TEST METHOD **WA 100.1 – 2023**

SAMPLING PROCEDURES FOR SOIL AND MANUFACTURED GRANULAR MATERIALS

1 SCOPE

This method describes the procedures for the location and taking of samples for testing purposes of material from embankment, subgrade and pavements layers that are either existing or under construction, from stockpiles, undisturbed soil, conveyors, bins and trucks by random or systematic sampling methods.

2 SAFETY

This method does not attempt to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this method to establish appropriate occupational health and safety practices that meet statutory regulations.

3 REFERENCED METHODS

Australian Standard

AS 1141.3.1 Sampling - Aggregate

Main Roads Western Australia

WA 0.1 Random Sample Site Location.

WA 105.1 Preparation of Disturbed Soil and Granular Pavement Materials Samples for Testing.

4 DEFINTIONS

a) The principles used to define the limits of any **Lot** shall be:

i. The maximum size of a Lot is limited to the quantity of work that is the subject of a single conformance decision;
ii. The whole of the works included in the Lot shall be continuous;
iii. The Lot has been produced by the same works process;
iv. The Lot has been bought to completion at the same time; and
v. The Lot shall appear to be of a constant quality without obvious changes in attribute values, whether or not these attributes form part of the acceptance criteria

b) A **sample site** is the position within a lot or section at which a single sample increment or test sample is taken or at which a single in situ test is performed.

c) A **sample increment** is the basic unit of sampling and shall consist of a quantity of material taken from a sample site.

d) A **bulk sample** is produced by taking a set of sample increments of approximately equal quantities from a lot or section and thoroughly mixing to provide a single uniform sample. A bulk sample may be reduced by sample division.

NOTE: Combination of test samples from a lot is only acceptable when testing for properties where the average value of which will not significantly change whether the result is obtained by testing the combined test samples or by testing individual test samples and computing the average. For example, it is permissible to combine test samples when testing for particle size distribution but not when testing for maximum dry density or strength parameters.

e) A **test sample** is the material for examination and/or testing and may be derived from a bulk sample, by sample division or may consist of a single sample increment.

f) The **Nominal Maximum Size** is the size of the smallest sieve aperture through which at least 90% of the material passes.

g) **Subgrade** is the trimmed or prepared portion of the formation on which the pavement is constructed. In relation to investigations conducted on new alignments the in situ material is often referred to as the subgrade. If the new pavement is placed directly onto the in situ material then the use of the terminology is correct. However if the road design requires embankment to be placed on the in situ material the in situ material is then referred to as the embankment foundation and the subgrade is then the uppermost layer of the embankment.

h) **Embankment** is a construction (usually of earth or stone) to raise the formation level above the natural surface.

i) **Pavement** is that portion of a carriageway placed above the subgrade for the support of, and to form a running surface for, vehicular traffic.

j) **Angle of repose** is the angle with the horizontal, which the sloping face of a bank of loose material assumes.

5 APPARATUS

a) **Tape measure, measuring wheel** or other distance, measuring device.

b) **Excavating tools**, e.g. pick, shovel, hand auger, backhoe.

NOTE: A variety of power or manual excavating tools can be used. The major requirement being that material properties being tested are not significantly affected by the excavation process, e.g. pulverisation of the sample during extraction using a pick.

c) **Brush** and flat or round sampling **scoop**.

d) **Sample containers**, e.g. canvas or plastic bags or plastic buckets.

NOTE: Sample containers may be of metal, plastic or woven material construction. The major requirements are that the loss of fines is prevented during handling and transportation, and they shall not lead to alteration of the true nature and condition of the sampled material, e.g. material required at field moisture condition needs to be sealed in an air-tight container such as a strong plastic bag. It is essential containers be examined before filling to ensure contamination of the sample is not possible.

e) Supply of **tags or labels**.

f) Supply of **survey stakes** (Optional).

6 PROCEDURE

6.1 Sampling for Embankment, Subgrade and Pavement Layers

The sampling methods applicable to embankment, subgrade and pavement layers are:

- Random Sampling for quality control during the construction process and
- Either Random Sampling or Systematic Sampling for the evaluation of existing formations

Powered augers or drills shall not be used for obtaining samples from embankment, subgrade and pavements layers. The use of such equipment does not readily facilitate the taking of uncontaminated samples, due to the mixing action of the auger or drill.

