edge over 6 inches is considered a trench as per the manufacturer. The trench correction factor offset should be used per the gauge operation manual.

2. All failures shall be circled in red.

3. If the compaction test fails to meet the minimum percent compaction a re-test shall be completed on the material per Test Method Nev. T103.

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR COMPACTION REPORT FOR SOILS AND AGGREGATES

Daily Standard Counts	
Density	Moisture

Contract No. _____
Date _____
Nuclear Set No. _____
Correlation Date _____

Test No. (code)			
Station			
Distance to Centerline			
Embankment Depth			
Type of Material			
Compaction Equipment			

WET DENSITY

Probe Depth			
Counts	—	—	—
Wet Density #1 Mg/m^3 (lb/ft^3)			
Wet Density #2 Mg/m^3 (lb/ft^3)			
Wet Density #3 Mg/m^3 (lb/ft^3)			
Wet Density #4 Mg/m^3 (lb/ft^3)			
Average Wet Density Mg/m^3 (lb/ft^3)			

MOISTURE AND MOISTURE %

Counts	—		—		—	
Moisture #1 Mg/m^3 (lb/ft^3) / M %						
Moisture #2 Mg/m^3 (lb/ft^3) / M %						
Moisture #3 Mg/m^3 (lb/ft^3) / M %						
Moisture #4 Mg/m^3 (lb/ft^3) / M %						
Avg. Moisture Mg/m^3 (lb/ft^3) / Avg. M %						

CORRELATION DATA

Moisture Offset (MCF)			
Wet Density Offset			

MODIFIED PROCTOR COMPACTION TEST RESULTS

Test No.			
Maximum Dry Density = (d) Mg/m^3 (lb/ft^3)			
Optimum Moisture %			
(if applicable)			
Corr. Max. Dry Density = (D) Mg/m^3 (lb/ft^3)			
Corr. Optimum Moisture %			

DRY DENSITY

Dry Density #1 Mg/m^3 (lb/ft^3)			
Dry Density #2 Mg/m^3 (lb/ft^3)			
Dry Density #3 Mg/m^3 (lb/ft^3)			
Dry Density #4 Mg/m^3 (lb/ft^3)			
Average Dry Density Mg/m^3 (lb/ft^3)			
% Compaction Average			
Accepted or Rejected			

Remarks: _____

Tested By: _____ Resident Engineer: _____

NDOT
040-007
Rev. 07/14

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR COMPACTION REPORT FOR SOILS AND AGGREGATES

	Daily Standard Counts	
	Density	Moisture
A.	**2202**	**B. 1070**

C. Contract No. **3925**
D. Date **7/12/2010**
E. Nuclear Set No. **33**
F. Correlation Date **7/1/2010**

G.	Test No. (code)	**60-SB-90**			
H.	Station	**"X" 7 + 22**			
I.	Distance to Centerline	**3.0 ' Lt**			
J.	Embankment Depth	**2.0 ' below finish grade**			
K.	Type of Material	**Granular Backfill**			
L.	Compaction Equipment	**Wacker**			
	WET DENSITY				
M.	Probe Depth	**4 in.**			
N.	**Counts**	**2164 — 2205**	**—**	**—**	
O.	Wet Density #1 Mg/m^3 (lb/ft^3)	**141.9**			
P.	Wet Density #2 Mg/m^3 (lb/ft^3)	**141.8**			
Q.	Wet Density #3 Mg/m^3 (lb/ft^3)				
R.	Wet Density #4 Mg/m^3 (lb/ft^3)				
S.	Average Wet Density Mg/m^3 (lb/ft^3)	**141.9**			
	MOISTURE AND MOISTURE %				
T.	**Counts**	**231 — 241**	**—**	**—**	
U.	Moisture #1 Mg/m^3 (lb/ft^3) / M %	**13.6**	**12.4**		
V.	Moisture #2 Mg/m^3 (lb/ft^3) / M %	**13.8**	**13.0**		
W.	Moisture #3 Mg/m^3 (lb/ft^3) / M %				
X.	Moisture #4 Mg/m^3 (lb/ft^3) / M %				
Y.	Avg. Moisture Mg/m^3 (lb/ft^3) / Avg. M %	**13.7**	**12.7**		
	CORRELATION DATA				
Z.	Moisture Offset (MCF)	**+ 6.55**			
AA.	Wet Density Offset	**+ 2.3**			
	MODIFIED PROCTOR COMPACTION TEST RESULTS				
BB.	Test No.	**60-SB-90**			
CC.	Maximum Dry Density = (d) Mg/m^3 (lb/ft^3)	**118.2**			
DD.	Optimum Moisture %	**12.1**			
	(if applicable)				
EE.	Corr. Max. Dry Density = (D) Mg/m^3 (lb/ft^3)	**124.3**			
FF.	Corr. Optimum Moisture %	**10.9**			
	DRY DENSITY				
GG.	Dry Density #1 Mg/m^3 (lb/ft^3)	**120.5**			
HH.	Dry Density #2 Mg/m^3 (lb/ft^3)	**121.2**			
II.	Dry Density #3 Mg/m^3 (lb/ft^3)				
JJ.	Dry Density #4 Mg/m^3 (lb/ft^3)				
KK.	Average Dry Density Mg/m^3 (lb/ft^3)	**120.9**			
LL.	% Compaction Average	**97**			
MM.	Accepted or Rejected	**A**			

NN. Remarks: **Inspector and Contractor notified of passing results**

OO. Tested By: **Leonard Cooper**

PP. Resident Engineer: **Howard Koothrappali**

NDOT
040-007
Rev. 07/14

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-007 Rev. 07/14

NUCLEAR COMPACTION REPORTS FOR SOILS AND AGGREGATES

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Density Standard Counts, (ex. 2202) **NOTE:** Standard gauge counts as determined at the beginning of each shift
B -	Moisture Standard Counts (ex. 1070) **NOTE:** Standard gauge counts as determined at the beginning of each shift
C -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (ex. 3925)
D -	Date the test was performed (ex. 7/12/2010)
E -	Gauge Set number, assigned to the moisture density gauge that is used for testing the material (ex. 33) **NOTE:** Consultants shall use the serial number found on the back of the gauge
F -	Correlation Date, will be the original date that the moisture density gauge correlation was performed on this material (ex. 07/1/2010)
G -	Test No. (code), actual test number for this particular test. 60 is the number of tests ran on that material, SB represents the material being tested (refer to the Construction Manual for coding) and 90 is the minimum percent compaction required (Standard Specifications or Special Provisions) (ex. 60-SB-90)
H -	Station, approximate sample location, found in the Contract Plans or on the jobsite survey stakes (ex. "X" 7 + 22)
I -	Distance to Centerline, distance right or left of centerline that the compaction test was performed (ex. 3.0' Lt)
J -	Embankment Depth, depth at which the compaction test was taken (ex. 2.0' below finish grade) (Depth may also be found on the slope stakes or by using the elevation markers)
K -	Type of Material, as specified and found in the Contract Plans or Special Provisions (ex. Granular Backfill)
L -	Compaction Equipment, type of equipment used to compact the material (ex. Wacker)

NUCLEAR COMPACTION REPORTS FOR SOILS AND AGGREGATES

LINE	EXPLANATION OF NEEDED INFORMATION
M -	Probe Depth, depth at which the gauge probe was set when the test was performed. (ex. 4 in.)
N -	Counts, wet density counts for first and second reading (ex. 2164 - 2205) **NOTE:** If the difference between the two counts is greater than 6% of the average, two additional 1 minute tests shall be immediately performed per Test Method Nev. T103
O -	Wet Density #1, reading obtained from the gauge (ex. 141.9)
P -	Wet Density #2, reading obtained from the gauge (ex. 141.8)
Q -	Wet Density #3, reading obtained from the gauge (Only necessary if the density counts exceed 6% per Test Method Nev. T103)
R -	Wet Density #4, reading obtained from the gauge (Only necessary if the density counts exceed 6% per Test Method Nev. T103)
S -	Avg. Wet Density, average of all wet density readings from the gauge Line O (Wet Density) + Line P (Wet Density) / 2 = Line S (Average Wet Density) (ex. 141.9 + 141.8 = 283.7 / 2 = 141.85 = 141.9)
T -	Counts, moisture and moisture % counts for first and second reading (ex. 231 - 241) **NOTE:** If the difference between the two counts is greater than 6% of the average, two additional 1 minute tests shall be immediately performed per Test Method Nev. T103
U -	Moisture #1, with two moisture numbers obtained from the gauge, the first value is the moisture reading the second value is the moisture %. (ex. 13.6 is the moisture reading and 12.4 is the moisture percent)
V -	Moisture #2, with two moisture numbers obtained from the gauge, the first value is the moisture reading the second value is the moisture %. (ex. 13.8 is the moisture reading and 13.0 is the moisture percent)
W -	Moisture #3, with two moisture readings obtained from the gauge (Only necessary if the moisture counts exceed 6% per Test Method Nev. T103)
X -	Moisture #4, with two moisture readings obtained from the gauge (Only necessary if the moisture counts exceed 6% per Test Method Nev. T103)

NUCLEAR COMPACTION REPORTS FOR SOILS AND AGGREGATES

LINE	EXPLANATION OF NEEDED INFORMATION
Y -	Average Moisture, average of the moisture readings and % moistures. (Line U (Moisture) + Line V (Moisture)) / 2 = Line Y (Avg. Moisture) (ex. 13.6 + 13.8 = 27.4 / 2 = 13.7 and 12.4 + 13.0 = 25.4 / 2 = 12.7)
Z -	Moisture Offset (MCF), number established from the gauge correlation, completed on NDOT form 040-026 (ex. + 6.55)
AA -	Wet Density Offset, number established from the gauge correlation, completed on NDOT form 040-026 (ex. + 2.3)
BB -	Test No., actual test number for this particular test. 60 is the number of tests ran on that material, SB represents the material being tested (refer to the Construction Manual for coding) and 90 is the minimum percent compaction required (Standard Specifications or Special Provisions) (ex. 60-SB-90)
CC -	Maximum Dry Density = (d) Mg/m^3 (lb/ft^3), the highest dry density as established per Test Method Nev. T108 from NDOT form 040-069 (ex. 118.2)
DD -	Optimum Moisture %, as established per Test Method Nev. T108 from NDOT form 040-069 (ex. 12.1)
EE -	Corr. Max. Dry Density = (D) Mg/m^3 (lb/ft^3), as established per test Method Nev. T108 from NDOT form 040-069 (ex. 124.3)
FF -	Corr. Optimum Moisture %, as established per Test Method Nev. T108 from NDOT form 040-069 (ex. 10.9)
GG -	Dry Density #1, reading obtained from the gauge. (ex. 120.5)
HH -	Dry Density #2, reading obtained from the gauge. (ex. 121.2)
II -	Dry Density #3, reading obtained from the gauge. (Only necessary if the density counts exceed 6% per Test Method Nev. T103)
JJ -	Dry Density #4, reading obtained from the gauge. (Only necessary if the density counts exceed 6% per Test Method Nev. T103)

NUCLEAR COMPACTION REPORTS FOR SOILS AND AGGREGATES

LINE	EXPLANATION OF NEEDED INFORMATION
KK -	Average of Dry Density, Line GG (Dry Density) + Line HH (Dry Density) / 2 = Line KK (Average Dry Density) (ex. 120.5 + 121.2 = 241.7 / 2 = 120.9)
LL -	% Compaction Average, (Line KK (Average Dry Density) / Line EE (Corr. Max. Dry Density)) x 100 = Line LL (% Compaction Average) ex. (120.9 / 124.3) x 100 = 97% Compaction) **NOTE:** If its been determined that per Test Method Nev. T108 a corrected maximum dry density is not applicable, Line KK / Line CC shall be used to determine % compaction.
MM -	Accepted or Rejected, if material passes compaction spec. write an "A" for accept, If material does not pass spec. write "R" for reject
NN -	Remarks, anything that needs to be documented (ex. Inspector and Contractor notified of passing results)
OO -	Tested by, printed first and last name of the tester or testers who completed the test (ex. Leonard Cooper)
PP -	Resident Engineer, or Assistant Resident Engineer signature on that specific crew verifying the accuracy of the reported results. (ex. Howard Koothrappali)

NOTES:

1. Any vertical edge over 6 inches is considered a trench as per the manufacturer. The trench correction factor offset should be used per the gauge operation manual.

2. All failures shall be circled in red.

3. If the compaction test fails to meet the minimum percent compaction a re-test shall be completed on the material per Test Method Nev. T103.

Date _____
Page _____ of _____ Pages
Report No. _____
Material Covered By Report _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

DAILY REPORT OF TESTS MADE IN THE FIELD

Contract No. _____
Contractor _____
Spec. Reference _____

Roadway Line								Specification Limit
Station								
Course (Lift)								
Source of Sample								
Acceptance Test No.								
Information Test No.								
SIEVE SIZES	**% Passing**	**% Passing**	**% Passing**	**% Passing**	**% Passing**	**% Passing**	**% Passing**	
75 mm (3")								
63 mm ($2^1/_2$")								
50 mm (2")								
37.5 mm ($1^1/_2$")								
31.5 mm ($1^1/_4$")								
25 mm (1")								
19 mm ($^3/_4$")								
12.5 mm ($^1/_2$")								
9.5 mm ($^3/_8$")								
4.75 mm (No. 4)								
2.36 mm (No. 8)								
2.00 mm (No. 10)								
1.18 mm (No. 16)								
600 µm (No. 30)								
425 µm (No. 40)								
150 µm (No. 100)								
75 µm (No. 200)								
Liquid Limit								
Plasticity Index								
% Fractured Face								
% Absorption								

☐ ***Please check box if sieve results are informational***

Quantity of Material Represented By Each Test: _____

Source of Materials: _____

Sampled By: _____

Tested By: _____

Remarks: _____

Resident Engineer: _____

NDOT
040-010
Rev. 2/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

A. Date **7/21/2010**
B. Page **1** of **3** Pages
C. Report No. **1**
D. Material Covered By Report **Type I Class B Base**

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

DAILY REPORT OF TESTS MADE IN THE FIELD

E. Contract No. **3925**
F. Contractor **Granite Construction Co.**
G. Spec. Reference **704.03.03 and 704.02.03**

H. Roadway Line	**"X"**							**X.** Specification Limit
I. Station	**7 + 22**							
J. Course (Lift)	**1ST Lift**							
K. Source of Sample	**Windrow**							
L. Acceptance Test No.	**T-1-1**							
M. Information Test No.								
N. SIEVE SIZES	**% Passing**	**% Passing**	**% Passing**	**% Passing**	**% Passing**	**% Passing**	**% Passing**	
75 mm (3")								
63 mm (2 1/2")								
50 mm (2")								
37.5 mm (1 1/2")	**100**							**100**
31.5 mm (1 1/4")	**99**							**80 - 100**
25 mm (1")								
19 mm (3/4")								
12.5 mm (1/2")								
9.5 mm (3/8")								
4.75 mm (No. 4)	**46**							**30 - 65**
2.36 mm (No. 8)								
2.00 mm (No. 10)								
1.18 mm (No. 16)	**22**							**15 - 40**
600 µm (No. 30)								
425 µm (No. 40)								
150 µm (No. 100)								
75 µm (No. 200)	**7**							**2 - 12**
O. Liquid Limit	**27**							**35 MAX**
P. Plasticity Index	**4**							**6 MAX**
Q. % Fractured Face	**90**							**15% MIN**
R. % Absorption								

S. ☐ ***Please check box if sieve results are informational***

T. Quantity of Material Represented By Each Test: **2000 Tons**

U. Source of Materials: **Cinderlite - Goni Pit**

V. Sampled By: **Jane Doe**

W. Tested By: **Jon Doe**

Y. Remarks: **Test met specs. James Fred (Granite Construction Co.) and Jerry Pine (NDOT R.E.) notified of results.**

Z. Resident Engineer: *Jerry Pine*

NDOT
040-010
Rev. 2/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-010 Rev. 02/09

DAILY REPORT OF TESTS MADE IN THE FIELD

LINE	EXPLANATION OF NEEDED INFORMATION
A-	Date the sample was taken (EX. 7/21/2010)
B-	Page, total number of all pages turned in together for this material being tested (EX. 1 of 3) Includes NDOT forms 040-010, 040-013 and 040-014
C-	Report No., consecutive numbering starting at 1 and continuing through the last report for this material (EX. 1) Refer to the Construction Manual for the correct numbering procedures for a particular material or deposit
D-	Material Covered by Report, material type as specified, found in the Contract Plans or Special Provisions. (EX. Type I Class B Base)
E-	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
F-	Prime Contractor awarded the contract (EX. Granite Construction Co.)
G-	Specification Reference, all of the specifications that apply to the material being tested, refer to the Standard Specifications and Special Provisions (EX. 704.03.03 and 704.02.03)
H-	Roadway Line designation found in the Contract Plans (EX. "X")
I-	Station, approximate sample location, found in the Contract Plans or on jobsite survey stakes (EX. 7 + 22)
J-	Course or Lift of the sample being taken (EX. 1st Lift)
K-	Source of sample, exact area the sample was taken from (EX. Windrow)
L-	Acceptance test number for that particular test (EX. T-1-1 T = Acceptance Test, 1 = first acceptance test of the day, 1 = number of days material has been tested) NOTE: This is not the working day number
M-	Informational Test Number, identified the same as acceptance test but with an (I) for informational. (EX. N/A)
N -	Sieve sizes % passing, number representing the % passing for each appropriate sieve, taken from NDOT form 040-013 and reported to the whole number on this form. (EX. 100, 99, 46, 22, 7)

040-010 Rev. 02/09

DAILY REPORT OF TESTS MADE IN THE FIELD

LINE	EXPLANATION OF NEEDED INFORMATION
O-	Liquid Limit, number achieved by the completion of Test Method Nev. T210 reported on NDOT form 040-014 and reported to the whole number on this form (EX. 27)
P-	Plasticity Index, number achieved by the completion of Test Method Nev. T212 reported on NDOT form 040-014 and reported to the whole number on this form (EX. 4)
Q-	% Fractured Face, number achieved by the completion of Test Method Nev. T230 reported on NDOT form 040-013 and reported to the whole number on this form (EX. 90)
R -	% Absorption, number achieved by the completion of Test Method Nev. T111 or T493 and reported on NDOT form 040-023 and reported to nearest 0.1 (EX. N/A)
S -	Check this box if the sieve is an informational test but, the liquid limit, plasticity index, % fractured face, and absorption are acceptance tests, Line L will be used for the acceptance test number **NOTE:** Used primarily for plantmix aggregates
T -	Quantity of material represented by this sample. Refer to the Minimum Required Samples and Tests Project in the Construction Manual (EX. 2000 Tons)
U -	Source of Materials, name of the source where the material was produced (EX. Cinderlite - Goni Pit)
V -	Sampled By, print first and last name of the tester or testers who sampled the material (EX. Jane Doe)
W -	Tested By, print first and last name of the tester or testers who completed the test (EX. Jon Doe)
X -	Specification Limit requirements of the material being tested, found in the Standard Specifications or Special Provisions
Y -	Remarks, anything that needs to be documented (EX. Test met specs. James Fred (Granite Construction Co.) and Jerry Pine (NDOT R.E.) notified of results)
Z -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Jerry Pine)

040-010 Rev. 02/09

DAILY REPORT OF TESTS MADE IN THE FIELD

LINE	EXPLANATION OF NEEDED INFORMATION

NOTE:

1. All failures shall be circled in red.

A. Date **7/21/2010**
B. Page **1** of **9** Pages
C. Report No. **1**
D. Material Covered By Report **Type 2C PBS Aggregates**

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

DAILY REPORT OF TESTS MADE IN THE FIELD

E. Contract No. **3925**
F. Contractor **Granite Construction Co.**
G. Spec. Reference **705.03.01**

H. Roadway Line								**X.** Specification Limit
I. Station								
J. Course (Lift)	**1" Rock**	**3/4" Rock**	**Crusher Fines**	**Washed Sand**				
K. Source of Sample	**Stockpile**	**Stockpile**	**Stockpile**	**Stockpile**				
L. Acceptance Test No.	**T-1-1**	**T-1-1**	**T-1-1**	**T-1-1**				
M. Information Test No.								
N. SIEVE SIZES	**% Passing**	**% Passing**	**% Passing**	**% Passing**	**% Passing**	**% Passing**	**% Passing**	
75 mm (3")								
63 mm ($2^1/_2$")								
50 mm (2")								
37.5 mm ($1^1/_2$")	**100**							
31.5 mm ($1^1/_4$")								
25 mm (1")	**99**	**100**	**100**	**100**				
19 mm ($^3/_4$")	**68**	**100**	**100**	**100**				
12.5 mm ($^1/_2$")	**10**	**82**	**100**	**100**				
9.5 mm ($^3/_8$")	**3**	**46**	**100**	**100**				
4.75 mm (No. 4)	**2**	**4**	**86**	**100**				
2.36 mm (No. 8)								
2.00 mm (No. 10)	**2**	**2**	**45**	**98**				
1.18 mm (No. 16)	**2**	**2**	**33**	**80**				
600 µm (No. 30)								
425 µm (No. 40)	**2**	**2**	**20**	**39**				
150 µm (No. 100)	**1**	**2**	**11**	**9**				
75 µm (No. 200)	**1**	**1**	**8**	**3**				
O. Liquid Limit	**26**	**25**	**19**	**N/A**				**35 Max**
P. Plasticity Index	**7**	**5**	**1**	**NP**				**10 Max**
Q. % Fractured Face	**100**	**100**	**N/A**	**N/A**				**80% Min**
R. % Absorption	**0.9**	**1.2**	**N/A**	**N/A**				**4% Max**

S. ☒ ***Please check box if sieve results are informational***

T. Quantity of Material Represented By Each Test: **5000 Tons**

U. Source of Materials: **Hunewill Pit Stockpile, Thomas Canyon**

V. Sampled By: **Fred Flintstone**

W. Tested By: **Wilma Flintstone**

Y. Remarks: **Tests for liquid limit, plasticity, % fractured face and % absorption met specs. R.E. and Contractor notified of results.**

Z. Resident Engineer: *Royce James*

NDOT
040-010
Rev. 2/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-010 Rev. 02/09

DAILY REPORT OF TESTS MADE IN THE FIELD

LINE	EXPLANATION OF NEEDED INFORMATION
A-	Date the sample was taken (EX. 7/21/2010)
B-	Page, total number of all pages turned in together for this material being tested (EX. 1 of 9) includes NDOT forms 040-010, 040-013, 040-014 and 040-023
C-	Report No., consecutive numbering starting at 1 and continuing through the last report for this material (EX. 1) Refer to the Construction Manual for the correct numbering procedures for a particular material or deposit
D-	Material Covered By Report, material type as specified, found in the Contract Plans or Special Provisions (EX. Type 2C PBS Aggregates)
E-	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
F-	Prime Contractor awarded the contract (EX. Granite Construction Co.)
G-	Specification Reference, all of the specifications that apply to the material being tested, refer to the Standard Specifications and Special Provisions (EX. 705.03.01)
H-	Roadway Line designation found in the Contract Plans (EX. N/A)
I-	Station, approximate sample location, found in the contract plans or on jobsite survey stakes (EX. N/A)
J-	Course or Lift of the sample being taken (Note: For plantmix aggregates put the material type (EX. 1" Rock, 3/4" Rock, Crusher Fines, Washed Sand)
K-	Source of Sample, exact area the sample was taken from (EX. Stockpile)
L-	Acceptance test number for that particular test (EX. T-1-1 T = Acceptance Test, 1 = first acceptance test of the day, 1 = number of days material has been tested) **NOTE:** This is not the working day number
M-	Informational Test Number, identified the same as acceptance test but with an (I) for informational. (EX. N/A)
N -	Sieve Sizes % Passing, number representing the % passing for each sieve, taken from NDOT form 040-013 and reported to the whole number (EX. 100, 99, 68, 10, 3, 2, 2, 2, 1, 1)

040-010 Rev. 02/09

DAILY REPORT OF TESTS MADE IN THE FIELD

LINE	EXPLANATION OF NEEDED INFORMATION
O-	Liquid Limit, number achieved by the completion of Test Method Nev. T210 reported on NDOT form 040-014 and reported to the whole number on this form (EX. 26, 25, 19, N/A)
P-	Plasticity Index, number achieved by the completion of Test Method Nev. T212 reported on NDOT form 040-014 and reported to the whole number on this form (EX. 7, 5, 1, NP)
Q-	% Fractured Face, number achieved by the completion of Test Method Nev. T230 reported on NDOT form 040-013 and reported to the whole number on this form (EX. 100, 100, N/A, N/A)
R -	% Absorption, number achieved by the completion of Test Method Nev. T111 and reported on NDOT form 040-023 and reported to nearest 0.1 (EX. 0.9, 1.2, N/A, N/A)
S -	Check this box if the sieve is an informational test but the liquid limit, plasticity index, % fractured face, and absorption are acceptance tests, Line L will be used for the acceptance test number **NOTE:** Used primarily for plantmix aggregates
T -	Quantity of material represented by this sample. Refer to the Minimum Required Samples and Tests - Project in the Construction Manual (EX. 5000 Tons)
U -	Source of Materials, name of the source where the material was produced (EX. Hunewill Pit Stockpile, Thomas Canyon)
V -	Sampled By, Print first and last name of the tester or testers who sampled the material (EX. Fred Flintstone)
W -	Tested By, print first and last name of the tester or testers who completed the test (EX. W. Flintstone)
X -	Specification Limit requirements of the material being tested, found in the Standard Specifications or Special Provisions
Y -	Remarks, anything that needs to be documented (EX. Tests for liquid limit, plasticity limit, % fractured face and % absorption met specs. R.E. and contractor notified of results)
Z -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Royce James)

Page _____ of _____
Report No. _____
Contract No. _____
Contractor _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
DAILY PLANT REPORT OF ASPHALT MIXTURES

TESTER'S REPORT

Date _____ Tested by _____

SIEVE ANALYSIS SAMPLES

Specification References _____
Job-mix Formula No. _____ Mix Design No. _____
Type of Mix _____ Job-mix bitumen ratio _____

Sample Number	1	2	3	4	Job-Mix Range	Specification Limits
Bitumen Ratio						± 0.4
% Moisture (belt)						
% Moisture (mix)						1% Max.
Pass 25 mm (1")						
Pass 19 mm (3/4")						
Pass 12.5 mm (1/2")						
Pass 9.5 mm (3/8")						
Pass 4.75 mm (No. 4)						
Pass 2 mm (No. 10)						
Pass 1.18 mm (No. 16)						
Pass 425 µm (No. 40)						
Pass 75 µm (No. 200)						

Sample Number	5	6	7	8	Job-Mix Range	Specification Limits
Bitumen Ratio						± 0.4
% Moisture (belt)						
% Moisture (mix)						1% Max.
Pass 25 mm (1")						
Pass 19 mm (3/4")						
Pass 12.5 mm (1/2")						
Pass 9.5 mm (3/8")						
Pass 4.75 mm (No. 4)						
Pass 2 mm (No. 10)						
Pass 1.18 mm (No. 16)						
Pass 425 µm (No. 40)						
Pass 75 µm (No. 200)						

Remarks: _____

PLANT INSPECTOR'S REPORT

Date _____ Contract No. _____

Inspection by _____
Type of hotplant _____
Source of asphalt _____
Type of asphalt _____
Source of coarse aggregate _____
Source of fine aggregate _____
Type of mineral filler _____
Job-mix Formula No. _____
Mix Design No. _____
Type of Mixture _____
Job-mix bitumen ratio _____

REPORT OF ASPHALT QUANTITIES

(circle all units used)

Plantmix wasted _____ t (tons)
Explanation of mix wasted _____

Minimum asphalt temperature _____ °C °F
Mix temperature range (Job-mix) _____ to _____ °C °F

REPORT OF TEMPERATURE AT PLANT

Time	Asphalt °C °F	Complete mix °C °F	Time	Asphalt °C °F	Complete mix °C °F

Remarks: _____

Resident Engineer: _____

STREET INSPECTOR'S REPORT

Date _____ Contract No. _____

Inspection by _____
Type of weather _____

(circle all units used)

Atmospheric temp. low _____ high _____ °C °F
Surface temp. low _____ high _____ °C °F

PLANTMIX PLACED

Plantmix placed _____ t (tons)

Roadway Line	Starting Station	Ending Station	Course

Plantmix wasted _____ t (tons)
Explanation of mix wasted _____

Job-mix minimum temperature _____ °C °F

REPORT OF TEMPERATURE AT PAVER

Time	Complete mix °C °F	Time	Complete mix °C °F

Remarks: _____

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

NDOT 040-011
Rev 10/08

A. Page **1** of **3**
B. Report No. **1**
C. Contract No. **3925**
D. Contractor **Granite Construction Co.**

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
DAILY PLANT REPORT OF ASPHALT MIXTURES

TESTER'S REPORT

E. Date **7-12-2010** **F.** Tested by **Stew Simon**

SIEVE ANALYSIS SAMPLES

G. Specification References **705.03.01, 401.03.09, 401.02.02**

H. Job-mix Formula No. **2** **J.** Mix Design No. **BF10-2**

I. Type of Mix **Type 2 PBS** **K.** Job-mix bitumen ratio **5.3%**

L. Sample Number	**T-1-1**	2	3	4	Job-Mix **Y.** Range	Specification **Z.** Limits
M. Bitumen Ratio	**5.5**				**4.9 - 5.7**	± 0.4
N. % Moisture (belt)	**4.1**					
O. % Moisture (mix)	**0.18**					1% Max.
P. Pass 25 mm (1")	**100**				**100**	**100**
Q. Pass 19 mm (3/4")	**93**				**88 - 95**	**90 - 100**
R. Pass 12.5 mm (1/2")						
S. Pass 9.5 mm (3/8")	**66**				**60 - 74**	**63 - 85**
T. Pass 4.75 mm (No. 4)	**48**				**43 - 57**	**43 - 60**
U. Pass 2 mm (No. 10)	**32**				**30 - 38**	**30 - 44**
V. Pass 1.18 mm (No. 16)						
W. Pass 425 µm (No. 40)	**15**				**12 - 20**	**12 - 22**
X. Pass 75 µm (No. 200)	**6**				**4 - 8**	**3 - 8**

Sample Number	5	6	7	8	Job-Mix Range	Specification Limits
Bitumen Ratio						± 0.4
% Moisture (belt)						
% Moisture (mix)						1% Max.
Pass 25 mm (1")						
Pass 19 mm (3/4")						
Pass 12.5 mm (1/2")						
Pass 9.5 mm (3/8")						
Pass 4.75 mm (No. 4)						
Pass 2 mm (No. 10)						
Pass 1.18 mm (No. 16)						
Pass 425 µm (No. 40)						
Pass 75 µm (No. 200)						

AA. Remarks: **Tests meet specs, inspector and contractor notified.**

PLANT INSPECTOR'S REPORT

Date Contract No.

Inspection by
Type of hotplant
Source of asphalt
Type of asphalt
Source of coarse aggregate
Source of fine aggregate
Type of mineral filler
Job-mix Formula No.
Mix Design No.
Type of Mixture
Job-mix bitumen ratio

REPORT OF ASPHALT QUANTITIES

(circle all units used)

Plantmix wasted t (tons)
Explanation of mix wasted
Minimum asphalt temperature °C °F
Mix temp. range (Job-mix) to °C °F

REPORT OF TEMPERATURE AT PLANT

Time	Asphalt °C °F	Complete mix °C °F	Time	Asphalt °C °F	Complete mix °C °F

Remarks:

BB. Resident Engineer: R. John

STREET INSPECTOR'S REPORT

Date Contract No.

Inspection by
Type of weather
(circle all units used)
Atmos. temp. low high °C °F
Surface temp. low high °C °F

PLANTMIX PLACED

Plantmix placed t (tons)

Roadway Line	Starting Station	Ending Station	Course

Plantmix wasted t (tons)
Explanation of mix wasted
Job-mix minimum temperature °C °F

REPORT OF TEMPERATURE AT PAVER

Time	Complete mix °C °F	Time	Complete mix °C °F

Remarks:

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

NDOT 040-011
Rev 10/08

040-011 Rev. 10/08

DAILY PLANT REPORT OF ASPHALT MIXTURES

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Page, total number of pages turned in together for this material being tested (EX. Page 1 of 3) NDOT forms 040-011, 040-013 and 040-050
B -	Report No., consecutive numbering starting with 1 and continuing on for every day plantmix is produced and placed on the jobsite (EX. 1) NOTE: Number sequence will start over with a new source and with a different material, such as PBS Type III, 3/8" Opengrade etc.
C -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
D -	Contractor awarded the contract (EX. Granite Construction Co.)
E -	Date the sample was taken (EX. 7-12-2010)
F -	Tested by, Print name of the tester or testers who completed the tests (EX. Stew Simon)
G -	Specification References, all of the specifications that apply to the material being tested, refer to the Standard Specifications and Special Provisions etc. (EX. 705.03.01, 401.03.09, 401.02.02)
H -	Job-Mix Formula No., number of the most current job-mix formula, written by the Resident Engineer (EX. 2)
I -	Type of mix, material being tested (EX. Type 2 PBS)
J -	Mix Design Number assigned by Materials Division for this specific material (EX. BF10-2)
K -	Job-Mix bitumen ratio, found on the current job-mix formula (EX. 5.3%)
L -	Sample Number, actual test number for this particular test (EX. T-1-1 T = test, 1 = first acceptance test, 1 = first acceptance test of the day, 1 = number of days the material has been tested) NOTE: This is not the working day number
M -	Bitumen Ratio from the results of the ignition furnace (from the printed ticket), per Test Method Nev. T761 (EX. 5.5), reported to the nearest 0.1.

040-011 Rev. 10/08

DAILY PLANT REPORT OF ASPHALT MIXTURES

LINE	EXPLANATION OF NEEDED INFORMATION
N -	% Moisture (belt), taken from the cold feed sample, from the belt at the hotplant, during plantmix production. Reported on NDOT form 040-011 and 040-013 (EX. 4.1)
O -	% Moisture (mix), from the complete mix, taken from behind the paver, per Test Method Nev. T306 (EX. 0.18)
P -	Percent passing the 1" sieve to the nearest whole number from NDOT form 040-050 (EX. 100)
Q -	Percent passing the 3/4" sieve to the nearest whole number from NDOT form 040-050 (EX. 93)
R -	Percent passing the 1/2" sieve to the nearest whole number from NDOT form 040-050 (EX. N/A)
S -	Percent passing the 3/8" sieve to the nearest whole number from NDOT form 040-050 (EX. 66)
T -	Percent passing the No. 4 sieve to the nearest whole number from NDOT form 040-050 (EX. 48)
U -	Percent passing the No. 10 sieve to the nearest whole number from NDOT form 040-050 (EX. 32)
V -	Percent passing the No. 16 sieve to the nearest whole number from NDOT form 040-050 (EX. N/A)
W -	Percent passing the No. 40 sieve to the nearest whole number from NDOT form 040-050 (EX. 15)
X -	Percent passing the No. 200 sieve to the nearest whole number from NDOT form 040-050 (EX. 6)
Y -	Job-Mix Range, allowable tolerances for the bitumen ratio and individual sieves, found on the Job-mix formula (EX. 4.9 - 5.7 job-mix range for the Bitumen Ratio and the job-mix range for the sieves)
Z -	Specification Limits, allowable tolerances for the bitumen ratio, percent moisture of the complete mix and the sieve analysis, found in the Standard Specifications or the Special Provisions

040-011 Rev. 10/08

DAILY PLANT REPORT OF ASPHALT MIXTURES

LINE	EXPLANATION OF NEEDED INFORMATION
AA -	Remarks, anything that needs to be documented that pertains to the testing of this sample (EX. Tests meet specs, inspector and contractor notified.)
BB -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. R. John)

NOTES:

1. Circle all applicable units

2. Line L - There are no re-tests for plantmix, a failure is a failure

3. Line AA - Write down what transpires with a failing test (EX. left in place, contractor removed etc.) have the Resident Engineer initial the remark.

