

CHAPTER 9
Plantmix Surfacing
Asphalt Cement and Mineral Filler

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**DOCUMENTATION REQUIREMENT
SECTION A
PLANTMIX SURFACING**

Contracts containing aggregate items paid by the ton as illustrated in this chapter shall be documented in a LOAD book with the title being the same as the material placed in the book.

To setup the load books, the Estimate of Quantities, as illustrated in Chapter 2 (Setting up a Contract, Book Format, etc.), found in the contract plans shall list the paving bid items that will be used on the contract. **Remember if the contract is wet tons there will be no bid item for asphalt cement or mineral filler.**

Load books are required on all contracts. Ditto marks, vertical lines, arrows, etc. are not acceptable.

Alternate load books may be used in order that one book remains in the office for checking and posting while the other is being used in the field. The headings may be handwritten or stamped. A stamp can be ordered through Headquarters Construction.

Any items requiring measurements, or final quantity calculations must be shown in the field book or on a CALCULATION sheet (Form No. 040-034) and filed in the CALCULATION book as illustrated in Chapter 2 (Setting up a Contract, Book Format, etc.). Make sure to cross reference the quantity in the field book to the CALCULATION sheet and the CALCULATION sheet to the field book(s) and page(s).

A Jobmix Formula is required on every job for both plantmix and open graded. A memo from the lab approving a mix design from another contract will not replace the JMF for your contract.

It is important that all records be kept in a neat and legible manner. All **notes in the remarks column must be initialed** by the person or persons responsible for the entry. **All calculations must be checked and initialed by the checker.**

Each book shall be set up according to Chapter 2 (Setting up a Contract, Book Format, etc.). Load books do not have a book recap.

Forms change periodically, please assure that you are using the most current form available, see Chapter 26 (Distribution of Documents).

PLANTMIX SURFACING

Each **Hotplant/Marination Inspector** must complete the following documentation:

1. Hotplant and/or Marination Plant diary
If there are any questions concerning the Daily Diaries, please contact Headquarters Construction Quality Assurance for assistance.
2. DAILY RECORD OF SCALE WEIGHTS (Form No. 040-009) or collect the COMPUTERIZED tickets. Instructions and illustrations are in Chapter 8 (Roadway Aggregates) and pages 9-4 thru 9-7.
3. Plant Inspector's portion of the DAILY PLANT REPORT OF ASPHALT MIXTURES (Form No. 040-011). If there are any questions concerning the Daily Plant Report of Asphalt Mixtures, please contact Headquarters Construction Quality Assurance for assistance.
4. ASPHALT CEMENT book: Record of Delivery, see page 9-15 and for the Plant Record, see page 9-16.
5. MINERAL FILLER book: Record of Delivery-same as Asphalt, see page 9-15.
6. TRANSMITTAL FOR ASPHALT SAMPLES (Form No. 020-016), see page 9-17. If there are any questions concerning the Transmittal for Asphalt Samples, please contact the Materials Division.
7. Bill of Ladings and certifications for asphalt and mineral filler, see pages 9-18 and 9-19.

Each **Street Inspector** must complete the following documentation:

1. DAILY CONSTRUCTION REPORT (Form No. 040-056). If there are any questions concerning the Daily Diaries, please contact Headquarters Construction Quality Assurance for assistance.
2. Load book, DAILY RECORD OF SCALE WEIGHTS (40-load sheet Form No. 040-009) or collect COMPUTERIZED tickets. Instructions and illustrations are in Chapter 8 (Roadway Aggregates) and pages 9-4 thru 9-7.
3. Street Inspector's portion of the DAILY PLANT REPORT OF ASPHALT MIXTURES (Form No. 040-011). If there are any questions concerning the Daily Plant Report of Asphalt Mixtures, please contact Headquarters Construction Quality Assurance for assistance.

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**DOCUMENTATION REQUIREMENT
SECTION B
PLANTMIX SURFACING
(HOTPLANT AND MARINATION INSPECTOR'S DIARY)
(Form No. 040-056A)
(DAILY CONSTRUCTION REPORT)
(Form 040-056)**

There are two versions of the DAILY DIARY REPORT. Hard copies are available in the Stockroom or the Electronic version on Sharepoint. For the electronic version, a copy will be printed and signed by the employee. For both the hard copy and the electronic version, copies will be made and distributed. The distribution for both versions is listed at the bottom of each form.

If a **hotplant or marination** plant supplies material for multiple projects for different Resident Engineers, it is up to the **Hotplant and/or Marination Inspector** to find out the contract numbers and record those numbers at the top of each diary page. The original diary shall be sent to the appropriate department for review and a copy kept with the Inspector's contract. Copies shall be made and sent to the other Resident Engineers for the remainder of the projects. This does not relieve any of the other documentation requirements. Follow the distribution instructions on the bottom of the form.

Construction Inspectors assigned to a particular phase of construction activity are required to prepare a DAILY CONSTRUCTION REPORT. This report shall be completed and submitted to the field office daily and signed by the **Inspector** and reviewed and signed by the **Resident Engineer**. The original shall be submitted to the appropriate department for review. Follow the distribution instructions on the bottom of the form. The **Inspector** shall retain a copy and a copy shall be filed in Section 1-Division No. 15 as described in Chapter 1 (Organization of a Project, etc.).

If there are any questions concerning the DAILY DIARIES (Form No. 040-056A) or the CONSTRUCTION REPORTS (Form No. 040-056), please contact Headquarters Construction Quality Assurance for assistance.

Forms change periodically, please assure that you are using the most current form available, see Chapter 26 (Distribution of Documents).