Sampling for Dry Density Ratio (WA 134.1) and Moisture Ratio (WA 136.1) with one of the following;

(a)

(i) **One to One testing** - Where the standard deviation of the maximum dry density results exceeds the values in Table 1, or the optimum moisture content results exceeds the values in Table 2, separate samples shall be taken from around each of the field density sites and the maximum dry density / optimum moisture content of each sample shall be determined.

(ii) **Homogenous Lots** - It is not necessary to sample and determine the maximum dry density / optimum moisture content of material immediately surrounding the field density site at all or any of these sites when the sites have been randomly selected within a homogeneous lot. An average maximum dry density and optimum moisture content based on a number of maximum dry density / optimum moisture content determinations may be used provided:

• The number of maximum dry density / optimum moisture content determinations is not less than one-third the number of field density / moisture determinations and not less than two.

• The standard deviation of those maximum dry density / optimum moisture content values does not exceed the values show in Table 1

• The sample sites used for the maximum dry density / optimum moisture content determinations shall be randomly selected from the lot.

TABLE 1
LIMITING VALUES OF STANDARD DEVIATION OF MAXIMUM DRY DENSITY

Component	Standard Deviation (t/m³)
Base Course	≤ 0.030
Sub-base	≤ 0.045
Subgrade, embankments, embankment foundation and general earthworks	≤ 0.060

TABLE 2
LIMITING VALUES OF STANDARD DEVIATION OF OPTIMUM MOISTURE CONTENT

Component	Standard Deviation (%)
Base Course	≤0.75
Sub-base	≤1.25
Subgrade, embankments, embankment foundation and general earthworks	≤1.75

Where an average maximum dry density / optimum moisture content is to be used and the field compaction process will not result in a significant alteration of the maximum dry density / optimum moisture content of the materials, it is permissible to randomly select sample sites from:

- Windrows, prior to the commencement of the compaction process or
- The full depth of the embankment or pavement layer.

Under no circumstances shall samples be taken from windrows produced during the trimming operation, as such material will not be representative of the material used in the construction process.

6.1.1 Random Sampling

a) Determine the location of sample sites using a stratified random sampling plan in accordance with Test Method WA 0.1.

NOTE: The required number of test samples or sample sites will vary according to the reason for sampling or

testing. In sampling and testing associated with quality control of contracts, the number of test samples or sample sites will normally be specified in the contract documents. In other cases the Project Manager will stipulate the required number. The number should be related to the variability of the material in question and the confidence required in the test results.

b) If the surface of the pavement layer in question is not fully exposed at each sample site, remove sufficient of the overlying material to provide access so that the test sample may be taken without contamination or to satisfy any requirements of any in situ testing to be conducted.

c) If the sample site is for an in situ test, the testing should be conducted as required.

d) If the sample site is required for sampling, loosen sufficient material for the required test sample taking care to avoid contamination of the material.

NOTE: When sampling a particular layer of material care must be exercised to ensure that the quantity of material taken is removed evenly over the full depth of the layer so that the proportion of material taken from the bottom the layer is the same as that taken from the top of the layer.

e) Carefully place the loosened material, including all fines, in a sample container. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

NOTE: Refer to Note 5(d)

f) If only a representative value of a material property is required and not its variability, then all test samples from a lot may be combined to give a single bulk sample provided the test samples are of approximately the same size and the test property is not distorted by this procedure. The bulk sample may be reduced by sample division to provide a single test sample.

NOTE: Refer to Note 4(d).

g) Package and identify each test sample in accordance with Procedure 7.

TABLE 3

MINIMUM MASS PER SAMPLE INCREMENT OR TEST SAMPLE, FOR ALL SAMPLING EXCEPT MOISTURE CONTENT			
Nominal Maximum Size, mm	80 - 41	40 - 20	Less than 20
Mass (kg)	30	20	10

TABLE 4

MINIMUM MASS PER SAMPLE INCREMENT OR TEST SAMPLE, FOR MOISTURE CONTENT DETERMINATIONS ONLY			
Nominal Maximum Size, mm	80 - 41	40 - 20	Less than 20
Mass (kg)	5	3	1

6.1.2 Systematic Sampling

a) Determine the boundaries of the lot to be sampled or tested.

b) Determine the number of sample sites required.