CONTRACT NO. _____
MATERIAL _____
DATE _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
FIELD MATERIAL SIEVE SHEET

Test No.			Test No.			Test No.			Checked By
Size or Type	Mix %		Size or Type	Mix %		Size or Type	Mix %		
Sampled by			Sampled by			Sampled by			
Tested by			Tested by			Tested by			
Source			Source			Source			
Weights-Moisture	Weights-Wash	Weights-Frac. Face	Weights-Moisture	Weights-Wash	Weights-Frac. Face	Weights-Moisture	Weights-Wash	Weights-Frac. Face	
Moisture %	Frac. Face %		Moisture %	Frac. Face %		Moisture %	Frac. Face %		
LL	PI		LL	PI		LL	PI		

Sieve Sizes	Weight Ret.	% Ret.	% Pass	Specs. Or % Pass	Sieve Sizes	Weight Ret.	% Ret.	% Pass	Specs. Or % Pass	Sieve Sizes	Weight Ret.	% Ret.	% Pass	Specs. Or % Pass	Sum of %'s used	Specs. Or % Pass
75 mm (3")					75 mm (3")					75 mm (3")						
63 mm (2½")					63 mm (2½")					63 mm (2½")						
50 mm (2")					50 mm (2")					50 mm (2")						
37.5 mm (1½")					37.5 mm (1½")					37.5 mm (1½")						
31.5 mm (1¼")					31.5 mm (1¼")					31.5 mm (1¼")						
25 mm (1")					25 mm (1")					25 mm (1")						
19 mm (¾")					19 mm (¾")					19 mm (¾")						
12.5 mm (½")					12.5 mm (½")					12.5 mm (½")						
9.5 mm (⅜")					9.5 mm (⅜")					9.5 mm (⅜")						
4.75 mm (No. 4)					4.75 mm (No. 4)					4.75 mm (No. 4)						
2.36 mm (No. 8)					2.36 mm (No. 8)					2.36 mm (No. 8)						
2.00 mm (No. 10)					2.00 mm (No. 10)					2.00 mm (No. 10)						
1.18 mm (No. 16)					1.18 mm (No. 16)					1.18 mm (No. 16)						
600 µm (No. 30)					600 µm (No. 30)					600 µm (No. 30)						
425 µm (No. 40)					425 µm (No. 40)					425 µm (No. 40)						
300 µm (No. 50)					300 µm (No. 50)					300 µm (No. 50)						
150 µm (No.100)					150 µm (No.100)					150 µm (No.100)						
75 µm (No. 200)					75 µm (No. 200)					75 µm (No. 200)						
Pan					Pan					Pan						
Wash					Wash					Wash						

Remarks: _____

Z. CONTRACT NO **3925**

AA. MATERIAL **Type I Class B Base Agg.**

BB. DATE **7/21/2010**

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
FIELD MATERIAL SIEVE SHEET

A. Test No. **T-1-1**					Test No.					Test No.									
B. Size or Type **Type IB**		**C.** Mix %			Size or Type			Mix %		Size or Type			Mix %						
D. Sampled by **Jane Doe**					Sampled by					Sampled by									
E. Tested by **Jon Doe**					Tested by					Tested by									
F. Source **Processed Windrow**					Source					Source									
Weights-Moisture		Weights-Wash		Weights-Frac. Face	Weights-Moisture		Weights-Wash		Weights-Frac. Face	Weights-Moisture		Weights-Wash		Weights-Frac. Face					
G. 2661		**K.** 2411		**N.** 1303															
H. 2411		**L.** 2251		**O.** 1172															
I. 250		**M.** 160		**P.** 131															
J. Moisture **10.4** %		**Q.** Frac. Face **89.9** %			Moisture %		Frac. Face %			Moisture %		Frac. Face %							
R. LL **26.7**		**S.** PI **4.4**			LL		PI			LL		PI							

CC. Checked By

BP

Sieve **T.** Sizes	Weight **U.** Ret.	% **V.** Ret.	% **W.** Pass	Specs. Or **X.** % Pass	Sieve Sizes	Weight Ret.	% Ret.	% Pass	Specs. Or % Pass	Sieve Sizes	Weight Ret.	% Ret.	% Pass	Specs. Or % Pass	Sum of %'s used	Specs. Or % Pass
75 mm (3")					75 mm (3")					75 mm (3")						
63 mm (2½")					63 mm (2½")					63 mm (2½")						
50 mm (2")					50 mm (2")					50 mm (2")						
37.5 mm (1½")	**0**	**0.0%**	**100.0%**	**100**	37.5 mm (1½")					37.5 mm (1½")						
31.5 mm (1¼")	**0**	**0.0%**	**100.0%**		31.5 mm (1¼")					31.5 mm (1¼")						
25 mm (1")	**34**	**1.4%**	**98.6%**	**80 - 100**	25 mm (1")					25 mm (1")						
19 mm (¾")	**103**	**4.3%**	**94.3%**		19 mm (¾")					19 mm (¾")						
12.5 mm (½")	**415**	**17.2%**	**77.1%**		12.5 mm (½")					12.5 mm (½")						
9.5 mm (⅜")	**225**	**9.3%**	**67.8%**		9.5 mm (⅜")					9.5 mm (⅜")						
4.75 mm (No. 4)	**526**	21.9 **21.8%**	**46.0%**	**30 - 65**	4.75 mm (No. 4)					4.75 mm (No. 4)						
2.36 mm (No. 8)	**358**	**14.8%**	**31.1%**		2.36 mm (No. 8)					2.36 mm (No. 8)						
2.00 mm (No. 10)					2.00 mm (No. 10)					2.00 mm (No. 10)						
1.18 mm (No. 16)	**222**	**9.2%**	**21.9%**	**15 - 40**	1.18 mm (No. 16)					1.18 mm (No. 16)						
600 µm (No. 30)	**126**	**5.2%**	**16.7%**		600 µm (No. 30)					600 µm (No. 30)						
425 µm (No. 40)					425 µm (No. 40)					425 µm (No. 40)						
300 µm (No. 50)	**96**	**4.0%**	**12.7%**		300 µm (No. 50)					300 µm (No. 50)						
150 µm (No.100)	**81**	**3.4%**	**9.3%**		150 µm (No.100)					150 µm (No.100)						
75 µm (No. 200)	**56**	**2.3%**	**7.0%**	**2 - 12**	75 µm (No. 200)					75 µm (No. 200)						
Pan	**9**	**0.4%**	**6.6%**		Pan					Pan						
Wash	**160**	**6.6%**			Wash					Wash						

Y. Remarks: **Test met specs. RE and Contractor notified of results.**

040-013 Rev. 11/10

FIELD MATERIAL SIEVE SHEET

LINE	EXPLANATION OF NEEDED MATERIAL
A -	Test number for this particular test. (EX. T-1-1 T = Acceptance Test, 1 = first acceptance test of the day, 1 = number of days the material has been tested) NOTE: If informational, test would be I-1-1 I = Informational Test, 1 = first informational test of the day, 1 = number of days the material has been tested
B -	Size or Type of material being tested (EX. Type 1B)
C -	Mix %, percentage of material used for plantmix aggregate or concrete aggregates (EX. N/A)
D -	Print first and last name of the tester or testers who sampled the material (EX. Jane Doe)
E -	Print first and last name of the tester or testers who completed the test (EX. Jon Doe)
F -	Source, name of the location where the sample was taken (EX. Processed Windrow)
G -	Weights - Moisture, wet weight of the material after the sample has been split, per Test Method Nev. T203, weighed to the nearest whole number in grams (EX. 2661)
H -	Total dry weight of the material after drying per Test Method Nev. T112, weighed to nearest whole number (EX. 2411)
I -	Line G (wet weight) - Line H (dry weight) = Line I ((EX. 2661 - 2411 = 250)
J -	Moisture, Line G (wet weight) - Line H (dry weight) / Line H (dry weight) x 100 = Line J (moisture %) (EX. (2661 - 2411) / 2411 x 100 = 10.4)
K -	Weights - Wash, total dry weight of the material after drying per Test Method Nev. T112 (weighed to the nearest whole number) (EX. 2411) NOTE: This number will be the same as Line H
L -	Dry weight of the material after it has been washed, per Test Method Nev. T206 (weighed to the nearest whole number) (EX. 2251)
M -	Line K (dry weight) - Line L (washed dry weight) = Line M (minus No. 200 wash weight) (EX. 2411 - 2251 = 160 washed through the No. 200 sieve) NOTE: The total dry weight in the pan after shaking should not exceed 1% of the total dry weight or the test is invalid

040-013 Rev. 11/10

FIELD MATERIAL SIEVE SHEET

LINE	EXPLANATION OF NEEDED MATERIAL
N -	Weights - Frac. Face, weight of the material retained on the No. 4 sieve and larger screens, per Test Method Nev. T230, weighed to the nearest whole number (EX. 1303)
O -	Weight of the fractured aggregate per Test Method Nev. T230 (EX. 1172)
P -	Line N (total weight of all No. + 4 and up material) - Line O (weight of fractured material) = Line P (weight of unfractured material) (EX. 1303 - 1172 = 131)
Q -	Frac. Face %, Line O (weight of the fractured aggregate) / Line N (total weight of all No. + 4 material and up) x 100 = Line Q (percent fractured face) (EX. 1172 / 1303 x 100 = 89.9%) Refer to the Special Provisions or Standard Specifications to see if the fractured face is required
R -	Liquid Limit result that was reported on NDOT form 040-014, per Test Method Nev. T210 (EX. 26.7)
S -	Plasticity Index result that was reported on NDOT form 040-014, per Test Method Nev. T212 (EX. 4.4)
T -	Sieves that are on the stack. Refer to the Special Provisions and Standard Specifications for the required specifications of the material being tested
U -	Weight Ret., weight retained on each sieve in the stack weighed to the nearest whole number **NOTE:** All of column U (Weight Ret.) shall add up to Line K (dry weight), if it does not, adjust the highest weight retained in column U (Weight Ret.) so it equals Line K (dry weight)
V -	% Ret., Line U (Weight Retained) / Line K (total dry weight) x 100 = Line V (% Ret.) (EX. Line U (No. 200 sieve is 56) / Line K (2411) x 100 = Line V (2.3%) NOTE: All of Column V shall add up to 100%, if it does not, adjust the highest percent retained to equal 100%, if its more than 0.3 this test is considered invalid and a new sieve shall be ran (EX. Line V (% Ret.) for the No. 4 Sieve was 21.8% and the total for column V is 99.9%, the % retained No. 4 sieve adjusted to 21.9% to allow column V to equal 100%)
W -	% Pass, Line W (% pass) + Line V (% Ret.) = Line W (% Pass) (EX. For the percent passing on the No. 200 sieve 6.6 + 0.4 = 7.0%)
X -	Specs. Or % Pass, specifications for the material or percent passing by mix design, (Refer to the Special Provisions or Standard Specifications)

040-013 Rev. 11/10

FIELD MATERIAL SIEVE SHEET

LINE	EXPLANATION OF NEEDED MATERIAL
Y -	Sum of % used, add Line X, horizontally added together for the percent used when combining sieves
Z -	Specs. Or % Pass, specifications found in the Special Provisions or Standard Specifications
AA -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
BB -	Material type as specified, found in the Contract Plans or Special Provisions (EX. Type 1 Class B Base Agg.)
CC -	Date the sample was taken (EX. 07/21/2010)
DD -	Checked By, initials of the person who checked the math, verified the specifications and accuracy of the test report (EX. STP)
EE -	Remarks, anything that needs to be documented (EX. Test met specs. RE and Contractor notified of results

GENERAL INFORMATION:

Maximum Allowable Quantity of Material Retained on a Sieve, g		
Sieve Opening Size	Nominal Dimensions of Sieve	
	203.2 mm (8 in.)	304.8 mm (12 in.)
75 mm (3 in.)	'-	'12600
63 mm (2 1/2 in.)	'-	'10600
50 mm (2 in.)	'3600	'8400
37.5 mm (1 1/2 in.)	'2700	'6300
25.0 (1 in.)	'1800	'4200
19.0 mm (3/4 in.)	'1400	'3200
12.5 mm (1/2 in.)	'890	'2100
9.5 mm (3/8 in.)	'670	'1600
4.75 mm (No. 4)	'330	'800
All sieves with openings smaller than 4.75 (No. 4)	'200	'450

040-013 Rev. 11/10

FIELD MATERIAL SIEVE SHEET

LINE **EXPLANATION OF NEEDED MATERIAL**

GENERAL INFORMATION:

Coarse Series	
4"	100 mm
3 - 1/2"	90 mm
3"	75 mm
2 - 1/2"	63 mm
2.12"	53 mm
2"	50 mm
1-3/4"	45 mm
1-1/2"	37.5 mm
1-1/4"	31.5 mm
1.06"	26.5 mm
1"	25.0 mm
7/8"	22.4 mm
3/4"	19.0 mm
5/8"	16.0 mm
0.530"	13.2 mm
1/2"	12.5 mm
7/16"	11.2 mm
3/8"	9.5 mm
5/16"	8.0 mm
0.265"	6.7 mm
1/4"	6.3 mm
No. 3-1/2	5.6 mm
No. 4	4.75 mm

Fine Series	
No. 5	4.0 mm
No. 6	3.35 mm
No. 7	2.80 mm
No. 8	2.36 mm
No. 10	2.00 mm
No. 12	1.70 mm
No. 14	1.40 mm
No. 16	1.18 mm
No. 18	1.00 mm
No. 20	850 µm
No. 25	710 µm
No. 30	600 µm
No. 35	500 µm
No. 40	425 µm
No. 45	355 µm
No. 50	300 µm
No. 60	250 µm
No. 70	212 µm
No. 80	180 µm
No. 100	150 µm
No. 120	125 µm
No. 140	106 µm
No. 170	90 µm
No. 200	75 µm
No. 230	63 µm
No. 270	53 µm
No. 325	45 µm
No. 400	38 µm
No. 450	32 µm
No. 500	25 µm
No. 635	20 µm
Regular Pan	
Extended Rim Pan	
Regular Cover	
Cover with Ring	

AA. CONTRACT NO. **3925**
BB. MATERIAL **PBS Type 2C Aggregate**
CC. DATE **7/21/2010**

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
FIELD MATERIAL SIEVE SHEET

A. Test No.	**T-1-1**				Test No.	**T-1-1**				Test No.	**T-1-1**								
B. Size or Type	**1" Rock**	**C.** Mix %	**28**		Size or Type	**3/4" Rock**	Mix %	**12**		Size or Type	**Crusher Fines**	Mix %	**55**						
D. Sampled by	**Fred Flinstone**				Sampled by	**Fred Flinstone**				Sampled by	**Fred Flinstone**								
E. Tested by	**Wilma Flinstone**				Tested by	**Wilma Flinstone**				Tested by	**Wilma Flinstone**								
F. Source	**Hunewill Pit Stockpile**				Source	**Hunewill Pit Stockpile**				Source	**Hunewill Pit Stockpile**								
Weights-Moisture	Weights-Wash	Weights-Frac. Face			Weights-Moisture	Weights-Wash	Weights-Frac. Face			Weights-Moisture	Weights-Wash	Weights-Frac. Face							
G. 2887	**K.** 2880	**N.** 2825			2634	2625	2531			596	588	0							
H. 2880	**L.** 2864	**O.** 2825			2625	2601	2531			588	543	0							
I. 7	**M.** 16	**P.** 0			9	24	0			8	45	0							
J. Moisture	**0.2** %	**Q.** Frac. Face	**100** %		Moisture	**0.3** %	Frac. Face	**100** %		Moisture	**1.4** %	Frac. Face	**N/A** %						
R. LL	**26.2**	**S.** PI	**6.5**		LL	**24.6**	PI	**5.2**		LL	**19.1**	PI	**1.4**						

DD. Checked By: *JJP*

Sieve **T.** Sizes	Weight **U.** Ret.	% **V.** Ret.	% **W.** Pass	Specs. Or **X.** % Pass	Sieve Sizes	Weight Ret.	% Ret.	% Pass	Specs. Or % Pass	Sieve Sizes	Weight Ret.	% Ret.	% Pass	Specs. Or % Pass	Sum of **Y.** % used	Specs. Or **Z.** % Pass
75 mm (3")					75 mm (3")					75 mm (3")						
63 mm (2½")					63 mm (2½")					63 mm (2½")						
50 mm (2")					50 mm (2")					50 mm (2")						
37.5 mm (1½")	**0**	**0.0%**	**100.0%**	**28.0 %**	37.5 mm (1½")					37.5 mm (1½")						
31.5 mm (1¼")	**0**	**0.0%**	**100.0%**	**28.0 %**	31.5 mm (1¼")					31.5 mm (1¼")						
25 mm (1")	**26**	**0.9%**	**99.1%**	**27.7 %**	25 mm (1")	**0**	**0.0%**	**100.0%**	**12.0%**	25 mm (1")	**0**	**0.0%**	**100.0%**	**55.0%**		
19 mm (¾")	**889**	**30.9%**	**68.2%**	**19.1 %**	19 mm (¾")	**0**	**0.0%**	**100.0%**	**12.0%**	19 mm (¾")	**0**	**0.0%**	**100.0%**	**55.0%**		
12.5 mm (½")	**1672**	**~~58.1%~~ 58.0**	**10.2%**	**2.9%**	12.5 mm (½")	**482**	**18.4%**	**81.6%**	**9.8%**	12.5 mm (½")	**0**	**0.0%**	**100.0%**	**55.0%**		
9.5 mm (⅜")	**208**	**7.2%**	**3.0%**	**0.8%**	9.5 mm (⅜")	**937**	**35.7%**	**45.9%**	**5.5%**	9.5 mm (⅜")	**0**	**0.0%**	**100.0%**	**55.0%**		
4.75 mm (No. 4)	**30**	**1.0%**	**2.0%**	**0.6%**	4.75 mm (No. 4)	**1112**	**~~42.4%~~ 42.3**	**3.6%**	**0.4%**	4.75 mm (No. 4)	**81**	**13.8%**	**86.2%**	**47.4%**		
2.36 mm (No. 8)					2.36 mm (No. 8)					2.36 mm (No. 8)						
2.00 mm (No. 10)	**5**	**0.2%**	**1.8%**	**0.5%**	2.00 mm (No. 10)	**42**	**1.6%**	**2.0%**	**0.2%**	2.00 mm (No. 10)	**244**	**~~41.5%~~ 41.4**	**44.8%**	**24.6%**		
1.18 mm (No. 16)	**2**	**0.1%**	**1.7%**	**0.5%**	1.18 mm (No. 16)	**3**	**0.1%**	**1.9%**	**0.2%**	1.18 mm (No. 16)	**68**	**11.6%**	**33.2%**	**18.3%**		
600 µm (No. 30)					600 µm (No. 30)					600 µm (No. 30)						
425 µm (No. 40)	**4**	**0.1%**	**1.6%**	**0.4%**	425 µm (No. 40)	**4**	**0.2%**	**1.7%**	**0.2%**	425 µm (No. 40)	**80**	**13.6%**	**19.6%**	**10.8%**		
300 µm (No. 50)					300 µm (No. 50)					300 µm (No. 50)						
150 µm (No.100)	**6**	**0.2%**	**1.4%**	**0.4%**	150 µm (No.100)	**6**	**0.2%**	**1.5%**	**0.2%**	150 µm (No.100)	**48**	**8.2%**	**11.4%**	**6.3%**		
75 µm (No. 200)	**8**	**0.3%**	**1.1%**	**1.3%**	75 µm (No. 200)	**7**	**0.3%**	**1.2%**	**0.1%**	75 µm (No. 200)	**19**	**3.2%**	**8.2%**	**4.5%**		
Pan	**14**	**0.5%**	**0.6%**	**0.2%**	Pan	**8**	**0.3%**	**0.9%**	**0.1%**	Pan	**3**	**0.5%**	**7.7%**	**4.2%**		
Wash	**16**	**0.6%**			Wash	**24**	**0.9%**			Wash	**45**	**7.7%**				

EE. Remarks: **Test met specs. RE and Contractor notified of the results.**

AA. CONTRACT NO. **3925**
BB. MATERIAL **PBS Type 2C Aggregate**
CC. DATE **7/21/2010**

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
FIELD MATERIAL SIEVE SHEET

A. Test No. **T-1-1**					Test No.					Test No.									
B. Size or Type **Washed Sand** **C.** Mix % **5**					Size or Type			Mix %		Size or Type			Mix %						
D. Sampled by **Fred Flinstone**					Sampled by					Sampled by									
E. Tested by **Wilma Flinstone**					Tested by					Tested by									
F. Source **Hunewill Pit Stockpile**					Source					Source									
Weights-Moisture	Weights-Wash		Weights-Frac. Face		Weights-Moisture	Weights-Wash		Weights-Frac. Face		Weights-Moisture	Weights-Wash		Weights-Frac. Face						
G. 1260	**K.** 1169		**N.** 0																
H. 1169	**L.** 1141		**O.** 0																
I. 91	**M.** 28		**P.** 0																
J. Moisture **7.8** %	**Q.** Frac. Face **N/A** %				Moisture %			Frac. Face %		Moisture %			Frac. Face %						
R. LL **N/A**	**S.** PI **N/P**				LL			PI		LL			PI						
Sieve **T.** Sizes	Weight **U.** Ret.	% **V.** Ret.	% **W.** Pass	Specs. Or **X.** % Pass	Sieve Sizes	Weight Ret.	% Ret.	% Pass	Specs. Or % Pass	Sieve Sizes	Weight Ret.	% Ret.	% Pass	Specs. Or % Pass	Sum of **Y.** % used	Specs. Or **Z.** % Pass			
75 mm (3")					75 mm (3")					75 mm (3")									
63 mm (2½")					63 mm (2½")					63 mm (2½")									
50 mm (2")					50 mm (2")					50 mm (2")									
37.5 mm (1½")					37.5 mm (1½")					37.5 mm (1½")									
31.5 mm (1¼")					31.5 mm (1¼")					31.5 mm (1¼")									
25 mm (1")	**0**	**0.0%**	**100.0%**	**5.0%**	25 mm (1")					25 mm (1")					**99.7%**	**100**			
19 mm (¾")	**0**	**0.0%**	**100.0%**	**5.0%**	19 mm (¾")					19 mm (¾")					**91.1%**	**88 - 95**			
12.5 mm (½")	**0**	**0.0%**	**100.0%**	**5.0%**	12.5 mm (½")					12.5 mm (½")					**72.7%**	**70 - 85**			
9.5 mm (⅜")	**0**	**0.0%**	**100.0%**	**5.0%**	9.5 mm (⅜")					9.5 mm (⅜")					**66.3%**	**60 - 78**			
4.75 mm (No. 4)	**0**	**0.0%**	**100.0%**	**5.0%**	4.75 mm (No. 4)					4.75 mm (No. 4)					**53.4%**	**43 - 60**			
2.36 mm (No. 8)					2.36 mm (No. 8)					2.36 mm (No. 8)									
2.00 mm (No. 10)	**29**	**2.5%**	**97.5%**	**4.9%**	2.00 mm (No. 10)					2.00 mm (No. 10)					**30.2%**	**30 - 44**			
1.18 mm (No. 16)	**203**	**17.4%**	**80.1%**	**4.0%**	1.18 mm (No. 16)					1.18 mm (No. 16)									
600 µm (No. 30)					600 µm (No. 30)					600 µm (No. 30)									
425 µm (No. 40)	**483**	41.2 ~~41.3%~~	**38.9%**	**1.9%**	425 µm (No. 40)					425 µm (No. 40)					**13.3%**	**12 - 22**			
300 µm (No. 50)					300 µm (No. 50)					300 µm (No. 50)									
150 µm (No.100)	**353**	**30.2%**	**8.7%**	**0.4%**	150 µm (No.100)					150 µm (No.100)									
75 µm (No. 200)	**70**	**6.0%**	**2.7%**	**0.1%**	75 µm (No. 200)					75 µm (No. 200)					**5.0%**	**3 - 8**			
Pan	**3**	**0.3%**	**2.4%**	**0.1%**	Pan					Pan									
Wash	**28**	**2.4%**			Wash					Wash									

DD. Checked By

EE. Remarks: **Test met specs. RE and Contractor notified of the results.**

040-013 Rev. 11/10

FIELD MATERIAL SIEVE SHEET

LINE	EXPLANATION OF NEEDED MATERIAL
A -	Test number for this particular test. (EX. T-1-1 T = Acceptance Test, 1 = first acceptance test of the day, 1 = number of days the material has been tested) NOTE: If informational test would be I-1-1 I = Informational Test, 1 = first informational test of the day, 1 = number of days the material has been tested
B -	Size or Type of material being tested (EX. 1" Rock)
C -	Mix %, percentage of material used for plantmix aggregate or concrete aggregates (EX. 1" Rock = 28%, you would find this information from the approved mix design, job mix Formula or from the Contractor)
D -	Print first and last name of the tester or testers who sampled the material (EX. Fred Flinstone)
E -	Print first and last name of the tester or testers who completed the test (EX. Wilma Flinstone)
F -	Source, name of the location where the material was produced (EX. Hunewill Pit Stockpile)
G -	Weights-Moisture, wet weight of the material after sample has been split, per Test Method Nev. T203, weighed to the nearest whole number in grams (EX. 2887)
H -	Total dry weight of the material per Test Method Nev. T112, weighed to nearest whole number (EX. 2880)
I -	Line G (wet weight) - Line H (dry weight) = Line I (weight in moisture) (EX. 2887 - 2880 = 7)
J -	Moisture, Line G (wet weight) - Line H (dry weight) / Line H (dry weight) x 100 = Line J (moisture %) (EX. (2887 - 2880) / 2880 X 100 = 0.2)
K -	Weights - Wash, total dry weight of the material per Test Method Nev. T112 (weighed to the nearest whole number) (EX. 2880). NOTE: This number will be the same as Line H
L -	Dry weight of the material after it has been washed, per Test Method Nev. T206 (weighed to the nearest whole number) (EX. 2864)

040-013 Rev. 11/10

FIELD MATERIAL SIEVE SHEET

LINE	EXPLANATION OF NEEDED MATERIAL
M -	Line K (dry weight) - Line L (washed dry weight) = Line M (minus No. 200 wash weight) (EX. 2880 - 2864 = 16 washed through the No. 200 sieve) NOTE: The total weight in the pan after shaking should not exceed 1% of the total dry weight or the test is invalid
N -	Weights - Frac. Face, weight of the material retained on the No. 4 sieve and larger screens, per Test Method Nev. T230, weighed to the nearest whole number (EX. 2825)
O -	Weight of the fractured aggregate per Test Method Nev. T230 (EX. 2825)
P -	Line N (total weight of all No. + 4 and up material) - Line O (weight of fractured material) = Line P (weight of unfractured material) (EX. 2825 - 2825 = 0)
Q -	Frac. Face %, Line O (weight of the fractured aggregate) / Line N (total weight of all No. + 4 and up material) x 100 = Line Q (percent fractured face) (EX. 2825 / 2825 x 100 = 100%). Refer to the Special Provisions and the Standard Specifications to see if fractured face is required
R -	Liquid Limit number that was determined on NDOT form 040-014, per Test Method Nev. T210 (EX. 26.2)
S -	Plasticity Index that was determined on NDOT form 040-014, per Test Method Nev. T212 (EX. 6.5)
T -	Sieves that are on the stack. Refer to the Special Provisions and the Standard Specifications for the required specifications on the material being tested
U -	Weight Ret., weight retained on each sieve in the stack, reported to the nearest whole number **NOTE:** All of Column U (Weight Ret.) shall add up to Line K (dry weight), if it does not, adjust the highest weight retained in Column U (Weight Ret.) so it equals Line K (Dry Weight)
V -	% Ret., Line U (Weight Ret.) / Line K (dry weight) x 100 = Line V (% Ret.) (EX. Line U (No. 200 sieve is 8) / Line K (2880) x 100 = Line V (0.3%)) **NOTE:** All of Column V shall add up to 100%, if it does not, adjust the highest percent retained, to equal 100%, if its more than 0.3, this sieve is invalid and a new sieve shall be ran (EX. Line V (% Ret.) for the 1/2" Sieve = 58.1%, and the total for column V is 100.1%, therefore the % retained for the 1/2" sieve will need to be adjusted to 58.0% to allow Column V to equal 100%)

040-013 Rev. 11/10

FIELD MATERIAL SIEVE SHEET

LINE	EXPLANATION OF NEEDED MATERIAL
W -	% Pass, Line W (% Pass) + Line V (% Ret.) = Line W (% Pass) (EX. For the percent passing on the No. 200 sieve 0.6 + 0.5 = 1.1%)
X -	Specs. or % Pass, specifications for the material or the percent passing by mix design, (refer to the Special Provisions or the Standard Specifications) Line W (% Passing) x Line C (Mix % decimal equivalent) = Line X (Specs or % Passing) (EX. Using the No. 200 sieve 1.1% x 0.28% = 0.3% passing)
Y -	Sum of % used, add Line X (mix design % pass), horizontally added together for each individual sieve size and each individual material to get the sum of the % used. (EX. Using the No. 200 sieve, add all Line X's up horizontally for each individual material 0.3 + 0.1 + 4.5 + 0.1 = 5.0)
Z -	Specs. Or % Pass, specifications found in the Special Provisions or Standard Specifications
AA -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
BB -	Material Type, as specified, found in the Contract Plans or Special Provisions (EX. PBS Type 2C Aggregate)
CC -	Date the sample was taken. (EX. 7/21/2010)
DD -	Checked By, initials of the person who checked the math, verified the specifications and accuracy of the test report
EE -	Remarks, anything that needs to be documented (EX. Test met specs. RE and Contractor notified of the results.)

NOTES:

1. This example is used for submitting material to Materials Division for a Bituminous Mix Design.

2. When completing the weekly checks of the stockpiles for plantmix aggregates, the next test number would be T-1-2 with the informational box checked on NDOT form 040-010.

040-013 Rev. 11/10

FIELD MATERIAL SIEVE SHEET

LINE **EXPLANATION OF NEEDED MATERIAL**

NOTES:

3. The 0.3 rule comes from AASHTO T27, if the amounts differ by more than 0.3% based on the original dry mass, the results are invalid.

4. Do not deduct lime from the original sample, run the sieve as is.

GENERAL INFORMATION:

Maximum Allowable Quantity of Material Retained on a Sieve, g		
Sieve Opening Size	Nominal Dimensions of Sieve	
	203.2 mm (8 in.)	304.8 mm (12 in.)
75 mm (3 in.)	-	12600
63 mm (2 1/2 in.)	-	10600
50 mm (2 in.)	3600	8400
37.5 mm (1 1/2 in.)	2700	6300
25.0 (1 in.)	1800	4200
19.0 mm (3/4 in.)	1400	3200
12.5 mm (1/2 in.)	890	2100
9.5 mm (3/8 in.)	670	1600
4.75 mm (No. 4)	330	800
All sieves with openings smaller than 4.75 (No. 4)	200	450

040-013 Rev. 11/10

FIELD MATERIAL SIEVE SHEET

LINE **EXPLANATION OF NEEDED MATERIAL**

NOTES:

5.

Coarse Series	
4"	100 mm
3 - 1/2"	90 mm
3"	75 mm
2 - 1/2"	63 mm
2.12"	53 mm
2"	50 mm
1-3/4"	45 mm
1-1/2"	37.5 mm
1-1/4"	31.5 mm
1.06"	26.5 mm
1"	25.0 mm
7/8"	22.4 mm
3/4"	19.0 mm
5/8"	16.0 mm
0.530"	13.2 mm
1/2"	12.5 mm
7/16"	11.2 mm
3/8"	9.5 mm
5/16"	8.0 mm
0.265"	6.7 mm
1/4"	6.3 mm
No. 3-1/2	5.6 mm
No. 4	4.75 mm

Fine Series	
No. 5	4.0 mm
No. 6	3.35 mm
No. 7	2.80 mm
No. 8	2.36 mm
No. 10	2.00 mm
No. 12	1.70 mm
No. 14	1.40 mm
No. 16	1.18 mm
No. 18	1.00 mm
No. 20	850 µm
No. 25	710 µm
No. 30	600 µm
No. 35	500 µm
No. 40	425 µm
No. 45	355 µm
No. 50	300 µm
No. 60	250 µm
No. 70	212 µm
No. 80	180 µm
No. 100	150 µm
No. 120	125 µm
No. 140	106 µm
No. 170	90 µm
No. 200	75 µm
No. 230	63 µm
No. 270	53 µm
No. 325	45 µm
No. 400	38 µm
No. 450	32 µm
No. 500	25 µm
No. 635	20 µm
Regular Pan	
Extended Rim Pan	
Regular Cover	
Cover with Ring	

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
FIELD L.L., AND P.I. WORK SHEET

CONTRACT NO. _____ TESTER _____ DATE SAMPLED _____

TEST NO. _____ MATERIAL _____ DATE TESTED _____

LOCATION OF SAMPLE _____

Watch Glasses No. 1 _____ Watch Glasses No. 2 _____

Dry Weight		Wet Weight		Dry Weight		Wet Weight	
Tare Weight		Dry Weight		Tare Weight		Dry Weight	

No. of Blows _____ No. of Blows _____

% of Moisture _____ % of Moisture _____

Watch Glasses No. 3 _____ Watch Glasses No. 4 _____

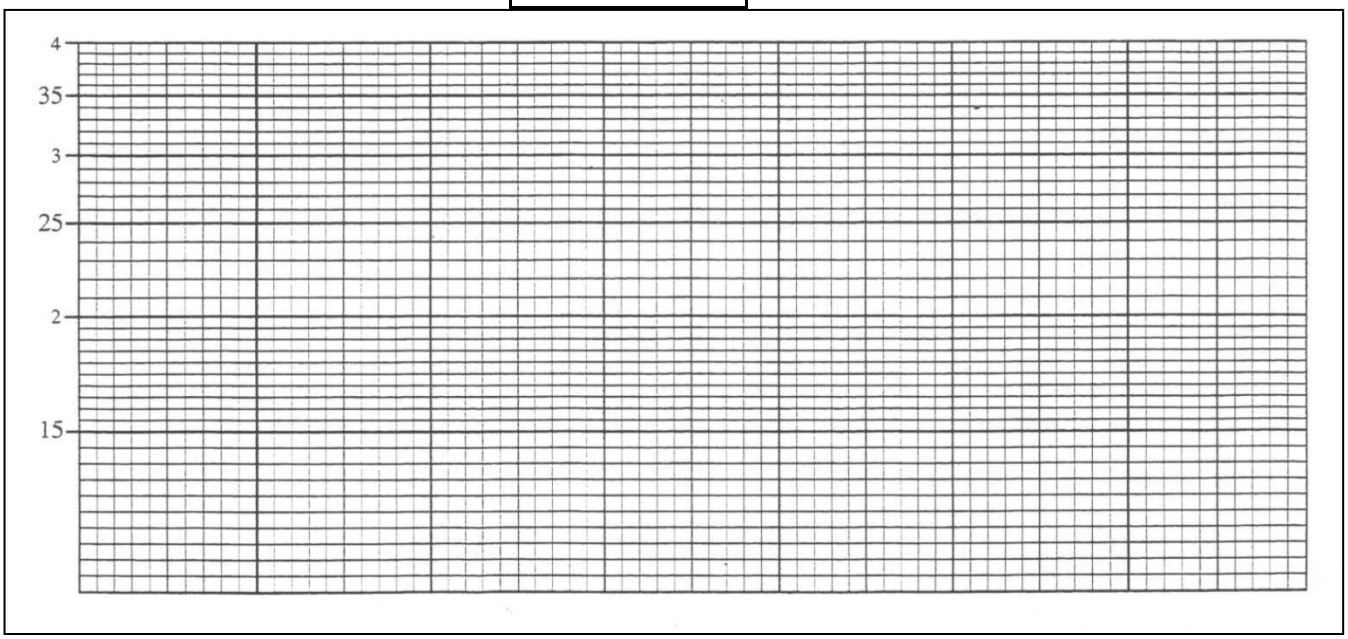
Dry Weight		Wet Weight		Dry Weight		Wet Weight	
Tare Weight		Dry Weight		Tare Weight		Dry Weight	

No. of Blows _____

% of Moisture _____

L.L. _____
P.L. _____
P.I. _____

% of Moisture _____



Remarks (Required for N.P. results): _____

Resident Engineer: _____
(Signature)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
FIELD L.L., AND P.I. WORK SHEET

A. CONTRACT NO. **3925** **B.** TESTER **Wilma Flinstone** **C.** DATE SAMPLED **7/21/2010**

D. TEST NO. **T-1-1** **E.** MATERIAL **1" Rock** **F.** DATE TESTED **7/22/2010**

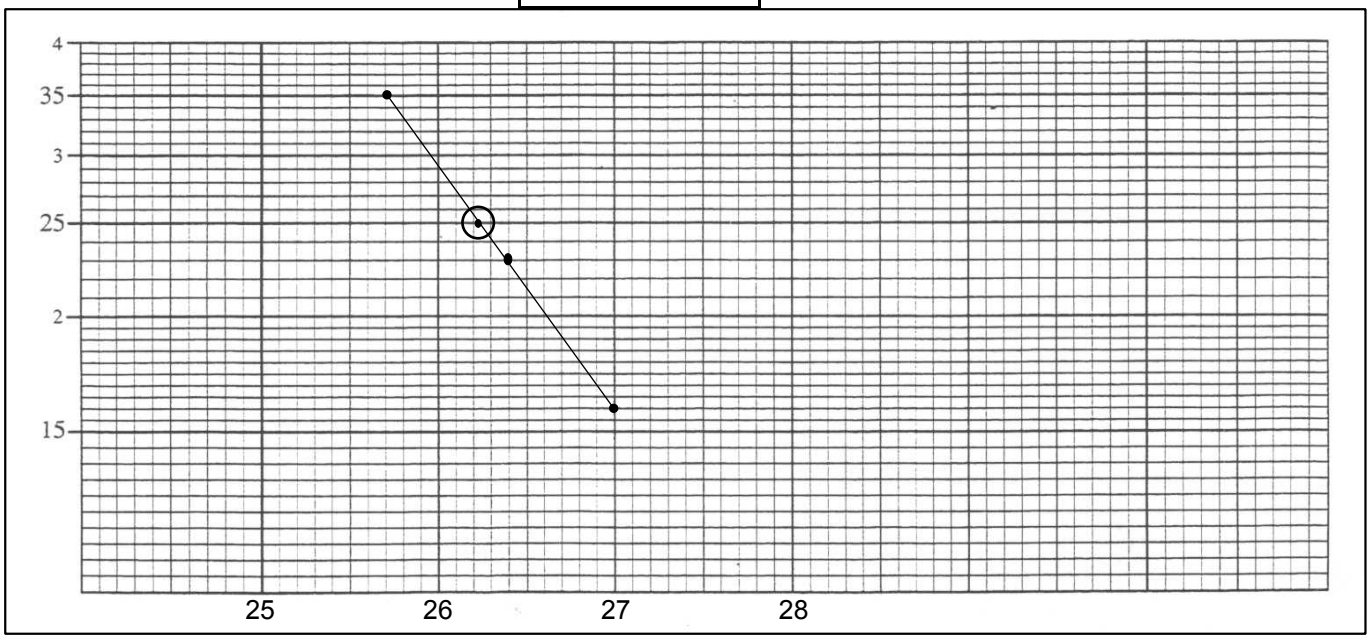
G. LOCATION OF SAMPLE **Hunewill Pit Stockpile**

	Watch Glasses No. 1			Watch Glasses No. 2		
H. Dry Weight	**25.56**	**I.** Wet Weight	**27.51**	**25.56**	**35.37**	**38.31**
J. Tare Weight	**17.97**	**K.** Dry Weight	**25.56**	**17.97**	**24.25**	**35.37**
L.	**7.59**	**M.**	**1.95**	**7.59**	**11.12**	**2.94**
N. No. of Blows	**35**			**35**	**23**	
O. % of Moisture	**25.7**			**25.7**	**26.4**	

	Watch Glasses No. 3			Watch Glasses No. 4		
H. Dry Weight	**31.49**	**I.** Wet Weight	**34.73**	**P.** Dry Weight	**30.87**	**Q.** Wet Weight	**32.44**
J. Tare Weight	**19.48**	**K.** Dry Weight	**31.49**	**R.** Tare Weight	**22.90**	**S.** Dry Weight	**30.87**
L.	**12.01**	**M.**	**3.24**	**T.**	**7.97**	**U.**	**1.57**
N. No. of Blows	**16**						
O. % of Moisture	**27.0**					**V.** % of Moisture	**19.7**

W. L.L. **26.2**
X. P.L. **19.7**
Y. P.I. **6.5**

Z.