**DOCUMENTATION REQUIREMENT
SECTION C
PLANTMIX SURFACING
(DAILY RECORD OF SCALE WEIGHTS, aka 40-LOAD SHEET)
(Form No. 040-009)**

The **Weighmaster** shall do the following:

1. Prepare the DAILY RECORD OF SCALE WEIGHTS as illustrated on pages 9-5. Record the sheet number, pit number or commercial source, material type, date, and contract number. This information is required on each sheet. Due to some pits being on private property and having royalties involved, the Deposit No. shall be recorded in the Pit No. space. Make sure to cross off Pit No. and place Deposit No. above.
2. Weigh the material and record the ticket number, truck number, gross, tare and net weight in pounds or kilograms (circle one), and net weight (circle Tons or Metric Tons). If a single beam scale is used, gross weights and tare weights must be shown on every load. If a scale with a tare bar, or certified load cells on a silo are used, no gross weights need be shown and the tare weights shall be indicated only when the trucks are tared twice each shift. (See subsection 109.01 of the Standard Specifications for Road and Bridge Construction, (Silver book.)
3. Record the time every five loads on the DAILY RECORD OF SCALE WEIGHTS.
4. Calculate the total of every 10 loads for the Gross, Tare, Net, and Tons on the DAILY RECORD OF SCALE WEIGHTS. Record the accumulative total in the Remarks column for every 10 loads.
5. Deduct any waste from the total tons delivered and calculate a new total. If there is no waste, place 0 waste below the total on the DAILY RECORD OF SCALE WEIGHTS. **An explanation for all waste must be noted and circled in red in the load book.**
6. Sign the bottom of the DAILY RECORD OF SCALE WEIGHTS as **Weighmaster**.
7. Turn the DAILY RECORD OF SCALE WEIGHTS into the office daily.

If NDOT is not the Weighmaster, the Contractor must sign the DAILY RECORD OF SCALE WEIGHTS as Weighmaster.

There may be some cases where the scales being used on the contract do not have sufficient length to weigh both truck and trailer loads at the same time. When this happens, the weights of the truck and trailer must be entered separately on the DAILY RECORD OF SCALE WEIGHTS. Be sure to use the correct tare weights for the separate truck and trailer.

The DAILY RECORD OF SCALE WEIGHTS shall be filed in Section 1 - Contract Files, Division No. 12 as described in Chapter 1 (Organization of Project).

Forms change periodically, please assure that you are using the most current form available, see Chapter 26 (Distribution of Documents).

The **Officeperson** shall check for mathematical correctness, place the AEB number(s), and stationing from the load book on the DAILY RECORD OF SCALE WEIGHTS, **making sure all stations are represented and match the load books and the DAILY PLANT REPORT OF ASPHALT MIXTURES (Form No. 040-011)**. Check to assure all waste has been explained and circled in red in the load book and the waste quantity deductions are correct and match the waste shown in the load book. Sign the DAILY RECORD OF SCALE WEIGHTS as Checked by and Checked against book by.

Note: All stations must have a line designation and left, right, or center line.

The Weighmaster's Checklist is explained in Chapter 8 (Roadway Aggregates).

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

DAILY RECORD OF SCALE WEIGHTS

Material Type: PBS Type 2C

Sheet No. 1
Pit No. _____
Or Commercial Source: Sloam
Date: 8/17/08
Contract No. 3247

Ticket No.	Truck No.	Gross Weight	Tare Weight	Net Weight	Net Weight	Time	Remarks
Circle	Units	(Lbs/Kg)	(Lbs/Kg)	(Lbs/Kg)	(Tons/Metric Tons)		
5172	192353	7 8 6 6 0	3 4 6 8 0	4 3 9 8 0	2 1 9 9	11:01 AM	1st TAKE "BD" 17+70 RT
5173	192346	7 4 6 6 0	3 5 3 4 0	3 2 1 2 0	1 6 0 6		1st TAKE
5174	192333	7 1 5 0 0	3 4 6 8 0	3 6 8 2 0	1 8 4 1		
5175	192346	7 4 4 8 0	3 5 3 4 0	3 9 1 4 0	1 9 5 7		
5176	192333	7 6 8 8 0	3 4 6 8 0	4 2 2 0 0	2 1 1 0		"BD" 15+90 RT
5177	192346	7 6 3 6 0	3 5 4 0 4	4 0 9 5 6	2 0 4 8	12:55 PM	"BD" 10+12 RT
5178	192353	7 5 8 8 0	3 4 6 8 0	4 1 2 0 0	2 0 6 0		
5179	192346	7 6 0 0 0	3 5 3 4 0	4 0 6 6 0	2 0 3 3	1:30 PM	"BD" 8+10 RT
		59 7220	280144	317076	158.54		158.54
							AEB#1 = 97.13
							AEB#2 = 61.41
							158.54
							Waste = 0
							158.54 placed

NOTES: Take tare weights twice each shift, once prior to starting work in the morning and again at some other time during the day. Note times tares were taken. Record time every five loads.