NOTE: Refer to Note 6.1.1(b).

c) Systematically select the location of the sample sites in accordance with an appropriate systematic sampling plan.

NOTE: Systematic sampling is frequently used to provide a representative test sample. The combination of systematically selected sample increments can be used to provide an unbiased estimate of average material quality but not variability in material quality. Systematic sampling does not necessarily refer to regular sample site selection but allows the frequency of sampling and the location of sample sites to be chosen to suit the reasons for sampling. For example, sample sites may be chosen at close intervals during the start up of a production shift to establish the quality of the batch then once the quality has been established the sampling frequency may be decreased. Pavement sample sites may be required at regular intervals transversely and longitudinally over the section concerned, or at sites of specific features.

d) Take test samples or sample increments at the selected sample sites in accordance with Procedure 6.1.1(c) to 6.1.1(f).

e) If more than one sample increment for each test sample has been taken, combine each set of sample increments to form separate bulk samples and reduce each bulk sample by sample division to provide separate test samples. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses for each the proposed tests, as specified in Test Method WA 105.1.

f) Package and identify each test sample in accordance with Procedure 7.

6.2 Stockpiled Materials

6.2.1 General

The segregation that occurs during stockpiling operations makes it difficult to obtain representative samples from stockpiles. The most satisfactory method of sampling a stockpile is by costeaning, that is by driving full depth channels through or into the stockpile

NOTE: The establishment of the properties of a stockpile by testing samples taken from conveyors during the formation of the stockpile is preferable and can often remove the need to sample a stockpile afterwards.

Either random or systematic sample site selection methods may be used. Costeaning must be used for all random sampling to ensure that all material in the stockpile has an equal chance of selection. Face sampling may be used for systematic sampling of stockpiles of less than approximately 1 000 m^3. Stockpiles of more than approximately 1 000 m^3 shall be sampled by costeaning whether random or systematic methods are used.

Where earthmoving equipment is not readily available, or does not have easy access, a narrow stockpile of more than approximately 1 000 m^3 with a base width less than five metres (approximately) and height less than one metre (approximately) may be systematically face sampled as specified in Procedure 6.2.5

NOTE: If the spacing between stockpiles or the lack of a front-end loader does not facilitate costeaning, a

backhoe may be used to obtain samples from the stockpiled material through excavations (gullets) from the top of the stockpile. Such practice is only acceptable provided the following conditions are satisfied:

- *The backhoe has sufficient reach to excavate the gullet through the full depth of the stockpile*
- *The gullet can be excavated such that the sides of the excavation have an angle of repose greater than 60°*
- *The location of each gullet is randomly selected and at least one gullet is placed per 500 m^3 of material*

Each stockpile shall be regarded as a number of sections of approximately equal size, each section not exceeding approximately 500 m^3 in volume. Each section shall be identified so that the test samples can be related to the sections from which they were obtained. The sections may have one or more exposed faces that may, but need not necessarily extend the full width of the stockpile. (Figures 1 and 2)

6.2.2 Random Sampling

a) Determine the boundaries and the approximate volume of the lot to be sampled. The maximum size of the lot will generally be no more than one day's production when applicable, or more than approximately 2 000 m^3, whichever is the lesser.

NOTE: Where the stockpile is greater than 2 000 m^3 the size and shape of the stockpile will inhibit the random sampling process. In such circumstances preference shall be given to random sampling of the material from the conveyor during the formation of the stockpile.

b) Sub-divide the lot into sections such that each section contains approximately 500 m^3. (Figure 1). Each section shall be identified so that the test samples can be related to the section within the lot from which they were obtained.

c) For each section within the lot, determine the location of the site at which the costean will be driven, in accordance with Test Method WA 0.1.

d) Costean each section of the stockpile in accordance with Procedures 6.2.4(a) and 6.2.4(b).

e) For each heap derived from the costeaning process randomly select the location of a single sample site, in accordance with Test Method WA 0.1.

At the selected sample site for each heap, take a test sample of sufficient mass to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

f) If only a representative value of a material property from the lot is required and not its variability, then all the test samples from each section may be combined to give a single bulk sample provided the samples are of approximately the same size and the test property is

not distorted by this procedure. The bulk sample may be reduced by sample division to produce a single test sample.

g) Place each test sample into a separate container.

h) Package and identify each test sample in accordance with Procedure 7.