AA. Remarks (Required for N.P. results): **From a 6000g sample, 91.11g of material (hand mortared) was obtained passing the #40 sieve. Used an automatic liquid limit device. Contractor and Resident Engineer notifed of results.**

BB. Resident Engineer: Dillon James
(Signature)

040-014 Rev. 6/05

FIELD L.L., AND P.I. WORK SHEET

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
B -	Tester, Print first and last name of the tester or testers who completed the test (EX. Wilma Flintstone)
C -	Date the sample was taken (EX. 7/21/2010)
D -	Test number for this particular test (EX. T-1-1 T = Acceptance Test, 1 = first test of the day, 1 = number of days material has been tested) **NOTE:** this test number should be the same number as the corresponding sieve
E -	Material, type of as specified, found in the Contract Plans or Specials (EX. 1" Rock)
F -	Actual date the sample was tested, which should always be the next day (EX 7/22/2010)
G -	Location of sample, where the material came from (EX. Hunewill Pit Stockpile)
H -	Dry weight of material, per Test Method Nev. T210 (EX. 25.56 Watch Glass No. 1) (weight includes glass weight)
I -	Wet weight of the material, per Test Method Nev. T210 prior to drying (EX. 27.51 Watch Glass No. 1) (wet weight includes the glass weight)
J -	Tare weight of the glass by itself (this weight is obtained before running any part of the test) (EX. 17.97 Watch Glass No. 1)
K -	Dry weight of the material, per Test Method Nev. T210 (EX. 25.56 Watch Glass No. 1) (dry weight includes glass weight)
L -	Line H (Dry Weight) - Line J (Tare Weight) = Line L (Dry Weight of Material) (EX. 25.56 - 17.97 = 7.59 Watch Glass No. 1)
M -	Line I (Wet Weight) - Line K (Dry Weight) = Line M (Weight of Water) (EX. 27.51 - 25.56 = 1.95 Watch Glass No. 1)
N -	Number of blows that it takes to close the groove of the soil cake per Test Method Nev. T210 (EX. 35 blows)

040-014 Rev. 6/05

FIELD L.L., AND P.I. WORK SHEET

LINE	EXPLANATION OF NEEDED INFORMATION
O -	% of Moisture, Line M (Weight of Water) / Line L (Dry Weight of Material) X 100 = Line O (% of Moisture) (EX. (1.95 / 7.59) x 100 = 25.7 Watch Glass No. 1) **NOTE:** Repeat Lines H - O for Watch Glass No. 1, No. 2, and No. 3
P -	Dry weight of the material per Test Method Nev. T211/T212 (dry weight includes glass weight)
Q -	Wet weight of the material per Test Method Nev. T211/T212 prior to drying (wet weight includes the glass weight)
R -	Tare weight of the glass by itself (this weight is obtained before running any part of the test)
S -	Dry weight of the material per Test Method Nev. T211/T212 (dry weight includes glass weight)
T -	Line P (Dry Weight) - Line R (Tare Weight of the Glass) = Line T (Dry Weight of Material) (EX. 30.87 - 22.90 = 7.97)
U -	Line Q (Wet Weight) - Line S (Dry Weight) = Line U (Weight of Water) (EX. 32.44 - 30.87 = 1.57)
V -	% of Moisture, Line U (Weight of Water) / Line T (Dry Weight of Material) x 100 = Line V (% of Moisture or P.L. (Plastic Limit)) (EX. (1.57 / 7.97) x 100 = 19.7)
W -	Liquid Limit, where the graphed line intersects the 25 shock ordinate line on the semi-logarithmic graph (EX. 26.2)
X -	Plastic Limit from Line V (EX. 19.7)
Y -	Plasticity Index, Line W (Liquid Limit) - Line X (Plastic Limit) = Line Y (Plasticity Index) (EX. 26.2 - 19.7 = 6.5) **NOTE:** This number shall not be a negative number, if it is start the test over, it is an invalid test.
Z -	Graph Line N and Line O on the logarithmic chart, numbers on the left represent Lines N (number of blows), numbers on the bottom represent Lines O (% of Moisture) **NOTE:** there shall not be more than .3 of a percent (3 lines on the graph) between the two lines crossing the 25 shock ordinate line for the number of blows, Line W comes from the % of moisture and where it intersects the 25 shock ordinate line

040-014 Rev. 6/05

FIELD L.L., AND P.I. WORK SHEET

LINE	EXPLANATION OF NEEDED INFORMATION
AA -	Remarks, anything that needs to be documented, should include sample size how much was obtained from the - # 40 material, if the material was to granular, N.P., if the test met specs. or did not meet specs., material was hand mortared etc. (EX. From a 6000g sample obtained 91.11g of material (hand mortared) was obtained passing the # 40 sieve. Used an Automatic Liquid Limit Device. Contractor and Resident Engineer notified of results.
BB -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Dillon James)

NOTES:

1. If you obtain less than 85 g of material after hand mortaring the test cannot be ran and INSUFF. MAT. will be written across Lines W, X and Y and an explanation is needed on Line Z under remarks

2. There must be at least 10 blows between Line N. on watch Glass No. 1 and Line N for Watch Glass No. 3, if there is not then the test is invalid and another one shall be ran

3. On the semi-logarithmic graph there shall be no more than .3 of a percent (3 lines on the graph) between the two lines that crossing the 25 shock ordinate line, if there is then the test is invalid and another complete test shall be started

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

REPORT OF TESTS OF PORTLAND CEMENT CONCRETE PAVEMENT

Date Reported _____ Contract No. _____
Sampled by _____ Contractor _____
Specification Reference _____ Mix Design No. _____

Brand of Cement _____ Type _____
Brand of Admixture(s) _____
Brand of Curing Agent _____
Brand of Air Entraining Admixture _____
Source of Fine Aggregate _____
Source of Coarse Aggregate(s) _____
Source of Water _____
Batch Ticket No. _____ Quantity Batched _____ m^3 (yd^3)

TESTS FOR CONCRETE BEAMS	
Field Set Number	
Test Number	
Location/Station	
Date Sampled	
Date Tested	
Class of Concrete	
Total Weight Fine Agg., kg/m^3 (lb/yd^3)	
Total Weight Coarse Agg., kg/m^3 (lb/yd^3)	
Total Water Added, L/m^3 (gal/yd^3)	
7 Day Modulus of Rupture, MPa (psi)	
28 Day Modulus of Rupture, MPa (psi)	
* ___ Day Modulus of Rupture, MPa (psi)	
Slump, mm (in)	
Total Weight of all Materials Batched	
Unit Weight, kg/m^3 (lb/ft^3)	
Yield, m^3 (yd^3)	
**Water/Cement Ratio	
Entrained Air %	

*Spare beam to test in case of a faulty break or if it is desired to vary the breaking schedule.
**(Water Added to Batch + Free Water on Aggregate + Water added in Field) ÷ Total Cementitious Material

- Free Water = Total Moisture Content of the Aggregates – Absorbed Moisture

Remarks: _____

Tested by: _____ Resident Engineer: _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

REPORT OF TESTS OF PORTLAND CEMENT CONCRETE PAVEMENT

A. Date Reported **08/09/2010** **B.** Contract No. **3925**
C. Sampled by **M. Smart** **D.** Contractor **Granite Construction Co.**
E. Specification Reference **409.03.13** **F.** Mix Design No. **503628**

G. Brand of Cement **Nevada** **H.** Type **II**
I. Brand of Admixture(s) **Daracem 55**
J. Brand of Curing Agent **WR Seal Tight 2500 White**
K. Brand of Air Entraining Admixture **Darex II**
L. Source of Fine Aggregate **Dayton Materials**
M. Source of Coarse Aggregate(s) **Dayton Materials**
N. Source of Water **City**
O. Batch Ticket No. **112756** **P.** Quantity Batched **10** ~~m^3~~ (yd^3)

TESTS FOR CONCRETE BEAMS	
Q. Field Set Number	**Set 1**
R. Test Number	**1**
S. Location/Station	**"X" 7+22 Lt.**
T. Date Sampled	**7/12/2010**
U. Date Tested	**7/16/2010**
V. Class of Concrete	**P.C.A.A.**
W. Total Weight Fine Agg., kg/m^3 (lb/yd^3)	**1382**
X. Total Weight Coarse Agg., kg/m^3 (lb/yd^3)	**2013**
Y. Total Water Added, L/m^3 (gal/yd^3)	**29**
Z. 7 Day Modulus of Rupture, MPa (psi)	**610 PSI**
AA. 28 Day Modulus of Rupture, MPa (psi)	**745 PSI**
BB. * **10** Day Modulus of Rupture, MPa (psi)	**610 PSI**
CC. Slump, mm (in)	**2 ½"**
DD. Total Weight of all Materials Batched	**38784**
EE. Unit Weight, kg/m^3 (lb/ft^3)	**128.7**
FF. Yield, m^3 (yd^3)	**0.99**
GG. **Water/Cement Ratio	**0.38**
HH. Entrained Air %	**4.6**

*Spare beam to test in case of a faulty break or if it is desired to vary the breaking schedule.
**(Water Added to Batch + Free Water on Aggregate + Water added in Field) ÷ Total Cementitious Material
- Free Water = Total Moisture Content of the Aggregates – Absorbed Moisture

II. Remarks: **First Break met spec. Contractor and R.E. notified of results.**

JJ. Tested by: **M. Smart** **KK.** Resident Engineer: Barra Jones

040–016 Rev. 11/10

REPORT OF TESTS OF PORTLAND CEMENT CONCRETE PAVEMENT

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Date the beam was tested (EX. 8/9/2010)
B -	Contract number for the material being tested, found on the Contract Plans or Special Provisions (EX. 3925)
C -	Sampled by, Print first and last name of the tester or testers who sampled the material (EX. Mudd and Stone)
D -	Contractor awarded the contract (EX. Granite Construction Co.)
E -	Specification References, all of the specifications that apply to the material being tested, refer to the Standard Specifications and Special Provisions (EX. 409.03.13)
F -	Mix Design number assigned by the Materials Division for this specific material (Mix Design approved by the State Materials Division) (EX. 503628)
G -	Brand of Cement, found on the approved mix design (EX. Nevada)
H -	Type of Cement, found on the approved mix design (EX. Type II)
I -	Brand of Admixture, found on the approved mix design (EX. Daracem 55)
J -	Brand of Curing Agent, given by the contractor, found on the certificate of compliance **NOTE:** Check the current QPL for this project and verify that the curing compound is an approved material to be used
K -	Brand of Air Entraining Admixture, found on the approved Mix Design (EX. Darex II)
L -	Source of Fine Aggregate, found on the approved mix design (EX. Dayton Materials) **NOTE:** Where the material was produced
M -	Source of Coarse Aggregate, found on the approved Mix Design (EX. Dayton Materials) **NOTE:** Where the material was produced
N -	Source of Water, found on the approved Mix Design (EX. City) **NOTE:** Source will either be City or Domestic

040–016 Rev. 11/10

REPORT OF TESTS OF PORTLAND CEMENT CONCRETE PAVEMENT

LINE	EXPLANATION OF NEEDED INFORMATION
O -	Batch Ticket No., number assigned to the batch ticket found on the batch ticket (EX. 112756)
P -	Quantity Batched, Total amount of the single load batched (EX. 10 yd^3)
Q -	Field Set Number, number designated to the beams being tested (EX. Set No. 1)
R -	Test number, is the same as the field sample number (EX. 1)
S -	Approximate sample location, found on the Contract Plans or jobsite survey stakes (EX. "X" 7 + 22 LT.)
T -	Date the sample was taken (EX. 7/12/2010)
U -	Date the material was tested (EX. 7/16/2010)
V -	Class of concrete found in the Contract Plans or Special Provisions (EX. P.C.A.A.)
W -	Total weight of Fine Aggregate (found on the delivery ticket) divided by yd^3 of total concrete batched (found on the delivery ticket) (EX. 13820 / 10 = 1382 lb/ft^3)
X -	Total weight of Coarse Aggregate (found on the delivery ticket) divided by yd^3 of total concrete batched (found on the delivery ticket) (EX. 20130 / 10 = 2013 lb/ft^3)
Y -	Total weight of water (found on the delivery ticket) divided by the yd^3 of total concrete batched (found on the delivery ticket) NOTE: If water has been indicated in lbs on the delivery ticket, divide by 8.33 (weight of one gallon of water) then divided by the total yd^3 of concrete batched (EX. 2416 / 8.33 = 290 / 10 = 29gal / yd^3)
Z -	7 day Modulus of Rupture see Test Method Nev. T442, using the following formula: $R = \frac{1.5\ Pl}{Bd^2}$ (EX. 610 psi) Note: Read pSi off of the Beam Breaker Worksheet if unable to use formula
AA -	28 day Modulus of Rupture per Test Method Nev. T442, using the following formula: $R = \frac{1.5\ Pl}{Bd^2}$ (EX. 745 psi) Note: Read pSi off of the Beam Breaker Worksheet if unable to use formula

040–016 Rev. 11/10

REPORT OF TESTS OF PORTLAND CEMENT CONCRETE PAVEMENT

LINE	EXPLANATION OF NEEDED INFORMATION
BB -	10 day Modulus of Rupture per Test Method Nev. T442, using the following formula: $R = \frac{1.5\ Pl}{Bd^2}$ (EX. 610 psi) Note: Read pSi off of the Beam Breaker Worksheet if unable to use formula
CC -	Slump results per Test Method Nev. T438 (EX. 2 1/2")
DD -	Total weight of all material from the batch ticket (EX. 38784)
EE -	Unit weight per Test Method Nev. T435 (EX. 128.7 lb/ft^3)
FF -	Yield is figured per Test Method Nev. T435 # 2 under calculations $S = \frac{Wa + W_1 + Wc + Ww}{W}$ (EX. 0.99)
GG -	Water added to Batch + Free Water on Aggregate + Water added in Field) / Total Cementitious Material = Water/Cement Ratio (EX. 0.38)
HH -	Percent of entrained air per Test Method Nev. T431 (EX. 4.6 %)
II -	Remarks, anything that needs to be documented (EX. First break met spec. Contractor and R.E. notified of results.)
JJ -	Tested By, print first and last name of the tester or testers who completed the test (EX. M. Smart)
KK -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Sarra Jones)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

Material Type		Contract Number	
Lift, Lane & Direction		Date	
Width and Depth		Gauge Set Number	
Lot/Sublot		Tested By	

TEST SECTION

Sta.	Sta.	Sta.	Sta.	Sta.

Random Number Block: ____ Beginning Station ____ Ending Station ____

(A x length = longitudinal , B x width = transverse)

A					B				
	x		=			x		=	
	x		=			x		=	
	x		=			x		=	
	x		=			x		=	
	x		=			x		=	

TARGET DENSITY Mg/m^3 (pcf) _____ From (RICE) test number _____

TEST #	-PM-		-PM-		-PM-		-PM-		-PM-	
STATION nearest 10m (25 ft.)										
Distance from edge		*** Joint**		*** Joint**		*** Joint**		*** Joint**		*** Joint**
Left or Right										
NUCLEAR 1										
DENSITY 2										
READINGS 3										
4										
Average Density										
Corrected Density										
% Relative Compaction										

Correction Factor ____

Remarks: ____

* Mean Test Section Density, Mg/m^3 (pcf)= ____

* Mean Percent relative Compaction= ____

* Not Applicable to Partial Test Sections or Joint Densities

Joint Test Specification	Min.			
Single Test Specification	Min.		Max.	
Mean Test Section Specification	Min.		Max.	

Accepted **Rejected**
(Circle one of the above)

Resident Engineer Signature _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

A. Material Type	**TYPE II PBS**	**E.** Contract Number	**3925**
B. Lift, Lane & Direction	**LIFT 1, LANE 1 and 2, NB**	**F.** Date	**7/12/2010**
C. Width and Depth	**22.0' 2.5"**	**G.** Gauge Set Number	**142**
D. Lot/Sublot		**H.** Tested By	**Jane Doe**

TEST SECTION

I.

Sta. **125+06**	Sta. **121+77**	Sta. **119+83**	Sta. **117+48**	Sta. **114+07**
126 + 50 to **124 + 00**	**121 + 50** to **119 + 00**	**116 + 50** to **114 + 00**		

J. Random Number Block: **1**

K. Beginning Station **"Z" 126+50**
L. Ending Station **"Z" 114+00**

(A x length = longitudinal , B x width = transverse)

M. A		**N.**		**O.**	**P.** B		**Q.**		**R.**
0.576	x	**250.0**	=	**144.0**	**0.730**	x	**22.0**	=	**16.1**
0.892	x	**250.0**	=	**223.0**	**0.948**	x	**22.0**	=	**20.9**
0.669	x	**250.0**	=	**167.3**	**0.726**	x	**22.0**	=	**16.0**
0.609	x	**250.0**	=	**152.3**	**0.482**	x	**22.0**	=	**10.6**
0.971	x	**250.0**	=	**242.8**	**0.824**	x	**22.0**	=	**18.1**

S. TARGET DENSITY Mg/m^3 (pcf) **147.6** **T.** From (RICE) test number **T-1-1**

U. TEST #		**1** -PM- **1**		**1**-PM-**2**		**1**-PM-**3**		**1**-PM-**4**		**1**-PM-**5**	
V. STATION nearest 10m (25 ft.)		**125+00**		**121+75**		**119+75**		**117+50**		**114+00**	
W. Distance from edge		**16**	* Joint	**21**	* Joint	**16**	* Joint	**11**	* Joint	**18**	* Joint
X. Left or Right		**Left**		**Left**		**Left**		**Left**		**Left**	
NUCLEAR	**Y.** 1	**141.0**	**133.9**	**140.7**	**134.0**	**141.3**	**137**	**138.1**	**136.4**	**140.7**	**134.7**
DENSITY	**Z.** 2	**140.7**	**134.3**	**140.6**	**134.3**	**140.7**	**139**	**138.3**	**136.4**	**140.6**	**135.7**
READINGS	**AA.** 3	**140.8**		**140.7**		**140.6**		**138.3**		**140.7**	
	BB. 4	**140.2**		**141.3**		**140.7**		**137.5**		**140.3**	
CC. Average Density		**140.7**	**134.1**	**140.8**	**134.2**	**140.8**	**138**	**138.1**	**136.4**	**140.6**	**135.2**
DD. Corrected Density		**139.3**	**132.8**	**139.4**	**132.9**	**139.4**	**137**	**136.7**	**135.0**	**139.2**	**133.8**
EE. % Relative Comp.		**94**	**90**	**94**	**9**	**94**	**93**	**93**	**91**	**94**	**91**

FF. Correction Factor **0.99**

GG.* Mean Test Section Density, Mg/m^3 (pc **138.8**
HH. * Mean Percent relative Compaction = **94**
* Not Applicable to Partial Test Sections or Joint Densities

LL. Remarks: **Test section ran to correlate the nuclear density gauge. Used test # 1, 2, 3, 4 and 5 to match the drilled cores for gauge correction factor. R.E. and contractor notified of results.**

II. Joint Test Specification	Min.	**90**		
JJ. Single Test Specification	Min.	**90**	Max.	**97**
KK. Mean Test Section Specification	Min	**92**	Max.	**96**

MM. (Accepted) Rejected
(Circle one of the above)

NN. Resident Engineer Signature *James Fret*

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

A. Material Type	**TYPE II PBS**	**E.** Contract Number	**3925**
B. Lift, Lane & Direction	**LIFT 1, LANE 1 and 2, NB**	**F.** Date	**7/12/2010**
C. Width and Depth	**22.0' 2.5"**	**G.** Gauge Set Number	**142**
D. Lot/Sublot		**H.** Tested By	**Jane Doe**

TEST SECTION

I.

Sta.	Sta.	Sta.	Sta.	Sta.	Sta.
126 + 50	**124 + 00**	**121 + 50**	**119 + 00**	**116 + 50**	**114 + 00**

J. Random Number Block: **1**

K. Beginning Station **"Z" 126+50**
L. Ending Station **"Z" 114+00**

(A x length = longitudinal , B x width = transverse)

M. A		**N.**		**O.**	**P.** B		**Q.**		**R.**
	x		=			x		=	
	x		=			x		=	
	x		=			x		=	
	x		=			x		=	
	x		=			x		=	

S. TARGET DENSITY Mg/m^3 (pcf) **147.6** **T.** From (RICE) test number **T-1-1**

U. TEST #	**1** -PM- **6**		**1**-PM-**7**		-PM-		-PM-		-PM-	
V. STATION nearest 10m (25 ft.)	**115 + 75**		**123 + 00**							
W. Distance from edge	**5**	* Joint	**3**	* Joint		* Joint		* Joint		* Joint
X. Left or Right	**Left**		**Left**							
NUCLEAR **Y.** 1	**135.2**		**134.2**							
DENSITY **Z.** 2	**135.5**		**134.4**							
READINGS **AA.** 3	**135.3**		**134.9**							
BB. 4	**136.3**		**134.3**							
CC. Average Density	**135.6**		**134.5**							
DD. Corrected Density	**137.0**		**135.8**							
EE. % Relative Comp.	**93**		**92**							

FF. Correction Factor **1.01**

GG.* Mean Test Section Density, Mg/m^3 (pc
HH. * Mean Percent Relative Compaction=

* Not Applicable to Partial Test Sections or Joint Densities

LL. Remarks: **Page 2 of 2, test section ran to correlate the nuclear density gauge. Used test # 1, 2, 3, 4, and 5 to match drilled cores for gauge correction factor. R.E. and contractor notified of results.**

II. Joint Test Specification	Min.	**90**		
JJ. Single Test Specification	Min.	**90**	Max.	**97**
KK. Mean Test Section Specification	Min	**92**	Max.	**96**

MM. (Accepted) Rejected
(Circle one of the above)

NN. Resident Engineer Signature *James Fret*

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

A. Material Type	**TYPE II PBS**	**E.** Contract Number	**3925**
B. Lift, Lane & Direction	**LIFT 1, Approach, N/A**	**F.** Date	**7/12/2010**
C. Width and Depth	**Varies 12.0' 2.5"**	**G.** Gauge Set Number	**142**
D. Lot/Sublot		**H.** Tested By	**Jane Doe**

TEST SECTION

I.

Sta. **113 + 75**	Sta.	Sta.	Sta.	Sta.
114 + 00 / **113 + 25**				

J. Random Number Block:

K. Beginning Station **"Z" 114 + 00**
L. Ending Station **"Z" 113 + 25**

(A x length = longitudinal , B x width = transverse)

M. A		**N.**		**O.**	**P.** B		**Q.**		**R.**
	x		=			x		=	
	x		=			x		=	
	x		=			x		=	
	x		=			x		=	
	x		=			x		=	

S. TARGET DENSITY Mg/m^3 (pcf) **147.6** **T.** From (RICE) test number **T-1-1**

U. TEST #	**2** -PM- **1**		-PM-		-PM-		-PM-		-PM-	
V. STATION nearest 10m (25 ft.)	**113 + 75**									
W. Distance from edge	**5**	* Joint		* Joint		* Joint		* Joint		* Joint
X. Left or Right	**Left**									
NUCLEAR **Y.** 1	**135.2**									
DENSITY **Z.** 2	**135.5**									
READINGS **AA.** 3	**135.3**									
BB. 4	**136.3**									
CC. Average Density	**135.6**									
DD. Corrected Density	**137.0**									
EE. % Relative Comp.	**93**									

FF. Correction Factor **1.01**

GG.* Mean Test Section Density, Mg/m^3 (pc

HH. * Mean Percent Relative Compaction=

* Not Applicable to Partial Test Sections or Joint Densities

LL. Remarks: **Small area under 1000yd^3 paving an approach at Topsy Lane**

II. Joint Test Specification	Min.			
JJ. Single Test Specification	Min.	**90**	Max.	**97**
KK. Mean Test Section Specification	Min		Max.	

MM. (Accepted) Rejected
(Circle one of the above)

NN. Resident Engineer Signature *James Fret*

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Material Type, found in the Contract Plans or Special Provisions (EX. Type II PBS)
B -	Lift, Lane & Direction, Lift of material that is being tested (EX. LIFT 1) Lane that is being paved and tested (EX. LANE 1 and 2) Direction of the paving operation (EX. NB - northbound)
C -	Width and Depth, Width of the plantmix that is currently being placed (EX. 22.0') Depth of the plantmix that is being placed (EX. 2.5")
D -	Used exclusively for **END RESULT** contracts
E -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
F -	Date the compactions were taken (EX. 7/12/2010)
G -	Gauge Set Number, number assigned to the gauge that is being used to test the material (EX. 142) **NOTE:** Consultants shall use the gauge serial number found on the back of the gauge
H -	Tested By, print first and last name of the tester or testers who completed the test (EX. Jane Doe)

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE **EXPLANATION OF NEEDED INFORMATION**

I - **TEST SECTION STATIONING**

Ending Station - Beginning Station = length of test section
(EX. "Z" 126+50 - "Z" 114+00 = 1250')

Length x Width / 9 = square yards for the test section
(EX. 1250' x 22.0' = 27500.0ft^2 / 9 = 3055.6 = 3056yds^2)

Total length (station to station) / 5 (total of subsections) = length of each subsection
(EX. 1250' / 5 = 250')

Beginning Station - the length of one section = parameters for the first test for the nuclear gauge, repeat this five times
(EX. "Z" 126+50 - 250' = "Z" 124+00
"Z" 124+00 - 250' = "Z" 121+50
"Z" 121+50 - 250' = "Z" 119+00
"Z" 119+00 - 250' = "Z" 116+50
"Z" 116+50 - 250' = "Z" 114+00)
NOTE: If you are paving ahead on line add the length of one section. If you are paving back on line subtract the length of one section

Beginning Station for each section - result from Column O = the station where the test should be taken to the nearest 25 ft. for English
(EX. "Z" 126+50 - 144 = "Z" 125+06 = "Z" 125+00
"Z" 124+00 - 223 = "Z" 121+77 = "Z" 121+75
"Z" 121+50 - 166 = "Z" 119+84 = "Z" 119+75
"Z" 119+00 - 152 = "Z" 117+48 = "Z" 117+50
"Z" 116+50 - 243 = "Z" 114+07 = "Z" 114+00)
NOTE: This station is where the actual test for each subsection will be ran

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE **EXPLANATION OF NEEDED INFORMATION**

J - Pick a Random Numbers Block from Test Method Nev. T335 (EX. 1) **NOTE:** The same random number block shall not be used more than once per shift

TABLE OF RANDOM NUMBERS

A	B	A	B	A	B	A	B	A	B
1		2		3		4		5	
.576	.730	.430	.754	.271	.870	.732	.721	.998	.239
.892	.948	.858	.025	.935	.114	.153	.508	.749	.291
.669	.726	.501	.402	.231	.305	.009	.420	.517	.858
.609	.482	.809	.140	.396	.025	.937	.310	.253	.761
.971	.824	.902	.470	.997	.392	.892	.957	.640	.463
6		7		8		9		10	
.053	.899	.554	.627	.427	.760	.470	.040	.904	.993
.810	.159	.225	.163	.549	.405	.285	.542	.231	.919
.081	.277	.035	.039	.860	.507	.081	.538	.986	.501
.982	.468	.334	.921	.690	.806	.879	.414	.106	.031
.095	.801	.576	.417	.251	.884	.522	.235	.398	.222
11		12		13		14		15	
.509	.025	.794	.850	.917	.887	.751	.608	.698	.683
.371	.059	.164	.838	.289	.169	.569	.977	.796	.996
.165	.996	.356	.375	.654	.939	.815	.592	.348	.743
.477	.535	.337	.155	.767	.187	.579	.787	.358	.595
.788	.101	.434	.638	.021	.894	.324	.871	.698	.539
16		17		18		19		20	
.566	.815	.622	.548	.947	.169	.317	.472	.864	.466
.901	.342	.873	.964	.942	.985	.123	.086	.335	.212
.470	.682	.412	.064	.150	.962	.925	.355	.909	.019
.068	.242	.667	.356	.195	.313	.396	.460	.740	.247
.874	.420	.127	.284	.448	.215	.833	.652	.601	.326
21		22		23		24		25	
.897	.877	.209	.862	.428	.117	.100	.259	.425	.284
.875	.969	.109	.843	.759	.239	.890	.317	.428	.802
.190	.696	.757	.283	.666	.491	.523	.665	.919	.146
.341	.688	.587	.908	.865	.333	.928	.404	.892	.696
.846	.355	.831	.218	.945	.364	.673	.305	.195	.887
26		27		28		29		30	
.882	.227	.552	.077	.454	.731	.716	.265	.058	.075
.464	.658	.629	.269	.069	.998	.917	.217	.220	.659
.123	.791	.503	.447	.659	.463	.994	.307	.631	.422
.116	.120	.721	.137	.263	.176	.798	.879	.432	.391
.836	.206	.914	.574	.870	.390	.104	.755	.082	.939
31		32		33		34		35	
.636	.195	.614	.486	.629	.663	.619	.007	.296	.456
.630	.673	.665	.666	.399	.592	.441	.649	.270	.612
.804	.112	.331	.606	.551	.928	.830	.841	.602	.183
.360	.193	.181	.399	.564	.772	.890	.062	.919	.875
.183	.651	.157	.150	.800	.875	.205	.446	.648	.685

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
K -	Beginning Station for this specific test section (EX. "Z" 126 + 50)
L -	Ending Station for this specific test section (EX. "Z" 114 + 00)
M -	Column **A** from the random numbers block from Test Method Nev. T335 (EX. 0.576 0.892 0.669 0.609 0.971)
N -	Length of one individual section figured in Letter I (EX. 250)
O -	Take Letter M (Random numbers from Column A, Test Method Nev. T335) x Letter N (length of one subsection) = Letter O (distance into that one subsection to the nearest 25 ft.) (EX. .576 x 250 = 144 .892 x 250 = 223 .669 x 250 = 166 .609 x 250 = 152 .971 x 250 = 243)
P -	Column **B** from the random numbers block from Test Method Nev. T335 (EX. 0.730 0.948 0.726 0.482 0.824)
Q -	Width of the lane being paved from Line C (EX. 22.0')
R -	Letter P (Random numbers from Column B, Test Method Nev. T335) x Letter Q (width of subsections) = Letter R (distance of one subsection rounded to the nearest 1 ft) (EX. 0.730 x 22 = 16.06 = 16 0.948 x 22 = 20.86 = 21 0.726 x 22 = 15.97 = 16 0.482 x 22 = 10.60 = 11 0.824 x 22 = 18.13 = 18)

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
S -	Target Density (pcf), Theoretical maximum specific gravity (RICE) performed from that day per Test Method Nev. T324, one in the A.M. and one in the P.M. (EX. 147.6) **NOTE:** Tester who is running the plantmix sample at the field lab will give you the RICE results. The RICE results from the previous days P.M. test can be used until the A.M. results are completed. One test section will have one RICE, DO NOT use two RICES on one test section.
T -	RICE test number that correlates to the test number for the ignition oven sample, per Test Method Nev. T761 (EX. T-1-1)
U -	Test number for this particular test section (EX. 1-PM-1, 1-PM-2, 1-PM-3, 1-PM-4, 1-PM-5, 1-PM-6 AND 1-PM-7) 7 tests are used only for the gauge correlation. The next test section would be numbered 2-PM-1 through 2-PM-5 **NOTE:** TEST NUMBERS RUN IN CHRONILOGICAL ORDER STARTING WITH 1-PM-1 THROUGH 1-PM-7 ANYTHING UNDER 1000 YD^2 SHOULD BE CONSIDERED A SMALL TEST SECTION. If it's a small test section each test needs its own test number, 1-PM-1, 2-PM-1 etc. and on its own sheet (If the contractor is moving to various locations throughout the day and it will equal a full test section, make it a full test section instead of a bunch of small sections)
V -	Station where the four test shots, at each location, are taken for the compactions, rounded to the nearest 25 ft. These stations were figured on Letter I (EX. "Z" 125+00, "Z" 121+75, "Z" 119+75, "Z" 117+50, "Z" 114+00)
W -	Distance from edge of the mat where the shots will be taken with the gauge. These numbers were figured in Letter R (EX. 16, 21, 16, 11, 18) **NOTE:** Do not take tests within 1 foot from the edge of the mat
X -	Left or Right, the side of the mat in which the distance is pulled from (EX. Left) **NOTE:** DON'T CHANGE SIDES THROUGHOUT THE DAY. PICK LEFT OR RIGHT AND STAY WITH IT SO YOU DON'T CONFUSE YOURSELF
Y -	Nuclear Density Reading, one minute test taken with the nuclear density gauge at "Z" 125+00, 16' left, gauge will read Dens: X.X (EX. 141.0) mark around the gauge with keil **NOTE:** If you are paving a joint, do not forget to take the shot as close to the joint as possible. Place the gauge parallel to the joint, be sure the gauge sits flat on the mat and does not rock.

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
Z -	Second one minute test taken with the nuclear density gauge rotated 90° at "Z" 125+00, 16' left, gauge will read Dens: X.X (EX. 140.7) mark around gauge with keil **NOTE:** If you are paving a joint, do not forget to take the shot as close to the joint as possible. Place close to the joint as possible, be sure the gauge sits flat on the mat and does not rock.
AA -	Third one minute test taken with the nuclear density gauge rotated another 90° at "Z" 125+00, 16' left, gauge will read Dens: X.X (EX. 140.8)
BB -	Fourth one minute test taken with the nuclear density gauge rotated another 90° at "Z" 125+00, 16' left, gauge will read Dens: X.X (EX. 140.2) **NOTE:** Repeat letters Y, Z, AA, BB four more times at the next four stations that are written in Letter V for a complete test section
CC -	Average Density, add lines (Y + Z + AA + BB) / 4 = average density of the four shots taken (EX. 141.0 + 140.7 + 140.8 + 140.2 = 562.7 / 4 = 140.7) **NOTE:** (Line Y + Line Z) / 2 = the average of the joint shots (EX. 133.9 + 134.3 = 268.2 / 2 = 134.1)
DD -	Corrected Density, Line CC (Average Density) x Line FF (Correction Factor) = Line DD (Corrected Density) (EX. 140.7 x .99 = 139.3)
EE -	% Relative Comp., Line DD (Corrected Density) / Line S (TARGET DENSITY) x 100 = Line EE (% Relative Comp.) (EX. (139.3 / 147.6) x 100 = 94.4% = 94%) **NOTE:** Round to the nearest whole percent **NOTE:** If this section fails, notify the contractor of the failing results, they may have the finish roller to re-roll this section. If section is re-rolled discard the failing results and start over from Letter Y
FF -	Correction Factor is established on the first day of paving using NDOT forms 040-017, 040-017A and 040-017B (EX. 0.99) **NOTE:** The correction factor will be used throughout the duration of the project unless the gauge is recorrelated
GG -	Mean Test Section Density, Add all five of Line DD (average corrected densities) / 5 = Line GG (Mean Test Section Density) (EX. 139.3 + 139.4 + 139.4 + 136.7 + 139.2 = 694.0 694.0 / 5 = 138.8) **NOTE:** The joint corrected densities are not used when calculating the Mean Test Section Density

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
HH -	Mean Percent Relative Compaction, Line GG (Mean Test Section Density) / Line S (TARGET DENSITY) x 100 = Line HH (Mean Percent Relative Compaction) round to the nearest whole percent (EX. 138.8 / 147.6 = 0.940 x 100 = 94.0% = 94%)
II -	Joint Test Specification, refer to the special Provisions or Standard Specifications for the joint test specification (EX. 90)
JJ -	Single Test Specification, refer to the Special Provisions or Standard Specifications for the single test specification (EX. 90 to 97)
KK -	Mean Test Section Specification, refer to the Special Provisions or Standard Specifications for the mean test section specifications (EX. 92 to 96)
LL -	Remarks, anything that needs to be documented in this test section (EX. Test section ran to correlate the nuclear density gauge. Used test # 1, 2, 3, 4 and 5 to match the drilled cores for gauge correction factor. R. E. and contractor notified of results)
MM -	Accepted Rejected, make sure you circle Accepted or Rejected for the test section **NOTE:** If an R.E. accepts a failing section on substantial compliance, they must write a note on the report and sign it
NN -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. James Fret)

NOTES:

1. Circle all failures in red and explain under remarks what transpired with failing test section (EX. Contractor ripped out, R.E. accepted on substantial compliance, etc.)

2. During the gauge correlation, two extra locations shall be tested within the test section. These two locations shall be labeled 1-PM-6 and 1-PM-7. These two extra test areas are randomly chosen and will be cored during gauge correlation. These two extra tests need to be submitted with the gauge correlation.

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE	EXPLANATION OF NEEDED INFORMATION

NOTES:

3. When figuring a test section that has a break in the stationing or an equation, figure the test section as follows: "Z" 126 + 50 to "Z" 124 + 00 break in stationing due to bridge "Z" 120 + 00 to "Z" 110 + 00
(EX. 12650 - 12400 = 250', 12000 - 11000 = 1000', 1000 + 250 = 1250' for this test section.)

4. Small sized area is 1000 yd^2 or less, it has its own test number 5-PM-1 and is on its own sheet. If there is over 1000 yd^2 it shall be made into a full test section. The only way multiple small sections will be accepted is if they are approaches.

5. There should not be any informational test sections for plantmix compactions unless the gauge is being correlated on another contract, or a road that is not on this specific contract. If this is the case then the test section numbering will be I-1-PM-1 through I-1-PM-7 and what transpired shall be documented under remarks.

6. There are no re-tests on plantmix compactions, refer to the Construction Manual under Section 5, Sampling and Testing.

7. Correlate the gauge for each surface that is being paved (EX. paving on top of base - correlate gauge, paving on coldmilling - correlate gauge, paving second lift of plantmix - correlate gauge etc.).

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Material Type as specified, found in the Contract Plans or Special Provisions (EX. TYPE II PBS)
B -	Lift, Lane & Direction, of material that is being tested (EX. LIFT 1) Lane that is being paved and tested (EX. Approach) Direction of the paving operation (EX. N/A)
C -	Width and Depth, Width of the plantmix that is currently being placed (EX. Varies 12') Depth of the plantmix that is being placed (EX. 2.5")
D -	Used exclusively for **END RESULT** contracts
E -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
F -	Date the compactions were taken (EX. 7/12/2010)
G -	Gauge Set Number, number assigned to the gauge that is being used to test the material (EX. 142) **NOTE:** Consultants shall use the gauge serial number found on the back of their gauge
H -	Tested By, print first and last name of the tester or testers who completed the test (EX. Jane Doe)
I -	TEST SECTION STATIONING, ending station minus beginning station equals length of test section (EX. 114+00 - 113+25 = 75')
J -	A Random Numbers Block is not required for a small area, pick a miscellaneous location within the small area
K -	Beginning Station for this specific small area (EX. "Z" 114+00)
L -	Ending Station for this specific small area (EX. "Z" 113+25)
M -	Random numbers are not required for small areas
N -	Length not required for small areas
O -	Random lengths are not required for small areas

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
P -	Random numbers are not required for small areas
Q -	Width not required for small areas
R -	Random widths not required for small areas
S -	TARGET DENSTIY (pcf), theoretical maximum specific gravity (RICE) performed from that day per Test Method Nev. T324, one in the A.M. and one in the P.M. (EX. 147.6) **NOTE:** The tester who is running the plantmix sample at the field lab will give you the RICE results. The RICE results from the previous days P.M. test can be used until the A.M. results are completed. One test section will have one RICE, DO NOT use two RICES on one test section
T -	RICE, test number that correlates to the test number for the ignition oven sample, per Test Method Nev. T761 (EX. T-1-1)
U -	Test number for this particular small area (EX. 2-PM-1) **NOTE:** Test numbers run in chronilogical order starting with 1-PM-1 through 1-PM-7 anything under 1000 yd^2 can be considered a small test section. If it's a small test section each test needs its own test number, 1-PM-1, 2-PM-1 etc. and on its own sheet and an explanation of why it's a small area (If the contractor is moving to various locations throughout the day and it will equal a full test section, make it a full test section instead of a bunch of small sections)
V -	Station where the four test shots are taken for the compaction (EX. 113 + 75)
W -	Distance from edge of the mat where the shots will be taken with the gauge that day (EX. 5) **NOTE:** Do not take tests within 1 foot from the edge of the mat
X -	Left or Right, the side of the mat in which the distance is pulled from (EX. Left) **NOTE:** Do Not change sides throughout the day. Pick left or right and stay with it so you don't confuse yourself
Y -	NUCLEAR DENSITY READINGS, one minute test taken with the nuclear density gauge at "Z" 113 + 75, 5' left, gauge will read Dens: X.X (EX. 135.2) mark around the gauge with keil **NOTE:** If you are paving a joint, do not forget to take the shot as close to the joint as possible place the gauge parallel to the joint. Be sure the gauge sits flat on the mat and does not rock

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
Z -	Second one minute test taken with the nuclear density gauge rotated 90° at "Z" 113+75, 5' left, gauge will read Dens: X.X (EX. 135.5) mark around the gauge with keil **NOTE:** If you are paving a joint, do not forget to take the shot as close to the joint as possible. Place the gauge parallel to the joint. Be sure the gauge sits flat on the mat and does not rock
AA -	Third one minute test taken with the nuclear density gauge rotated another 90° at "Z" 113+75, 5' left, gauge will read Dens: X.X (EX. 135.3)
BB -	Fourth one minute test taken with the nuclear density gauge rotated another 90° at "Z" 113+75, 5' left, gauge will read Dens: X.X (EX. 136.3)
CC -	Average Density, add lines Y + Z + AA + BB / 4 = average density of the four shots taken (EX. 135.2 + 135.5 + 135.3 + 136.3 = 542.3 / 4 = 135.6)
DD -	Corrected Density, Line CC (Average Density) x Line FF (Correction Factor) = Line DD (Corrected Density) (EX. 135.6 x 1.01 = 137.0)
EE -	% Relative Compaction, Line DD (Corrected Density) / Line S (TARGET DENSITY) x 100 = Line EE (% Relative Compaction) (EX. (137.0 / 147.6) x 100 = 92.8% = 93%) **NOTE:** Round to the nearest whole percent NOTE: If this section fails, notify the contractor of the failing results, they may have the finish roller to re-roll this section. If section is re-rolled discard the failing results and start over from Letter Y
FF -	Correction Factor is established on the first day of paving using NDOT forms 040-017, 040-017A and 040-017B (EX. 1.01) **NOTE:** The correction factor will be used throughout the duration of the project unless the gauge is recorrelated
GG -	Mean Test Section Density is not required for a small area
HH -	Mean Percent Relative Compaction is not required for a small area
II -	Joint Test Specification, refer to the Special Provisions or Standard Specifications for the joint test specification (EX. 90)
JJ -	Single Test Specification, refer to the Special Provisions or Standard Specifications for the single test specifications (EX. 90 to 97)
KK -	Mean Test Section Specifications are not required for a small area

040-017 Rev. 5/05

NUCLEAR THIN LAYER COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
LL -	Remarks, anything that needs to be documented for this small area Test Section (EX. Small area under 1000yd^3 paving an approach at Topsey Lane)
MM -	Accepted Rejected, make sure you circle Accepted or Rejected for this small area **NOTE:** If an R.E. accepts a failing ssmall area on substantial compliance, they must write a note on the report and initial it
NN -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. James Fret)

NOTES:

1. Circle all failures in red and explain under remarks what transpired with failing test section.

2. Small sized area is 1000 yd^2 or less, it has its own test number 5-PM-1 and is on its own sheet. If there is over 1000 yd^2 it shall be made into a full test section. The only way multiple small areas will be accepted is if they are approaches.