Sam Elliott Weighmaster
Joe Green Resident Engineer
Shelli Jones Checked by
Demi Brown Checked Against Book by

DDOT 040-009 (Rev. 12-00) DISTRIBUTION: ORIGINAL—Retained by State; COPY—To Contractor. (0)-557

**DOCUMENTATION REQUIREMENT
SECTION D
PLANTMIX SURFACING
(COMPUTERIZED SCALE TICKETS)**

Some Contractors are equipped with automated scales, which produce a COMPUTERIZED ticket with each load as illustrated on page 9-7. On projects where these facilities are available, these tickets may be used in lieu of the DAILY RECORD OF SCALE WEIGHTS to document roadway aggregates. **Each COMPUTERIZED ticket must contain the date, material source, material type, ticket number, truck number, gross, tare and net weights, tons, time and accumulative total.**

Each day, the **Officeperson** shall add all of the tickets to verify the accumulative total and initial. If the total is incorrect the **Officeperson** must investigate. If the error is only a rounding error, the **Officeperson** will line through the printed total and place the new total above and initial. If there are loads missing, then a DAILY RECORD OF SCALE WEIGHTS (Form No. 040-009) must be completed in lieu of the COMPUTERIZED tickets. The **Officeperson** shall place the AEB number(s) and stationing from the load book on the last COMPUTERIZED ticket for the day, making sure all stations are represented and match the load books and the DAILY PLANT REPORT OF ASPHALT MIXTURES (Form No. 040-011). The Resident Engineer must sign, **not initial** the last ticket for the day.

If there is waste for the day it must be deducted from the checked accumulative total and the tons placed, after any deductions, must be initialed. If there is zero waste, place "0 waste" on the last scale ticket for the day. An explanation for all waste must be noted in the load book.

The last ticket along with the load books, become the source documents and shall be turned in at the completion of the contract.

Special care must be taken to insure that only those loads used on the contract are included in the accumulated total shown on the ticket and the accumulative tons are zeroed each day.

The last COMPUTERIZED ticket for the day shall be filed in Section 1 - Contract Files, Division No. 12 as described in Chapter 1 (Organization of Project).

Load books and spreadsheet are still required when using this method.

Information required on every computerized ticket:

- Date
- Material source
- Material type
- Ticket and truck number
- Gross, tare, net weights, and tons
- Accumulative total tons
- Time

On the last ticket of the day, the following information must be record:

- Beginning and ending stations, making sure all stations are represented and match the load book and the DAILY PLANT REPORT OF ASPHALT MIXTURES (Form No. 040-011)
- Stations shall have a line designation left, right, or center line
- AEB number
- Pit information
- Waste, if there is zero waste place 0 waste
- Resident Engineers **signature** and checker's initials

		SIGN AND RETURN				CONTROL NO. → 499286 TICKET NO. → 21238018		
		Sloan Hot Plant Sloan Pit		DATE	TIME	HAULER NO.	TRUCK NO.	
CUSTOMER	PURCHASE ORDER NO.	PRODUCT CODE	SALE TYPE	ZONE	PLANT NO.	PROJECT NO.	LOAD	ACCUM. AMOUNT
627190		3103	78.5		212	324700	16	614.58
CUSTOMER NAME			JOB NAME / DIRECTIONS					
Contract Sales - SNP			NDOT 3247 SR-160, Blue Diamond, #I-15 ACCUM. METRIC TONS 557.54 "BD" 46+88 To "BD" 58+60 LT waste = 0 614.58 Placed AEB #2					
RE: Joe Green								
PRODUCT	QUANTITY	UNIT	PRICE	AMOUNT		MEGA GRAMS	POUNDS	TONS
NDOT PG Dense Grade	39.85	Ton			GROSS	56.97	125600	62.80
BF07-77					TARE	20.82*	45900	22.95
					NET	36.15	79700	39.85
					TOTAL DUE			
I/We relieve the seller of any liability for personal injury or property damage when delivery is made beyond the curb line. See reverse side.				ARRIVE JOB	DEPART JOB	WAITING TIME	WEIGHT MASTER	
* Predetermined Rate							Mike M	

**DOCUMENTATION REQUIREMENT
SECTION E
PLANTMIX SURFACING
(LOAD BOOK)**

Separate load books shall be used for all major paving items such as plantmix bituminous surface (PBS) and open graded and any other item that is delivered to the job with weigh tickets and is paid by the ton. An illustration of a page in a load book is on page 9-10.

The **Officeperson** shall complete for each page all headings, Record of Delivery, date, type of material, ticket no., truck no., time, station, tickets taken by, and checked against scale sheet. Alternate load books may be used in order that one book remains in the office for checking and posting while the other is being used in the field. The headings may be handwritten or stamped. A stamp can be ordered through Headquarters Construction.

When the load is delivered to the jobsite, the truck driver will hand the ticket to the **Inspector**. The **Inspector** will record the **date, type of material, ticket no., truck no., time every fifth load, and beginning and ending station for each page** in the load book. Make sure all stations have a line designation left, right, or center line and **equations are listed to explain any changes in the line**. The **Inspector** shall initial tickets taken by:

Load books are required on all contracts. Ditto marks, vertical lines, arrows, etc. are not acceptable.

The **Inspector**, at the end of the shift, will turn the DAILY RECORD OF SCALE WEIGHTS or the COMPUTERIZED tickets, the load book, and the **Street Inspector's** portion of the DAILY PLANT REPORT OF ASPHALT MIXTURES into the field office.

The **Officeperson** shall compare the load book against the DAILY RECORD OF SCALE WEIGHTS or the COMPUTERIZED tickets. If there is a ticket, the load most likely arrived at the jobsite. If there is a ticket that does not show in the load book and should be included for payment, document the ticket in the appropriate load book. Loads appearing on the DAILY RECORD OF SCALE WEIGHTS or COMPUTERIZED tickets, that are not to be included for payment, must have a satisfactory explanation. **Stations in the load book, the DAILY RECORD OF SCALE WEIGHTS or the last COMPUTERIZED ticket and the DAILY PLANT REPORT OF ASPHALT MIXTURES (Form No. 040-011) for the day must match.**

All waste quantities in load books shall be explained and circled in red. On the last page of the day, in the load book, **circle in red the total tons wasted for the day. If there is zero waste, place 0 waste and circle in red. Remember, an explanation for all waste must be noted.**

The **Officeperson** shall initial each page at the bottom, "checked against scale sheet" in the load book indicating that it was crosschecked against the DAILY RECORD OF SCALE WEIGHTS or the COMPUTERIZED tickets.