6.2.3 Systematic Sampling

a) Determine the number of test samples required.

NOTE: Refer to Note 6.1.1(b).

b) Take five sample increments of approximately the same size for each test sample by either costeaning (one costean per test sample) in accordance with Procedure 6.2.4 or systematic face sample in accordance with Procedure 6.2.5.

c) Combine each set of sample increments to form separate bulk samples and reduce each bulk sample by sample division to provide separate test samples. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

d) Place each test sample into a separate container.

e) Package and identify each test sample in accordance with Procedure 7.

6.2.4 Costeaning

a) At each location selected for a costean, excavate a full depth channel through each section of the stockpile, from one extremity of the section to the other (Figure 1). Avoid contamination by other materials.

b) Place the material removed from each costean into separate flat heaps of height less than or equal to 0.5 m.

6.2.5 Face Sampling

6.2.5.1 Machine Assisted Face Sampling

a) At each location selected for sampling, cut a step in the stockpile, from near the full height to the base of the stockpile using a loader bucket or other suitable machine. Draw this material into a heap on a flat clean surface.

b) Level the top of the heap with the loader or other machine until the height of the material to be sampled is less than or equal to 0.5 m.

c) Take sufficient material from the levelled heap to satisfy sampling requirements.

6.2.5.2 Manual Face Sampling

(a) At each sample site selected for face sampling remove and discard the surface material to a depth of about 0.2 m. If necessary use a shield to prevent loose material from moving into the sampling area.

NOTE: The presence of large size particles at the toe of the stockpile face may indicate that the material being sampled is prone to segregation. In such cases a representative face sample may be obtained by taking the sample from a channel cut from the toe of the stockpile to the top of the stockpile. Larger particles, at the toe of the stockpile, shall be included in the sample.

6.3 Undisturbed Soil

The sampling of undisturbed soils is carried out to:

- Locate and prove proposed pavement and fill materials from natural deposits

- Conduct surveys to provide design information for new roads

6.3.1 Natural Deposits

Sampling of natural deposits is frequently carried out as part of an investigation to establish the location and extent of a road building material source. This usually involves the excavation of inspection holes on a regular grid pattern, which may extend beyond the boundary of the deposit. The inspection holes may pass through one or more layers of other materials before the horizon of the material of interest is reached. Selection of sample sites may be based on the results of visual examination of the material in the inspection holes and should be related to material variability and the extent of the deposit. Where practicable, inspection holes should be used as sample sites. Proposed borrow areas which have been cleared, ripped, etc., may be considered as undisturbed natural deposits.

a) Select an appropriate systematic sample site location plan.

b) Excavate a hole at each sample site to the full depth of the material to be sampled.

c) Sample the material from each sample site taking care to avoid contamination with material other than that from the horizon being investigated. Sample the full thickness of the horizon of interest. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

NOTE: Refer to Note 6.1.1(f).

d) Place the sampled material from each sample site into a separate container. Where more than one horizon has been sampled at a sample site, place the test samples into separate containers.

e) Package and identify each test sample in accordance with Procedure 7 including the depth and thickness of the horizon sampled.

6.3.2 Subgrade Soils: Random Sampling

Investigations of subgrade soils usually require sampling to an initial systematic plan in accordance with Procedure 6.3.3 to establish the types of material present and the extent of these materials. Lots may then be selected based on this information and random sampling carried out to establish the variability of the material within a lot.

a) Determine the boundaries of the lot to be sampled.

b) Determine the required number of test sites required and determine the coordinates for the location of each site, in accordance with Test Method WA 0.1.

NOTE: Refer to Note 6.1.1(b).

c) Ensure that material at the proposed subgrade grade line is exposed at the selected sample sites. Where necessary excavate holes to expose the relevant material.

d) Sample the exposed subgrade at the selected sample sites to a depth appropriate to the reason for sampling. Take care to avoid contamination of the subgrade test sample with material from other horizons. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

NOTE: Refer to Note 6.1.1(f).

e) Transfer each test sample into a separate sample container.

f) Package and identify each test sample in accordance with Procedure 7.