3. There are no re-tests on plantmix compactions, refer to the Construction Manual under Section 5, Sampling and Testing.

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR THIN LIFT CORRECTION FACTOR WORKSHEET

Date _____ Contract No. _____
Material Type _____ Nuclear Set No. _____
Calculated By _____ Mix Design No. _____

(Mg/m^3) will be carried to the 0.001 *(pcf) will be carried to the 0.1*

NUCLEAR DENSITIES				CORE DENSITIES			
#	=		Mg/m^3 or (pcf)	#	=		Mg/m^3 or (pcf)
#	=		Mg/m^3 or (pcf)	#	=		Mg/m^3 or (pcf)
#	=		Mg/m^3 or (pcf)	#	=		Mg/m^3 or (pcf)
#	=		Mg/m^3 or (pcf)	#	=		Mg/m^3 or (pcf)
#	=		Mg/m^3 or (pcf)	#	=		Mg/m^3 or (pcf)
Average	=		Mg/m^3 or (pcf)	Average	=		Mg/m^3 or (pcf)

(Nuclear Density Numbers and Core Density Numbers Must Correspond)

1% CHECK FOR A 1.00 CORRECTION

(If the difference between the two averages is not greater than +/-1% of the average core density, the nuclear gauge readings shall be used without correction) (i.e. correction factor = 1.00).

_____ X 0.01 = _____
Core Density Average +/-1% of Core Density Avg.

_____ - _____ = _____
Core Density Average Nuclear Density Average

If 1.00 Correction Factor use box [ ]

CORRECTION FACTOR

_____ / _____ = [ ]
Core Density Average Nuclear Density Average Correction factor

REMARKS: _____

Resident Engineer: _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR THIN LIFT CORRECTION FACTOR WORKSHEET

A. Date	**7/12/2010**	**D.** Contract No.	**3925**
B. Material Type	**Type II PBS**	**E.** Nuclear Set No.	**142**
C. Calculated By	**Jane Doe**	**F.** Mix Design No.	**BF07-137**

(Mg/m^3) will be carried to the 0.001 *(pcf) will be carried to the 0.1*

NUCLEAR DENSITIES

G.		H.	
# **1-PM-1**	=	**140.7**	Mg/m^3 or (pcf)
# **1-PM-2**	=	**140.8**	Mg/m^3 or (pcf)
# **1-PM-3**	=	**140.8**	Mg/m^3 or (pcf)
# **1-PM-4**	=	**138.1**	Mg/m^3 or (pcf)
# **1-PM-5**	=	**140.6**	Mg/m^3 or (pcf)
K. Average	=	**140.2**	Mg/m^3 or (pcf)

CORE DENSITIES

I.		J.	
# **1-PM-1**	=	**143.0**	Mg/m^3 or (pcf)
# **1-PM-2**	=	**138.7**	Mg/m^3 or (pcf)
# **1-PM-3**	=	**140.8**	Mg/m^3 or (pcf)
# **1-PM-4**	=	**134.2**	Mg/m^3 or (pcf)
# **1-PM-5**	=	**135.5**	Mg/m^3 or (pcf)
L. Average	=	**138.4**	Mg/m^3 or (pcf)

(Nuclear Density Numbers and Core Density Numbers Must Correspond)

1% CHECK FOR A 1.00 CORRECTION

(If the difference between the two averages is not greater than +/-1% of the average core density, the nuclear gauge readings shall be used without correction) (i.e. correction factor = 1.00).

M. **138.4**	X	**N.** 0.01	=	**O.** **1.4**	
Core Density Average				+/-1% of Core Density Avg.	
P. **138.4**	-	**Q.** **140.2**	=	**R.** **-1.8**	
Core Density Average		Nuclear Density Average			

S. If 1.00 Correction Factor use box **N/A**

CORRECTION FACTOR

T. **138.4**	/	**U.** **140.2**	=	**V.** **0.99**
Core Density Average		Nuclear Density Average		Correction factor

W. REMARKS: **The difference between the two was greater than +/- 1%, the correction factor is 0.99. Used 1-PM-1, 1-PM-2, 1-PM-3, 1-PM-4 AND 1-PM-5 for the gauge correlation Did not use cores 1-PM-6 and 1-PM-7 in the gauge correlation.**

X. Resident Engineer: James Fret

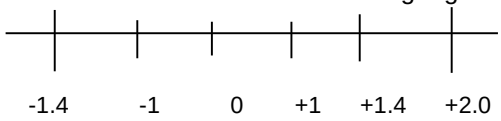
040-017A Rev. 11/08

NUCLEAR THIN LIFT CORRECTION FACTOR WORKSHEET

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Date the cores were taken (EX. 7/12/2010)
B -	Material Type, as specified, found in the Contract Plans or Special Provisions (EX. Type II PBS)
C -	Calculated By, print first and last name of the tester or testers who completed the test (EX. Jane Doe)
D -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
E -	Nuclear Set Number assigned to the gauge that is being used to test the plantmix (EX. 142) NOTE: Consultants shall use the gauge serial number found on the back of the gauge
F -	Mix Design No. approved by the Materials Division that the sample represents (EX. BF07-137) NOTE: Approved copies on file in the construction field office
G -	Nuclear Densities, actual test number for this particular test given to a specific nuclear gauge shot and core while paving, use the same test number used on NDOT form 040-017 to fill in Line G (Nuclear Densities) on form 040-017A (EX. 1-PM-1, 1-PM-2, 1-PM-3, 1-PM-4 and 1-PM-5) NOTE: If correlating multiple gauges, number all test reports 1-PM-1 through 1-PM-7 since all tests are taken at the same location. Only use 1-PM-6 and 1-PM-7 for a gauge correlation and only if one of the cores 1-PM-1 to 1-PM-5 breaks, is damaged or is a flyer.
H -	Nuclear Densities, Average density from the four one minute shots taken from NDOT form 040-017 Line CC (Average Densities) (EX. 140.7, 140.8, 140.8, 138.1, 140.6), make sure to use the average densities that are correlated to the cores being used NOTE: These numbers are NOT from Line DD (Corrected Density) on Form 040-017
I -	Actual test number for this particular test given to that specific nuclear gauge shot and core while paving, use the same test number used on NDOT form 040-017 and 040-017B (EX. 1-PM-1, 1-PM-2, 1-PM-3, 1-PM-4 AND 1-PM-5) NOTE: If correlating multiple gauges, number all cores 1-PM-1 through 1-PM-7 since the same set of cores will be used for all gauges being correlated

040-017A Rev. 11/08

NUCLEAR THIN LIFT CORRECTION FACTOR WORKSHEET

LINE	EXPLANATION OF NEEDED INFORMATION
J -	Core Densities, density of the actual core after completing Test Method Nev. T336 and reported on Form 040-017B. (EX. 143.0, 138.7, 140.8, 134.2, and 135.5) NOTE: Be sure that the core used is the one drilled from the same nuclear test shot
K -	Average, Line H (Nuclear Average Density numbers from NDOT form 040-017) / 5 = Line K (Nuclear Density Average) (EX. 140.7 + 140.8 + 140.8 + 138.1 + 140.6 = 701.0 / 5 = 140.2)
L -	Average, Line J (core densities from NDOT form 040-017B) / 5 = Line L (Core Density Average) (EX. 143.0 + 138.7 + 140.8 + 134.2 + 135.5 = 692.2 / 5 = 138.4)
M -	Core Density Average from Line L (EX. 138.4)
N -	Constant number, it is the decimal equivalent of 1% (EX. 0.01)
O -	Line M (Core Density Average) x Line N (constant 1%) = Line O (± 1% of Core Density Average) (EX. 138.4 x 0.01 = 1.4)
P -	Core Density Average from Line L (EX. 138.4)
Q -	Nuclear Density Average from Line K (EX. 140.2)
R -	(Core Density Average) - (Nuclear Density Average) = difference of the two NOTE: If the absolute value of Line R is more than Line O you will have a Correction Factor. Absolute value of -1.8 = 1.8 1.8 > 1.4 therefore this gauge has a Correction Factor EX. 
S -	If the absolute value of Line R is less than Line O then there will **NOT** be a correction factor for this gauge, use 1.0. (EX. 1.2 < 1.4 no correction factor)
T -	Core Density Average from Line L (EX. 138.4)
U -	Nuclear Density Average from Line K (EX. 140.2)

040-017A Rev. 11/08

NUCLEAR THIN LIFT CORRECTION FACTOR WORKSHEET

LINE	EXPLANATION OF NEEDED INFORMATION
V -	Line T (Core Density Average) / Line U (Nuclear Density Average) = Line V (Correction Factor (EX. 138.4 / 140.2 = 0.99) NOTE: This correction factor will be used for the Type II PBS for the duration of the job unless a new correction factor is established due to a new mix design, a change in material or the paving surface is different than that of the original surface that was cored
W -	Anything that needs to be documented (EX. The difference between the two was greater than ±1%, the correction factor is 0.99. Used 1-PM-1, 1-PM-2, 1-PM-3, 1-PM-4 AND 1-PM-5 for the gauge correlation. Did not use cores 1-PM-6 and 1-PM-7 in the gauge correlation)
X -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. James Fret)

NOTE:

1. Gauge shall be correlated for every different surface of material being paved on top of (EX. gauge correlated - milled surface, gauge correlated - base surface, gauge correlated - second lift of plantmix, gauge correlated - cold recycle surface etc.).

2. Use the first 5 cores for the gauge correlation unless one of the first five cores is damaged (EX. broken core, diesel spilled on the core etc.).

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

BULK SPECIFIC GRAVITY AND DENSITY OF COMPACTED BITUMINOUS MIXTURES

Contract No.: _____ Material Type: _____

Date: _____ Gauge Set Number: _____

Bulk Specific Gravity = $\frac{A}{B - C}$
to nearest 0.001

Core Density = Bulk Specific Gravity x 62.4 lbs/ft³
to nearest 0.001 Mg/m³ (0.1 lb/ft³)

Nuclear Density to nearest 0.001 Mg/m³ (0.1 lb/ft³)

"A" = Weight in grams in air (oven-dry condition)

Difference to nearest 0.001 Mg/m³ (0.1 lb/ft³)

"B" = Weight in grams (saturated surface-dry)

"C" = Weight in grams (immersed in water)

Core No.	Station	"A"	"B"	"C"	Bulk Specific Gravity	Core Density	Nuclear Density	Difference
				AVERAGE OF FIVE (5) CORES				

Remarks: _____

_____

_____

Tested By: _____ Resident Engineer: _____

NDOT
040-017B
Rev. 09/13

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

BULK SPECIFIC GRAVITY AND DENSITY OF COMPACTED BITUMINOUS MIXTURES

A. Contract No.: 3925

C. Material Type: PBS Type 2

B. Date: 8/27/2013

D. Gauge Set Number: 121

Bulk Specific Gravity = $\frac{A}{B - C}$ to nearest 0.001

Core Density = Bulk Specific Gravity x 62.4 lbs/ft³ to nearest 0.001 Mg/m³ (0.1 lb/ft³)

Nuclear Density to nearest 0.001 Mg/m³ (0.1 lb/ft³)

"A" = Weight in grams in air (oven-dry condition)

Difference to nearest 0.001 Mg/m³ (0.1 lb/ft³)

"B" = Weight in grams (saturated surface-dry)

"C" = Weight in grams (immersed in water)

E. Core No.	**F.** Station	**G.** "A"	**H.** "B"	**I.** "C"	**J.** Bulk Specific Gravity	**K.** Core Density	**L.** Nuclear Density	**M.** Difference
1-PM-1	"Z" 125 + 00	1243.1	1248.0	705.4	2.291	143.0	143.1	-0.1
~~1-PM-2~~	~~"Z" 121 + 75~~	~~1245.4~~	~~1249.2~~	~~709.1~~	~~2.306~~	~~143.9~~	~~146.1~~	~~2.2~~
1-PM-3	"Z" 119 + 75	780.5	783.7	437.9	2.257	140.8	139.7	1.1
1-PM-4	"Z" 117 + 50	972.0	987.1	535.3	2.151	134.2	134.7	-0.5
1-PM-5	"Z" 114 + 00	973.6	987.5	539.3	2.172	135.5	135.4	0.1
~~1-PM-6~~	~~"Z" 124 + 75~~	~~1100.5~~	~~1110.0~~	~~613.7~~	~~2.217~~	~~138.3~~	~~136.9~~	~~1.4~~
1-PM-7	"Z" 123 + 00	1235.1	1242.4	686.5	2.222	138.7	139.5	-0.8
				N. AVERAGE OF FIVE (5) CORES	2.219	138.4	138.5	

O. Remarks: Correlation was completed on a milled surface

P. Tested By: Leonard Cooper

Q. Resident Engineer: Howard Koothrappali

NDOT
040-017B
Rev. 09/13

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-017B Rev. 09/13

BULK SPECIFIC GRAVITY AND DENSITY OF COMPACTED BITUMINOUS MIXTURES

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (ex. 3925)
B -	Date the cores were taken (ex. 8/27/2013)
C -	Material Type, as specified, in the Contract Plans or Special Provisions (ex. PBS Type 2)
D -	Gauge Set Number, assigned to the gauge that is being used to test the plantmix (ex. 121) **NOTE:** Consultants shall use the gauge serial number found on the back of the gauge
E -	Core No., number assigned to each core taken from the roadway (ex. 1-PM-1 etc.)
F -	Station, corresponding sample location found on NDOT form 040-017 (station) (ex. "Z" 125 + 00)
G -	Column "A", weight of the oven-dry core in grams in air, per Test Method Nev. T336 (ex. 1243.1)
H -	Column "B", weight of the saturated surface-dry core in grams, per Test Method Nev. T336 (ex. 1248.0)
I -	Column "C", weight of the immersed in water core in grams, per Test Method Nev. T336 (ex. 705.4)
J -	Bulk Specific Gravity, Line G (Oven-Dry Condition) / Line H ((Saturated Surface-Dry) - Line I (Immersed in Water)) = Line J (Bulk Specific Gravity) (ex. 1243.1 / (1248.0 - 705.4) = 2.291)
K -	Core Density, Line J (Bulk Specific Gravity) x 62.4 lbs/ft^3 = Line K (Core Density) (ex. 2.291 x 62.4 = 143.0)
L -	Nuclear Density, Thin-Layer Average Density value obtained at the corresponding test location found on Form 040-017 (ex. 143.1)
M -	Difference, Line K (Core Density) - Line L (Nuclear Density) = M (Difference) (ex. 143.0 - 143.1 = -0.1)

BULK SPECIFIC GRAVITY AND DENSITY OF COMPACTED BITUMINOUS MIXTURES

LINE	EXPLANATION OF NEEDED INFORMATION
N -	Average, sum of the five cores divided by 5 to get the average of the Bulk Specific Gravity (ex. 2.291 + 2.257 + 2.151 + 2.172 + 2.222 = 11.093 / 5 = 2.219) Average, sum of the five cores divided by 5 to get the average of the Core Density (ex. 143.0 + 140.8 + 134.2 + 135.5 + 138.7 = 692.2 / 5 = 138.4) Average, sum of the five cores divided by 5 to get the average of the Nuclear Density (ex. 143.1 + 139.7 + 134.7 + 135.4 + 139.5 = 692.4 / 5 = 138.5) **Note:** From the initial seven cores taken, discard the two cores with the biggest difference between the Core Density and the Nuclear Density. Use five cores that are the most uniform to obtain the "Average of Five (5) Cores"
O -	Remarks, anything that needs to be documented (ex. Correlation was completed on a milled surface.)
P -	Tested By, printed first and last name of the tester or testers who completed the test (ex. Leonard Cooper)
Q -	Resident Engineer or Assistant Resident Engineer signature on that specific crew verifying the accuracy of the reported results. (ex. Howard Koothrappali)

NOTE:

1. Unless a core is broken or damaged, five cores shall be used to correlate the Thin-Layer density gauge. If a core is broken or damaged, one of the other cores will be used in its place.

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS
(Drilled Core Data)

Material Type _____ Contract Number _____

Lift, Lane & Description _____ Date _____

Width and Depth _____ Tested By _____

CONTROL DENSITY:

Theoretical Maximum Density	**AM**	**PM**
Test Number		
Station		
Target Density (Rice)		

TEST SECTION DENSITY:

Location of Test Section Station _____ to Station _____

Random Block Number _____

CORE DATA

Test Number					
Station					
Distance from Edge					
Left or Right					
Dry Weight					
Weight in Water					
SSD Weight					
Bulk Specific Gravity					
Core Density					
Percent Relative Compaction					

Mean Test Section Density = _____

Mean Percent Relative Compaction = _____

Test Section: Accepted _____ Rejected _____

Remarks: _____
_____
_____
_____
_____

Tested By: _____ Resident Engineer: _____

NDOT
040-018
Rev. 8/06

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

COMPACTION REPORT FOR PLANTMIX BITUMINOUS PAVEMENTS
(Drilled Core Data)

A. Material Type	**PBS Type II**	**B.** Contract Number	**3925**
C. Lift, Lane & Description	**Lift 1, Lane 1, NB**	**D.** Date	**7/12/2010**
E. Width and Depth	**20.0' 2"**	**F.** Tested By	**J. Moren**

CONTROL DENSITY:

Theoretical Maximum Density	**AM**	**PM**
G. Test Number	**T-1-1**	
H. Station	**"PW" 541 + 90**	
I. Target Density (Rice)	**149.8**	

TEST SECTION DENSITY:

J. Location of Test Section Station **"PW" 544 + 00** to Station **"PW" 537 + 40**

K. Random Block Number **3**

CORE DATA

L. Test Number	**1-PM-1**	**1-PM-2**	**1-PM-3**	**1-PM-4**	**1-PM-5**
M. Station	**"PW" 543+75**	**"PW"541+50**	**"PW"541+00**	**"PW"539+50**	**"PW"537+25**
N. Distance from Edge	**17'**	**2'**	**10'**	**19'**	**8'**
O. Left or Right	**LT.**	**LT.**	**LT.**	**LT.**	**LT.**
P. Dry Weight	**1247**	**1160**	**1143**	**1266**	**1088**
Q. Weight in Water	**691**	**648**	**636**	**713**	**602**
R. SSD Weight	**1261**	**1168**	**1155**	**1274**	**1099**
S. Bulk Specific Gravity	**2.188**	**2.231**	**2.202**	**2.257**	**2.189**
T. Core Density	**136.5**	**139.2**	**137.4**	**140.8**	**136.6**
U. Percent Relative Compaction	**(91)**	**93**	**92**	**94**	**(91)**

V. Mean Test Section Density = **138.1**

W. Mean Percent Relative Compaction = **92**

X. Test Section: Accepted **X** Rejected ____

Y. Remarks: **These cores were used to accept this test section per the Standard Specifications for Road and Bridge Construction. This test section met specification and the Resident Engineer was notified of results.**

Z. Tested By: **J. Moren**

AA. Resident Engineer: Samuel Peter

NDOT
040-018
Rev. 8/06

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-018 REV. 08/06

Compaction Report for Plantmix Bituminous Pavements (Drilled Core Data)

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Material type as specified, found in the Standard Specifications, Contract Plans or Special Provisions (EX. PBS Type II)
B -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
C -	Lift of plantmix that the cores represent, lane that the cores were taken from, direction of the lane the cores were taken from (EX. Lift 1, Lane 1, NB)
D -	Date the sample was taken (EX. 7/12/2010)
E -	Width of the lane the cores were taken from, depth of the lane the cores were taken from (EX. Width - 20.0' Depth - 2")
F -	Tested by, print first and last name of the tester or testers who completed the test (EX. J. Moren)
G -	Test number from the RICE that was taken at the cored location while initial paving was taking place (EX. T-1-1)
H-	Location of sample from the RICE test that was taken while initial paving was taking place prior to compaction per Test Method Nev. T200 (EX. "PW" 541 + 90)
I -	Target density (RICE) from the test taken while initial paving was taking place per Test Method Nev. T335 (EX. 149.8)
J -	Beginning station and ending station of the test section that was determined per Test Method Nev. T335 (EX. "PW" 544 + 00 to "PW" 537 + 40)
K -	Number of the random block that was used to determine the test section per Test Method Nev. T335 (EX. 3)
L -	Test number that was given to the test section that is being cored, found on NDOT form 040-017 (EX. 1-PM-1 through 1-PM-5)
M -	Station where the core was taken from on the roadway, found on NDOT form 040-017 (EX. "PW" 543 + 75)

040-018 REV. 08/06

Compaction Report for Plantmix Bituminous Pavements (Drilled Core Data)

LINE	EXPLANATION OF NEEDED INFORMATION
N -	Distance from the edge of oil the core was drilled, found on NDOT form 040-017 (EX. 17') **NOTE:** Rounded to the nearest foot and at least 1 foot away from the edge of oil
O -	Side of the mat that the distance from the edge is pulled (EX. LT.)
P -	Dry weight of the core determined per Test Method Nev. T336 (EX. 1247)
Q -	Weight of the core immersed in water per Test Method Nev. T336 (EX. 691)
R -	Saturated surface dry weight of the core per Test Method Nev. T336 (EX. 1261)
S -	Bulk Specific Gravity per Test Method Nev. T335 Line P (Dry weight) / (Line R (SSD Weight) - Line Q (Weight in Water) = Line S (Bulk Specific Gravity) (EX. 1247 / (1261 - 691) = 2.188)
T -	Core density determined per Test Method Nev. T336 Line S (Bulk Specific Gravity) x 62.4 (weight of water in $1lb/ft^3$)= Line T (Core Density) (EX. 2.188 x 62.4 = 136.5)
U -	(Line T (Core Density) / Line I (Target Density (Rice)) x 100 = Line U (Percent Relative Compaction) (EX. (136.5 / 149.8) x 100 = 91.1% = 91%)
V -	Add all 5 core tests from Line T (Core Density) / 5 = Mean Test Section Density (EX. 136.5 + 139.2 + 137.4 + 140.8 + 136.6 = 690.5 / 5 = 138.1)
W -	(Line V (Mean Test Section Density) / Line I (Target Density (RICE)) x 100 = Line W (Mean Percent Relative Compaction) (EX. 138.1 / 149.8 = 0.922 x 100 = 92.2% = 92%)
X -	If this test is within specification, it will be accepted. If this test is out of specification it will be rejected. Find the specification in the Standard Specifications.
Y -	Any remarks that need to be documented(EX. These cores were used to accept this test section per the Standard Specifications for Road and Bridge Construction. This test section met specification and the Resident Engineer was notified of the results)
Z -	Tested by, print first and last name of the tester or testers who completed the test (EX. J. Moren)
AA -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Samuel Ritz)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
STRIPING PAINT THICKNESS REPORT

Date of Test _____
Contract Number _____
Instrument Model _____
Serial Number _____

Location of Test:

Route _____
Direction of Travel _____
Position of Stripe _____

Name of Operator _____

Sampled By _____

Name of Tester _____

Average Thickness Reading: _____
Specification Requirement: _____
Stripe Color: _____

COMMENTS: _____
_____
_____
_____
_____
_____

_____
Resident Engineer

NDOT
040-021
Rev. 1/05

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
STRIPING PAINT THICKNESS REPORT

A. Date of Test **7/12/2010**
B. Contract Number **3925**
C. Instrument Model **Mitutoyo 0-1”**
D. Serial Number **No. 389-711-30**

Location of Test:

E. Route **US 50**
F. Direction of Travel **East Bound**
G. Position of Stripe **Double Yellow (Centerline)**

H. Name of Operator **Jammie Rittle**

I. Sampled By **Sonia Gittel**

J. Name of Tester **Sonia Gittel**

K. Average Thickness Reading: **635um**
L. Specification Requirement: **500um**
M. Stripe Color: **Yellow**

N. COMMENTS: **This test met specifications. Resident Engineer notified of results.**

O. *Jackson L Robertson*
Resident Engineer

NDOT
040-021
Rev. 1/05

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040–021 Rev. 1/05

STRIPING PAINT THICKNESS REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
A -	Date the sample was taken (EX. 7/12/2010)
B -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
C -	Model number of the micrometer that is used to measure the thickness of the plate (EX. Mitutoyo 0 – 1”)
D -	Serial number found on the micrometer that is used to measure the thickness of the plate (EX. No. 389-711-30)
E -	Route that is getting painted and will be tested (EX. US 50)
F -	Direction of travel (EX. East Bound)
G -	Type and location of the stripe in regards to the roadway (EX. Double Yellow, Centerline)
H -	First and last name of the operator, who is operating the striping truck (EX. Jammie Rittle)
I -	Print first and last name of the inspector who sampled the material as it was being placed on the roadway (EX. Sonia Gittel)
J -	Print first and last name of the tester or testers who completed the test per Test Method Nev. T510 (EX. Sonia Gittel)
K -	Average thickness of the striping determined by Test Method Nev. T510 (EX. 635um)
L -	Specification requirement found in the Standard Specifications or Special Provisions (EX. Minimum 500um)
M -	Color of the stripe that is being placed on the roadway (EX. Yellow)
N -	Any remarks that need to be documented (EX. This test met specifications. Resident Engineer notified of results.)
O -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Jackson L. Robertson)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

ABSORPTION AND SPECIFIC GRAVITY FOR COARSE AND FINE AGGREGATES

Contract No. _____ Mix Design No. _____

Date _____ Source _____

Material _____ Tested By _____

AR = Weight of Sample in air (as received condition) _____

A = Weight of sample in oven-dry condition _____

B = Weight of sample in saturated surface-dry condition _____

C = Weight of saturated sample immersed in water _____

Bulk Specific Gravity (oven-dry basis) $= \frac{A}{B - C}$ _____

Bulk Specific Gravity (saturated surface-dry basis) $= \frac{B}{B - C}$ _____

Apparent Specific Gravity $= \frac{A}{A - C}$ _____

Percent Absorption $= \frac{B - A}{A} \times 100$ _____

Remarks: _____

_____

_____

_____

_____

Resident Engineer: _____

NDOT
040-023
Rev. 11/08

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

ABSORPTION AND SPECIFIC GRAVITY FOR COARSE AND FINE AGGREGATES

A. Contract No. **3925** **B.** Mix Design No. **BF09-2**

C. Date **7/12/2010** **D.** Source **Hunewill Pit Stockpile**

E. Material **1" Rock** **F.** Tested By **Stewart Simon**

G. AR	=	Weight of Sample in air (as received condition)	**5106**
H. A	=	Weight of sample in oven-dry condition	**5053**
I. B	=	Weight of sample in saturated surface-dry condition	**5098**
J. C	=	Weight of saturated sample immersed in water	**3157**

K. Bulk Specific Gravity (oven-dry basis) $= \frac{A}{B - C}$ **2.60**

L. Bulk Specific Gravity (saturated surface-dry basis) $= \frac{B}{B - C}$ **2.63**

M. Apparent Specific Gravity $= \frac{A}{A - C}$ **2.67**

N. Percent Absorption $= \frac{B - A}{A} \times 100$ **0.9**

O. Remarks: **Plantmix aggregate for mix design and weekly check of materials. Test met specs.**

P. Resident Engineer: R. John

NDOT
040-023
Rev. 11/08

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040–023 Rev. 11/08

ABSORPTION AND SPECIFIC GRAVITY FOR COARSE AND FINE AGGREGATES

LINE	EXPLANATION OF NEEDED MATERIAL
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
B -	Mix design number assigned by the Materials Division for this specific material (EX. BF09-2) **NOTE**: If this is for mix design submittal, there will not be a mix design number assigned to this material at first
C -	Date the sample was taken (EX. 7/12/2010)
D -	Name of the location where the material was produced (EX. Hunewill Pit Stockpile)
E -	Material type as specified, found in the Standard Specifications, Contract Plans or Special Provisions (EX. 1" Rock)
F -	Print first and last name of the tester or testers who completed the test (EX. Stewart Simon)
G -	Weight of Sample in air (as received condition) after it has been split to the appropriate sample size determined per Test Method Nev. T200 (EX. 5106)
H -	Weight of sample in oven-dry condition determined per Test Method Nev. T111 (EX. 5053)
I -	Weight of sample in saturated surface-dry condition after sample soaked per Test Method Nev. T111 (EX. 5098)
J -	Weight of saturated sample immersed in water determined per Test Method Nev. T111 (EX. 3157)
K -	Line H (Weight of Sample in Oven-Dry Condition) / ((Line I (Weight of Sample in Saturated Surface-Dry Condition) - Line J (Weight of Saturated Sample Immersed in Water)) = Line K (Bulk Specific Gravity Oven-Dry Basis) (EX. 5053 / (5098 - 3157) = 2.60 to the nearest 0.01)
L -	Line I (Weight of Sample in Saturated Surface-Dry Condition) / ((Line I (Weight of Sample in Saturated Surface-Dry Condition) - Line J (Weight of Saturated Sample Immersed in Water)) = Line L (Bulk Specific Gravity Saturated Surface-Dry Basis) (EX. 5098 / (5098 - 3157) = 2.63 to the nearest 0.01)

ABSORPTION AND SPECIFIC GRAVITY FOR COARSE AND FINE AGGREGATES

LINE	EXPLANATION OF NEEDED MATERIAL
M -	Line H (Weight of Sample in Oven-Dry Condition) / ((Line H (Weight of Sample in Oven-Dry Condition) - Line J (Weight of Saturated Sample Immersed in Water)) = Line M (Apparent Specific Gravity) (EX. 5053 / (5053 - 3157) = 2.67 to the nearest 0.01)
N -	(Line I (Weight of Sample in Saturated Surface-Dry Condition) - Line H (Weight of Sample in Oven-Dry Condition)) / Line H (Weight of Sample in Oven-Dry Condition) x 100 = Line N (Percent Absorption) (EX. ((5098 - 5053) / 5053) x 100 = 0.9 to the nearest 0.1)
O -	Any remarks that need to be documented (EX. Plantmix aggregate for mix design and weekly check of materials. Test met specs.)
P -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. R. John)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

ABSORPTION AND SPECIFIC GRAVITY FOR FINE AGGREGATE

Contract No. _____ Mix Design No. _____

Date _____ Source _____

Material _____ Tested By _____

A = Weight of dry sample _____

B = Weight of pycnometer filled with water to calibration level _____

C = Weight of pycnometer with fine aggregate and water filled to calibration level _____

S = Weight of saturated surface-dry sample _____

Bulk Specific Gravity (Saturated Surface-Dry Basis) $= \frac{S}{B + S - C}$ _____

Percent Absorption $= \frac{S - A}{A} \times 100$ _____

Remarks: _____

Resident Engineer: _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

ABSORPTION AND SPECIFIC GRAVITY FOR FINE AGGREGATE

A. Contract No. **3925** **B.** Mix Design No. **STN370DAR**

C. Date **07/12/2010** **D.** Source **Hunewill Pit Stockpile**

E. Material **Concrete Sand** **F.** Tested By **James Bones**

G. A	=	Weight of dry sample	**476.1**
H. B	=	Weight of pycnometer filled with water to calibration level	**1468.1**
I. C	=	Weight of pycnometer with fine aggregate and water filled to calibration level	**1773.0**
J. S	=	Weight of saturated surface-dry sample	**500.0**

K. Bulk Specific Gravity (Saturated Surface-Dry Basis) $= \frac{S}{B + S - C}$ **2.56**

L. Percent Absorption $= \frac{S - A}{A} \times 100$ **5.0**

M. Remarks: **Test met specs.**

N. Resident Engineer: J. Read

040–023A Rev. 11/08

ABSORPTION AND SPECIFIC GRAVITY FOR FINE AGGREGATE

Line	Explanation of Needed Information
A -	Actual contract number for the material being tested, found on the Contract Plans, Special Provisions etc. (EX. 3925)
B -	Mix design number assigned by the Materials Division for this specific material (EX. STN370DAR) Note: If this is for mix design submittal there will not be a mix design number assigned to this material yet
C -	Actual date the sample was taken (EX. 7/12/2010)
D -	Name of the location where the material was produced (EX. Hunewill Pit Stockpile)
E -	Type of material as specified, found on the Contract Plans, Special Provisions etc. (EX. Concrete Sand)
F -	Printed name of the tester or testers who completed the test (EX. J. Bones)
G -	Weight of dry sample after drying per Test Method Nev. T112 (EX. 476.1)
H -	Weight of pycnometer filled with water to the calibration level per Test Method Nev. T493 (EX. 1468.1)
I -	Weight of pycnometer with fine aggregate and water filled to the calibration level per Test Method Nev. T493 (EX. 1773.0)
J -	Weight of saturated surface-dry sample per Test Method Nev. T493 (EX. 500.0)
K -	Line J (Weight of Saturated Surface-Dry Sample) / ((Line H (Weight of Pycnometer Filled with Water to Calibration Level) + Line J (Weight of Saturated Surface-Dry Sample) - Line I (Weight of Pycnometer with Fine Aggregate and Water Filled to Calibration Level)) = Line K (Bulk Specific Gravity Saturated Surface-Dry Basis) (EX. 500.0 / (1468.1 + 500.0 - 1773.0) = 2.56)
L -	(Line J (Weight of Saturated Surface-Dry Sample) - Line G (Weight of Dry Sample)) / Line G (Weight of Dry Sample) x 100 = Line L (Percent Absorption) (EX. ((500.0 - 476.1) / 476.1) x 100 = 5.0)

ABSORPTION AND SPECIFIC GRAVITY FOR FINE AGGREGATE

Line	Explanation of Needed Information
M -	Anything that should be documented. (EX. Test met specs.)
N -	Actual signature of the Resident Engineer or Assistant Engineer on that specific crew (EX. J. Read)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

ABSORPTION AND SPECIFIC GRAVITY FOR COARSE AGGREGATES

Contract No. _____ Mix Design No. _____

Date _____ Source _____

Material _____ Tested By _____

AR = Weight of Sample in air (as received condition) _____

A = Weight of sample in oven-dry condition _____

B = Weight of sample in saturated surface-dry condition _____

C = Weight of saturated sample immersed in water _____

Bulk Specific Gravity (oven-dry basis) $= \frac{A}{B - C}$ _____

Bulk Specific Gravity (saturated surface-dry basis) $= \frac{B}{B - C}$ _____

Apparent Specific Gravity $= \frac{A}{A - C}$ _____

Percent Absorption $= \frac{B - A}{A} \times 100$ _____

Remarks: _____

Resident Engineer: _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

ABSORPTION AND SPECIFIC GRAVITY FOR COARSE AGGREGATES

A. Contract No. **3925** **B.** Mix Design No. **STN370DAR**

C. Date **7/12/2010** **D.** Source **Hunewill Pit**

E. Material **#67 Rock** **F.** Tested By **James Bones**

G. AR	=	Weight of Sample in air (as received condition)	**4405**
H. A	=	Weight of sample in oven-dry condition	**4169**
I. B	=	Weight of sample in saturated surface-dry condition	**4403**
J. C	=	Weight of saturated sample immersed in water	**2451**

K. Bulk Specific Gravity (oven-dry basis) $= \frac{A}{B - C}$ **2.14**

L. Bulk Specific Gravity (saturated surface-dry basis) $= \frac{B}{B - C}$ **2.26**

M. Apparent Specific Gravity $= \frac{A}{A - C}$ **2.43**

N. Percent Absorption $= \frac{B - A}{A} \times 100$ **5.6**

O. Remarks: **Test met specs.**

P. Resident Engineer: J. Read

NDOT
040-023B
Rev. 02/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040–023B Rev. 2/09

ABSORPTION AND SPECIFIC GRAVITY FOR COARSE AGGREGATES

LINE	EXPLANATION OF NEEDED MATERIAL
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
B -	Mix design number assigned by the Materials Division for this specific material (EX. STN370DAR) **NOTE:** If this is for mix design submittal, there will not be a mix design number assigned to this material at first
C -	Date the sample was taken (EX. 7/12/2010)
D -	Name of the location where the material was produced (EX. Hunewill Pit Stockpile)
E -	Type of material as specified, found in the Contract Plans or Special Provisions (EX. #67 Rock)
F -	Print first and last name of the tester or testers who completed the test (EX. James Bones)
G -	Weight of sample in air (as received condition) after it has been split to the appropriate sample size per Test Method Nev. T200 (EX. 4405)
H -	Weight of sample in oven-dry condition per Test Method Nev. T111 (EX. 4169)
I -	Weight of sample in saturated surface-dry condition after sample soaked per Test Method Nev. T111 (EX. 4403)
J -	Weight of saturated sample immersed in water per Test Method Nev. T111 (EX. 2451)
K -	Line H (Weight of Sample in Oven-Dry Condition) / ((Line I (Weight of Sample in Saturated Surface-Dry Condition) - Line J (Weight of Saturated Sample Immersed in Water)) = Line K (Bulk Specific Gravity Oven-Dry Basis) (EX. 4169 / (4403 - 2451) = 2.14 rounded to the nearest 0.01)
L -	Line I (Weight of Sample in Saturated Surface-Dry Condition) / (Line I (Weight of Sample in Saturated Surface-Dry Condition) - Line J (Weight of Saturated Sample Immersed in Water)) = Line L (Bulk Specific Gravity Saturated Surface-Dry Basis) (EX. 4403 / (4403 - 2451) = 2.26 rounded to the nearest 0.01)

ABSORPTION AND SPECIFIC GRAVITY FOR COARSE AGGREGATES

LINE	EXPLANATION OF NEEDED MATERIAL
M -	Line H (Weight of Sample in Oven-Dry Condition) / (Line H (Weight of Sample in Oven-Dry Condition) - Line J (Weight of Saturated Sample Immersed in Water)) = Line M (Apparent Specific Gravity) (EX. 4169 / (4169 - 2451) = 2.43 rounded to the nearest 0.01)
N -	(Line I (Weight of Sample in Saturated Surface-Dry Condition) - Line H (Weight of Sample in Oven-Dry Condition)) / Line H (Weight of Sample in Oven-Dry Condition)) x 100 = Line N (Percent Absorption) (EX. ((4403 - 4169) / 4169) x 100 = 5.6 rounded to the nearest 0.1)
O -	Any remarks that need to be documented (EX. Test met spec.)
P -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. J. Read)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR GAUGE / SAND CONE CORRELATION FORM