The DAILY RECORD OF SCALE WEIGHTS or the last COMPUTERIZED ticket for the day and the load books together become the source documents and must be turned in at the completion of the job.

DOCUMENTATION REQUIREMENT
SECTION F
PLANTMIX SURFACING
(DAILY PLANT REPORT OF ASPHALT MIXTURES)
(Form No. 040-011)

The **Hotplant Inspector** must document all information required in the center section of the DAILY PLANT REPORT OF ASPHALT MIXTURES. It is very important that all information is accurate and complete. It is also important that the information recorded on this report is not in conflict with the hotplant diary.

The **Street Inspector** must document all information required on the right-hand side of the DAILY PLANT REPORT OF ASPHALT MIXTURES. It is very important that all information is accurate and complete and the stations and waste correspond to what is shown in the load book for that day. All stations must have a line designation and show left, right, or center line.

The **Tester** must document all information required on the left-hand side of the DAILY PLANT REPORT OF ASPHALT MIXTURES and complete and turn in all test reports that apply to the paving operation **daily**.

The **Officeperson** shall take all three parts, (Tester, Plant Inspector, and Street Inspector,) and cut and tape together and attach all pertinent test reports. Compare the stations on the DAILY PLANT REPORT OF ASPHALT MIXTURES to the load book and place the stations on either the DAILY RECORD OF SCALE WEIGHTS or the last COMPUTERIZED ticket for the day. Compare the plantmix placed and the waste shown on the DAILY PLANT REPORT OF ASPHALT MIXTURES to the total plantmix and waste shown on the DAILY RECORD OF SCALE WEIGHTS or the last COMPUTERIZED ticket for the day. The waste shall also match the load book and the waste in the load book must be circled in red and explained. Check and initial the DAILY PLANT REPORT OF ASPHALT MIXTURES, and all attached test reports, acquire the Resident Engineer's signature and distribute according to the bottom of the DAILY PLANT REPORT OF ASPHALT MIXTURES. A **copy** of the DAILY PLANT REPORT OF ASPHALT MIXTURES and all pertinent test reports shall be filed in Section 2 - Materials and Testing File, Division No. 8 as described in Chapter 1 (Organization of Project).

If there are any questions concerning the DAILY PLANT REPORT OF ASPHALT MIXTURES (Form No. 040-011), please contact Headquarters Construction Quality Assurance for assistance.

If the mix is being used on multiple projects for different Resident Engineers, it is up to the **Hotplant Inspector** to find out the contract numbers and record those numbers at the top of the Plant Inspector portion of the DAILY PLANT REPORT OF ASPHALT MIXTURES. **Copies of the Plant Inspector's portion only shall be made and sent to the other Resident Engineers for the remainder of the projects. Following the instructions in the above paragraph, process the completed packet for the days paving.** This does not relieve any of the other documentation requirements. Follow the distribution instructions on the bottom of the form.

Forms change periodically, please assure that you are using the most current form available, see Chapter 26 (Distribution of Documents).

**DOCUMENTATION REQUIREMENT
SECTION G
PLANTMIX SURFACING
(PLANTMIX AND OPEN GRADE)
(SPREADSHEET)**

Quantities for wet ton items shall be posted daily on a spreadsheet by the Officeperson as illustrated below. The significant figure is to the hundredth (.01). Each day will be listed separately and a final total is required on every column except the date and payment no. column. **The DAILY RECORD OF SCALE WEIGHTS or COMPUTERIZED tickets shall be kept in order as listed on the spreadsheet.** The spreadsheet and the DAILY RECORD OF SCALE WEIGHTS or COMPUTERIZED tickets will be filed in Section 1-Contract Files, Division No. 12 as described in Chapter 1 (Organization of Project).

The **yellow side** of the spreadsheet is for posting the DAILY RECORD OF SCALE WEIGHTS or the COMPUTERIZED tickets. The **green side** is for posting what has been paid on the turnaround document. If an error is found at a later date on the DAILY RECORD OF SCALE WEIGHTS or the COMPUTERIZED tickets the correction is to be made to the original entry on the yellow side. **Do not make a new entry at the bottom of the spreadsheet on the yellow side.** If the correction will affect the turnaround document then the correction will be made on the next progress payment and will be entered on the green side of the spreadsheet. The **blue column** is used for calculating to see that there are enough B/Ls to cover what has been delivered. Make sure to use the total tons from the DAILY RECORD OF SCALE WEIGHTS or the last COMPUTERIZED ticket for the day **not** what was placed. **Do not** deduct the waste before calculating. The **orange column** is for listing the mix design used for each day of paving.

Note: colors are for reference only and are not required on actual spreadsheets.