6.3.3 Subgrade Soils: Systematic Sampling

Investigations of subgrade soils usually require an initial systematic sampling plan to establish the types of material present and the extent of these materials. If required lots may then be selected based on this information and random sampling carried out in accordance with Procedure 6.3.2 to establish the variability of the material within a lot.

a) Where possible, obtain plans of the proposed road showing the ground line and proposed grade line on the same sheet.

b) Select a regular interval for the spacing of sample sites along the proposed centre line. The interval selected should be chosen to provide the required

degree of confidence in the investigation and should be related to the uniformity of the subgrade and frequency with which changes in subgrade occur. Changes in subgrade may be indicated by:

- Changes in topography
- Changes in vegetation
- Changes in soil colour

The line being investigated may be broken into sections within which different regular sampling intervals may be used.

c) Where transverse changes in subgrade are suspected, select additional sample sites on either side of the proposed centre line at the approximate extremities of the proposed formation.

d) Where the proposed subgrade grade line is known ensure that material at this level is exposed at the selected sample site. Where necessary excavate holes to expose the relevant material.

e) Sample the exposed subgrade at the selected sample sites to a depth appropriate to the reason for sampling, e.g. approximately 200 mm for CBR testing. Take care to avoid contamination of the subgrade horizon of interest with material from other layers.

NOTE: Refer to Note 6.1.1(f).

f) Where required sample other soil horizons of interest.

g) If more than one sample increment for each test sample has been taken, combine each set of sample increments to form separate bulk samples and reduce each bulk sample by sample division to provide separate test samples. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

h) Transfer each test sample into a separate sample container.

i) Package and identify each sample in accordance with Procedure 7, including the location of the sample site and the depth and soil type of any overlying layers.

6.4 Conveyors

Sampling from a conveyor shall only be carried out when safe and easy access is provided and the sampling tool can safely intercept the flow of material.

6.4.1 Random Sampling

a) Select the quantity of material or the duration of production, which will constitute the lot to be sampled.

b) Determine the number of test samples required and the quantities or times at which each of the samples will be taken, in accordance with Test Method WA 0.1.

NOTE: Refer to Note 6.1.1(b).

c) Take each test sample by the stationary conveyor method or the moving conveyor method in accordance with Procedure 6.4.3 or 6.4.4 respectively. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

d) Place each test sample in a separate container.

e) Package and identify each test sample in accordance with Procedure 7.

6.4.2 Systematic Sampling

a) Determine the number of test samples required.

NOTE: Refer to Note 6.1.1(b).

b) Take a set of five systematically selected sample increments, for each test sample, of approximately the same size by the stationary conveyor method or the moving conveyor method in accordance with Procedure 6.4.3 or 6.4.4 respectively.

NOTES:

i. Refer to Note 6.1.2(b).

ii. Systematic sampling is frequently used to provide a representative test sample. The combination of systematically selected sample increments can be used to provide an unbiased estimate of average material quality but not variability in material quality. Systematic sampling does not necessarily refer to regular sample site selection but allows the frequency of sampling and the location of sample sites to be chosen to suit the reasons for sampling. For example, sample sites may be chosen at close intervals during the start up of a production shift to establish the quality of the batch then once the quality has been established the sampling frequency may be decreased.

c) Combine each set of sample increments to form separate bulk samples and reduce each bulk sample, by sample division to provide separate test samples. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

d) Place each test sample in a separate container.

e) Package and identify each test sample in accordance with Procedure 7.

6.4.3 Stationary Conveyor Method

a) The conveyor shall be stopped and the sample increment or test sample shall be taken by removing the full width of material from a suitable length of the conveyor using a shovel or scoop and a suitable brush. This method is facilitated by the use of a sample frame to isolate the material on a section of the conveyor. A suitable design for a sample frame is included in Australian Standard AS 1141.3.1

b) Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

c) Place each test sample in a separate container.

d) Package and identify each test sample in accordance with Procedure 7.

6.4.4 Moving Conveyor Method

a) The material flowing onto or off the full width of the conveyor shall be intercepted for a suitable period of time. The sample increment or test sample shall be taken using a sampling device, which can intercept the full flow of material. This method should not be used when the width of the conveyor and the rate of flow of material are too large for safe interception.

b) Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses for each the proposed tests, as specified in Test Method WA 105.1.

c) Place each test sample in a separate container.

d) Package and identify each test sample in accordance with Procedure 7.