Date _____ Contract No. _____
Material Type _____ Nuclear Set No. _____
Material Source _____

IN PLACE WET DENSITY CORRELATION *(With Offsets Disabled)*

	Test No.	Sand Cone Wet Density	Nuclear Gauge Wet Density	
1				
2				
3				Difference (±)
	Average:			

Sand Cone - Nuclear Gauge = Wet Density Offset

	Test No.	% Moisture Oven Dry	% Moisture Gauge
1			
2			
3			
	Average:		

Moisture Correction Factor Equation

$$\frac{\text{Avg. \% Moisture Oven Dry - Avg. \% Moisture Gauge}}{\text{100 + Avg. \% Moisture Gauge}} \times 1000 = \frac{\quad - \quad}{\textbf{100 +}} \textbf{ x 1000 =}$$ Moisture Offset (MCF)

HARVARD MINIATURE COMPACTION TEST RESULTS

1	Test No.	
	H.M.C.T, Dry = d Mg/m^3 (pcf)	
	Total Sample, Approx. Opt. Moisture	
	Appar. Spec. Grav. + 4.75 mm (+ No. 4)	
	Dec. Equiv. Of % + 4.75 mm (+ No. 4)	
	Calculated Max. Density Mg/m^3 (pcf)	

CHECK TESTS *(With Offsets Enabled)*

	Test No.	Sand Cone Wet Density	Nuclear Gauge Wet Density	Difference (±)
4				
5				

Maximum Deviation:
(± 0.032 Mg/m^3 or ± 2.0 pcf Allowable) _____
Remarks: _____

Tested By: _____ Resident Engineer: _____

NDOT
040-026
Rev. 03/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR GAUGE / SAND CONE CORRELATION FORM

A. Date **7/12/2010**
B. Material Type **Type I Class B Base/Gran. Back.**
C. Material Source **Sloan Pit, Bardon Materials**

D. Contract No. **3925**
E. Nuclear Set No. **43**

IN PLACE WET DENSITY CORRELATION ***(With Offsets Disabled)***

	F. Test No.	**G.** Sand Cone Wet Density	**H.** Nuclear Gauge Wet Density	
1	**I-1-1B-95**	**120.4**	**119.1**	
2	**I-2-1B-95**	**126.5**	**122.0**	
3	**I-3-1B-95**	**117.5**	**115.8**	**J.** Difference (±)
	I. Average:	**121.5**	**119.0**	**+ 2.5**

Sand Cone - Nuclear Gauge = Wet Density Offset

	K. Test No.	**L.** % Moisture Oven Dry	**M.** % Moisture Gauge
1	**I-1-1B-95**	**11.2**	**8.8**
2	**I-2-1B-95**	**11.0**	**11.8**
3	**I-3-1B-95**	**6.0**	**5.7**
	N. Average:	**9.4**	**8.8**

Moisture Correction Factor Equation

$$\frac{\text{Avg. \% Moisture Oven Dry - Avg. \% Moisture Gauge}}{\text{100 + Avg. \% Moisture Gauge}} \times 1000 =$$

$$\frac{\textbf{O. } 9.4 - \textbf{P. } 8.8}{100 + \textbf{Q. } 8.8} \times 1000 = \textbf{R. } +5.51 \text{ Moisture Offset (MCF)}$$

HARVARD MINIATURE COMPACTION TEST RESULTS

1	**S.** Test No.	**I-1-1B-95**
	T. H.M.C.T, Dry = d Mg/m^3 (pcf)	**111.2**
	U. Total Sample, Approx. Opt. Moisture	**14.4**
	V. Appar. Spec. Grav. + 4.75 mm (+ No. 4)	**2.24**
	W. Dec. Equiv. Of % + 4.75 mm (+ No. 4)	**0.016**
	X. Calculated Max. Density Mg/m^3 (pcf)	**114.7**

CHECK TESTS ***(With Offsets Enabled)***

	Y. Test No.	**Z.** Sand Cone Wet Density	**AA.** Nuclear Gauge Wet Density	**BB.** Difference (±)
4	**I-4-1B-95**	**117.2**	**117.7**	**- 0.5**
5	**I-5-1B-95**	**118.0**	**119.0**	**- 1.0**

CC. Maximum Deviation:
(± 0.032 Mg/m^3 or ± 2.0 pcf Allowable) **- 1.0**

DD. Remarks: **Gauge met correlation specs for Type I Class B Base and Granular Backfill. Resident Engineer and Contractor notified of results.**

EE. Tested By: **Sierra Dinn**

FF. Resident Engineer: *Bob Black*

NDOT
040-026
Rev. 03/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-026 Rev. 3/09

NUCLEAR GAUGE / SAND CONE CORRELATION FORM

LINE	EXPLANATION OF NEEDED MATERIAL
A -	Date the sample was taken (EX. 7/12/2010)
B -	Material as specified, found in the Standard Specifications, Contract Plans or Special Provisions (EX. Type I Class B Base/Gran. Back.) **NOTE:** Multiple material types can use the same correlation as long as it is written on NDOT form 040-026
C -	Name of the location where the material was produced (EX. Sloan Pit, Bardon Materials)
D -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
E -	Set number assigned to the moisture density gauge that is used for testing the material (EX. 43) **NOTE:** If there is not a set number, use the serial number on the back of the gauge
F -	Acceptance test number for this particular test (EX. I-1-1B-95 I = Informational pad; 1 = first test of the day; 1B = coding found in the Construction Manual; 95 = minimum required percent compaction)
G -	Sand cone wet density obtained from NDOT form 040-004 (EX. 120.4)
H -	Nuclear gauge wet density obtained from NDOT form 040-007 (EX. 119.1)
I -	Add up all three Line G's (Sand Cone Wet Densities) / 3 = Line I (Average) (EX. 120.4 + 126.5 + 117.5 = 364.4 / 3 = 121.5 rounded to the nearest 0.1) Add up all three Line H's (Nuclear Gauge Wet Density) / 3 = Line I (Average) (EX. 119.1 + 122.0 + 115.8 = 356.9 / 3 = 119.0 rounded to the nearest 0.1)
J -	Line I (Sand Cone Wet Density Average) - Line I (Nuclear Gauge Wet Density Average) = Line J (Difference or Wet Density Offset) (EX. 121.5 - 119.0 = + 2.5) **NOTE:** Pay attention to the algebraic sign (+ or -)
K -	Acceptance test number for this particular test (EX. I-1-1B-95 I = Informational pad; 1 = first test of the day; 1B = coding found in the Construction Manual; 95 = minimum required percent compaction)
L -	% moisture oven dry obtained from NDOT form 040-004 (EX. 11.2)
M -	% moisture gauge obtained from NDOT form 040-007 (EX. 8.8)

040-026 Rev. 3/09

NUCLEAR GAUGE / SAND CONE CORRELATION FORM

LINE	EXPLANATION OF NEEDED MATERIAL
N -	Add up all three Line L's (% Moisture Oven Dry) / 3 = Line N (Average) (EX. 11.2 + 11.0 + 6.0 = 28.2 / 3 = 9.4 rounded to the nearest 0.1) Add up all three Line M's (% Moisture Gauge) / 3 = Line N (Average) (EX. 8.8 + 11.8 + 5.7 = 26.3 / 3 = 8.8 rounded to the nearest 0.1)
O -	Line N (Average % Moisture Oven Dry) (EX. 9.4)
P -	Line N (Average % Moisture Gauge) (EX. 8.8)
Q -	Line N (Average % Moisture Gauge) (EX. 8.8)
R -	((Line O (Average % Moisture Oven Dry) - Line P (Average % Moisture Gauge)) / (100 + Line Q (Average % Moisture Gauge)) x 1000 = Line R (Moisture Offset) (EX. ((9.4 - 8.8) / (100 + 8.8)) x 1000 = + 5.51) **NOTE:** Pay attention to the algebraic sign (+ or -)
S -	Test number from NDOT form 040-004 that the full rathole, Harvard Miniature and pycnometer were ran on that will be used for the next 20 compaction tests (EX. I-1-1B-95)
T -	H.M.C.T., Dry, Harvard Miniature Compaction Test Dry, from NDOT form 040-004 that will be used on the next 10 compaction tests (EX. 111.2)
U -	Total Sample, Approx. Opt. Moisture from NDOT form 040-004 that will be used on the next 10 compaction tests (EX. 14.4)
V -	Apparent Specific Gravity + 4.75 mm (+ No. 4) from NDOT form 040-004 that will be used on the next 10 compaction tests (EX. 2.24)
W -	Decimal Equivalent of % + 4.75 mm (+ No. 4) from NDOT form 040-004 that will be used on the next 10 compaction tests (EX. 0.016)
X -	Calculated Maximum Density from NDOT form 040-004 that will be used on the next 10 compaction tests (EX. 114.7)
Y -	Acceptance test number for this particular test (EX. I-1-1B-95 I = Informational pad; 1 = first test of the day; 1B = coding found in the Construction Manual; 95 = minimum required percent compaction)

040-026 Rev. 3/09

NUCLEAR GAUGE / SAND CONE CORRELATION FORM

LINE	EXPLANATION OF NEEDED MATERIAL
Z -	Sand Cone Wet Density obtained from NDOT form 040-004 during the two check tests with the offsets enabled (EX. 117.2)
AA -	Nuclear Gauge Wet Density obtained from NDOT form 040-007 during the two check tests with the offsets enabled (EX. 117.7)
BB -	Line Z (Sand Cone Wet Density) - Line AA (Nuclear Gauge Wet Density) = Line BB (Difference) (EX. 117.2 - 117.7 = - 0.5) NOTE: Pay attention to the algebraic sign (+ or -)
CC -	Maximum Deviation is the largest difference between the sand cone and the nuke shot at the same location obtained during the two check tests for the gauge correlation (EX. -1.0)
DD -	Any remarks that need to be documented (EX. Gauge met correlation specs for Type I Class B Base and Granular Backfill. Resident Engineer and Contractor notified of results)
EE -	Tested by, print first and last name of the tester or testers who completed the test (EX. Sierra Dinn)
FF -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Bob Black)

NOTES:

1. Gauge correlation can be run on acceptance tests or on an informational pad

2. Gauge rod depth and the rathole depth need to be the same depth for the gauge correlation, then whatever rod depth is needed after that can be used

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR GAUGE / SAND CONE CORRELATION FORM

Date _____ Contract No. _____
Material Type _____ Nuclear Set No. _____
Material Source _____

IN-PLACE WET DENSITY CORRELATION ***(with Offsets Disabled)***

	Test No.	Sand Cone Wet Density	Nuclear Gauge Wet Density	
1				
2				
3				Difference (±)
	Average:			

Sand Cone - Nuclear Gauge = Wet Density Offset

	Test No.	% Moisture Oven Dry	% Moisture Gauge
1			
2			
3			
	Average:		

Moisture Correction Factor Equation

$$\frac{\text{Avg. \% Moisture Oven Dry - Avg. \% Moisture Gauge}}{\text{100 + Avg. \% Moisture Gauge}} \times 1000 =$$

$$\frac{\quad\quad}{\textbf{100 +}} \textbf{ - } \textbf{x 1000 =} \quad \underline{\quad\quad}$$

Moisture Offset (MCF)

MODIFIED PROCTOR COMPACTION TEST RESULTS

1	Test No.	
	Maximum Dry Density = (d) Mg/m³ (lb/ft³)	
	Optimum Moisture %	

(if applicable)

Corr. Max. Dry Density = (D) Mg/m³ (lb/ft³)	
Corr. Optimum Moisture %	

CHECK TESTS ***(with Offsets Enabled)***

	Test No.	Sand Cone Wet Density	Nuclear Gauge Wet Density	Difference (±)
4				
5				

Maximum Deviation:
(± 0.032 Mg/m^3 or ± 2.0 lb/ft³ Allowable) _____

Remarks: _____

Tested By: _____ Resident Engineer: _____

NDOT
040-026
Rev. 07/14

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

NUCLEAR GAUGE / SAND CONE CORRELATION FORM

A. Date: **7/12/2010** | **D.** Contract No.: **3925**
B. Material Type: **Type 1 Class B Base / Gran. Bkfl.** | **E.** Nuclear Set No.: **43**
C. Material Source: **Slona Pit, Bardon Materials**

IN-PLACE WET DENSITY CORRELATION *(with Offsets Disabled)*

	F. Test No.	G. Sand Cone Wet Density	H. Nuclear Gauge Wet Density	J. Difference (±)
1	I-1-1B-95	120.4	119.1	
2	I-2-1B-95	126.5	122.0	
3	I-3-1B-95	117.5	115.8	
	I. Average:	121.5	119.0	+ 2.5

Sand Cone - Nuclear Gauge = Wet Density Offset

	K. Test No.	L. % Moisture Oven Dry	M. % Moisture Gauge
1	I-1-1B-95	11.2	8.8
2	I-2-1B-95	11.0	11.8
3	I-3-1B-95	6.0	5.7
	N. Average:	9.4	8.8

Moisture Correction Factor Equation

$$\frac{\text{Avg. \% Moisture Oven Dry - Avg. \% Moisture Gauge}}{\text{100 + Avg. \% Moisture Gauge}} \times 1000 =$$

O. **P.** **R.**

$$\frac{9.4 - 8.8}{100 + 8.8} \times 1000 = +5.51$$

+ 5.51 Moisture Offset (MCF)

Q.

MODIFIED PROCTOR COMPACTION TEST RESULTS

S.	1	Test No.	I-1-1B-95
T.		Maximum Dry Density = (d) Mg/m³ (lb/ft³)	111.2
U.		Optimum Moisture %	14.4

(if applicable)

V.		Corr. Max. Dry Density = (D) Mg/m³ (lb/ft³)	114.7
W.		Corr. Optimum Moisture %	12.9

CHECK TESTS *(with Offsets Enabled)*

	X. Test No.	Y. Sand Cone Wet Density	Z. Nuclear Gauge Wet Density	AA. Difference (±)
4	I-4-1B-95	117.2	117.7	- 0.5
5	I-5-1B-95	118.0	119.0	- 1.0

Maximum Deviation:
(± 0.032 Mg/m^3 or ± 2.0 lb/ft³ Allowable) **BB.** - 1.0

CC. Remarks: **Gauge met correlation tolerances for Type 1 Class B and Granular Backfill. RE and Contractor notified of results**

DD. Tested By: **Leonard Cooper** **EE.** Resident Engineer: **Howard Koothrappali**

NDOT
040-026
Rev. 07/14

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-026 Rev. 07/14

NUCLEAR GAUGE / SAND CONE CORRELATION FORM

LINE	EXPLANATION OF NEEDED MATERIAL
A -	Date the sample was taken (ex. 7/12/2010)
B -	Material Type, as specified in the Contract Plans or Special Provisions (ex. Type 1 Class B Base / Gran. Bkfl.) **NOTE:** Multiple material types can use the same correlation as long as it's been indicated on NDOT form 040-026
C -	Material Source, where the material was produced (ex. Sloan Pit, Bardon Materials)
D -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (ex. 3925)
E -	Nuclear Set No., assigned to the moisture density gauge that is used for testing the material (ex. 43) **NOTE:** Consultants shall use the serial number found on the back of the gauge
F -	Test No., I indicates informational test number(s) for this particular test. 1 is the number of tests performed on that material, 1B represents the material being tested (refer to the Construction Manual for coding) and 95 is the minimum percent compaction required (Standard Specifications or Special Provisions) (ex. I-1-1B-95)
G -	Sand Cone Wet Density, determined per Test Method Nev. T102 from NDOT form 040-069 (ex. 120.4)
H -	Nuclear Gauge Wet Density, determined per Test Method Nev. T103 from NDOT form 040-007 (ex. 119.1)
I -	Average, the sum of all three Line G's (Sand Cone Wet Density) / 3 = Line I (Average) (ex. 120.4 + 126.5 + 117.5 = 364.4 / 3 = 121.5 rounded to the nearest 0.1) Average, the sum of all three Line H's (Nuclear Gauge Wet Density) / 3 = Line I (Average) (ex. 119.1 + 122.0 + 115.8 = 356.9 / 3 = 119.0 rounded to the nearest 0.1)
J -	Difference (±), Line I (Sand Cone Wet Density Average) - Line I (Nuclear Gauge Wet Density Average) = Line J (ex. 121.5 - 119.0 = + 2.5) **NOTE:** Pay attention to the algebraic sign (+ or -)
K -	Test No., I indicates informational test number(s) for this particular test. 1 is the number of tests performed on that material, 1B represents the material being tested (refer to the Construction Manual for coding) and 95 is the minimum percent compaction required (Standard Specifications or Special Provisions) (ex. I-1-1B-95)

040-026 Rev. 07/14

NUCLEAR GAUGE / SAND CONE CORRELATION FORM

LINE	EXPLANATION OF NEEDED MATERIAL
L -	% Moisture Oven Dry, obtained from NDOT form 040-004 (ex. 11.2)
M -	% Moisture Gauge, obtained from NDOT form 040-007 (ex. 8.8)
N -	Average, the sum of all three Line L's (% Moisture Oven Dry) / 3 = Line N (Average) (ex. 11.2 + 11.0 + 6.0 = 28.2 / 3 = 9.4 rounded to the nearest 0.1) Average, the sum of all three Line M's (% Moisture Gauge) / 3 = Line N (Average) (ex. 8.8 + 11.8 + 5.7 = 26.3 / 3 = 8.8 rounded to the nearest 0.1)
O -	Average % Moisture Oven Dry, Line N (ex. 9.4)
P -	Average % Moisture Gauge, Line N (ex. 8.8)
Q -	Average % Moisture Gauge, Line N (ex. 8.8)
R -	Moisture Offset (MCF), ((Line O (Average % Moisture Oven Dry) - Line P (Average % Moisture Gauge)) / (100 + Line Q (Average % Moisture Gauge)) x 1000 = Line R (ex. ((9.4 - 8.8) / (100 + 8.8)) x 1000 = + 5.51) **NOTE:** Pay attention to the algebraic sign (+ or -)
S -	Test No., I indicates informational test number(s) for this particular test. 1 is the number of tests performed on that material, 1B represents the material being tested (refer to the Construction Manual for coding) and 95 is the minimum percent compaction required (Standard Specifications or Special Provisions) (ex. I-1-1B-95)
T -	Maximum Dry Density = (d) Mg/m^3 (lb/ft^3), the highest dry density as established per Test Method Nev. T108 from NDOT form 040-069 (ex. 111.2)
U -	Optimum Moisture %, as established per Test Method Nev. T108 from NDOT form 040-069 (ex. 14.4)
V -	Corr. Max. Dry Density = (D) Mg/m^3 (lb/ft^3), as established per test Method Nev. T108 from NDOT form 040-069 (ex. 114.7)
W -	Corr. Optimum Moisture %, as established per Test Method Nev. T108 from NDOT form 040-069 (ex. 12.9)
X -	Test No., I indicates informational test number(s) for this particular test. 4 is the number of tests performed on that material, 1B represents the material being tested (refer to the Construction Manual for coding) and 95 is the minimum percent compaction required (Standard Specifications or Special Provisions) (ex. I-4-1B-95)

040-026 Rev. 07/14

NUCLEAR GAUGE / SAND CONE CORRELATION FORM

LINE	EXPLANATION OF NEEDED MATERIAL
Y -	Sand Cone Wet Density, determined per Test Method Nev. T102 from NDOT form 040-069 (ex. 117.2)
Z -	Nuclear Gauge Wet Density, determined per Test Method Nev. T103 from NDOT form 040-007 (ex. 117.7)
AA -	Difference (±), Line Y (Sand Cone Wet Density) - Line Z (Nuclear Gauge Wet Density) = Line AA (Difference ±) (ex. 117.2 - 117.7 = - 0.5) **NOTE:** Pay attention to the algebraic sign (+ or -)
BB -	Maximum Deviation, is the largest difference between the sand cones and gauge shots obtained at the same locations. If the number is within ± 0.032 Mg/m3 (± 2.0 pcf), a successful moisture density gauge correlation has been performed. If tolerances exceed re-correlation shall be required (ex. - 1.0 pcf)
CC -	Remarks, anything that needs to be documented (ex. Gauge met correlation tolerances for Type 1 Class B Base and Granular Backfill. RE and Contractor notified of results)
DD -	Tested By, printed first and last name of the tester or testers who completed the test (ex. Leonard Cooper)
EE -	Resident Engineer, or Assistant Resident Engineer signature on that specific crew verifying the accuracy of the reported results. (ex. Howard Koothrappali)

NOTES:

1. Gauge correlation can be performed on acceptance tests or on informational pads

2. Gauge rod depth and the in-place sand cone depth shall be the same depth for the gauge correlation. After a successful correlation, a desired rod depth of choice may be used.

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

THEORETICAL MAXIMUM SPECIFIC GRAVITY OF BITUMINOUS PAVING MIXTURES (FIELD METHOD)

Material Type: _____ Date: _____

Tested By: _____ Contract Number: _____

Sampled By: _____ Test Number (same as burn-off): _____

Sampled From Station: _____ Time of Day: _____

Lot / Sublot: _____

FIELD RICE RESULTS

"A" = Mass of sample in air _____

"B" = Mass of pycnometer and water _____

"C" = Mass of evacuated sample, pycnometer and water _____

APPARENT SPECIFIC GRAVITY

A / [(A + B) - C] = _____

DENSITY

S.G. x 1 Mg/m^3 = _____ Mg/m^3

S.G. x 62.4 lbs/ft^3 = _____ lbs/ft^3

Resident Engineer: _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

THEORETICAL MAXIMUM SPECIFIC GRAVITY OF BITUMINOUS PAVING MIXTURES (FIELD METHOD)

A. Material Type: **PBS Type II**

B. Date: **7/12/2010**

C. Tested By: **Jacob Willis**

D. Contract Number: **3925**

E. Sampled By: **Jacob Willis**

F. Test Number (same as burn-off): **T-1-1**

G. Sampled From Station: **"X" 79 + 80 Rt.**

H. Time of Day: **7:08 A.M.**

I. Lot / Sublot: **N/A**

FIELD RICE RESULTS

J. "A" = Mass of sample in air **1231.1**

K. "B" = Mass of pycnometer and water **2575.2**

L. "C" = Mass of evacuated sample, pycnometer and water **3305.2**

APPARENT SPECIFIC GRAVITY

M. A / [(A + B) - C] = **2.457**

DENSITY

N. S.G. x 1 Mg/m^3 = **2.457** Mg/m^3

O. S.G. x 62.4 lbs/ft^3 = **153.3** lbs/ft^3

P. Resident Engineer: *Jeffry Rodgers*

040-030 Rev. 8/10

THEORETICAL MAXIMUM DENSITY WORKSHEET

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Material type as specified, found in the Standard Specifications, Contract Plans or Special Provisions (EX. PBS Type II)
B -	Date the sample was taken (EX. 7/12/2010)
C -	Print first and last name of tester or testers who completed the test (EX. Jacob Willis)
D -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
E -	Print first and last name of tester or testers who sampled the material to be tested (EX. Jacob Willis)
F -	Test number of the RICE that correlates to the test number for the ignition oven sample per Test Method Nev. T761 (EX. T-1-1)
G -	Approximate sample location, found in the Contract Plans or jobsite survey stakes (EX. "X" 79 + 80 Rt.)
H-	Time of day the sample was taken (EX. 7:08 a.m.) **NOTE:** One for each half day of paving (one in a.m. and one in p.m.)
I -	Only applies to End Result projects
J -	Mass of sample in the air determined per Test Method Nev. T324 (EX. 1231.1)
K -	Mass of pycnometer, with lid, and water with a meniscus at the top determined per Test Method Nev. T324 (EX. 2575.2)
L -	Total mass of evacuated sample, pycnometer with the lid, water with the meniscus and the material determined per Test Method Nev. T324 (EX. 3305.2)
M -	Line J (Mass of Sample in Air) / [(Line J (Mass of Sample in Air) + Line K (Mass of Pycnometer and Water)) - Line L (Mass of Evacuated Sample, Pycnometer and Water)] = Line M (Apparent Specific Gravity) (EX. 1231.1 / [(1231.1 + 2575.2) - 3305.2] = 2.457) Rounded to the nearest 0.001
N -	Line M (Apparent Specific Gravity) x 1 = Metric Specific Gravity (EX. 2.457 x 1 = 2.457 Mg/m^3) Rounded to the nearest 0.001

040-030 Rev. 8/10

THEORETICAL MAXIMUM DENSITY WORKSHEET

LINE	EXPLANATION OF NEEDED INFORMATION
O -	Line M (Apparent Specific Gravity) x 62.4 = English specific gravity (EX. 2.457 x 62.4 = 153.3 lbs/ft^3)
P -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Jeffry Rodgers)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

EMULSION VISCOSITY WORKSHEET

Contract No. _____

Specification Requirement _____ Material Type _____

SAMPLE #	TRK/TRL #	TIME (SECONDS)	CALIBRATION FACTOR	VISCOSITY	TOTAL TONS	TESTED BY	DATE TESTED

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

EMULSION VISCOSITY WORKSHEET

A. Contract No. **3925**

B. Specification Requirement **703.03.02** **C.** Material Type **CMS-2S**

D.	E.	F.	G.	H.	I.	J.	K.
SAMPLE #	TRK/TRL #	TIME (SECONDS)	CALIBRATION FACTOR	VISCOSITY	TOTAL TONS	TESTED BY	DATE TESTED
1	**14 / 001B**	**201.6**	**1.006**	**203**	**14.04**	**Jesse Smoen**	**6/22/2010**
2	**14 / 001B**	**211.8**	**1.006**	**213**	**22.62**	**Jesse Smoen**	**6/22/2010**

040-032 Rev. 7/07

EMULSION VISCOSITY WORKSHEET

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
B -	All the specifications that apply to the material being tested see the Standard Specifications and Special Provisions etc. (EX. 703.03.02)
C -	Type of material as specified, found in the Contract Plans or Special Provisions (EX. CMS-2S)
D -	Sample number for this particular sample in chronological order (EX. 1)
E -	Number given to the truck and trailer by its company, found on the truck and trailer, on the bill of lading or Certificate of Compliance (EX. Truck # 14, Trailer # 001B)
F -	Time it takes for the emulsion to come out of the viscometer per Test Method Nev. T759 (EX. Stop watch shows 3 minutes and 21.6 seconds = 201.6 seconds Take 3 x 60 = 180; Take 180 + 21.6 = 201.6)
G -	Calibration factor is on the viscometer tube (EX. 1.006)
H -	Line F (Time in Seconds) x Line G (Calibration Factor) = Line H (Viscosity) rounded to the nearest whole number (EX. 201.6 x 1.006 = 202.8 = 203)
I -	Total tons of what this specific test represents, it will be the total tons of the truck or total tons of the trailer, not both truck and trailer combined (EX. 14.04 tons)
J -	Print first and last name of the tester or testers who completed the test (EX. Jesse Some)
K -	Date the sample was tested (EX. 6/22/2010)

NOTES:

1. Once this sheet is full, turn into the office so they can submit to the Construction Office. Continue the numbering from the previous sheet. DO NOT start over.

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
REPORT OF FIELD TESTS OF COARSE AND FINE AGGREGATE FOR CONCRETE

Test Number	Contract Number
Date sampled	Contractor
Sampled by	Mix Design Number
Tested by	Item to be Constructed
Specifications reference	
Quantity represented by sample	
Source of No. 4 coarse aggregate	
Source of No. 57 or 67 coarse aggregate	
Source of No. 467 coarse aggregate	
Source of fine aggregate (sand)	

COARSE AGGREGATE

TOTAL %	No. 4	Specs.	No. 57 No. 67	Specs.	No. 467	Specs.	Fines	Total Combined	Comb. Specs.
Passing	----------%		----------%		----------%		----------%		
75 mm (3")									
63 mm (2½")									
50 mm (2")									
37.5 mm (1½")									
25 mm (1")									
19 mm (¾")									
12.5 mm (½")									
9.5 mm (⅜")									
4.75 mm (No. 4)									
2.36 mm (No. 8)									
1.18 mm (No. 16)									
600 µm (No. 30)									
300 µm (No. 50)									
150 µm (No.100)									
75 µm (No. 200)									
Y. Cleanness Value									

FINE AGGREGATE (SAND)

Screen size	A % Retained	B % Passing	Specs.	C Total % Retained Fin. Mod. Sieves (100 - "B")	Remarks:
9.5 mm (⅜")					
4.75 mm (No. 4)					
2.36 mm (No. 8)					
1.18 mm (No. 16)					
600 µm (No. 30)					
300 µm (No. 50)					
150 µm (No.100)					
75 µm (No. 200)					

Sand equivalent _____ (Specs.) _____

Fineness Modulus (sum of column ÷ C 100) _____ +/- 0.2 of _____ Base F.M.

Resident Engineer: _____

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
REPORT OF FIELD TESTS OF COARSE AND FINE AGGREGATE FOR CONCRETE

A. Test Number	**T-1-1**	**K.** Contract Number	**3925**
B. Date sampled	**7/12/2010**	**L.** Contractor	**Granite Construction Co.**
C. Sampled by	**Chris Time**	**M.** Mix Design Number	**PSPT 375**
D. Tested by	**Chris Time**	**N.** Item to be Constructed	**Barrier Rail**

E. Specifications reference **706.03.01 and 706.03.03**
F. Quantity represented by sample **300 yd^3**
G. Source of No. 4 coarse aggregate **N/A**
H. Source of No. 57 or (67) coarse aggregate **Sierra Stone Quarry**
I. Source of No. 467 coarse aggregate **N/A**
J. Source of fine aggregate (sand) **Tracy Pit**

COARSE AGGREGATE

O. TOTAL %	**P.** No. 4	**Q.** Specs.	**R.** No. 57 No.(67)	**S.** Specs.	**T.** No. 467	**U.** Specs.	**V.** Fines	**W.** Total Combined	**X.** Comb. Specs.
Passing	----------%		----------%		----------%		----------%		
75 mm (3")									
63 mm (2½")									
50 mm (2")									
37.5 mm (1½")									
25 mm (1")			**100**	**100**					
19 mm (¾")			**95**	**90 - 100**					
12.5 mm (½")									
9.5 mm (⅜")			**23**	**20 - 55**					
4.75 mm (No. 4)			**4**	**0 - 10**					
2.36 mm (No. 8)			**2**	**0 - 5**					
1.18 mm (No. 16)									
600 µm (No. 30)									
300 µm (No. 50)									
150 µm (No.100)									
75 µm (No. 200)			**1**	**0 - 1**					
Y. Cleanness Value			**91**	**71 Min.**					

FINE AGGREGATE (SAND)

Z. Screen size	A **AA.** % Retained	B **BB.** % Passing	**CC.** Specs.	C **DD.** Total % Retained Fin. Mod. Sieves (100 - "B")
9.5 mm (⅜")	**0**	**100**	**100**	
4.75 mm (No. 4)	**0.3**	**99.7**	**95 - 100**	**0.3**
2.36 mm (No. 8)	**7.0**	**92.9**	**80 - 100**	**7.1**
1.18 mm (No. 16)	**23.1**	**62.4**	**50 - 85**	**37.6**
600 µm (No. 30)	**21.4**	**41.0**	**25 - 60**	**59.0**
300 µm (No. 50)	**7.8**	**24.5**	**5 - 30**	**75.5**
150 µm (No.100)	**14.2**	**10.3**	**0 - 10**	**89.7**
75 µm (No. 200)	**7.3**	**3.0**	**0 - 5**	

EE. Remarks: **Test met specs. Resident Engineer and Contractor notified of results.**

FF. Sand equivalent **88** **GG.** (Specs.) **71 Min.**
HH. Fineness Modulus (sum of column ÷ C 100) **2.7** **II.** +/- 0.2 of **2.7** Base F.M.

JJ. Resident Engineer: H. Polly

040-035 Rev. 10/09

REPORT OF FIELD TESTS OF COURSE AND FINE AGGREGATE FOR CONCRETE

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Test number for this particular test (EX. T-1-1 T = Acceptance; 1 = first acceptance test of the day; 1 = number of days the material has been tested) NOTE: Test numbering will start over for each source and each mix design, found in the Construction Manual
B -	Date the sample was taken (EX. 7/12/2010)
C -	Print first and last name of the tester or testers who sampled the material (EX. Chris Time)
D -	Print first and last name of the tester or testers who completed the test (EX. Chris Time)
E -	All of the specifications that apply to the material being tested; see the Standard Specifications and Special Provisions (EX. 706.03.01 and 706.03.03)
F -	Total yards of concrete from the Construction Manual frequencies (EX. 300 yd^3)
G -	Where the number 4 material was produced, not where it was stockpiled
H-	Where the number 67 material was produced, not where it was stockpiled (EX. Sierra Stone Quarry)
I -	Where the number 467 material was produced, not where it was stockpiled
J -	Where the fine material was produced, not where it was stockpiled (EX. Tracy Pit)
K -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
L -	Name of the Prime contractor awarded the contract (EX. Granite Construction Co.)
M -	Number of the Mix Design that the sample represents (Mix Design approved by the Materials Division) (EX. PSPT 375) NOTE: Mix Design shall be on file in the Field Office and copies handed out to the crew
N -	Name of the item being constructed, where the concrete is being placed (EX. Barrier Rail)

040-035 Rev. 10/09

REPORT OF FIELD TESTS OF COURSE AND FINE AGGREGATE FOR CONCRETE

LINE	EXPLANATION OF NEEDED INFORMATION
O -	Sieves that could be used for particular materials, depending on the aggregate requirement
P -	No. 4 material percent passing the required sieves from NDOT form 040-013 reported to the whole number
Q -	Specifications for the No. 4 or larger material
R -	No. 57 or No. 67 material percent passing the required sieves from NDOT form 040-013 reported to the whole number
S -	Required specifications for the No. 57 or No. 67
T -	No. 467 material percent passing the required sieves from NDOT form 040-013 reported to the whole number
U -	Specifications for the No. 467 material
V -	Fine material percent passing the required sieves from NDOT form 040-013 NOTE: This column will only be used when combining aggregates for combined gradation requirements
W -	Total combined if combining sieves for aggregates that require combined gradations
X -	Combined specification for this particular mix design
Y -	Value determined by Test Method Nev. T228 (EX. 91) NOTE: This test is only performed on coarse material
Z -	Sieves that are used for fine concrete aggregates
AA -	Percent retained on each sieve determined per Test Method Nev. T206 from NDOT form 040-013 reported to the nearest 0.1
BB -	Percent passing each sieve determined per Test Method Nev. T206 from NDOT form 040-013 reported to the nearest 0.1

040-035 Rev. 10/09

REPORT OF FIELD TESTS OF COURSE AND FINE AGGREGATE FOR CONCRETE

LINE	EXPLANATION OF NEEDED INFORMATION
DD -	Fineness Modulus is determined for Fine Aggregates for materials between the No. 4 sieve to the No. 100 sieve. 100 - Line BB (% Passing) = Line DD (Total % Retained Fin. Mod. Sieves) (EX. use the No. 100 sieve 100 - 10.3 = 89.7)
EE -	Any remarks that needs to be documented (EX. Test met specs. Resident Engineer and Contractor notified of results)
FF -	Value determined per Test Method Nev. T227 from NDOT form 040-006 reported to the whole number (EX. 88)
GG -	Specifications per Test Method Nev. T227 found in the Standard Specifications or Special Provisions (EX. 71 min.)
HH -	Fineness Modulus is the sum of Lines DD (Total % Retained Fin. Mod. Sieves) / 100 = Fineness Modulus reported to the 0.1 (EX. 0.3 + 7.1 + 37.6 + 59.0 + 75.5 + 89.7 = 269.2 / 100 = 2.7)
II -	Base Fineness Modulus is determined by taking the sum of the Fineness Modulus values and dividing by 10. A rolling average is kept of the Fineness Modulus values as the tests are performed. Anything over 10, average tests 2 - 11 or 3 - 12 etc. If there are less than 10 tests taken, all the tests that are completed to date are to be averaged. # 1 + # 2 + # 3 = # / 3 = Line II (Base F.M.) NOTE: There will always be a number for the Base Fineness Modules
JJ -	Resident Engineer or Assistant Resident Engineer on that specific crew (EX. H. Polly) specific crew (EX. H. Polly)

NOTE:

1.	NDOT forms 040-013 and 040-006 are to be submitted with this form
2.	If performing a combined gradation and assistance is needed, contact the Independence Assurance Lab or the Quality Assurance Section
3.	PCCP is to be reported to the nearest 0.1 on this form. Since the PCCP is a combined gradation, all other concrete is to be reported to the nearest whole number

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
RETROREFLECTIVITY MEASUREMENTS

Contract No.: _____

Specification Requirement: _____

Equipment Used: _____

*Color: Yellow ☐ White ☐

Equipment Calibration / Service Date: _____

***One color per sheet**

Material Description: _____

DATE AND TIME PLACED	STATION	DIRECTION OF TRAFFIC	LINE TYPE	DATE TESTED	RETRO-REFLECTIVITY READING	RETESTS IF REQUIRED

Remarks: _____

_____

Tested By: _____

Resident Engineer : _____

NDOT
040-041
Rev. 3/05

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
RETROREFLECTIVITY MEASUREMENTS

A. Contract No.: **3925**

C. Specification Requirement: **375 Minimum**

D. Equipment Used: **LTL - X**

B. *Color: Yellow ☐ White ☒ X

E. Equipment Calibration / Service Date: **5/8/2010**

***One color per sheet**

F. Material Description: **Epoxy Pavement Striping**

G. DATE AND TIME PLACED	H. STATION	I. DIRECTION OF TRAFFIC	J. LINE TYPE	K. DATE TESTED	L. RETRO-REFLECTIVITY READING	M. RETESTS IF REQUIRED
6-16-10 / 7:00 a.m.	"R2" 7 + 00 LT	South Bound	4" Solid	7/12/2010	395	
6-16-10 / 7:30 a.m.	"R1" 9 + 00 RT	North Bound	4" Solid	7/17/2010	426	
6-16-10 / 8:00 a.m.	"R1" 9 + 70 RT	North Bound	8" Solid	7/17/2010	445	

N. Remarks: **All tests meet specifications.**

O. Tested By: **Martin Hopeful**

P. Resident Engineer : *Tony Hopner*

NDOT
040-041
Rev. 3/05

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-041 Rev. 3/05

RETROREFLECTIVITY MEASUREMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
B -	Indicate white or yellow as the color of striping that is being tested (EX. White)
C -	Specification requirement found in the Contract Plans or Special provisions etc. (EX. 375 Minimum)
D -	Name of the equipment that is being utilized to test the material (EX. LTL-X) Check the current Qualified Product List (QPL) for this contract to determine if the contractor is using an appropriate and approved model
E -	Date the equipment was last calibrated and serviced (EX. 5/8/2010)
F -	Type of material that is being tested (EX. Epoxy Pavement Striping)
G -	Date and time the material was placed (EX. 6-16-10 / 7:00 a.m.)
H -	Approximate sample location, found in the Contract Plans or jobsite survey stakes (EX. "R2" 7 + 00 LT)
I -	Direction of traffic in which the striping is being placed (EX. South Bound)
J -	Line type that is being applied (EX. 4" Solid)
K -	Date the material was tested for retroreflectivity determined per Test Method Nev. T511 (EX. 7/12/2010)
L -	Reading indicated by the Retroreflectometer per Test Method Nev. T511 (EX. 395)
M -	Three additional readings outside of the original five constitute a re-test per Test Method Nev. T511
N -	Any remarks that need to be documented (EX. All tests meet specifications.)
O -	Tested by, print first and last name of the tester or testers who completed the test (EX. Martin Hopeful)
P -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Tony Hepner)