CONTRACT NO. 3247 ITEM NO. 402 6002 - PLANTMIX SURFACING (TYPE 2C)(WET) PLAN QUANTITY = 22,000.00 TONS								
DATE	AEB #2 TOTAL	DAILY TOTAL PLACED	ACCUM. TOTAL	AEB #2 PAY TOTAL	ACCUM. PAY TOTAL	PAYMENT NO.	DAILY TOTAL DELIVERED	MIX DESIGN NO.
06/09/08	1,995.34	1,995.34	1,995.34				2,015.50	BF07-77
06/10/08	1,858.21	1,858.21	3,853.55	3,853.55	3,853.55	20	1,858.21	BF07-77
07/06/08	2,493.69	2,493.69	6,347.24				2,500.50	BF07-77
07/07/08	1,670.09	1,670.09	8,017.33				1,685.00	BF07-77
07/08/08	1,631.64	1,631.64	9,648.97				1,631.64	BF07-77
07/13/08	1,062.08	1,062.08	10,711.05	6,857.50	10,711.05	22	1,062.08	BF07-77
07/22/08	2,260.68	2,260.68	12,971.73				2,279.00	BF07-77
07/23/08	679.86	679.86	13,651.59	2,940.54	13,651.59	23	700.90	BF07-77
08/05/08	2,541.99	2,541.99	16,193.58				2,541.99	BF07-77
08/06/08	1,786.64	1,786.64	17,980.22				1,786.64	BF07-77
08/07/08	2,600.93	2,600.93	20,581.15	6,929.56	20,581.15	24	2,600.93	BF07-77
08/09/08	1,918.50	1,918.50	22,499.65				1,957.00	BF07-77
08/17/08	158.54	158.54	22,658.19				160.54	BF07-77
08/18/08	614.58	614.58	23,272.77	2,691.62	23,272.77	25	620.25	BF07-77
FINAL TOTAL	23,272.77	23,272.77	23,272.77	23,272.77	23,272.77		23,400.18	

Before job pickup, a copy of the mix design(s) used shall be placed in the file with the spreadsheet and scale tickets.

**DOCUMENTATION REQUIREMENT
SECTION H
PLANTMIX SURFACING
(ASPHALT CEMENT AND MINERAL FILLER)**

Asphalt Cement (AC-20, AC-20P, AC-30, PG76-22, SC-800, etc.) shall be documented in an ASPHALT CEMENT book with a RECORD OF DELIVERY section and PLANT RECORD section for each type of asphalt. **Mineral Filler** shall be documented in a MINERAL FILLER book. If the contract is small and room permits the asphalt cement (Record of Delivery and Plant Record) and the mineral filler (Record of Delivery) shall be placed in one book and titled PAVING B/L book.

If the job is a wet tons job there will be no bid items for asphalt cement or mineral filler. The Bill of Lading (B/Ls) are collected and recorded on the Record of Delivery. Use the calculation sheet on page 9-21 to assure there are enough B/Ls to cover what was delivered and used on the contract. This should be done for every progress payment and at job closeout.

If the marination is being done for more then one contract it is the responsibility of the **Marination Inspector** to collect the B/Ls and certifications and record the contract numbers on the top of the B/L and certification and turn in daily.

The **Officeperson** will make copies of the B/Ls and certifications and send them to the other Resident Engineers for the remainder of the projects. It will be the responsibility of the **Resident Engineer** to assure there are enough B/Ls to cover their contract.

Hint: Each contract will be listing the same B/Ls, communicate with the other Office people and compare what has been used on each contract to assure no B/L is being used more then once.

Requirements for Certification on all B/Ls shall follow a certain criteria as described in the Standard Specifications for Road and Bridge Construction (Silver book) or the Contract Special Provisions for that item. For example: mineral filler certification requirements shall be found in section 705.03.03 of the Standard Specifications for Road and Bridge Construction (Silver book), the cert has to conform to ASTM C1097.

It is important that all records be kept in a neat and legible manner. All **notes in the remarks column must be initialed** by the person or persons responsible for the entry. **All calculations must be checked and initialed by the checker.**

Each book shall be set up according to Chapter 2 (Setting up a Contract, Book Format, etc.). There will be no book recap page.

**PLANTMIX SURFACING
(ASPHALT CEMENT AND MINERAL FILLER)
(INDEX AND INITIAL KEY)**

Below is an illustration of an index and an initial key. When setting up a field book at the beginning of a contract make sure each item in the book is listed on the index. During the contract if anything is added to the book make sure it is placed on the index. At job closeout make sure the index has the ending page for each item listed on more than one page. Load books do not have a book recap page. If room permits skip a line between entries on the index. Check the initial key each progress payment to assure that everyone who has made entries in the book has initialed and signed the initial key. If the signature is not legible, have the person print his/her name under the signature. Make sure the initials used throughout the book match the way the initials show on the initial key. If the initials change, add the new initials to the initial key next to the original initials.

**ASPHALT
CEMENT book**



Use when only
the asphalt
cement and plant
record are
placed in a book.

Index		Initial Key		
Page	Description	Initials	Signature	Title
4-10	Record of Delivery - PG 76-22NU	EB	Sherri Brown	Tech II
15-25	Plant Record - PG 76-22NU	TC	Terrie Carson	Tech I

**PAVING B/L
book**



Use when
asphalt
cement and
mineral filler
are placed in
the same
book.

Index		Initial Key		
Page	Description	Initials	Signature	Title
4-10	Record of Delivery - PG 76-22NU	EB	Sherri Brown	Tech II
15-25	Plant Record - PG 76-22NU	TC	Terrie Carson	Tech I
30-50	Record of Delivery - Mineral Filler			

**PLANTMIX SURFACING
(ASPHALT CEMENT AND MINERAL FILLER)
(RECORD OF DELIVERY)**

The **Officeperson** shall complete the item description, RECORD OF DELIVERY and all column headings.