040-041 Rev. 3/05

RETROREFLECTIVITY MEASUREMENTS

LINE	EXPLANATION OF NEEDED INFORMATION
NOTE:	Only one color per sheet should be indicated as white and yellow striping have different specified requirements for reflectivity

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING FILM ADHESION TEST (SECTION 634)

Contract No.: _____ Specification Requirement: _____

*Color: Yellow ☐ White ☐ Material Description: _____

***One color per sheet**

DATE PLACED	STATION	DIRECTION OF TRAFFIC	MARKING FILM DESCRIPTION	DATE TESTED	ADHESION TEST RESULTS N or lb	RETESTS

Remarks: _____

Tested By: _____ Resident Engineer: _____

NDOT
040-047
Rev. 7/07

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING FILM ADHESION TEST (SECTION 634)

A. Contract No.: **3925**

C. Specification Requirement: **8 lb Minimum**

B. *Color: Yellow ☐ White ☒ X

D. Material Description: **Pavement Marking Film**

***One color per sheet**

E. DATE PLACED	F. STATION	G. DIRECTION OF TRAFFIC	H. MARKING FILM DESCRIPTION	I. DATE TESTED	J. ADHESION TEST RESULTS N or (lb)	K. RETESTS
8/15/2010	"LE" 125 + 00	East Bound	4" marking film	8/16/2010	9.5 lb	
8/15/2010	"LW" 229 + 25	West Bound	4" marking film	8/16/2010	8.2 lb	

L. Remarks: **Tests met specs.**

M. Tested By: **Jane Mackenna**

N. Resident Engineer: *Kindra Kind*

NDOT
040-047
Rev. 7/07

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-047 Rev. 7/07

PAVEMENT MARKING FILM ADHESION TEST (SECTION 634)

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
B -	Choose white or yellow for the color of striping that is tested (EX. White)
C -	Specification requirement found in the Contract Plans or Special Provisions (EX. 8 lb Minimum)
D -	Type of material that is tested (EX. Pavement Marking Film)
E -	Date the material was placed (EX. 8/15/2010)
F -	Approximate sample location, found in the Contract Plans or jobsite survey stakes (EX. "LE" 125 + 00)
G -	Direction of traffic the striping is being placed (EX. East Bound)
H -	Marking film description that was placed, description can be found in Contract Plans (EX. 4" Marking Film)
I -	Date the material was tested for adhesion test results per Test Method Nev. T512 (EX. 8/16/2010)
J -	Value indicated by the clamp scale determined per Test Method Nev. T512 (EX. 9.5 lb)
K -	Additional test determined per Test Method Nev. T512
L -	Any remarks that need to be documented (EX. Tests met specs.)
M -	Printed name of the tester or testers who completed the test (EX. Jane Mackenna)
N -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Kindra Kind)

NUCLEAR GAUGE OPERATOR'S WORKSHEET
FOR CONTROL STRIP DENSITY - PART 1

Material Type ______________________ Contract No. ______________________

Lift & Pad Number ______________________ Date ______________________

Width of Spread ______________________ Station ______________________

Control Strip No. ______________________ Nuclear Set No. ______________________

TESTS DURING ROLLING

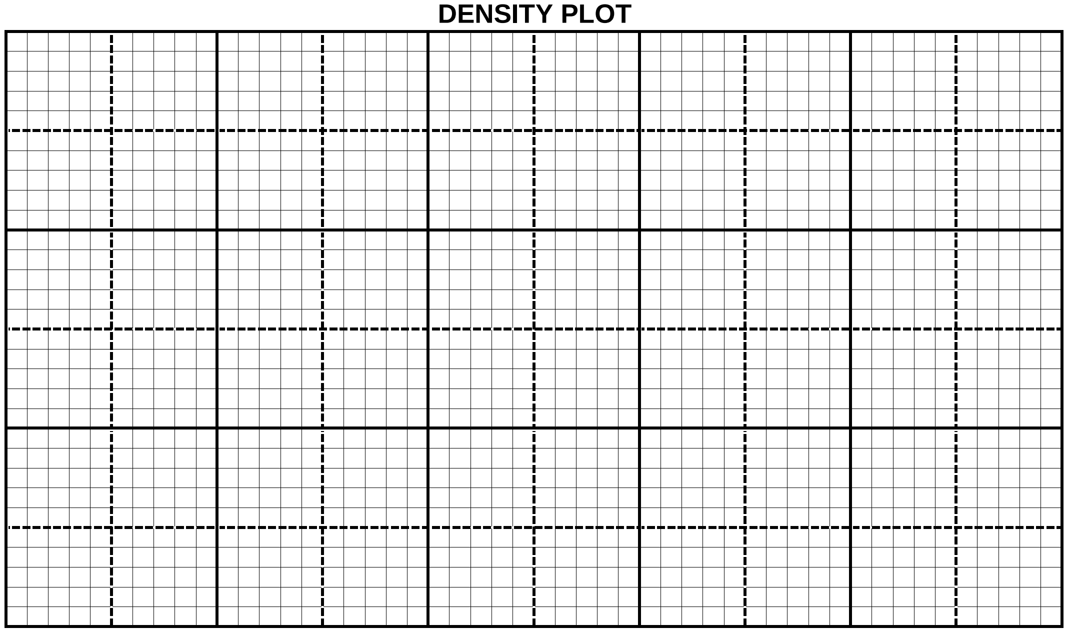
No. of Roller Passes										
Site Number		1	2	3	1	2	3	1	2	3
Density, Mg/m^3 (pcf)	1									
	2									
Average Test Site Density										
Average Density										

No. of Roller Passes										
Site Number		1	2	3	1	2	3	1	2	3
Density, Mg/m^3 (pcf)	1									
	2									
Average Test Site Density										
Average Density										

No. of Roller Passes										
Site Number		1	2	3	1	2	3	1	2	3
Density, Mg/m^3 (pcf)	1									
	2									
Average Test Site Density										
Average Density										

DENSITY PLOT

Density, Mg/m^3 (pcf)



Number of Roller Passes

NDOT 040-048
Rev 12/05

NUCLEAR GAUGE OPERATOR'S WORKSHEET FOR CONTROL STRIP DENSITY - PART 2

Material Type _____ Contract No. _____

Lift & Pad Number _____ Date _____

Width of Spread _____ Station _____

Control Strip No. _____ Nuclear Set No. _____

DIAGRAM OF CONTROL STRIP

Show: centerline, stations at ends of control strip, stations at test sites, site number and offset from edge of oil or centerline.

TESTS AFTER ROLLING

Site Number		1	2	3	4	5
Density, Mg/m^3 (pcf)	1					
	2					
Average Test Site Density						

Site Number		6	7	8	9	10
Density, Mg/m^3 (pcf)	1					
	2					
Average Test Site Density						

Mean Control Strip Density, Mg/m^3 (pcf) = _____

Rolling Pattern: _____

Remarks (initial compaction or recompaction): _____

Tested by: _____ Resident Engineer: _____

NUCLEAR GAUGE OPERATOR'S WORKSHEET
FOR CONTROL STRIP DENSITY - PART 1

A. Material Type	**Cold Recycle**	**B.** Contract No.	**3925**
C. Lift & Pad Number	**1 / NB Lane # 1**	**D.** Date	**7/12/2010**
E. Width of Spread	**15.5'**	**F.** Station	**"X" 800+68 to "X" 803+00**
G. Control Strip No.	**1**	**H.** Nuclear Set No.	**133**

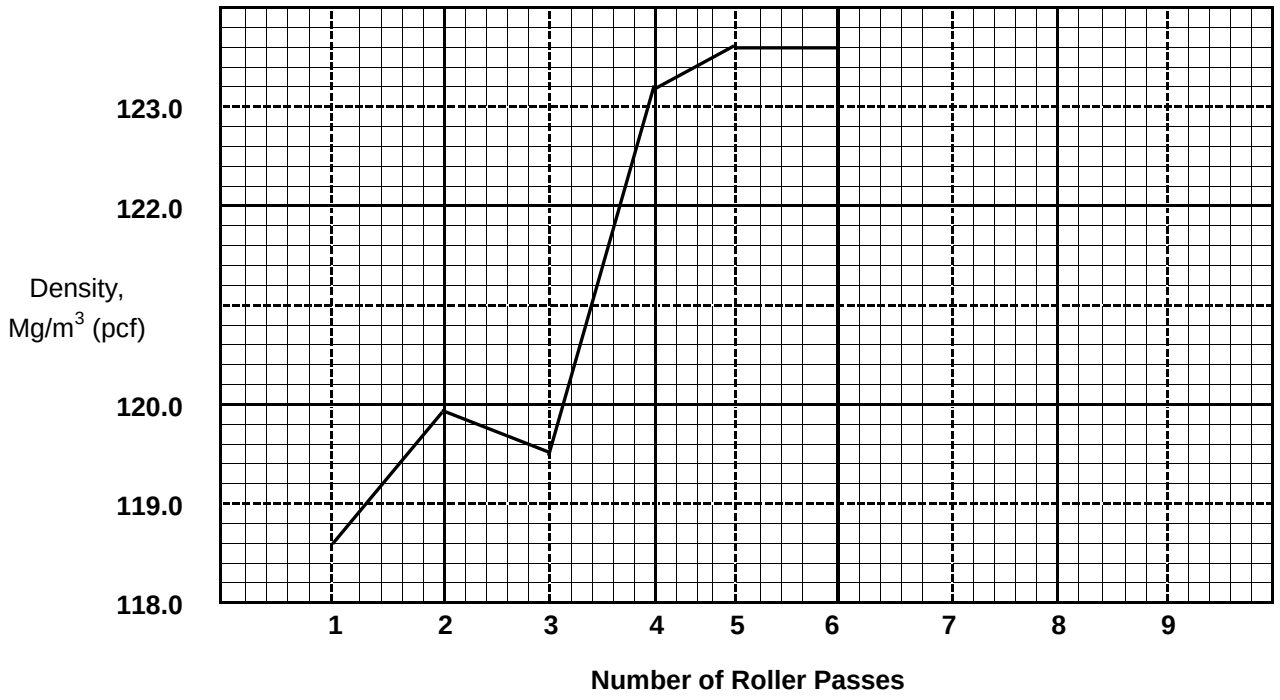
TESTS DURING ROLLING

I. No. of Roller Passes		**Pneumatic Tire Roller - 1**			**Pneumatic Tire Roller - 2**			**Steel Wheel Roller - 3**		
J. Site Number		1	2	3	1	2	3	1	2	3
K. Density, Mg/m^3 (pcf)	1	**114.1**	**115.0**	**125.2**	**118.5**	**116.9**	**124.0**	**118.9**	**118.6**	**120.9**
	2	**115.6**	**117.6**	**124.2**	**119.3**	**116.9**	**123.8**	**118.8**	**117.2**	**122.6**
L. Average Test Site Density		**114.9**	**116.3**	**124.7**	**118.9**	**116.9**	**123.9**	**118.9**	**117.9**	**121.8**
M. Average Density		**118.6**			**119.9**			**119.5**		

No. of Roller Passes		**Steel Wheel Roller - 4**			**Steel Wheel Roller - 5**			**Steel Wheel Roller - 6**		
Site Number		1	2	3	1	2	3	1	2	3
Density, Mg/m^3 (pcf)	1	**119.8**	**122.8**	**124.8**	**121.5**	**123.4**	**124.1**	**121.5**	**123.4**	**124.0**
	2	**121.2**	**123.7**	**126.9**	**122.3**	**123.1**	**127.3**	**122.3**	**123.1**	**127.1**
Average Test Site Density		**120.5**	**123.3**	**125.9**	**121.9**	**123.3**	**125.7**	**121.9**	**123.3**	**125.6**
Average Density		**123.2**			**123.6**			**123.6**		

No. of Roller Passes										
Site Number		1	2	3	1	2	3	1	2	3
Density, Mg/m^3 (pcf)	1									
	2									
Average Test Site Density										
Average Density										

N. DENSITY PLOT

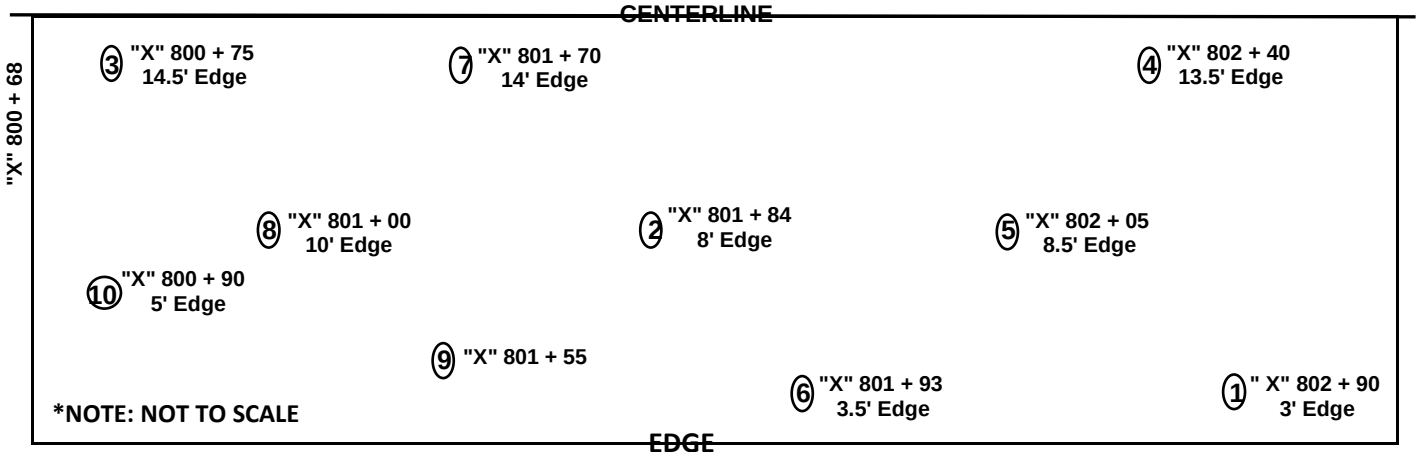


NUCLEAR GAUGE OPERATOR'S WORKSHEET
FOR CONTROL STRIP DENSITY - PART 2

O. Material Type	**Cold Recycle**	**P.** Contract No.	**3925**
Q. Lift & Pad Number	**1 / NB Lane #1**	**R.** Date	**7/12/2010**
S. Width of Spread	**15.5'**	**T.** Station	**"X"800+68 to "X" 803+00**
U. Control Strip No.	**1**	**V.** Nuclear Set No.	**133**

W. DIAGRAM OF CONTROL STRIP

Show: centerline, stations at ends of control strip, stations at test sites, site number and offset from edge of oil or centerline.



TESTS AFTER ROLLING

X. Site Number		1	2	3	4	5
Y. Density, Mg/m^3 (pcf)	1	**121.5**	**123.4**	**124.0**	**125.2**	**125.3**
	2	**122.3**	**123.1**	**127.1**	**125.3**	**123.6**
Z. Average Test Site Density		**121.9**	**123.3**	**125.6**	**125.3**	**124.5**

AA. Site Number		6	7	8	9	10
BB. Density, Mg/m^3 (pcf)	1	**125.7**	**127.0**	**119.2**	**123.4**	**126.9**
	2	**125.3**	**126.0**	**117.0**	**123.6**	**126.4**
CC. Average Test Site Density		**125.5**	**126.5**	**118.1**	**123.5**	**126.7**

DD. Mean Control Strip Density, Mg/m^3 (pcf) = **124.1**

EE. Rolling Pattern: **Two rubber passes and two steel passes for this control strip**

FF. Remarks (initial compaction or recompaction): **Initial Compaction**

GG. Tested by: **Stew Simon**

HH. Resident Engineer: *Jenell Rice*

NDOT 040-048
Rev 12/05

Distribution: Headquarter Construction, Resident Engineer, District Engineer, Contractor

040-048 Rev. 12/05

NUCLEAR GAUGE OPERATOR'S WORKSHEET FOR CONTROL STRIP DENSITY - PART 1 AND 2

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Type of material as specified, found in the Contract Plans or Special Provisions (EX. Cold Recycle)
B -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
C -	Lift and pad that is currently being tested (EX. 1st lift, Northbound lane #1)
D -	Date the compactions were taken (EX. 7/12/2010)
E -	Total width of the pavement mat being tested (EX. 15.5')
F -	Station to station for the control strip test section found in the Contract Plans, or jobsite survey stakes (EX. "X" 800 + 68 to "X" 803 + 00)
G -	Control Strip number shall be numbered in chronological order starting with one. Numbering will start over for the re-roll or different material (EX. 1)
H -	Set number assigned to the gauge that is being used to test the material (EX. 133) NOTE: Consultants are to use the gauge serial number found on the back of their gauge
I -	One pass of a roller is described as one complete pass, forward and back across the entire width of the mat (EX. 1 is the number of passes the pneumatic tire roller made)
J -	Three random site numbers determined per Test method Nev. T750, continue to use the same roller until the curve levels off or drops off (EX. Site Number 1, 2 and 3)
K -	Two one minute density shots performed at each of the three random site locations per Test Method Nev. T750 (EX. 114.1 and gauge rotated 180° is 115.6)
L -	Average of the two densities from Line K (Density) (EX. 114.1 + 115.6 = 229.7 / 2 = 114.85 = 114.9 round to the nearest 0.1)
M -	Average of Line L (Three Average Test Site Densities) equals average density (EX. 114.9 + 116.3 + 124.7 = 355.9 / 3 = 118.63 = 118.6 round to the nearest)
N -	Plot the Average Densities from Line M (Average Density) for Line I (No. of Roller Passes) (EX. 118.6, 119.9, 119.5, 123.2, 123.6, 123.6)

040-048 Rev. 12/05

NUCLEAR GAUGE OPERATOR'S WORKSHEET FOR CONTROL STRIP DENSITY - PART 1 AND 2

LINE	EXPLANATION OF NEEDED INFORMATION
O -	Type of material as specified, found in the Contract Plans or Special Provisions (EX. Cold Recycle)
P -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
Q -	Lift and pad that is currently being tested (EX. 1st lift, Northbound Lane #1)
R -	Date the compactions were taken (EX. 7/12/2010)
S -	Total width of the pavement being tested (EX. 15.5')
T -	Station to station for the control strip test section found on the Contract Plans, or jobsite survey stakes (EX. "X" 800 + 68 to "X" 803 + 00)
U -	Control Strip shall be numbered in chronological order starting with one. Numbering will start over for the re-roll or different material (EX. 1)
V -	Set number assigned to the gauge that is being used to test the material (EX. 133) NOTE: Consultants are to use the gauge serial number found on the back of their gauge
W -	Diagram of control strip illustrates all 10 test locations. Indicate the site location labeled 1 to 10 with each corresponding station, distance from edge, centerline location and the beginning and ending station of the control strip
X -	Ten random site numbers per Test method Nev. T750
Y -	Two one minute density shots performed at each of the ten random number site locations per Test Method Nev. T750 (EX. 121.5 and gauge rotated 180° is 122.3)
Z -	Average of the two densities from Line Y (Density) (EX. 121.5 + 122.3 = 243.8/2 = 121.9 rounded to the nearest 0.1)
AA -	Ten random site numbers determined per Test method Nev. T750
BB -	Two one minute density shots performed at each of the ten random number site locations per Test Method Nev. T750 (EX. 125.7 and gauge rotated 180° is 125.3)

040-048 Rev. 12/05

NUCLEAR GAUGE OPERATOR'S WORKSHEET FOR CONTROL STRIP DENSITY - PART 1 AND 2

LINE	EXPLANATION OF NEEDED INFORMATION
CC -	Average of the two densities from Line BB (Density) (EX. 125.7 + 125.3 = 251.0 / 125.5 rounded to the nearest 0.1)
DD -	Average of Line Z (Average Test Site Densities) + Line CC (Average Test Site Densities) / 10 = Line DD (Mean Control Strip Density) (EX. 121.9 + 123.3 + 125.6 + 125.3 + 124.5 +125.5 + 126.5 + 118.1 + 123.5 + 126.7 = 1240.9 / 10 = 124.09 = 124.1)
EE -	Record and indicate the rolling pattern per Test Method Nev. T750 (EX. Two rubber passes and two steel passes for this control strip) this information comes from Part I of this form NOTE: If the density for one roller does not gain 1 pound or more do not use that pass as part of the rolling pattern
FF -	Any remarks that needs to be documented (EX. Initial compaction)
GG -	Tested by, print first and last name of the tester or testers who performed the test (EX. Stew Simon)
HH -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Jenell Rice)

STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

FIELD MATERIAL SIEVE TEST / BITUMINOUS RATIO BY IGNITION METHOD

Contract No.: _____ JMF No.: _____ Tested By: _____

Type of Mixture: _____ Station: _____ Location: _____

Asphalt Grade: _____ Test No.: _____ Date Sampled: _____

Mix Design No.: _____ Furnace Temp: _____ Date Tested: _____

SIEVE	WEIGHT RETAINED	% RETAINED	% PASSING	JOB-MIX	SPEC
25 mm (1")					
19 mm (3/4")					
12.5 mm (1/2")					
9.5 mm (3/8")					
4.75 mm (No. 4)					
2.00 mm (No. 10)					
1.18 mm (No. 16)					
425 µm (No. 40)					
300 µm (No. 50)					
150 µm (No. 100)					
75 µm (No. 200)					
Pan			(MF) Mass After _____		Bitumen Ratio
Wash			- Mass After Wash _____		From Job-mix:
Mass After			= Mass - 200 Wash _____		_____

CALIBRATION FACTOR:

Factor _____

Date Performed _____

Furnace No. _____

*Calibration Factor from form NDOT 040-053

MOISTURE CORRECTION:

[(_____ (A) Initial Mass - _____ (B) Final Mass) ÷ _____ (B) Final Mass] × 100 = _____ % MC

BITUMEN RATIO FROM TAPE CALCULATION:

_____ (MI) Dry Mass _____ % (B.R.) Printed Tape - _____ % (MC) = _____ % B.R.

**BITUMEN RATIO FROM MANUAL CALCULATION:

[[(_____ (MI) Dry Mass - _____ (MF) Mass After) ÷ _____ (MF) Mass After] × 100] *± _____ % (CF) - _____ % (MC) = _____ % B.R.

* NOTE: add (-) correction factors and subtract (+) correction factors

**NOTE: If the furnace can't automatically calculate a corrected bitumen ratio, calculations can be performed manually. Only fill in Tape Calculation or Manual Calculation, not both.

Resident Engineer: _____

NDOT
040-050
Rev. 11/10

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

FIELD MATERIAL SIEVE TEST / BITUMINOUS RATIO BY IGNITION METHOD

A. Contract No.: **3925** **B.** JMF No.: **1** **C.** Tested By: **Stew Simon**

D. Type of Mixture: **PBS Type IIC** **E.** Station: **"X" 7 + 22 RT.** **F.** Location: **NB / #1 Lane / RT.**

G. Asphalt Grade: **PG64-28NV** **H.** Test No.: **T-1-1** **I.** Date Sampled: **7/12/2010**

J. Mix Design No.: **BF10-31** **K.** Furnace Temp: **482°C** **L.** Date Tested: **7/12/2010**

M. SIEVE	**N.** WEIGHT RETAINED	**O.** % RETAINED	**P.** % PASSING	**Q.** JOB-MIX	**R.** SPEC
25 mm (1")	**0**	**0.0%**	**100.0%**	**100**	**100**
19 mm (3/4")	**209**	**7.5%**	**92.5%**	**88 - 95**	**90 - 100**
12.5 mm (1/2")	**425**	~~**15.3%**~~ **15.2%**	**77.3%**		
9.5 mm (3/8")	**314**	**11.3%**	**66.0%**	**60 - 74**	**63 - 85**
4.75 mm (No. 4)	**502**	**18.0%**	**48.0%**	**43 - 57**	**45 - 63**
2.00 mm (No. 10)	**449**	**16.1%**	**31.9%**	**30 - 38**	**30 - 44**
1.18 mm (No. 16)	**200**	**7.2%**	**24.7%**		
425 µm (No. 40)	**282**	**10.1%**	**14.6%**	**12 - 20**	**12 - 22**
300 µm (No. 50)					
150 µm (No. 100)	**194**	**7.0%**	**7.6%**		
75 µm (No. 200)	**59**	**2.1%**	**5.5%**	**4 - 8**	**3 - 8**
Pan	**24**	**0.9%**	**S.** (MF) Mass After	**2786**	**V.** Bitumen Ratio
Wash	**128**	**4.6%**	**T.** Mass After Wash	**2658**	From Job-mix:
Mass After	**2786**		**U.** Mass - 200 Wash	**128**	**5.3**

CALIBRATION FACTOR:

W. Factor **+ 0.96**

X. Date Performed **7/1/2010**

Y. Furnace No. **250400**

*Calibration Factor from form NDOT 040-053

MOISTURE CORRECTION:

Z.		**AA.**		**BB.**			**CC.**
[(**706.9**	-	**705.6**	) ÷	**705.6**	] × 100 =	**0.18%**	%
(A)		(B)		(B)		MC	
Initial Mass		Final Mass		Final Mass			

BITUMEN RATIO FROM TAPE CALCULATION:

2968.2		**5.65** %	-	**0.18** %	=	**5.47** %
DD. *(MI)*		**EE.** *(B.R.)*		**FF.** *(MC)*		**GG.** *B.R.*
Dry Mass		Printed Tape				

HH. **BITUMEN RATIO FROM MANUAL CALCULATION:

[[(	_____	-	_____	) ÷	_____	] × 100] *±	_____	% -	_____	% =	_____	%
	(MI)		*(MF)*		*(MF)*		*(CF)*		*(MC)*		*B.R.*	
	Dry Mass		Mass After		Mass After							

* NOTE: add (-) correction factors and subtract (+) correction factors

**NOTE: If the furnace can't automatically calculate a corrected bitumen ratio, calculations can be performed manually. Only fill in Tape Calculation or Manual Calculation, not both.

II. Resident Engineer: R. John

040-050 Rev. 11/10

FIELD MATERIAL SIEVE TEST / BITUMINOUS RATIO BY IGNITION METHOD

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
B -	Job Mix Formula number assigned by the Resident Engineer (EX. 1)
C -	Print first and last name of the tester or testers who completed the test (EX. Stew Simon)
D -	Type of plantmix placed on the jobsite found on the Mix Design from the Materials Division (EX. PBS Type IIC)
E -	Approximate sample location, found in the Contract Plans or jobsite survey stakes (EX. "X" 7 + 22 RT.)
F -	Location from where the sample was taken, lanes travel direction, lane number and the side of center line the sample was taken (EX. NB / #1 lane / RT.)
G -	Grade of asphalt that is utilized in the plantmix, found on the approved Mix Design provided by the Materials Division (EX. PG64-28NV)
H -	Acceptance Test number for this particular test (EX. T-1-1 T = Acceptance Test; 1 = First acceptance test of the day; 1 = Number of days the material has been tested)
I -	Date the sample was taken (EX. 7/12/2010)
J-	Mix design number given to this material by the Materials Division (EX. BF10-31)
K -	Temperature of the ignition furnace that the Correction Factor was established, will either be 482°C or 538°C per Test Method Nev. T61 (EX. 482°C)
L -	Date the material was tested (EX. 7/12/2010)
M -	List of sieves that could be used in the testing of specified material, found in the Special Provisions or Standard Specifications
N -	Weight of the material retained on each specified sieve determined per Test Method Nev. T206 NOTE: This number is reported to the whole number

040-050 Rev. 11/10

FIELD MATERIAL SIEVE TEST / BITUMINOUS RATIO BY IGNITION METHOD

LINE	EXPLANATION OF NEEDED INFORMATION
O -	Take the weight retained from Line N (Weight Retained) / Line N (Mass After) x 100 = Line O (% Retained) NOTE: Reported to the nearest tenth (EX. # 200 sieve is 59 / 2786 x 100 = 2.1%) NOTE: All of Column O. shall add up to 100%. If it does not, the largest sieve shall be adjusted accordingly so Column O equals 100%. If Column O has to be adjusted by more than .3 the sieve is invalid and another sieve shall be ran
P -	Take Line S (% Passing) + Line R (% Retained) = Line S (% Passing) (EX. #200 sieve 5.5 + 2.1 = 7.6)
Q -	Job Mix range is sound on the Job Mix Formula written by the Resident Engineer NOTE: Make sure the current JMF is used
R -	Specification range for the material being tested, found in the Special Provisions or Standard Specifications
S -	Weight of the entire sample (Mass After) after it has been burned off determined per Test Method Nev. T761 taken off of the ticket (EX. 2786)
T -	Weight of the material (Mass After Wash) after it has been burned off, washed and dried determined per Test Method Nev. T761 and T206 (EX. 2658)
U -	Line S (Mass After (MF)) - Line T (Mass After Wash) = Line U (Mass - 200 Wash) (EX. 2786 - 2658 = 128)
V -	Bitumen Ratio found on the current Job Mix Formula written by the Resident Engineer (EX. 5.3%)
W -	Correction Factor that is determined prior to any acceptance testing for this Mix Design and current JMF per Test Method Nev. T761, enter this number into the ignition furnace prior to performing the burn-off procedure (EX. + 0.96) NOTE: Each ignition furnace and mix design have it's own correction factor
X -	Date the current correction factor being used was determined (EX. 7/1/2010)
Y -	Number assigned to the ignition furnace that is being used to perform the burn-offs, found on the outside of the furnace (EX. 250400)

040-050 Rev. 11/10

FIELD MATERIAL SIEVE TEST / BITUMINOUS RATIO BY IGNITION METHOD

LINE	EXPLANATION OF NEEDED INFORMATION
Z -	Initial Mass of PBS Type IIC determined per Test Method Nev. T306 (EX. 706.9)
AA -	Final Mass of PBS Type IIC determined per Test Method Nev. T306 (EX. 705.6)
BB -	Final Mass of PBS Type IIC determined per Test Method Nev. T306 (EX. 705.6)
CC -	Line Z (Initial Mass) - Line AA (Final Mass) / Line BB (Final Mass) x 100 = Line CC (Moisture Correction) (EX. 706.9 - 705.6 / 705.6 x 100 = 0.18%)
DD -	Weight of the sample (Dry Mass) that is placed in the baskets prior to the burn off per Test Method Nev. T761 (EX. 2968.2)
EE -	Bitumen Ratio off of the printed ticket from the Muffle Furnace (EX. 5.65)
FF -	Moisture correction value from Line CC (Moisture Correction) determined per Test Method Nev. T306 (EX. 0.18%)
GG -	Line EE (Bitumen Ratio) - Line FF (Moisture Content) = Line GG (Bitumen Ratio) (EX. Ticket says 5.65 - 0.18 = 5.47%) Report to the nearest 0.1 as 5.5% on NDOT form 040-011)
HH -	NOTE: Manual Calculation shall only be used if the printed tape cannot be used (EX. power failure during burn-off, approval from Quality Assurance to manually calc etc.)
II -	Resident Engineer or Assistant Resident Engineer on that specific crew (EX. R. John)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

REPORT OF CALIBRATION FACTOR (INCLUDING WEEKLY CHECKS) USING THE IGNITION FURNACE METHOD

Contract No.: ____________ Tested by ____________ Date: ____________
JMF No.: ____________ Furnace No: ____________ Calibration Factor: ____________

Test No.	C.F.	Temperature	Accept or Reject
1			
2			
3			
4			
5			

Asphalt Source: ____________
Asphalt Grade: ____________
Type of Mixture: ____________
Actual Lime %: ____________
Lime Marinated: Yes or No

Act. Bit. Ratio ____ Agg. (w\Lime) ____ A: Agg.(Dry) ____ B: Lime ____ C: Oil ____ D: Total	**Calibration Factor:** { [(____ (MI) DRY MASS - ____ (MF) MASS AFTER) ÷ ____ (MF) MASS AFTER]100 } = ____ BIT. RATIO ____ BIT. RATIO - ____ ACT. BIT. RATIO = C.F. ____ %
Act. Bit. Ratio ____ Agg. (w\Lime) ____ A: Agg.(Dry) ____ B: Lime ____ C: Oil ____ D: Total	**Calibration Factor:** { [(____ (MI) DRY MASS - ____ (MF) MASS AFTER) ÷ ____ (MF) MASS AFTER]100 } = ____ BIT. RATIO ____ BIT. RATIO - ____ ACT. BIT. RATIO = C.F. ____ %
Act. Bit. Ratio ____ Agg. (w\Lime) ____ A: Agg.(Dry) ____ B: Lime ____ C: Oil ____ D: Total	**Calibration Factor:** { [(____ (MI) DRY MASS - ____ (MF) MASS AFTER) ÷ ____ (MF) MASS AFTER]100 } = ____ BIT. RATIO ____ BIT. RATIO - ____ ACT. BIT. RATIO = C.F. ____ %
Act. Bit. Ratio ____ Agg. (w\Lime) ____ A: Agg.(Dry) ____ B: Lime ____ C: Oil ____ D: Total	**Calibration Factor:** { [(____ (MI) DRY MASS - ____ (MF) MASS AFTER) ÷ ____ (MF) MASS AFTER]100 } = ____ BIT. RATIO ____ BIT. RATIO - ____ ACT. BIT. RATIO = C.F. ____ %
Act. Bit. Ratio ____ Agg. (w\Lime) ____ A: Agg.(Dry) ____ B: Lime ____ C: Oil ____ D: Total	**Calibration Factor:** { [(____ (MI) DRY MASS - ____ (MF) MASS AFTER) ÷ ____ (MF) MASS AFTER]100 } = ____ BIT. RATIO ____ BIT. RATIO - ____ ACT. BIT. RATIO = C.F. ____ %

Remarks: ____________

Resident Engineer ____________

NDOT
040-053
Rev. 08/10

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

REPORT OF CALIBRATION FACTOR (INCLUDING WEEKLY CHECKS) USING THE IGNITION FURNACE METHOD

A. Contract No.: **3925** **B.** Tested by: **Joe Powell** **C.** Date: **7/1/2010**

D. JMF No.: **1** **E.** Furnace No: **250400** **F.** Calibration Factor: **+0.96**

	G. Test No.	**H.** C.F.	**I.** Temperature	**J.** Accept or Reject
1	**I-1-1**	**1.13**	**538**	**Reject**
2	**I-2-1**	**0.78**	**482**	**Reject**
3	**I-3-1**	**0.94**	**482**	**Accept**
4	**I-4-1**	**0.97**	**482**	**Accept**
5	**I-5-1**	**1.05**	**482**	**Reject**

K. Asphalt Source: **Paramount Fernley**

L. Asphalt Grade: **PG64-28NV**

M. Type of Mixture: **PBS Type II**

N. Actual Lime %: **1.46**

O. Lime Marinated: (Yes) or No

P. Act. Bit. Ratio	**5.30**
Q. Agg. (w\Lime)	**2348.7**
R. A: Agg.(Dry)	**2314.9**
S. B: Lime	**33.8**
T. C: Oil	**122.7**
U. D: Total	**2471.4**

Calibration Factor:

{ [(**2462.0** (MI) - **N/A** (MF)) ÷ **N/A** (MF)]100 } = **6.43** **Y.** BIT. RATIO

V. DRY MASS **W.** MASS AFTER **X.** MASS AFTER

6.43 **Z.** BIT. RATIO - **5.30** **AA.** ACT. BIT. RATIO = C.F. **1.13** % **BB.**

Act. Bit. Ratio	**5.30**
Agg. (w\Lime)	**2345.8**
A: Agg.(Dry)	**2312**
B: Lime	**33.8**
C: Oil	**122.5**
D: Total	**2468.3**

Calibration Factor:

{ [(**2462.2** (MI) DRY MASS - **N/A** (MF) MASS AFTER) ÷ **N/A** (MF) MASS AFTER]100 } = **6.08** BIT. RATIO

6.08 BIT. RATIO - **5.30** ACT. BIT. RATIO = C.F. **0.78** %

Act. Bit. Ratio	**5.30**
Agg. (w\Lime)	**2343.1**
A: Agg.(Dry)	**2308.4**
B: Lime	**33.7**
C: Oil	**122.3**
D: Total	**2464.4**

Calibration Factor:

{ [(**2459.9** (MI) DRY MASS - **N/A** (MF) MASS AFTER) ÷ **N/A** (MF) MASS AFTER]100 } = **6.24** BIT. RATIO

6.24 BIT. RATIO - **5.30** ACT. BIT. RATIO = C.F. **0.94** %

Act. Bit. Ratio	**5.30**
Agg. (w\Lime)	**2352.6**
A: Agg.(Dry)	**2318.7**
B: Lime	**33.9**
C: Oil	**122.9**
D: Total	**2475.5**

Calibration Factor:

{ [(**2473.0** (MI) DRY MASS - **N/A** (MF) MASS AFTER) ÷ **N/A** (MF) MASS AFTER]100 } = **6.27** BIT. RATIO

6.27 BIT. RATIO - **5.30** ACT. BIT. RATIO = C.F. **0.97** %

Act. Bit. Ratio	**5.30**
Agg. (w\Lime)	**2400**
A: Agg.(Dry)	**2365.5**
B: Lime	**34.5**
C: Oil	**125.4**
D: Total	**2525.4**

Calibration Factor:

{ [(**2519.8** (MI) DRY MASS - **N/A** (MF) MASS AFTER) ÷ **N/A** (MF) MASS AFTER]100 } = **6.35** BIT. RATIO

6.35 BIT. RATIO - **5.30** ACT. BIT. RATIO = C.F. **1.05** %

CC. Remarks: **Used I-3-1 and I-4-1 for the calibration factor. Dropped the temperature to 482°C due to excessive aggregate breakage in the ignition furnace.**

DD. Resident Engineer: R. John

NDOT
040-053
Rev. 08/10

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-053 Rev. 8/10

REPORT OF CALIBRATION FACTOR (INCLUDING WEEKLY CHECKS) USING THE IGNITION OVEN METHOD

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Special Provisions (3925)
B -	Tested by, print first and last name of the tester or testers who completed the test (EX. Joe Powell)
C -	Date the Calibration Factor was performed (EX. 7/1/2010)
D -	Job Mix number assigned by the Resident Engineer (EX. 1)
E -	Number assigned to the ignition furnace that is being used to perform the burn-offs, found somewhere on the outside of the furnace (EX. 250400)
F -	Calibration Factor that is determined prior to any acceptance testing for this Mix Design and current JMF per Test Method Nev. T761 (EX. + 0.96) NOTE: Each ignition furnace will have it's own mix design and correction factor
G -	Acceptance test number for this particular test (EX. I-1-1; I = Informational Test; 1 = First Acceptance test of the day; 1 = Number of days the material has been tested)
H -	Calibration Factor from each individual test performed (EX. 1.13)
I -	Temperature determined per Test Method Nev. T761, will either be 482°C or 538°C (EX. 538°C)
J -	Accept or reject each individual test determined per Test method Nev. T761 (EX. Reject)
K -	Name of the producer providing the asphalt being utilized in the plantmix (EX. Paramount Fernley)
L -	Grade of asphalt that is being used in the plantmix, found on the Mix Design approved from the Materials Division (EX. PG64-28NV)
M -	Type of plantmix that is used, found in the Contract Plans or Special Provisions (EX. PBS Type II)