When a load of asphalt is received at the hotplant, the **Inspector** shall obtain the weigh ticket (bill of lading) indicating the weight of the material and the certification. Record the load no., date delivered, truck and trailer no, bill of lading no. (B/L), tons and accumulative tons delivered, initials, and any remarks. For ease in cross checking, the load number and contract number must be written on the corresponding weigh ticket in the upper right-hand corner. If the B/L for mineral filler does not have a B/L number, the control number shall be recorded in the remarks column and the B/L no. column will be left blank. The company/supplier can be called and they will supply the B/L number and/or the ticket.

The entry in the field book, along with the weigh ticket, which shall be filed in Section 1 - Contract Files, Division No. 12 as described in Chapter 1 (Organization of Project), documents the load and quantity received at the plant.

The RECORD OF DELIVERY illustration below shall be used for all types of asphalt and mineral filler.

Item: PG 76-22 NU						Sig Fig = .01			5
Record of Delivery									
Load No.	Date	Trk No	Trl No	B/L No	Tons Delivd	Accum Tons Delivd	Insp	Remarks	
21	8-6-08	12380	212428	56007	22.55	825.55	TC		
22	8-6-08	192520	212788	56015	23.72	849.27	TC		
23	8-7-08	12380	212489	56020	22.89	872.16	TC		
24	8-7-08	23X0	2788	56028	23.09	895.25	TC		
25	8-7-08	192324	272783	56040	24.66	919.91	TC		
26	8-7-08	192329	212733	56045	24.44	944.35	TC		
27	8-7-08	192329	2127	56049	13.96	958.31	TC		
28	8-9-08	192380	212788	56693	23.91	982.22	TC		
29	8-9-08	192380	212788	56694	23.74	1005.96	TC		
30	8-9-08	192380	212788	56695	23.45	1029.41	TC		
31	8-9-08	192380	212788	56704	22.97	1052.38	TC		
32	8-17-08	192380	212788	56708	23.04	1075.42	TC		
33	8-18-08	192380	212788	56711	23.36	1098.78	TC		
34	8-18-08	192380	212788		20.85	1119.63	TC	✓ 125 Control # 125731	

**PLANTMIX SURFACING
(ASPHALT CEMENT)
(PLANT RECORD)**

ASPHALT CEMENT PLANT RECORD (sample record)

Asphalt samples are taken by the Contractor's personnel from the line between the storage tank and the plant bituminous metering device. One sample must be taken for each 25 tons (23 metric tons) of asphalt used or on the last sample of the day any portion thereof. For performance grade (PG) asphalts, refer to subsection 106.04 of the special provisions for sampling frequency. The plant record is also used in calculating liquidated damages on asphalt as explained in Chapter 23 (Preparation of Progress Payments).

The **Inspector** shall document the sample no., date, time, and initials. **The sample number and date must match the field number and date sampled on the TRANSMITTAL FOR ASPHALT SAMPLES (Form No. 020-016).**

The **PLANT RECORD** illustration below shall be used for all types of asphalt.

Sample No.	Date	Time	Insp
21	7/23/08	5:30 AM	TC
22	8/5/08	5:45 AM	TC
23	8/5/08	6:00 AM	TC
24	8/5/08	6:30 AM	TC
25	8/5/08	6:50 AM	TC
26	8/5/08	7:15 AM	TC
27	8/6/08	5:20 AM	TC
28	8/6/08	5:45 AM	TC
29	8/6/08	6:15 AM	TC
30	8/7/08	6:00 AM	TC
31	8/7/08	6:30 AM	TC
32	8/7/08	6:50 AM	TC
33	8/7/08	7:20 AM	TC
34	8/7/08	7:45 AM	TC
35	8/9/08	4:00 AM	TC
36	8/9/08	4:25 AM	TC
37	8/9/08	5:00 AM	TC
38	8/9/08	5:30 AM	TC
39	8/17/08	6:10 AM	TC
40	8/18/08	6:30 AM	TC
41	8/18/08	7:00 AM	TC

Item: PG 76-22NU
Plant Record
16

**DOCUMENTATION REQUIREMENT
SECTION I
PLANTMIX SURFACING
(TRANSMITTAL FOR ASPHALT SAMPLES)
(Form No.020-016)
(ASPHALT CEMENT AND MINERAL FILLER)
(TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS)
(Form No. 020-018)**

The **Inspector** shall complete the TRANSMITTAL FOR ASPHALT SAMPLES, attach the transmittal to the asphalt sample, and turn the sample with the transmittal into the Materials Division. **A copy of the transmittal will be turned into the field office.**

The **Officeperson** shall compare the Field No. and Date Sampled on the TRANSMITTAL FOR ASPHALT SAMPLES to the information on the PLANT RECORD to assure there are no discrepancies. These two items are very important when calculating liquidated damages as described in Chapter 23 (Preparation of Progress Payment).

The TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS shall be completed by the **Officeperson, Tester, or the Inspector. The Materials Division requires the bid item number to be listed on the Material description line.** If there is not a bid item, make sure to put a complete description of the material. All information on the transmittal is required for test samples. All stations must have a line designation and show left, right, or center line.

The B/L(s) **only**, for both asphalt cement and mineral filler will be filed in Section 1 - Contract Files, Division No. 12 as described in Chapter 1 (Organization of Project). A copy of the B/L, the certification, and a copy of the TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS shall be filed in Section 2 - Materials and Testing File, Division No. 4 as described in Chapter 1 (Organization of Project).

When there is more than one B/L and certification to be submitted for approval, combine them all on one transmittal.

If there are any questions concerning the TRANSMITTAL FOR ASPHALT SAMPLES (Form No.020-016) and the TRANSMITTAL FOR TEST SAMPLES AND CERTIFICATIONS (Form No. 020-018), please contact the Material Division for assistance.