040-053 Rev. 8/10

REPORT OF CALIBRATION FACTOR (INCLUDING WEEKLY CHECKS) USING THE IGNITION OVEN METHOD

LINE	EXPLANATION OF NEEDED INFORMATION
N -	Calculated mineral filler percent used to marinate the virgin aggregate. This information is determined by the bin percentages found on the JMF for this particular material per Test Method Nev. T761 (EX. 18% - 1" Rock, 20% - 3/4" Rock, 16% - 3/8" Rock, 36% - Crusher Fines, 10% - Sand (18 + 20 + 16 = 54 x .01 (found in the Standard Specifications) = 0.54 36 + 10 = 46 x 0.02 (found in the Standard Specifications) = 0.92 0.54 + 0.92 = 1.46) NOTE: Each mix design or change to the job mix formula will result in a change to the actual lime percent
O -	Is the material marinated or not Mix Design for this specific contract will indicate if the material is marinated or not. NOTE: Most bituminous plantmix products will be marinated in Nevada (EX. Yes)
P -	Actual Bit ratio for this mix design. This value may change based on the current Job Mix Formula (EX. 5.30)
Q -	Aggregate with lime from the calibrated hotplant coldfeed sample. NOTE: This will be the actual weight of hot aggregate that you start out with to perform the calibration factor
R -	Total weight of aggregate minus the lime, Line Q (Aggregate with Lime) / (1 + Line N (Actual Lime % in Decimal Form) = Line R (Agg. without Lime (Dry)) (EX. 2348.7 / (1 + 0.0146) = 2314.9)
S -	Total amount of lime in this sample, Line Q (Aggregate with Lime) - Line R (Aggregate without Lime (Dry)) = Line S (Lime) (EX. 2348.7 - 2314.9 = 33.8)
T -	Total weight of asphalt to be added to the sample, Line R (Aggregate without Lime (Dry)) x Line P (Actual Bit. Ratio in Decimal Form) = Line T (Oil) (EX. 2314.9 x .053 = 122.7)
U -	Line R (Aggregate without Lime (Dry)) + Line S (Lime) + Line T (Oil) = Line U (Total Material) (EX. 2314.9 + 33.8 + 122.7 = 2471.4)
V -	Weight of the sample after mixing and weighing determined per Test Method Nev. T761 (EX. 2462.0)
W -	This number would be the weight of the sample after it has completed the burn-off (Mass After) when weighing the material outside the furnace NOTE: This example shows N/A since the Bit Ratio was determined off of the tape per Test Method Nev. T761

040-053 Rev. 8/10

REPORT OF CALIBRATION FACTOR (INCLUDING WEEKLY CHECKS) USING THE IGNITION OVEN METHOD

LINE	EXPLANATION OF NEEDED INFORMATION
X -	This number would be the weight of the sample after it has completed the burn-off (Mass After) when weighing the material outside the furnace NOTE: This example shows N/A since the Bit Ratio was determined off of the tape per Test Method Nev. T761
Y -	Bitumen Ratio shall be determined by using the indicated Bitumen Ratio from the furnace printout (EX. 6.43) NOTE: See Test Method Nev. T761 if calculating the Bit Ratio off of the scale outside of the ignition furnace
Z -	Bit. Ratio from Line Y (EX. 6.43)
AA -	Act. Bit. Ratio from the JMF (EX. 5.30)
BB -	Line Z (Bit Ratio) minus Line AA (Act. Bit Ratio) equals Line BB (Single Correction Factor) (EX. 6.43 - 5.3 = + 1.13)
CC -	Any remarks that need to be documented (EX. Used I-3-1 and I-4-1 for the calibration factor. Dropped the temperature to 482°C due to excessive aggregate breakage in the ignition furnace)
DD -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. R. John)

NOTES:

1. There will be at least 2 and sometimes 4 burn offs per calibration factor see Test Method Nev. T761

2. Try to keep the remaining material waste in the mixing bowl under 10 grams after mixing

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

REPORT OF CALIBRATION FACTOR WITH RAP (INCLUDING WEEKLY CHECKS)
USING THE IGNITION OVEN METHOD - PART 1

Contract No.: _____ Tested by: _____ Date: _____

Mix Design No.: _____ JMF No.: _____ Furnace No.: _____ Actual Lime %: _____

Calibration Factor: Test No.: _____

A: (Agg w/lime) ÷ (1 - % RAP in decimal form) = (Agg w/lime + RAP)

(Agg w/lime + RAP) - (Agg w/lime) = **B:** (RAP)

Verify that RAP does not exceed 15%

(RAP) ÷ (Agg w/lime + RAP) x 100 = (% RAP)

(Agg w/lime) ÷ (Agg w/lime + RAP) x 100 = (% Agg w/lime)

(Agg w/lime) ÷ (1 + lime % in decimal form) = (Agg w/out lime)

(Agg w/lime) - (Agg w/out lime) = (Lime)

(Agg w/out lime) + (RAP) = (Dry agg w/out lime + RAP)

(Dry agg w/out lime + RAP) x (Bit.ratio added in decimal form) = **C:** (Oil added)

(Dry agg w/out lime + RAP) + (Lime) + (Oil added) = **D:** (Total)

Calibration Factor: Test No.: _____

A: (Agg w/lime) ÷ (1 - % RAP in decimal form) = (Agg w/lime + RAP)

(Agg w/lime + RAP) - (Agg w/lime) = **B:** (RAP)

Verify that RAP does not exceed 15%

(RAP) ÷ (Agg w/lime + RAP) x 100 = (% RAP)

(Agg w/lime) ÷ (Agg w/lime + RAP) x 100 = (% Agg w/lime)

(Agg w/lime) ÷ (1 + lime % in decimal form) = (Agg w/out lime)

(Agg w/lime) - (Agg w/out lime) = (Lime)

(Agg w/out lime) + (RAP) = (Dry agg w/out lime + RAP)

(Dry agg w/out lime + RAP) x (Bit.ratio added in decimal form) = **C:** (Oil added)

(Dry agg w/out lime + RAP) + (Lime) + (Oil added) = **D:** (Total)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

REPORT OF CALIBRATION FACTOR WITH RAP (INCLUDING WEEKLY CHECKS)
USING THE IGNITION OVEN METHOD - PART 2

Contract No.: _____ Tested by: _____ Date: _____

Mix Design No.: _____ JMF No.: ___ Furnace No.: _____ Calibration Factor: _____

Test No.	C.F.	Temperature	Accept or Reject
1			
2			
3			
4			

Asphalt Source: _____
Asphalt Grade: _____
Type of Mixture: _____

_____ (BIT. RATIO ADDED) + _____ (BIT. RATIO RAP) = _____ (BIT. RATIO TOTAL)

Bit. Ratio Total _____
A: Agg w/lime _____
B: RAP _____
C: Oil added _____
D: Total _____

Calibration Factor: Test No. 1

{ [(_____ (MI) DRY MASS - _____ (MF) MASS AFTER) ÷ _____ (MF) MASS AFTER]100 } = _____ BIT. RATIO

_____ BIT. RATIO - _____ BIT. RATIO TOTAL = C.F. _____ %

Bit. Ratio Total _____
A: Agg w/lime _____
B: RAP _____
C: Oil added _____
D: Total _____

Calibration Factor: Test No. 2

{ [(_____ (MI) DRY MASS - _____ (MF) MASS AFTER) ÷ _____ (MF) MASS AFTER]100 } = _____ BIT. RATIO

_____ BIT. RATIO - _____ BIT. RATIO TOTAL = C.F. _____ %

Bit. Ratio Total _____
A: Agg w/lime _____
B: RAP _____
C: Oil added _____
D: Total _____

Calibration Factor: Test No. 3

{ [(_____ (MI) DRY MASS - _____ (MF) MASS AFTER) ÷ _____ (MF) MASS AFTER]100 } = _____ BIT. RATIO

_____ BIT. RATIO - _____ BIT. RATIO TOTAL = C.F. _____ %

Bit. Ratio Total _____
A: Agg w/lime _____
B: RAP _____
C: Oil added _____
D: Total _____

Calibration Factor: Test No. 4

{ [(_____ (MI) DRY MASS - _____ (MF) MASS AFTER) ÷ _____ (MF) MASS AFTER]100 } = _____ BIT. RATIO

_____ BIT. RATIO - _____ BIT. RATIO TOTAL = C.F. _____ %

Remarks: _____

Resident Engineer: _____

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

REPORT OF CALIBRATION FACTOR WITH RAP (INCLUDING WEEKLY CHECKS)
USING THE IGNITION OVEN METHOD - PART 1

A. Contract No.: 3925 **B.** Tested by: Leonard Cooper **C.** Date: 8/28/2013
D. Mix Design No.: BF12-13 **E.** JMF No.: 1 **F.** Furnace No.: 248500 **G.** Actual Lime %: 1.20

H.Calibration Factor: Test No.: 1

I.

A: 2101.4 (Agg w/lime) ÷ 0.85 (1 - % RAP in decimal form) = 2472.2 (Agg w/lime + RAP)

2472.2 (Agg w/lime + RAP) - 2101.4 (Agg w/lime) = **B:** 370.8 (RAP)

Verify that RAP does not exceed 15%

370.8 (RAP) ÷ 2472.2 (Agg w/lime + RAP) x 100 = 15.0 (% RAP)

2101.4 (Agg w/lime) ÷ 2472.2 (Agg w/lime + RAP) x 100 = 85.0 (% Agg w/lime)

2101.4 (Agg w/lime) ÷ 1.012 (1 + lime % in decimal form) = 2076.5 (Agg w/out lime)

2101.4 (Agg w/lime) - 2076.5 (Agg w/out lime) = 24.9 (Lime)

2076.5 (Agg w/out lime) + 370.8 (RAP) = 2447.3 (Dry agg w/out lime + RAP)

2447.3 (Dry agg w/out lime + RAP) x 0.04 (Bit.ratio added in decimal form) = **C:** 97.9 (Oil added)

2447.3 (Dry agg w/out lime + RAP) + 24.9 (Lime) + 97.9 (Oil added) = **D:** 2570.1 (Total)

Calibration Factor: Test No.: 2

A: 2076.7 (Agg w/lime) ÷ 0.85 (1 - % RAP in decimal form) = 2443.2 (Agg w/lime + RAP)

2443.2 (Agg w/lime + RAP) - 2076.7 (Agg w/lime) = **B:** 366.5 (RAP)

Verify that RAP does not exceed 15%

366.5 (RAP) ÷ 2443.2 (Agg w/lime + RAP) x 100 = 15.0 (% RAP)

2076.7 (Agg w/lime) ÷ 2443.2 (Agg w/lime + RAP) x 100 = 85.0 (% Agg w/lime)

2076.7 (Agg w/lime) ÷ 1.012 (1 + lime % in decimal form) = 2052.1 (Agg w/out lime)

2076.7 (Agg w/lime) - 2052.1 (Agg w/out lime) = 24.6 (Lime)

2052.1 (Agg w/out lime) + 366.5 (RAP) = 2418.6 (Dry agg w/out lime + RAP)

2418.6 (Dry agg w/out lime + RAP) x 0.04 (Bit.ratio added in decimal form) = **C:** 96.7 (Oil added)

2418.6 (Dry agg w/out lime + RAP) + 24.5 (Lime) + 96.7 (Oil added) = **D:** 2539.8 (Total)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

REPORT OF CALIBRATION FACTOR WITH RAP (INCLUDING WEEKLY CHECKS)
USING THE IGNITION OVEN METHOD - PART 2

J. Contract No.: 3925 **K.** Tested by: Leonard Cooper **L.** Date: 8/28/2013

M. Mix Design No.: BF12-13 **N.** JMF No.: 1 **O.** Furnace No.: 248500 **P.** Calibration Factor: + 0.22

	Q. Test No.	**R.** C.F.	**S.** Temperature	**T.** Accept or Reject
1	1	0.17	538	Accept
2	2	0.27	538	Accept
3				
4				

U. Asphalt Source: Ergon
V. Asphalt Grade: PG 76-22NV
W. Type of Mixture: PBS Type 2 w/RAP

X. 4.00 (BIT. RATIO ADDED) + **Y.** 0.50 (BIT. RATIO RAP) = **Z.** 4.50 (BIT. RATIO TOTAL)

Bit. Ratio Total 4.50
AA: Agg w/lime 2101.4
BB: RAP 370.8
CC: Oil added 97.9
DD: Total 2570.1

Calibration Factor: Test No. 1

{ [(2564.0 (MI) DRY MASS - N/A (MF) MASS AFTER) ÷ N/A (MF) MASS AFTER]100 } = 4.67 BIT. RATIO
EE. **FF.** **GG.** **HH.**

II. 4.67 BIT. RATIO - **JJ.** 4.50 BIT. RATIO TOTAL = C.F. 0.17 % **KK.**

Bit. Ratio Total 4.50
A: Agg w/lime 2076.7
B: RAP 366.5
C: Oil added 96.7
D: Total 2539.8

Calibration Factor: Test No. 2

{ [(2534.0 (MI) DRY MASS - N/A (MF) MASS AFTER) ÷ N/A (MF) MASS AFTER]100 } = 4.77 BIT. RATIO

4.77 BIT. RATIO - 4.50 BIT. RATIO TOTAL = C.F. 0.27 %

Bit. Ratio Total
A: Agg w/lime
B: RAP
C: Oil added
D: Total

Calibration Factor: Test No. 3

{ [((MI) DRY MASS - (MF) MASS AFTER) ÷ (MF) MASS AFTER]100 } = BIT. RATIO

BIT. RATIO - BIT. RATIO TOTAL = C.F. %

Bit. Ratio Total
A: Agg w/lime
B: RAP
C: Oil added
D: Total

Calibration Factor: Test No. 4

{ [((MI) DRY MASS - (MF) MASS AFTER) ÷ (MF) MASS AFTER]100 } = BIT. RATIO

BIT. RATIO - BIT. RATIO TOTAL = C.F. %

LL. Remarks: Calibration Factor Test's No. 1 and No. 2 are within the ± 0.15 tolerance. Used to establish a calibration factor of + 0.22

MM. Resident Engineer: Howard Koothrappali

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-053A Rev. 3/12

REPORT OF CALIBRATION FACTOR WITH RAP (INCLUDING WEEKLY CHECKS) USING THE IGNITION OVEN METHOD - PARTS 1 & 2

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Special Provisions (ex. 3925)
B -	Tested by, print first and last name of the tester or testers who completed the test (ex. Leonard Cooper)
C -	Date the Calibration Factor was performed (ex. 8/28/2013)
D -	Mix Design No., assigned by the Carson Materials Division (ex. BF12-13)
E -	JMF No., Job Mix Formula number assigned by the Resident Engineer (ex. 1)
F -	Furnace No., number assigned to the ignition furnace that is being used to perform the burn-offs, typically found somewhere on the outside of the furnace (ex. 248500)
G -	Actual Lime %, Calculated mineral filler percent used to marinate the virgin aggregate. This information is determined by the bin percentages found on the JMF for this particular material per Test Method Nev. T761 (ex. 30% - 3/4" agg, 20% - 3/8" agg, 27% - crusher fines and 8% - sand (30 + 20 = 50 x .01 (found in the Standard Specifications) = 0.50, 27 + 8 = 35 x 0.02 (found in the Standard Specifications) = 0.70, 0.50 + 0.70 = 1.20) **NOTE:** Each mix design or change to the job mix formula will result in a change to the actual lime.
H -	Calibration Factor: Test No., correlates to the calibration factor test number "Line Q" located on Part 2 of form No. 040-053A (ex. 1)
I -	Mathematic calculations for the Calibration Factor Test No, to determine the weight of Agg w/lime, RAP, Oil added and Total weight (ex. Agg w/lime 2101.4, RAP 370.8, Oil added 97.9 and Total 2570.1) **NOTE:** Refer to the example for all calculations
J -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (ex. 3925)
K-	Tested by, print first and last name of the tester or testers who completed the test (ex. Leonard Cooper)
L -	Date the Calibration Factor was performed (ex. 8/28/2013)

040-053A Rev. 3/12

REPORT OF CALIBRATION FACTOR WITH RAP (INCLUDING WEEKLY CHECKS) USING THE IGNITION OVEN METHOD - PARTS 1 & 2

LINE	EXPLANATION OF NEEDED INFORMATION
M -	Mix Design No, assigned by the Materials Division (ex. BF12-13)
N -	JMF No, Job Mix Formula number assigned by the Resident Engineer (ex. 1)
O -	Furnace No, number assigned to the ignition furnace that is being used to perform the burn-offs, typically found somewhere on the outside of the furnace (ex. 248500)
P -	Calibration Factor that is determined prior to any acceptance testing for this particluar Mix Design and current JMF per Test Method Nev. T761 (ex. + 0.22) **NOTE:** Each ignition furnace will have its own designated correction factor for each specific type of material
Q -	Test No., Correlates to the specific Calibration Factor Test No.
R -	Calibration Factor from each individual test performed, refer to Line KK (ex. 0.17)
S -	Temperature, determined per Test Method Nev. T761, will either be 482°C or 538°C (ex. 538°C)
T -	Accept or Reject, each individual test determined per Test Method Nev. T761 (ex. Accept)
U -	Asphalt Source, name of the producer providing the asphalt utilized in the plantmix (ex. Ergon)
V -	Asphalt Grade, grade of asphalt that is being used in the plantmix, found on the Mix Design approved from the Carson Materials Division (ex. PG76-22NV)
W -	Type of Mixture, found in the Contract Plans or Special Provisions (ex. PBS Type 2 w/RAP)
X -	Bit Ratio Added, found on the Mix Design approved from the Carson Materials Division (ex. 4.00)
Y -	Bit Ratio RAP, found on the Mix Design approved from the Carson Materials Division (ex. 0.50)
Z -	Bit. Ratio Total, found on the Mix Design approved from the Materials Division Line X (Bit. Ratio Added) + Line Y (Bit Ratio RAP) = Line Z (Bit. Ratio Total) (ex. 4.50)

040-053A Rev. 3/12

REPORT OF CALIBRATION FACTOR WITH RAP (INCLUDING WEEKLY CHECKS) USING THE IGNITION OVEN METHOD - PARTS 1 & 2

LINE	EXPLANATION OF NEEDED INFORMATION
AA -	Agg w/lime, from the calibrated hotplant coldfeed sample. Refer to Part 1 Line I of Form No. 040-053A for this weight (ex. 2101.4) **NOTE:** This will be the actual weight of hot aggregate that you start out with to perform the calibration factor
BB -	RAP, refer to Part 1 Line I of Form No. 040-053A for this weight (ex. 370.8)
CC -	Oil added, refer to Part 1 Line I of Form No. 040-053A for this weight (ex. 97.9)
DD -	Total, refer to Part 1 Line I of Form No. 040-053A for this weight (ex. 2570.1)
EE -	Dry Mass (MI), weight of the sample after mixing and weighing determined per Test Method Nev. T761 (ex. 2564.0)
FF -	Mass After (MF), weight of the sample after it has completed the burn-off when weighing the material outside the furnace **NOTE:** This example indicates N/A since the Bit Ratio was determined using the tape per Test Method Nev. T761
GG -	Mass After (MF), weight of the sample after it has completed the burn-off when weighing the material outside the furnace **NOTE:** This example indicates N/A since the Bit Ratio was determined using the tape per Test Method Nev. T761
HH -	Bit. Ratio, shall be determined by using the indicated Bitumen Ratio from the furnace printout (ex. 4.67) **NOTE:** See Test Method Nev. T761 if calculating the Bit Ratio using the scale outside of the ignition furnace
II -	Bit. Ratio, shall be determined by using the indicated Bitumen Ratio from the furnace printout (ex. 4.67) **NOTE**: See Test Method Nev. T761 if calculating the Bit Ratio using the scale outside of the ignition furnace
JJ -	Bit. Ratio Total, found on Line Z (Bit. Ratio Total) (ex. 4.50)
KK -	C.F., Line II (Bit Ratio) - Line JJ (Bit Ratio Total) = Line KK (C.F.) (ex. 4.67 - 4.50 = 0.17)

040-053A Rev. 3/12

REPORT OF CALIBRATION FACTOR WITH RAP (INCLUDING WEEKLY CHECKS) USING THE IGNITION OVEN METHOD - PARTS 1 & 2

LINE	EXPLANATION OF NEEDED INFORMATION
LL -	Remarks, anything pertinent that needs to be documented (ex. Calibration Factors Test No. 1 and No. 2 are within the ± 0.15 tolerance. Used to establish a calibration factor of + 0.22)
MM -	Resident Engineer or Assistant Resident Engineer signature verifying the accuracy of the reported results (ex. Howard Koothrappali)

NOTES:

1. There shall be a minimum of 2 burn-offs to establish an oven's calibration factor. Refer to Test Method Nev. T761

2. Attempts shall be made to keep the remaining material waste in the mixing bowl under 10 grams after mixing

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

WATER VOLUME CALCULATIONS FOR SAND CONE APPARATUS AND MEASURING VESSEL (HAT)

Contract No. _____ Temperature of Water _____

Date _____ State Id No. _____

☐ One Piece Sand Cone ☐ Measuring Vessel Hat 250 mm (10 in.)

☐ Three Piece Sand Cone ☐ Measuring Vessel Hat 200 mm (8 in.)

Weight of Water _____ lb
(Carry to nearest 0.1)

Volume of Vessel = Weight of Water / 62.4 _____ ft^3
(Carry to nearest 0.001)

Volume of Vessel in m^3 = Volume in ft^3 x 0.0283168 _____ m^3
(Carry to nearest 0.00001)

Remarks: _____

_____

_____

Tested By: _____ Resident Engineer: _____

NDOT
040-067
Rev. 5/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

WATER VOLUME CALCULATIONS FOR SAND CONE APPARATUS AND MEASURING VESSEL (HAT)

A. Contract No. **3925**

B. Temperature of Water: **78°F**

C. Date **7/12/2010**

D. State Id No. **19315**

E.

- [X] One Piece Sand Cone
- [ ] Three Piece Sand Cone
- [ ] Measuring Vessel Hat 250 mm (10 in.)
- [ ] Measuring Vessel Hat 200 mm (8 in.)

F. Weight of Water **12.5** lb
(Carry to nearest 0.1)

G. Volume of Vessel = Weight of Water / 62.4 **0.200** ft^3
(Carry to nearest 0.001)

H. Volume of Vessel in m^3 = Volume in ft^3 x 0.0283168 _____ m^3
(Carry to nearest 0.00001)

I. Remarks: **Performed at the Elko Progress Lab, with the supervision of the progress tester.**

J. Tested By: **Jane Gethro**

K. Resident Engineer: Ray Geles

NDOT
040-067
Rev. 5/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-067 Rev. 5/09

WATER VOLUME CALCULATIONS FOR SAND CONE APPARATUS AND MEASURING VESSEL (HAT)

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (3925)
B -	Temperature of the water used to determine the volume of the apparatus calibrated per Test Method Nev. T761 (EX. 78°)
C -	Date the calibration was performed (EX. 7/12/2010)
D -	Fixed ID number on the calibrated piece of equipment (EX. 19315) NOTE: If there is not an ID number on the piece of equipment, label it with the crew number and a #1 or #2 depending if there is more than one piece of the same equipment
E -	Check the appropriate box that applies to the specific type of equipment being calibrated (EX. X - One Piece Sand Cone)
F -	Total weight of water that it took to fill up the apparatus determined per Test Method Nev. T102 (EX. 12.5 lb)
G -	Line F (Weight of Water) / 62.4 (Weight of a Cubic Foot of Water) = Line G (Volume of Vessel) (EX. 12.5 / 62.4 = 0.200)
H -	Line G (Volume of Vessel in ft^3) x 0.0283168 (conversion factor from English to metric) = Line H (Volume of Vessel in m^3) NOTE: Only fill this line out if work is being performed on a metric contract
I -	Any remarks that need to be documented (EX. Performed at the Elko Progress Lab, with the supervision of the progress tester)
J -	Tested by, print first and last name of the tester or testers who completed the test (EX. Jane Gethro)
K -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Ray Geles)

NOTES:

1. Per Test Method Nev. T102, the apparatus shall be calibrated annually

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

SAND DENSITY CALCULATION - T102

Contract No. _____ State Id No. _____

Date _____

☐ Three Piece Sand Cone with 200 mm (8 in.) Measuring Vessel (Hat)

☐ One Piece Sand Cone with 250 mm (10 in.) Measuring Vessel (Hat)

Trial Pours

Initial Weight of Sand - Weight of Residue = Weight of Sand Used

1. _____ - _____ = _____ lb

2. _____ - _____ = _____ lb

3. _____ - _____ = _____ lb

Trial Pour Average = _____ lb

(Note: All three trial pours must be within ± 0.2 lb of each other, if not repeat this procedure.)

Trial Pour Average / Volume of the Sand Cone and Measuring Vessel (Hat) = Sand Density in lb/ft^3

_____ / _____ = _____ lb/ft^3

Sand Density in lb/ft^3 / 62.4 = Sand Density in Mg/m^3

_____ lb/ft^3 / 62.4 = _____ Mg/m^3

Remarks: _____

_____

_____

Tested By: _____ Resident Engineer: _____

NDOT
040-068
Rev. 3/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

SAND DENSITY CALCULATION - T102

A. Contract No. **3925** **B.** State Id No. **19315**

C. Date **7/12/2010**

D.

- ☐ Three Piece Sand Cone with 200 mm (8 in.) Measuring Vessel (Hat)
- ☒ One Piece Sand Cone with 250 mm (10 in.) Measuring Vessel (Hat)

Trial Pours

	E. Initial Weight of Sand	-	**F.** Weight of Residue	=	**G.** Weight of Sand Used	
1.	**51.9**	-	**21.9**	=	**30.0**	lb
2.	**50.6**	-	**20.6**	=	**30.0**	lb
3.	**50.3**	-	**20.3**	=	**30.0**	lb

H. Trial Pour Average = **30.0** lb

(Note: All three trial pours must be within ± 0.2 lb of each other, if not repeat this procedure.)

I. Trial Pour Average / **J.** Volume of the Sand Cone and Measuring Vessel (Hat) = **K.** Sand Density in lb/ft^3

30.0 / **0.334** = **89.8** lb/ft^3

L. Sand Density in lb/ft^3 / 62.4 = **M.** Sand Density in Mg/m^3

_____ lb/ft^3 / 62.4 = _____ Mg/m^3

O. Remarks: **New sand brought in, calibrated for ratholes.**

P. Tested By: **Bill Lewis** **Q.** Resident Engineer: Kyle Ross

NDOT
040-068
Rev. 3/09

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-068 Rev. 3/09

SAND DENSITY CALCULATION - T102

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
B -	Fixed ID number on the piece of equipment being tested (EX. 19315) NOTE: If there is not an ID number on the piece of equipment, label it with the crew number and a #1 or # 2 depending on if there is more than one piece of the same equipment
C -	Date the calibration was performed (EX. 7/12/2010)
D -	Check the appropriate box that applies to the equipment being calibrated (EX. X - One Piece Sand Cone)
E -	Initial weight of sand being used to determine the sand density determined per Test Method Nev. T102 (EX. 51.9) NOTE: A minimum amount of 50.0 lb shall be used
F -	Weight of sand residue from filling the measuring vessel (hat) and sand cone determined per Test Method Nev. T102 (EX. 21.9)
G -	Line E (Initial Weight of Sand) - Line F (Weight of Residue) = Line G (Weight of Sand Used) (EX. 51.9 - 21.9 = 30.0 round to the nearest 0.1)
H -	The sum of all three values of Line G (Weight of Sand Used) / 3 = Line H (Trial Pour Average) (EX. 30.0 + 30.0 + 30.0 = 90.0 / 3 = 30.0 round to the nearest 0.1)
I -	Value from Line H (Trial Pour Average) (EX. 30.0)
J -	Volume of sand cone and measuring vessel (hat) from NDOT form 040-067 (EX. 0.334)
K -	Line I (Trial Pour Average) / Line J (Volume of the Sand Cone and Measuring Vessel (hat)) = Line K (Sand Density in lb/ft^3) (EX. 30.0 / 0.334 = 89.8 round to the nearest 0.1)
L -	Line K (Sand Density in lb/ft^3) (EX. 89.8) NOTE: Only fill this line out if work is being performed on a metric contract
M -	62.4 (weight of a cubic foot of water) NOTE: Only fill this line out if work will be done on a metric contract

040-068 Rev. 3/09

SAND DENSITY CALCULATION - T102

LINE	EXPLANATION OF NEEDED INFORMATION
N -	Line L (Sand Density in lb/ft^3) / Line M (62.4 weight of a cubic foot of water) = Line N (Sand Density in Mg/m^3) (EX. 89.8 / 62.4 = 1.439) NOTE: Only fill this line out if work is being performed on a metric contract
O -	Any remarks that need to be documented (EX. New sand brought in, calibrated for ratholes)
P -	Print first and last name of the tester or testers who completed the test (EX. Bill Lewis)
Q -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Kyle Ross)

STATE OF NEVADA DEPARTMENT OF TRANSPORTATION

MOISTURE-DENSITY DETERMINATION, COMPACTION REPORT - PART 1

Contract No. _____
Date _____

Test Hole No. (code)			
Station			
Distance to Centerline			
Embankment Depth			
Type of Material			
Compaction Equipment			

Sand Volume Data Nev. T102

1. Initial Wt. of Sand	kg (lbs)			
2. Wt. of Residue	kg (lbs)			
3. Wt. of Sand Used, 1 - 2	kg (lbs)			
4. Sand Density	Mg/m^3 (lb/ft^3)			
5. Vol. Hole + Cone + Plate, 3/4	m^3 x 1000 (ft^3)			
6. Vol. of Cone + Plate	m^3 x 1000 (ft^3)			
7. Vol. of Hole, 5 - 6	m^3 x 1000 (ft^3)			

Excavated Sample Nev. T102

8. Total Excavated Wet Wt.	kg (lbs)			
9. Wet Wt.	grams			
10. Dry Wt.	grams			
11. Wt. of Water, 9 - 10	grams			
12. % Moisture, (11 / 10)100				
13. Field Wet Density, 8 / 7	Mg/m^3 (lb/ft^3)			
14. Field Dry Density, [13 / (100 + % Moisture)]100	Mg/m^3 (lb/ft^3)			

Data for Calculated Maximum Density Determination Nev. T108

Total Sample Wt. _____

Wt. of + 3/4" _____ _____**% retained on +3/4",** _____**% retained on +No.4**

Wt. of + No. 4 _____ **(Method Selected)** **Method "A"** ☐ **Method "D"** ☐

		Point 1	*Point 2*	*Point 3*	*Point 4*	*Point 5*
16. Wt. of Mold + Compacted Soil	grams					
17. Wt. of Mold	grams					
18. Wt. of Compacted Soil, 16 - 17	grams					
19. Wet Density, (Line 18 / 453.59) x Factor	(lb/ft^3)					
20. Dry Density, (Line 19 / (100 + % Moist.))100	(lb/ft^3) *					

Note: Mold Volume Factor, F = (1 / Volume)
For Method "A" (4" Mold) use **30.03**
For Method "D" (6" Mold) use **13.33**

Wet Density = (Wt. of Compacted Soil / 453.59) x Factor
Dry Density = (Wet Density / (100 + % Moisture)) x 100

Moisture Content, Nev. T112 or T108 (Microwave Oven Procedure)

		Point 1	*Point 2*	*Point 3*	*Point 4*	*Point 5*
21. Wet Wt.	grams					
22. Dry Wt.	grams					
23. Wt. of Water, 21 - 22	grams					
24. % Moisture, (23 / 22)100	*					

* Oven-dry density points shall be plotted as ordinates (y-axis) and corresponding moisture contents as absicca (x-axis)

STATE OF NEVADA DEPARTMENT OF TRANSPORTATION

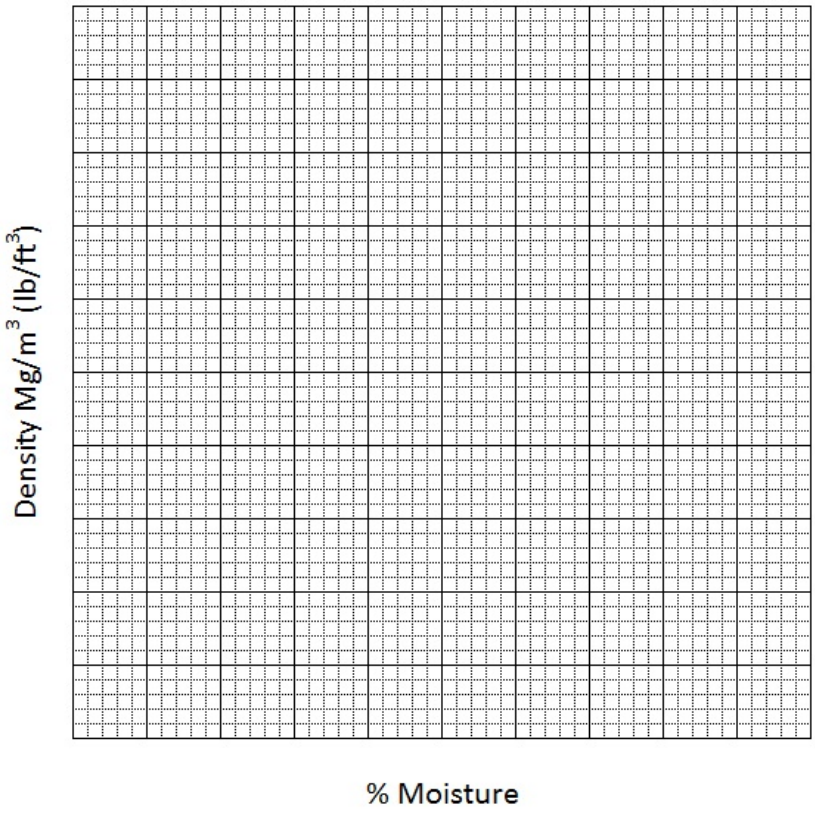
MOISTURE-DENSITY DETERMINATION, COMPACTION REPORT - PART 2

Oversized Aggregate Correction, Nev. T104

Apply to **Method "A"** if aggregate particles exceed 5% by mass retained on the 4.75 mm (No. 4) sieve

Apply to **Method "D"** if aggregate particles exceed 5% by mass retained on the 19.0 mm (3/4 in.) sieve

25. Wt. of Aggregate = A					
26. Wt. of Pycnometer = p					
27. (Wt. of Pyc. + Water) - p = M	M =		M =		M =
28. (Wt. of Pyc. + Water + Aggregate) - (p + A) = M_1	M_1 =		M_1 =		M_1 =
29. Wt. of Water Recovered from Pyc. = M_2	M_2 =		M_2 =		M_2 =
30. If $M_1 - M_2 \leq 14$ g, G = [A / (M - M_1)] x 62.4					
31. If $M_1 - M_2 > 14$ g, G = [A / (M - M_1) + 0.5 ($M_1 - M_2$ - 14 g)] x 62.4					
32. Decimal Equiv. of % + No.4 or + 3/4", (1 - P)					
33. Decimal Equiv. of % - No. 4 or - 3/4", P					
34. Maximum Dry Density = d (lb/ft³)					
35. Corrected Max. Dry Density D = dG / [(d)(1- P) + (G)(P)] (lb/ft³)					
36. % Compaction = (14 / 35)100					



As Plotted

Max. Dry Density (d)	Mg/m³ (lb/ft³)
Optimum Moisture	%

Corrected Max. Density and Opt. Moisture
Utilizing the Coarse Aggregate Correction

Max. Dry Density (D)	Mg/m³ (lb/ft³)
Optimum Moisture	%

Corrected Optimum Moisture Calculation:
[(1-P) x 2] + [P x "As Plotted" Opt. Moisture]

Note: For Metric, lb/ft³ / 62.4 = Mg/m³

Determine Decimal Equiv. of % ± No.4 or ± 3/4"
(Round to nearest 0.001)

37. Sieve Test No. _____
38. Total Sample Wt. _____
39. Wt. of + No.4 or + 3/4" _____
40. Dec. Equiv. (1-P), 39 / 38 _____
41. Wt. of - No.4 or - 3/4" _____
42. Dec. Equiv. (P), 41 / 38 _____

REMARKS: _____

TESTED BY: _____ RESIDENT ENGINEER: _____

NDOT
040-069
Rev. 02/13

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

STATE OF NEVADA DEPARTMENT OF TRANSPORTATION

MOISTURE-DENSITY DETERMINATION, COMPACTION REPORT - PART 1

A. Contract No. 3925
B. Date 4/8/2013

C. Test Hole No. (code)	1-SB-90		
D. Station	"X" 7+22		
E. Distance to Centerline	2' RT		
F. Embankment Depth	2' frm. Finish Grade		
G. Type of Material	Granular Backfill		
H. Compaction Equipment	Vibratory Roller		

Sand Volume Data Nev. T102

I. 1. Initial Wt. of Sand	kg (lbs)	50.0		
J. 2. Wt. of Residue	kg (lbs)	18.1		
K. 3. Wt. of Sand Used, 1 - 2	kg (lbs)	31.9		
L. 4. Sand Density	Mg/m^3 (lb/ft^3)	84.6		
M. 5. Vol. Hole + Cone + Plate, 3/4	m^3 x 1000 (ft^3)	0.377		
N. 6. Vol. of Cone + Plate	m^3 x 1000 (ft^3)	0.199		
O. 7. Vol. of Hole, 5 - 6	m^3 x 1000 (ft^3)	0.178		

Excavated Sample Nev. T102

P. 8. Total Excavated Wet Wt.	kg (lbs)	22.7		
Q. 9. Wet Wt.	grams	2587		
R. 10. Dry Wt.	grams	2389		
S. 11. Wt. of Water, 9 - 10	grams	198		
T. 12. % Moisture, (11 / 10)100		8.3 %		
U. 13. Field Wet Density, 8 / 7	Mg/m^3 (lb/ft^3)	127.5		
V. 14. Field Dry Density, [13 / (100 + % Moisture)]100	Mg/m^3 (lb/ft^3)	117.7		

Data for Calculated Maximum Density Determination Nev. T108

W. Total Sample Wt. 1205
X. Wt. of + 3/4" 35
Y. Wt. of + No. 4 181

Z. 2.9 **% retained on +3/4",** 15.0 **% retained on +No.4**

(Method Selected) **Method "A"** ☒ **Method "D"** ☐

		Point 1	*Point 2*	*Point 3*	*Point 4*	*Point 5*
AA. 16. Wt. of Mold + Compacted Soil	grams	6050	6195	6230	6175	
BB. 17. Wt. of Mold	grams	4200	4200	4200	4200	
CC. 18. Wt. of Compacted Soil, 16 - 17	grams	1850	1995	2030	1975	
DD. 19. Wet Density, (Line 18 / 453.59) x Factor	(lb/ft^3)	122.5	132.1	134.4	130.7	
EE. 20. Dry Density, (Line 19 / (100 + % Moist.))100	(lb/ft^3) *	111.9	118.5	118.4	112.7	

Note: Mold Volume Factor, F = (1 / Volume)
For Method "A" (4" Mold) use **30.03**
For Method "D" (6" Mold) use **13.33**

Wet Density = (Wt. of Compacted Soil / 453.59) x Factor
Dry Density = (Wet Density / (100 + % Moisture)) x 100

Moisture Content, Nev. T112 or T108 (Microwave Oven Procedure)

		Point 1	*Point 2*	*Point 3*	*Point 4*	*Point 5*
FF. 21. Wet Wt.	grams	430.5	433.0	503.5	457.9	
GG. 22. Dry Wt.	grams	393.2	388.4	443.5	394.9	
HH. 23. Wt. of Water, 21 - 22	grams	37.3	44.6	60.0	63.0	
II. 24. % Moisture, (23 / 22)100	*	9.5	11.5	13.5	16.0	

* Oven-dry density points shall be plotted as ordinates (y-axis) and corresponding moisture contents as absicca (x-axis)

STATE OF NEVADA DEPARTMENT OF TRANSPORTATION

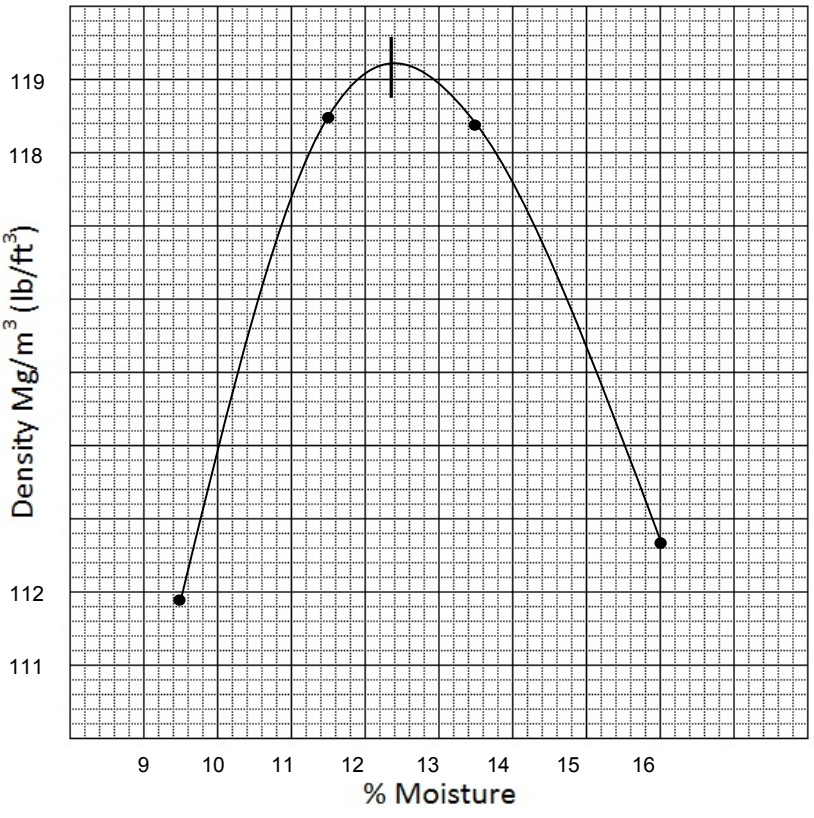
MOISTURE-DENSITY DETERMINATION, COMPACTION REPORT - PART 2

Oversized Aggregate Correction, Nev. T104

Apply to **Method "A"** if aggregate particles exceed 5% by mass retained on the 4.75 mm (No. 4) sieve

Apply to **Method "D"** if aggregate particles exceed 5% by mass retained on the 19.0 mm (3/4 in.) sieve

JJ. 25. Wt. of Aggregate = A	500					
KK. 26. Wt. of Pycnometer = p	449					
LL. 27. (Wt. of Pyc. + Water) - p = M	1454	M = 1005		M =		M =
MM. 28. (Wt. of Pyc. + Water + Aggregate) - (p + A) = M_1	1754	M_1 = 805		M_1 =		M_1 =
NN. 29. Wt. of Water Recovered from Pyc. = M_2	793	M_2 = 793		M_2 =		M_2 =
OO. 30. If $M_1 - M_2 \leq 14$ g, G = [A / (M - M_1)] x 62.4	156.0					
PP. 31. If $M_1 - M_2 > 14$ g, G = [A / (M - M_1) + 0.5 (M_1 - M_2 - 14 g)] x 62.4						
QQ. 32. Decimal Equiv. of % + No.4 or + 3/4", (1 - P)	0.150					
RR. 33. Decimal Equiv. of % - No. 4 or - 3/4", P	0.850					
SS. 34. Maximum Dry Density = d (lb/ft³)	119.2					
TT. 35. Corrected Max. Dry Density D = dG / [(d)(1- P) + (G)(P)] (lb/ft³)	123.6					
UU. 36. % Compaction = (14 / 35)100	95.2					



VV. As Plotted

Max. Dry Density (d)	119.2	Mg/m³ (lb/ft³)
Optimum Moisture	12.4	%

WW. Corrected Max. Density and Opt. Moisture Utilizing the Coarse Aggregate Correction

Max. Dry Density (D)	123.6	Mg/m³ (lb/ft³)
Optimum Moisture	10.8	%

Corrected Optimum Moisture Calculation:
[(1-P) x 2] + [P x "As Plotted" Opt. Moisture]

Note: For Metric, lb/ft³ / 62.4 = Mg/m³

Determine Decimal Equiv. of % ± No.4 or ± 3/4"
(Round to nearest 0.001)

XX. 37. Sieve Test No.	T-1-1
YY. 38. Total Sample Wt.	1205
ZZ. 39. Wt. of + No.4 or + 3/4"	181
AAA. 40. Dec. Equiv. (1-P), 39 / 38	0.150
BBB. 41. Wt. of - No.4 or - 3/4"	1024
CCC. 42. Dec. Equiv. (P), 41 / 38	0.850

REMARKS: Test performed on CMP backfill met specs. Inspector and R.E. notified

DDD.

EEE. TESTED BY: Leonard Cooper **FFF.** RESIDENT ENGINEER: Howard Koothrappali

NDOT
040-069
Rev. 02/13

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-069 Rev. 02/13

MOISTURE-DENSITY DETERMINATION, COMPACTION REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
A -	Contract Number for the material being tested, found in the contract plans or special provisions (ex. 3925)
B -	Date the sample was taken or test was performed (ex. 4/8/2013)
C -	Test Hole No., actual test number for this particular test. (ex. 1-SB-90). 1 is the number of tests ran on that material, SB represents the material being tested (refer to the Construction Manual for coding) and 90 is the minimum percent compaction required (Standard Specifications or Special Provisions) (ex. 1-SB-90)
D -	Station, approximate sample location, found in the Contract Plans or on the jobsite survey stationing (ex. "X" 7+22)
E -	Distance to Centerline, distance right or left of centerline that the compaction test was performed (ex. 2' RT.)
F -	Embankment Depth, depth at which the compaction test was performed (ex. 2' from finish grade) (Depth may also be found on the slope stakes or by using the elevation markers)
G -	Type of Material as specified and found in the contract plans or special provisions (ex. Granular Backfill)
H -	Compaction Equipment, type of equipment used to compact the material (ex. Vibratory Roller)
I -	Initial Weight of Sand in lbs or kg used to fill the test hole and cone (ex. 50.0) **NOTE:** Minimum of 50 lb needed
J -	Wt. of Residue, remaining in the bucket after the test hole and sand cone are filled (ex. 18.1)
K -	Line I (Initial Weight of Sand) - Line J (Weight of Residue) = Wt. of Sand Used (ex. 50.0 - 18.1 = 31.9)
L -	Sand Density, established per Test Method Nev. T102 during sand calibration, and reported on NDOT form 040-068 **NOTE:** Sand densities may change each time the sand is calibrated (ex. 84.6)

MOISTURE-DENSITY DETERMINATION, COMPACTION REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
M -	Line K (Weight of Sand Used) / Line L (Sand Density) = Vol. Hole + Cone + Plate (ex. 31.9 / 84.6 = 0.377)
N -	Vol. of Cone + Plate, is established per Test Method Nev. T102 (ex. 0.199)
O -	Line M (Vol. Hole + Cone + Plate) - Line N (Vol. of Cone + Plate) = Vol. of Hole (ex. 0.377 - 0.199 = 0.178) **NOTE:** If the test hole is less than .0042 m^3 (Metric) or 0.15 ft^3 (English), the test is invalid and another test shall be performed immediately
P -	Total Excavated Wet Wt. - entire sample excavated from the test hole per Test Method Nev. T102 (ex. 22.7)
Q -	Wet Wt., Representative split of the entire sample excavated from the test hole per Test Method Nev. T102 (ex. 2587)
R -	Dry Wt., sample after all moisture has been removed, per Test Method Nev. T112 (ex. 2389)
S -	Line Q (Wet Weight) - Line R (Dry Weight) = Wt. of Water (ex. 2587 - 2389 = 198)
T -	Line S (Weight of Water) / Line R (Dry Weight) x 100 = % Moisture (ex. (198 / 2389) X 100 = 8.3)
U -	Line P (Total Excavated Wet Weight) / Line O (Vol. Of Hole) = Field Wet Density (ex. 22.7 / 0.178 = 127.5)
V -	[Line U (Field Wet Density) / (100 + Line T (% Moisture))] x 100 = Field Dry Density (ex. [127.5 / (100 + 8.3)] X 100 = 117.7)
W -	Total Sample Wt., Representative sample as obtained per Test Method Nev. T200 (ex. 1205)

040-069 Rev. 02/13

MOISTURE-DENSITY DETERMINATION, COMPACTION REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
X -	Wt. of +3/4", weight of material retained on the 3/4" sieve obtained per Test Method Nev. T206 (ex. 35) **NOTE:** Weight retained shall include not only the 3/4" sieve, but any sieves greater than 3/4". For materials without sieve specifications such as borrow or original ground, these weights may be obtained by use of stacked No. 4 and 3/4" barrel sieves. Values indicated will be used in the determination of which Proctor Method to utilize
Y -	Wt. of +No. 4, weight of material retained on the No. 4 sieve obtained per Test Method Nev. T206 (ex. 181) **NOTE:** Weight retained shall include not only the No. 4 sieve, but any sieves greater than No. 4, including weights on the 3/4" sieve and greater. For materials without sieve specifications such as borrow or original ground, these weights may be obtained by use of stacked No. 4 and 3/4" barrel sieves. Values indicated will be used in the determination of which Proctor Method to utilize
Z -	Line X (Wt. of +3/4") / Line W (Total Sample Wt.) = % Retained on +3/4" (ex. (35 / 1205) x 100 = 2.9) **NOTE:** 2.9 < 30 , Method "D" criteria met Line Y (Wt. of +No. 4) / Line W (Total Sample Wt.) = % Retained on No. 4 (ex. (181 / 1205) x 100 = 15.0) **NOTE:** 15.0 < 40 , Method "A" criteria met **NOTE:** When both criteria are met for determining "Method A" and "Method D", "Method A" shall be used
AA -	Wt. of Mold + Compacted Soil, determined weight of trimmed and compacted specimen with collar extension removed and recorded to the nearest 1 g. (ex. 6050 for Point 1)
BB -	Wt. of Mold, determined weight of clean and dry mold. Include the base plate, exclude the collar extension and record to the nearest 1 g. (ex. 4200 for Point 1)
CC -	Line AA (Wt. of Mold + Compacted Soil) - Line BB = Wt. of Compacted Soil (Wt. of Mold) (ex. 6050 - 4200 = 1850 for Point 1)
DD -	Line CC (Wt. of Compacted Soil) / 453.59 (grams to lbs) x 30.03 = Wet Density (Vol. of Method "A" mold) (ex. (1850 / 453.59) x 30.03 = 122.5 for Point 1)

MOISTURE-DENSITY DETERMINATION, COMPACTION REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
EE -	Line DD (Wet Density) / ((100 + Line II (% Moisture)) x 100 = Dry Density (ex. (122.5 / (100 + 9.5)) x 100 = 111.9 for Point 1)
FF -	Wet Wt., wet weight of representative moisture sample obtained from extruded specimen (ex. 430.5 for Point 1)
GG -	Dry Wt., dry weight of representative moisture sample obtained from extruded specimen (ex. 393.2 for Point 1)
HH -	Line FF (Wet Weight) - Line GG (Dry Weight) = Wt. of Water (ex. 430.5 - 393.2 = 37.3 for Point 1)
II -	Line HH (Weight of Water) / Line GG (Dry Weight) x 100 = % Moisture (ex. (37.3 / 393.2) X 100 = 9.5 for Point 1)
JJ -	Wt. of Aggregate = A, (+No. 4 for Method "A") or (+3/4" for Method "D") sample shall be 500 g per Test Method Nev. T104
KK -	Wt. of Pycnometer = p, clean, dry and with lid (ex. 449)
LL -	(Line LL (Weight of Pyc. + Water) - Line KK = (Wt. of Pyc. + Water) - p = M (Wt. of Pycnometer) = M (ex. 1454 - 449, M = 1005)
MM -	(Wt. of Pyc. + Water + Aggregate) - (p + A)) = M_1, [(Line MM (Wt. of Pyc. + Water + Agg.)] - [Line KK (Wt. of Pyc.) + Line JJ (Wt. of Agg.)] = M_1 (ex. 1754 - (500 + 449), M_1 = 805)
NN -	Wt. of Water Recovered from Pyc. = M_2, (ex. 793)
OO -	If $M_1 - M_2 \leq 14$ g, use formula G = [A / (M - M_1)] x 62.4 (ex. [500 / (1005 - 805)] x 62.4 = 156.0)
PP -	If $M_1 - M_2 > 14$ g, use formula G = A / [(M - M_1) + 0.5 ($M_1 - M_2$ - 14)] x 62.4
QQ -	Decimal Equiv. of % +No. 4 or +3/4", (1-P), If utilizing Method "A", decimal equiv of +No. 4 is to be indicated If utilizing Method "D", decimal equiv of +3/4" is to be indicated Value is determined mathmatically on Line AAA (Dec. Equiv. (1-P)) (ex. 0.150)

040-069 Rev. 02/13

MOISTURE-DENSITY DETERMINATION, COMPACTION REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
RR-	Decimal Equiv. of % -No. 4 or -3/4", (P), If utilizing Method "A", decimal equiv of -No. 4 is to be indicated If utilizing Method "D", decimal equiv of -3/4" is to be indicated Value is determined mathmatically on Line CCC (Dec. Equiv. (P)) (ex. 0.850)
SS-	Maximum Dry Density = d, value is indicated on Line VV (As Plotted, Max. Dry Density) (ex. 119.2)
TT-	Corrected Max. Dry Density, D = dG / [(d)(1-P) + (G)(P)] (ex. (119.2 x 156.0) / [(119.2 x 0.150) + (156.0 x 0.850)] = 123.6) **NOTE:** Aggregate corrections only apply to Method "A" if aggregate particles exceed 5% by mass retained on the No. 4 sieve or Method "D" if particles exceed 5% by mass retained on the 3/4" sieve.
UU-	Line V (Field Dry Density) / Line TT (Corrected Max. Dry Density) = % Compaction x 100 (ex. (117.7 / 123.6) x 100 = 95.2) **NOTE:** If no oversized aggregate correction is required at the time the Proctor Curve is established, calculate as follows: % Compaction, Line V (Field Dry Density) / Line VV (As Plotted Maximum Dry Density) x 100 (ex. (117.7 / 119.2) x 100 = 95.2)
VV & PLOT CHART	As Plotted Max. Dry Density and Optimum Moisture, plot Line EE (Dry Density) and its corresponding Line II (% Moisture) The oven-dry densities of the soils shall be plotted as ordinates (y-axis) and corresponding moisture content as abscissa (x-axis) (ex. 119.2 @ 12.5%)
WW-	Corrected Max. Density and Opt. Moisture Utilizing the Coarse Aggregate Correction, Line TT (Corrected Max. Dry Density) = 123.6 **Corrected Optimum Moisture Calculation:** [(Line QQ x 2) + (Line RR x As Plotted Opt. Moisture)] [(0.150 x 2) + (0.850 x 12.5)] = 10.9 (ex. 123.6 @ 10.9%) **NOTE:** If its determined that no oversized aggregate correction is to be applied per Test Method Nev. T108, no further action may be necessary
XX-	Sieve Test No., sieve test number from the corresponding sieve (ex. T-1-1 T = Acceptance Test, 1 = first acceptance test of the day, 1 = number of days material has been tested) (ex. T-1-1) **NOTE:** In instances such as borrow or original ground in which weights where obtained from barrel sieves, indicate N/A

040-069 Rev. 02/13

MOISTURE-DENSITY DETERMINATION, COMPACTION REPORT

LINE	EXPLANATION OF NEEDED MATERIAL
YY-	Total Sample Wt., Representative sample as obtained per Test Method Nev. T200 from the actual sieve test (ex. 1205) **NOTE:** In instances such as borrow or original ground, these weights may be obtained by use of barrel sieves
ZZ-	Wt. of +No. 4 or +3/4", weight of material retained on the No. 4 sieve obtained per Test Method Nev. T206. (ex. 181) **NOTE:** Weight retained shall include not only the No. 4 or 3/4" sieve, but any sieves greater than. If a sieve analysis is performed in conjunction with the Proctor Curve, "retained weights" may be obtained from NDOT form 040-013
AAA-	Line ZZ / Line YY = Dec. Equiv. of % +No. 4 or +3/4", (1-P) (ex. (181 / 1205 = 0.150)) If utilizing Method "A", decimal equiv of +No. 4 is to be indicated If utilizing Method "D", decimal equiv of +3/4" is to be indicated
BBB-	Wt. of -No. 4 or -3/4", weight to include any sieves less than No. 4 or 3/4". Test Method Nev. T206. (ex. 1024) **NOTE:** If a sieve analysis is performed in conjunction with the Proctor Curve, weights may be obtained from NDOT form 040-013.
CCC-	Line BBB / Line YY = Dec. Equiv. of % -No. 4 or -3/4", (P) (ex. (1024 / 1205 = 0.850)) If utilizing Method "A", decimal equiv of -No. 4 is to be indicated If utilizing Method "D", decimal equiv of -3/4" is to be indicated
DDD-	Remarks, anything pertanent that should be documented (ex. Test performed on corrugated matel pipe backfill met specs. Inspector and R.E. notified)
EEE-	Tested By, full printed name of the tester or testers who completed the test (ex. Leonard Cooper)
FFF -	Resident Engineer, RE or ARE signature verifiying the accuracy of the reported results (ex. Howard Koothrappali)

NEVADA DEPARTMENT OF TRANSPORTATION

REPORT OF PROFILOGRAPH TEST

Report No: _____ Contract No: _____ Contractor: _____

Lane Description: _____ Type of Material: _____

Date of Test: _____ Smoothness Type: _____

Date of Placement: _____ Lot No: _____ Pay Factor: _____

Station to Station (Include Roadway Line)	Section Length km or (mi)	mm or (in.)		High Point Location(s)
		Left Wheel Track	Right Wheel Track	
to				
to				
to				
to				
to				
to				
to				
to				
to				
to				
TOTALS:				Average total of the two wheel tracks (PCCP):

Profile Index (P.I.):		Checked By:	
Average P.I. (PCCP):			

PROFILE INDEX

Smoothness Type	mm/km (in./mi)	mm/0.1km (in./0.1mi)
Type A	80 (5)	8 (0.5)
Type B	110 (7)	11 (0.7)
Type C	160 (10)	16 (1.0)

Metric: P.I. = 1 km ÷ total section length in km X total measurement in mm

English: P.I. = 1 mi ÷ total section length in mi X total measurement in in.

Note: For one shift, the reports shall be numbered as follows: T-1-1, T-2-1, T-3-1...

Reprofiled sections shall be numbered as follows: T-1-1R1, T-2-1R1, T-3-1R1…

Significant Figures: 0.001 km, 1.0 mm, 0.001 mi, 0.01 in.

Remarks: _____

Resident Engineer: _____ Inspector: _____ Operator: _____

(Signature)

NEVADA DEPARTMENT OF TRANSPORTATION

REPORT OF PROFILOGRAPH TEST

A. Report No: **T-1-1** **B.** Contract No: **3925** **C.** Contractor: **Granite Construction Co.**

D. Lane Description: **Eastbound No. 1 Lane** **E.** Type of Material: **PBS Type 2C**

F. Date of Test: **7/12/2010** **G.** Smoothness Type: **A**

H. Date of Placement: **7/12/2010** **I.** Lot No: _____ **J.** Pay Factor: _____

K. Station to Station (Include Roadway Line)	**L.** Section Length km or (mi)	mm or (in.) **M.** Left Wheel Track	mm or (in.) **N.** Right Wheel Track	**O.** High Point Location(s)
"S" 553 + 00 to "S" 558 + 28	0.100		0.12	
"S" 558 + 28 to "S" 563 + 56	0.100		0.00	
"S" 563 + 56 to "S" 568 + 84	0.100		0.40	
"S" 568 + 84 to "S" 574 + 12	0.100		0.00	
"S" 574 + 12 to "S" 579 + 40	0.100		0.00	
"S" 579 + 40 to "S" 584 + 68	0.100		0.64	Fails to meet in./0.1mi spec. MG @ 579 + 51
"S" 584 + 68 to "S" 589 + 96	0.100		0.18	
"S" 589 + 96 to "S" 595 + 24	0.100		0.00	
"S" 595 + 24 to "S" 600 + 52	0.100		0.00	
"S" 600 + 52 to "S" 603 + 00	0.047		0.05	(0.1/0.047)x0.05 = 0.11
P. TOTALS:	0.947		1.39	**Q.** Average total of the two wheel tracks (PCCP):

R. Profile Index (P.I.):	1.468	**T.** Checked By: TM	**PROFILE INDEX**
S. Average P.I. (PCCP):			

Smoothness Type	mm/km (in./mi)	mm/0.1km (in./0.1mi)
Type A	80 (5)	8 (0.5)
Type B	110 (7)	11 (0.7)
Type C	160 (10)	16 (1.0)

Metric: P.I. = 1 km ÷ total section length in km X total measurement in mm

English: P.I. = 1 mi ÷ total section length in mi X total measurement in in.

Note: For one shift, the reports shall be numbered as follows: T-1-1, T-2-1, T-3-1...

Reprofiled sections shall be numbered as follows: T-1-1R1, T-2-1R1, T-3-1R1…

Significant Figures: 0.001 km, 1.0 mm, 0.001 mi, 0.01 in.

U. Remarks: **Profile Index = (1 / 0.947) x 1.39 = 1.468**

Equipment was calibrated and the parameters were checked on 7-12-2010. See attachment for parameter settings.

V. Resident Engineer: *Billy James* (Signature) **W.** Inspector: **Ryan James** **X.** Operator: **Angie Pineapple**

040-073 Rev. 6/08

REPORT OF PROFILOGRAPH TEST

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Test number for this particular test (EX. T-1-1; T = Test; 1 = First acceptance test of the day; 1 = Number of days the material has been tested)
B -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
C -	Name of the Prime Contractor awarded the contract (EX. Granite Construction Co.)
D -	Lane where the test was performed (EX. Eastbound No. 1 Lane)
E -	Type of material as specified, found in the Contract Plans or Specials Provisions (EX. PBS Type 2C)
F -	Date the test was taken (EX. 7/12/2010)
G -	Smoothness Type found in the Special Provisions (EX. A)
H -	Date the material was placed (EX. 7/12/2010)
I -	Each mile is considered a lot and will be given a number starting with one continuing with consecutive numbering throughout the project (EX. 1) NOTE: This only applies to ride incentive project on Open Grade. See the Special Provisions for this information
J -	Used on ride incentive projects found in the Special Provisions
K -	Station to station length should be 528 ft or (0.1 mi) unless profiling a short section (EX. "S" 553 + 00 to "S" 558 + 28) NOTE: A ramp or the last portion of a lane)
L -	Length of each station to station section should be 528 ft or (0.1 mi). If it is a short section, it will be less than 528 ft (0.1 mi) (EX. 0.100)
M -	Profile for one section 528 ft (0.1mi), per Test Method Nev. T446, check the Special Provisions to make sure you are in the appropriate wheel track (EX. Not using left wheel track) NOTE: Typically right wheel track is used for PBS and right and left wheel track for PCCP
N -	Profile for one section 528 ft (0.1 mi), per Test Method Nev. T446, check the Special Provisions to make sure you are in the appropriate wheel track (EX. 0.12)

040-073 Rev. 6/08

REPORT OF PROFILOGRAPH TEST

LINE	EXPLANATION OF NEEDED INFORMATION
O -	Station at which a high point (must grind) is located within the 528 ft (0.1 mi) section. Counts that are not within specification should be noted. See the Special Provisions for any changes, otherwise use the index on NDOT form 040-073 (EX. Fails to meet in./0.1 mi spec. MG @ 579 + 51)
P -	Sum of all Line L (Section Length) (EX. 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.047 = 0.947) Sum of Line M (Left Wheel Track) (EX. N/A) Sum of Line N (Right Wheel Track) (EX. 0.12 + 0.00 + 0.40 + 0.00 + 0.00 + 0.64 + 0.18 + 0.00 + 0.00 + 0.05 = 1.39)
Q -	Average total of the two wheel tracks (PCCP) NOTE: Only used on PCCP
R -	1.0 / by Line P (Total for Line L (Section Length)) x Line P (Total for Line N (Right Wheel Track)) equals Line R (Profile Index (P.I)) (EX. (1 / 0.947) x 1.39 = 1.468)
S -	1.0 / by Line P (Total for Line L (Section Length)) x Line Q (Average Total of the Two Wheel Tracks (PCCP)) = Line S (Average P.I. (PCCP))
T -	Initials of the person who checked to make sure the calculations were performed properly and to ensure that the form was filled out correctly (EX. TM)
U -	Any remarks that need to be documented for this test (EX. Profile Index = (1 / 0.947) x 1.39 = 1.468 Equipment was calibrated and the parameters were checked on 7-12-2010, See attachment for parameter settings.) NOTE: Inspector shall be present during the calibration of the profilograph
V -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Billy James)
W -	Inspected by, print first and last name of the person who walked with the profilograph or watched the contractor perform Test Method Nev. T446 (EX. Ryan James)
X -	Operated by, print first and last name of the person who ran the profilograph (EX. Angie Pineapple)

NEVADA DEPARTMENT OF TRANSPORTATION

REPORT OF PROFILOGRAPH TEST

A. Report No: **T-1-1R1** **B.** Contract No: **3925** **C.** Contractor: **Granite Construction Co.**

D. Lane Description: **Eastbound No. 1 Lane** **E.** Type of Material: **PBS Type 2C**

F. Date of Test: **7/13/2010** **G.** Smoothness Type: **A**

H. Date of Placement: **7/12/2010** **I.** Lot No: _____ **J.** Pay Factor: _____

K. Station to Station (Include Roadway Line)	**L.** Section Length km or (mi)	mm or (in.)		**O.** High Point Location(s)
		M. Left Wheel Track	**N.** Right Wheel Track	
"S" 579 + 40 to **"S" 584 + 68**	**0.100**		**0.22**	High Point was ground out to meet specifications @ 579 + 51
to				
to				
to				
to				
to				
to				
to				
to				
to				
P. TOTALS:	**0.947**		**0.97**	**Q.** Average total of the two wheel tracks (PCCP):

R. Profile Index (P.I.):	**1.024**	**T.** Checked By:	**TM**
S. Average P.I. (PCCP):			

PROFILE INDEX

Smoothness Type	mm/km (in./mi)	mm/0.1km (in./0.1mi)
Type A	80 (5)	8 (0.5)
Type B	110 (7)	11 (0.7)
Type C	160 (10)	16 (1.0)

Metric: P.I. = 1 km ÷ total section length in km X total measurement in mm

English: P.I. = 1 mi ÷ total section length in mi X total measurement in in.

Note: For one shift, the reports shall be numbered as follows: T-1-1, T-2-1, T-3-1...

Reprofiled sections shall be numbered as follows: T-1-1R1, T-2-1R1, T-3-1R1…

Significant Figures: 0.001 km, 1.0 mm, 0.001 mi, 0.01 in.

U. Remarks: **New Profile Index = (1 / 0.947) x 0.97 = 1.024**

Equipment was calibrated and the parameters were checked on 7-12-2010. See attachment for parameter settings.

V. Resident Engineer: *Billy James* (Signature) **W.** Inspector: **Ryan James** **X.** Operator: **Angie Pineapple**

040-073 Rev. 6/08

REPORT OF PROFILOGRAPH TEST

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Re-test number for this particular test (EX. T-1-1R1; T = Test; 1 = First acceptance test of the day; 1 = Number of days the material has been tested; R1= Re-test 1)
B -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (EX. 3925)
C -	Name of the Prime Contractor awarded the contract (EX. Granite Construction Co.)
D -	Lane where the test was performed (EX. Eastbound No. 1 Lane)
E -	Type of material as specified, found in the Contract Plans or Specials Provisions (EX. PBS Type 2C)
F -	Date the re-test was taken (EX. 7/13/2010)
G -	Smoothness Type found in the Standard Specifications or Special Provisions (EX. A)
H -	Date the material was placed (EX. 7/12/2010)
I -	Each mile is considered a lot and will be given a number starting with one continuing with consecutive numbering throughout the project (EX. 1) NOTE: This only applies to a ride incentive project. See Special Provisions for additional information
J -	Used on ride incentive projects found in the Special Provisions
K -	Station to station length shall equal 528 ft or (0.1 mi) unless profiling the last section of the day may be less than 528 ft or (0.1 mi). Since this is a re-test, this station to station will be the same as the failing section from T-1-1 (EX. "S" 579 + 40 to "S" 584 + 68) NOTE: Place only the re-test(s) on this sheet
L -	Length of each section should equal 528 ft or (0.1 mi) unless it is the last section and it may be less than 528 ft (0.1 mi) (EX. 0.100) NOTE: since this a re-test this number shall match the number from T-1-1)

040-073 Rev. 6/08

REPORT OF PROFILOGRAPH TEST

LINE	EXPLANATION OF NEEDED INFORMATION
M -	Profile for one section 528 ft (0.1mi), per Test Method Nev. T446, check the Special Provisions to make sure you are in the appropriate wheel track (EX. Not using left wheel track)
N -	New profile for one section 528 ft (0.1 mi), determined per Test Method Nev. T446 (EX. 0.22)
O -	Station at which there was a high point and notification if the 528 ft (0.1 mi) is in or out of Specification (EX. High point ground out to meet specifications)
P -	Sum of all Line L (Section of Length) (EX. 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.100 + 0.047 = 0.947) NOTE: Since this is a re-test, this number will be the same as T-1-1R1 Total of all Line N (Right Wheel Track) from T-1-1 minus failing section(s) plus the new .1 mi from the re-test = Line P (Total (Line N Right Wheel Track)) (EX. 0.12 + 0.00 + 0.40 + 0.00 + 0.00 + 0.64 + 0.18 + 0.00 + 0.00 +0.05 = 1.39 - 0.64 = 0.75 + 0.22 = 0.97)
Q -	Average total of the two wheel tracks (PCCP) NOTE: Only used on PCCP
R -	1.0 / Line P (Total for Line L (Section Length)) x Line P (Total for Line N (Right Wheel Track)) = Line R (Profile Index (P.I)) (EX. (1 / 0.947) x 0.97 = 1.024) NOTE: Since this is a re-test this is the new Profile Index
S -	1.0 / Line P (Total for Line L (Section Length)) x Line Q (Average Total of the two wheel tracks (PCCP)) = Line S (Average P.I. (PCCP))
T -	Initials of the person who checked to make sure the calculations were done properly (EX. TM)
U -	Any remarks that need to be documented for this test (EX. New Profile Index = (1 / 0.947) x 0.97 = 1.024 Equipment was calibrated and the parameters were checked on 7-12-2010. See attachments for parameter settings) NOTE: Profile Index is based off the total .1 mi sections from T-1-1 + T-1-1R1
V -	Resident Engineer or Assistant Resident Engineer signature on that specific crew (EX. Billy James)

040-073 Rev. 6/08

REPORT OF PROFILOGRAPH TEST

LINE	EXPLANATION OF NEEDED INFORMATION
W -	Inspected by, forst and last name of the person who walked with the profilograph and watched the contractor complete Test Method T446 (EX. Ryan James)
X -	Operated by, first and last name of the person who ran the profilograph (EX. Angie Pineapple)

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

Sheet ____of ____

CONCRETE FIELD SUMMARY REPORT

Date: _____ Contract No.: _____ Projected Size of Pour: _____ Actual: _____ Tester(s): _____

Producer: _____ Mix Design No.: _____ Strength: _____ Contractor: _____

Item to be Constructed: _____

Aggregate Moistures from Tester(s):
(time is when plant operator received the moistures)

Agg. Type	%	Time	Agg. Type	%	Time

Specifications and Design Criteria: Slump _____ Air _____ U.W. _____ Temp _____

Location/Station	Load No. / Truck No.	Time	Slump/Flow		% Air	Unit Weight	Air Temp / Conc. Temp	Cylinder/ Beam Set #	Remarks(when taking cylinders/beams include cylinder size and method of field curing)
			1st						
			2nd						
			1st						
			2nd						
			1st						
			2nd						
			1st						
			2nd						
			1st						
			2nd						
			1st						
			2nd						
			1st						
			2nd						
			1st						
			2nd						
			1st						
			2nd						

Additional Remarks: _____

Resident Engineer: _____
(Signature)

NDOT
040-078
Rev. 1/14

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

Sheet 1 of 1

CONCRETE FIELD SUMMARY REPORT

A. Date: **5/13/2017** **B.** Contract No.: **3650** **C.** Projected Size of Pour: **256yd³** **D.** Actual: **263 yd³** **E.** Tester(s) **Adam West**

F. Producer: **Burt Ward Ready Mix Inc.** **G.** Mix Design No. **FA 1372 N** **H.** Strength: **4000 psi** **I.** Contractor: **Martinson & Leslie Inc.**

J. Item to be Constructed: **Abutment #2**

Specifications and Design Criteria **N.** Slump **1" - 4"** **O.** Air **4 - 7** **P.** UW **152.6 ± 3lbs** **Q.** Temp **50°F - 90°F**

Aggregate Moistures from Tester(s): Time is when plant operator received the moistures

K. Agg. Type	**L.** %	**M.** Time	Agg. Type	%	Time
#67	**1.2**	**6:45am**			
WS	**3.4**	**6:45am**			

R. Location/Station	**S.** Load No. / **T.** Truck No.	**U.** Time	**V.W.** Slump/Flow		**X.** % Air	**Y.** Unit Weight	**Z.** Air Temp / **AA.** Conc. Temp	**BB.** Cylinder Beam Set #	**CC.** Remarks(when taking cylinders/beams include cylinder size and method of field curing)
Structure B-1237	**#3**	**8:00am**	1st	**4**	**5**	**151.3**	**67°F**	**19**	**Set #19 stored in insulated box onsite**
	#4236		2nd				**72°F**		**6" x 12" Cylinders**
			1st						
			2nd						
Structure B-1237	**#12**	**10:00am**	1st	**4**	**5.5**	**151.8**	**73°F**	**20**	**Set #20 stored in insulated box onsite**
	#237		2nd				**74°F**		**6" x 12" Cylinders**
			1st						
			2nd						
Structure B-1237	**#21**	**11:32am**	1st	**4**	**5**	**152.3**	**82°F**	**21**	**Set #21 stored in insulated box onsite**
	#4250		2nd				**76°F**		**6" x 12" Cylinders**
			1st						
			2nd						
			1st						
			2nd						
			1st						
			2nd						
			1st						
			2nd						
			1st						
			2nd						

DD. Additional Remarks: **All cylinders made this day include 1/7, 1/14, 3/28 day breaks. All test performed at the placement site.**

All test this day met the required tolerances.

EE. Resident Engineer: **Cesar Romero**
(Signature)

NDOT
040-078
Rev. 1/14

Distribution: Headquarters Construction, District, Resident Engineer, Contractor

040-078 Rev. 01/14

CONCRETE FIELD SUMMARY REPORT

LINE	EXPLANATION OF NEEDED INFORMATION
A -	Date that the testing was performed (Ex. 5/13/2017)
B -	Contract number for the material being tested, found in the Contract Plans or Special Provisions (Ex. 3625)
C -	Estimated cubic yards of concrete from field measurements (Ex. 256 yd^3)
D -	Total cubic yards placed into the structure (Ex. 263 yd^3) **NOTE:** Actual yards placed could be different than quantities ordered on tickets
E -	Print first and last name of the tester(s) who actually tested the fresh concrete (Ex. Adam West)
F -	Producer of the concrete mix being placed (Ex. Burt Ward Ready Mix Inc.)
G -	Mix Design number that the sample represents. Mix Design approved by the Materials Division (Ex. FA 1372 N)
H -	Project specified strength, found in the Standard Specifications, Special Provisions, or Contract Plans and indicated as Mpa if the contract is metric or psi if the contract is english (Ex. 4000 psi) **NOTE:** If the mix design specifies 4000 psi then the specified strength has to meet 4000 psi even if the barrier rail only has to meet a 3000 psi
I -	Prime contractor awarded the contract (Ex. Martinson & Leslie Inc.)
J -	Item being constructed from the Contract Plans (Ex. Abutment #2)
K -	Size of the aggregate being used in the approved mix design (Ex. #67)
L -	Moisture content result of the aggregate type in percent form per Test Method Nev. T112 **NOTE:** Moisture percentages of the aggregates at the batch plant are not required to be performed by the State testers when a Concrete Quality Control Plan is required per Section 501.01.01 of the contract special provisions. If so required in the Specials then it is the duty of the Contractors Quality Control Supervisor to supply the plant inspector (if there is one) with the aggregate moisture percentages. (Ex. 1.2)
M -	Time the moisture percentage was completed per Test Method Nev. T112 (EX. 6:45am)

040-078 Rev. 01/14

CONCRETE FIELD SUMMARY REPORT

LINE	EXPLANATION OF NEEDED INFORMATION
N -	Slump specification as specified on the approved Mix Design from the Materials Division (Ex. 1" - 4")
O -	Air content specification as specified on the approved Mix Design from the Materials Division (Ex. 4 - 7)
P -	Specified unit weight specification limits of the concrete mix as stated on the approved Mix Design approved by the Materials Division (152.6 ± 3 lbs)
Q -	Specification range for the fresh concrete temperature on the approved Mix Design approved by the Materials Division (Ex. 50°F - 90°F)
R -	Approximate sample location found in the Contract Plans or job site survey stakes (Ex. Structure B-1237)
S -	Consecutive load delivery number as stated on the load ticket (Ex. #3)
T -	Delivery vehicle number found on the delivery vehicle and batch ticket (Ex. 4236) **NOTE:** Vehicle number and batch ticket vehicle number should match
U -	Actual time that the sample was taken. (Ex. 8:00am)
V -	Slump results from Test Method Nev. T438 performed at time of sampling (Ex. 4) **NOTE:** If slump test is required on before and after admixtures are added use 1st for the before slump and 2nd for the after slump
W -	Slump flow results per Test Method Nev. T417 and T418 use 1st for the first test result and 2nd for the second test result
X -	Air results from Test Method Nev. T431 or T432, performed at time of sampling. (Ex. 5)
Y -	Unit weight results from Test Method Nev. T435, performed at the time of sampling (Ex. 151.3)
Z -	Ambient air temperature (Ex. 67°F)
AA -	Temperature of the concrete, per Test Method Nev. T440. (Ex. 72°F)
BB -	Successive cylinder/beam set numbers for each mix design (Ex. 19)

040-078 Rev. 01/14

CONCRETE FIELD SUMMARY REPORT

LINE	EXPLANATION OF NEEDED INFORMATION
CC -	Anything that needs to be documented (Ex. Set #19 stored in insulated box onsite 6" x 12" cylinders)
DD -	Anything that needs to be documented (Ex. All cylinders made this day include for 1/7, 1/14, 3/28 day breaks. All test performed at the placement site. All test this day meet the required tolerances)
EE -	The Resident Engineers or Assistant Resident Engineer signature on that specific crew (Ex. Cesar Romero)