Forms change periodically, please assure that you are using the most current form available, see Chapter 26 (Distribution of Documents).

**DOCUMENTATION REQUIREMENT
SECTION J
PLANTMIX SURFACING
(ASPHALT CEMENT AND MINERAL FILLER)
(BILL OF LADING (B/L) AND CERTIFICATIONS)**

The **Inspector** will collect a B/L and certification for each delivery of asphalt cement and/or mineral filler. The **Inspector** shall record the contract number and the corresponding load number from the RECORD OF DELIVERY in the upper right-hand corner on the B/L and the certification and check and initial all weight calculations. The illustration below is a B/L for asphalt and the certification illustration is on page 9-19.

The **Officeperson** shall assure the contract number and load number correspond to the RECORD OF DELIVERY, the weight calculations have been checked and initialed, and there is a certification for each B/L.

BILL OF LADING
56695
#3247
LOAD #39
WVP



**Ergon Asphalt
Products, Inc.**
800-380-5255

CHANDLER, 6940 W. Chandler Blvd. SNOWFLAKE, 400 N. Industrial Way LAS VEGAS, 6400 W. Flamingo

CUSTOMER: Las Vegas Parking CUSTOMER # LVEPRV ERGON # _____
 CUST. JOB REF.: _____ CUSTOMER JOB REF. # 620/8082 DATE / TIME 8/9/08
 DESTINATION: Blue Diamond PO#/PG _____ TRUCK # 19280 TRAILER # 2A788

STATE JOB # _____ GROSS 80480 LB
 TONS 23.45 TARE 33580 LB
 GALS 6214 NET 46900

DRIVER ON DRIVER OFF
 TEMPERATURE _____ SPECIFIC GRAVITY _____

PUBLIC WEIGHMASTER CERTIFICATE OF WEIGHT AND MEASURE
This is to certify that the described merchandise was weighed, counted or measured by public or deputy weighmaster and when properly signed and sealed shall be prima facie evidence of the accuracy of the weight shown as prescribed by law.

TERMS NET 30 DAYS, INTEREST MAY BE CHARGED AT THE RATE OF 18% PER YEAR ON THE UNPAID BALANCE

RECEIVED FOR CONSIGNEE [Signature] WEIGHMASTER [Signature]
 12626 DEPUTY _____
 ERGON ASPHALT PRODUCTS, INC.

CHECK BOX IF APPLICABLE CHECK BOX IF APPLICABLE
 Elevated temperature, liquid, N.O.S., 9, UN3257, III (Asphalt) Asphalt cut back UN 1999

COMMENTS/SPECIAL INSTRUCTIONS _____

The following personal protective equipment is required at ERGON ASPHALT PRODUCTS facilities:
 Hard Hat Long Sleeve Shirt Safety Glasses
 Closed Toe Shoes Long Pants
 Specialty Equipment As Required By Plant Manager

X [Signature]
 Drivers Signature

WHITE - ACCOUNTING BLUE - ACCOUNTING GREEN - PLANT CANARY - CUSTOMER PINK - DRIVER/CUSTOMER GOLDENROD - CUSTOMER

Requirements for Certification on all B/Ls shall follow a certain criteria as described in the Standard Specifications for Road and Bridge Construction (Silver book) or in the Contract Special Provisions for that item. For example: PG 76-22NV criteria is located in the Contract Special Provisions, in section 703.03.02.

<u>Ergon Asphalt Products, Las Vegas Terminal</u>		#3247 load #30	
6400 W. Richmar Ave. Las Vegas Nevada, 89139 702-837-8995			
Product 76-22NV	Date Sampled <u>8/8/08</u>	Date Tested <u>8/8/08</u>	
Tank # <u>AC-1</u>	Time Sampled <u>5:30a</u>		

Test	Test Method	Criteria	Results
Tests on original binder			
Flash Point, °C	Nev. T716	230 Min.	
Viscosity @ 135 °C, Pa*s	AASHTO T316	3 Max	2.213
Dynamic Shear, G*/sin&, Test Temp 76°C @10rad/s, kPa	AASHTO T315	1.3 Min.	1.573
Ductility @ 4 °C, 5cm/min, cm	Nev. T746	20 Min.	28.75
Sieve	Nev. T730	Pass	pass
Polymer Content, % by mass		3.0 Min.	pass
Tests on Residue from R.T.F.O., Nev.T728			
Mass Loss, %	Nev. T728	0.50 Max.	
Dynamic Shear, G*/sin&, Test Temp 76°C @10rad/s, kPa	AASHTO T315	2.20 Min.	2.889
Ductility @ 4 °C, 5cm/min, cm	Nev. T746	10 Min.	14.5
Tests on residue from Pressure Aging Vessel, AASHTO R28 @ 110 °C			
Dynamic Shear, G*/sin&, Test Temp 31°C @10rad/s, kPa	AASHTO T315	5000 Max.	892.2
Creep Stiffness, S, Test Temp -12°C @ 60 sec, Mpa	AASHTO T313	300 Max	89.4
Creep Stiffness, m-value, Test Temp -12°C @ 60 sec	AASHTO T313	0.300 Min	0.333
Direct Tension, Failure Strain, Test Temp -12°C @1.0 mm/min, %	AASHTO T314	1.00 Min.	

This certifies that this material meets the specification for PG 76-22NV according to section 703 of the State of Nevada Standard Specifications. This certificate has been reviewed by the Quality Control Manager for accuracy.
This material is certified to contain at least the minimum polymer content as set forth by section 703 of the State of Nevada Standard Specifications.

Signature: [Signature] Title: Lab Manager

Date: 8/8/08

Notes: B/L # 56695
Temp. 340f

**DOCUMENTATION REQUIREMENT
SECTION K
PLANTMIX SURFACING
(MINERAL FILLER)
(MARINATION CALCULATIONS)**

The **Officeperson** shall check the jobmix formula to assure the percent of mineral filler is correct. The ratio of the coarse and fine aggregate shall be at a 1% for coarse stockpiles and 2% for the fine stockpiles. Refer to subsection 401.03.08 of the Standard Specifications for Road and Bridge Construction (Silver book) and the Special Provisions to assure the percentages do not differ from the percentages mentioned above for coarse and fine aggregate.

$$\begin{array}{r} \text{coarse stockpile ratio X percentage (1\% 100)} \\ + \text{ fine stockpile ratio X percentage (2\% 100)} \\ \hline = \% \text{ lime (new theoretical)} \end{array}$$

Example: if the bin percentages from the applicable jobmix formula are 49% coarse aggregate and 51% fine aggregate, the new theoretical percentage would be:

$$\begin{array}{r} 49\% \text{ coarse agg X .01} = .49 \\ + 51\% \text{ fine agg X .02} = 1.02 \\ \hline = \% \text{ lime used for payment } 1.51 \end{array}$$

This new theoretical percentage shall be used on the jobmix formula for the marinated mineral filler. **Do not use this new percent to assure there are enough B/Ls to cover what has been used. Use the percent from the mix design, see page 9-21.**

The Jobmix formula is written by the RE and the mix design is supplied by the Materials Division.

**DOCUMENTATION REQUIREMENT
SECTION L
PLANTMIX SURFACING
(ASPHALT CEMENT AND MINERAL FILLER)
(BILL OF LADING CALCULATION SHEET)**

The BILL OF LADING CALCULATION sheet shall be used to assure there are enough B/Ls collected of both asphalt cement and mineral filler to cover what has been delivered to the project. This form will be completed by the **Officeperson** Bi-weekly and when finaling out a contract. The calculation sheet shall be done for both plantmix and open grade. If both plantmix and open grade are using the same type of asphalt cement and mineral filler make sure to add the asphalt cement together and the mineral filler together to assure there are enough B/Ls to cover what has been delivered to the project. The final calculation sheet for plantmix and open grade will be placed in the appropriate file. If there are **not** enough B/Ls to cover what has been delivered, it is the responsibility of the **Resident Engineer** to contact the Contractor to have extra B/Ls submitted. Make sure the B/Ls received are **not** copies of what has already been submitted and the dates on the new B/Ls coincide with the dates of the paving operation. These additional loads will have a contract number and load number placed in the top right-hand corner and will be entered on the Record of Delivery. The asphalt cement and mineral filler percent are taken from the applicable mix design.

Before job pickup, a copy of the mix design(s) used and the final calculation sheet shall be placed in the file with the spreadsheet and scale tickets. The plantmix and open grade files shall be filed in Section 1-Contract Files, Division 12 as described in Chapter 1 (Organization of Project).

State of Nevada Department of Transportation BILL OF LADING CALCULATION SHEET					
CONTRACT NO.	3247	DATE	8/20/2008	MATERIAL	PBS TYPE 2C
MIX DESIGN NO.	BF07-77	(Please fill in YELLOW boxes)			
% OIL	5.10	% M.F.	1.50	=	1.066
<small>% FROM MIX DESIGN</small>		<small>COMBINED % FOR CALCULATING ((% OIL + % MF) / 100) + 1 = COMBINED %</small>			
TOTAL WET TONS DELIVERED:	<div style="background-color: yellow; display: inline-block; padding: 2px;">23,400.18</div> ←				
TOTAL WET TONS DELIVERED:	23,400.18	÷	1.066	=	21,951.39
<small>(WET TONS DIVIDED BY COMBINED % = DRY AGG)</small>					
	21,951.39	X	0.051	=	1,119.52
	<small>DRY AGG</small>		<small>(% OIL / 100)</small>		<small>TOTAL ASPHALT TONS</small>
	23,400.18	-	21,951.39	-	1,119.52
<small>TOTAL WET TONS DELIVERED</small>		<small>DRY AGGREGATE</small>		<small>ASPHALT</small>	<small>MINERAL FILLER</small>
<small>M.F. +/- .01</small>					
					<small>= 329.27</small>
					<small>MINERAL FILLER TONS</small>
TOTAL BILL OF LADINGS (B/L) DELIVERED FOR ASPHALT CEMENT:					1,119.63
TOTAL BILL OF LADINGS (B/L) DELIVERED FOR MINERAL FILLER:					354.16
<small>IN THE GREEN BOXES ABOVE PLACE THE ACCUM. TOTAL SHOWN ON THE RECORD OF DELIVERY IN THE ASPHALT CEMENT AND MINERAL FILLER BOOKS. COMPARE THESE TOTALS TO THE CALCULATED ASPHALT AND MINERAL FILLER SHOWN ON THIS FORM.</small>					
<small>THIS SHEET IS USED TO ASSURE THAT ENOUGH ASPHALT AND MINERAL FILLER BILL OF LADINGS (B/L) ARE COLLECTED TO COVER WHAT WAS DELIVERED. DO NOT DEDUCT WASTE OR STORAGE.</small>					
CALCULATION BY:	Sherri Brown				
CHECKED BY:	Terri Carson				

THIS FORM IS BASED ON TOTAL DELIVERY. DO NOT DEDUCT WASTE.

Payment should not be made if there is not enough Bill of Ladings (B/L) to cover what has been delivered.

Form is on Sharepoint.