6.5 Bins

Sampling of the contents of a bin shall only be carried out while the material is being discharged. Sampling shall only be carried out when safe and easy access is provided.

6.5.1 Random Sampling

a) Select the quantity of material or duration of discharge from the bin, which will constitute the lot to be sampled.

b) Determine the number of test samples required and the quantities or times at which each of the samples will be taken, in accordance with Test Method WA 0.1.

NOTE: Refer to Note 6.1.1(b).

c) Take each test sample by intercepting a full cross section of the flow from the bin discharge. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

d) If only a representative value of a material property and not its variability is required then all test samples from a lot may be combined to give a single bulk sample provided the test samples are of approximately the same size and the test property is not distorted by this procedure. The bulk sample may be reduced by sample division to provide a single test sample.

e) Place each test sample in a separate container.

f) Package and identify each test sample in accordance with Procedure 7.

6.5.2 Systematic Sampling

a) Determine the number of test samples required.

NOTE: Refer to Note 6.1.1(b).

b) Take a set of five systematically selected sample increments, for each test sample, of approximately the same size by intercepting the full cross section of the discharge.

NOTES:

i. Refer to Note 6.1.2(b).

ii. Refer to Note 6.4.2(b).

c) Combine each set of sample increments to form separate bulk samples and reduce each bulk sample by sample division to provide separate test samples. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses of the proposed tests, as specified in Test Method WA 105.1.

d) Place each test sample in a separate container.

e) Package and identify each test sample in accordance with Procedure 7.

6.6 Trucks - Systematic Sampling

Restricted access only permits the use of a systematic sampling plan hence random sampling must be carried out at other locations. This method is intended to provide for the systematic face sampling of trucks.

a) Select at least five sample sites systematically within the truck being sampled. The sample sites shall be at least 1.0 m apart and not less than 0.5 m from any side of the truck body.

NOTE: Refer to Note 6.1.2(c).

b) Remove the surface material at each sample site to a depth of approximately 0.2 m.

c) Take approximately equal sample increments from the material exposed at each of the sample sites, using shielding if necessary to prevent material from falling back into the sampling excavation.

d) Combine the sample increments to form a bulk sample, and then reduce by sample division to form a test sample. Take sufficient material to satisfy the requirements of Table 3 or Table 4. Where multiple tests are to be performed, the mass of sample taken must be larger than the sum of the minimum test sample masses for each the proposed tests, as specified in Test Method WA 105.1.

e) Place the test sample in a container.

f) Package and identify each test sample in accordance with Procedure 7.

7 PACKING AND IDENTIFICATION

7.1 Packing

Each test sample should be packed and securely tied or sealed in one or more bags or containers. Containers shall be made of a material, which shall be strong enough to resist damage or lead to loss of any of the sample.

7.2 Identification

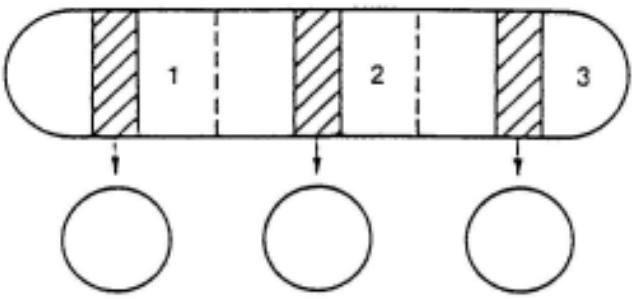
All samples shall be appropriately marked with an identifying mark or label adequate for traceability.

8 REPORTING

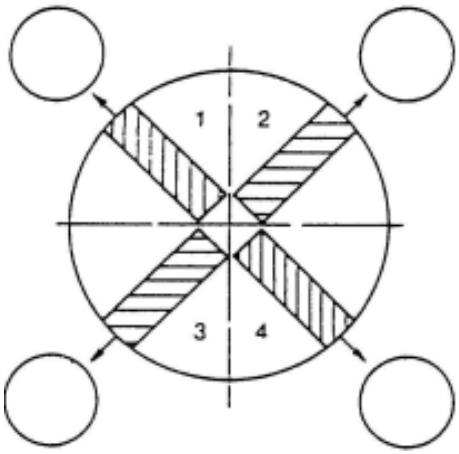
Report the following:

- Date of sampling
- Type of material
- Sample site location
- Proposed use
- Specific sampling procedure used in section 6

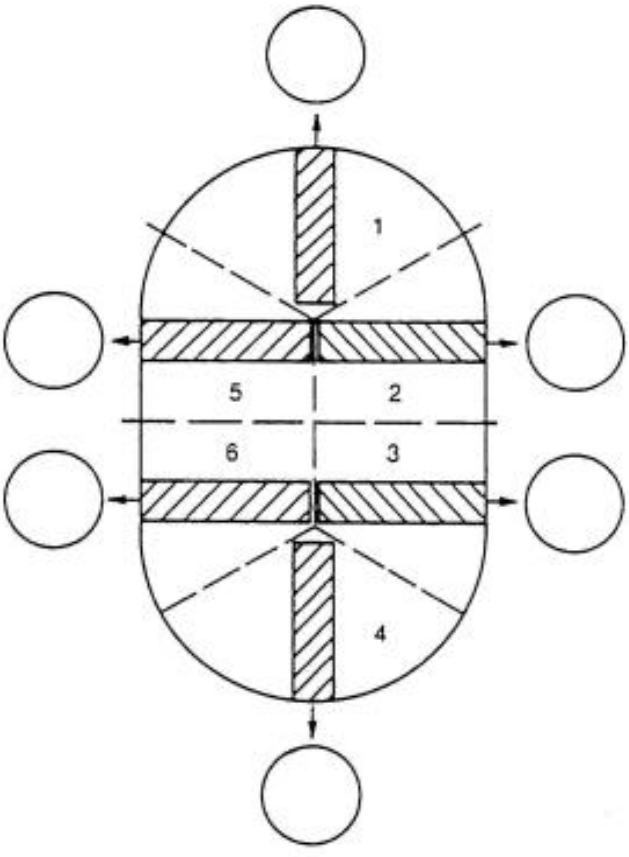
9 FIGURES AND DRAWINGS



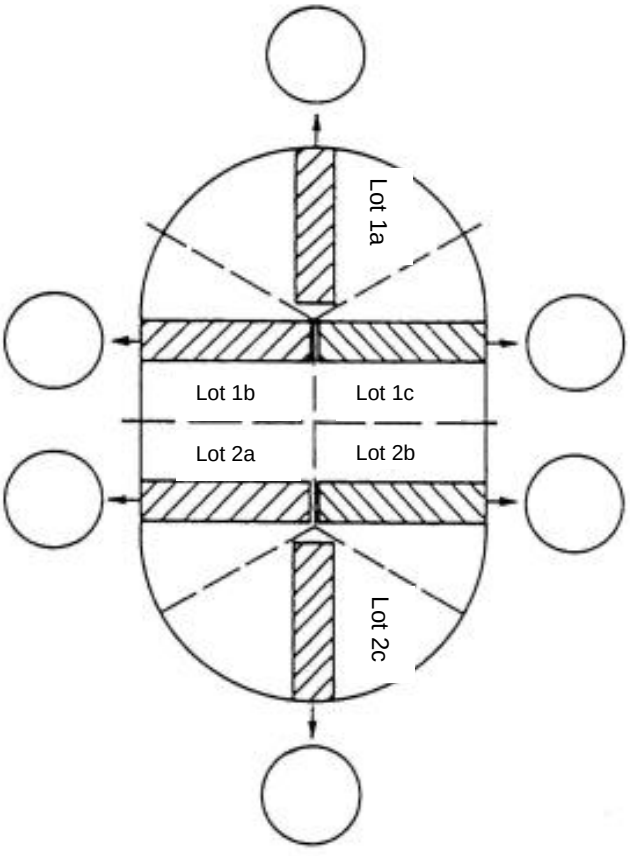
(a) 1500m^3 – 3 sections



(b) 2000m^3 – 4 sections



(c) 3000m^3 – 1 Lot (Systematic Sampling. 6 sub-lots)



(d) 3000m^3 – (Random Sampling. Minimum of 2 Lots, 3 sub-lots per Lot)

FIGURE 1

EXAMPLE OF SECTIONING AND COSTEANING STOCK PILES

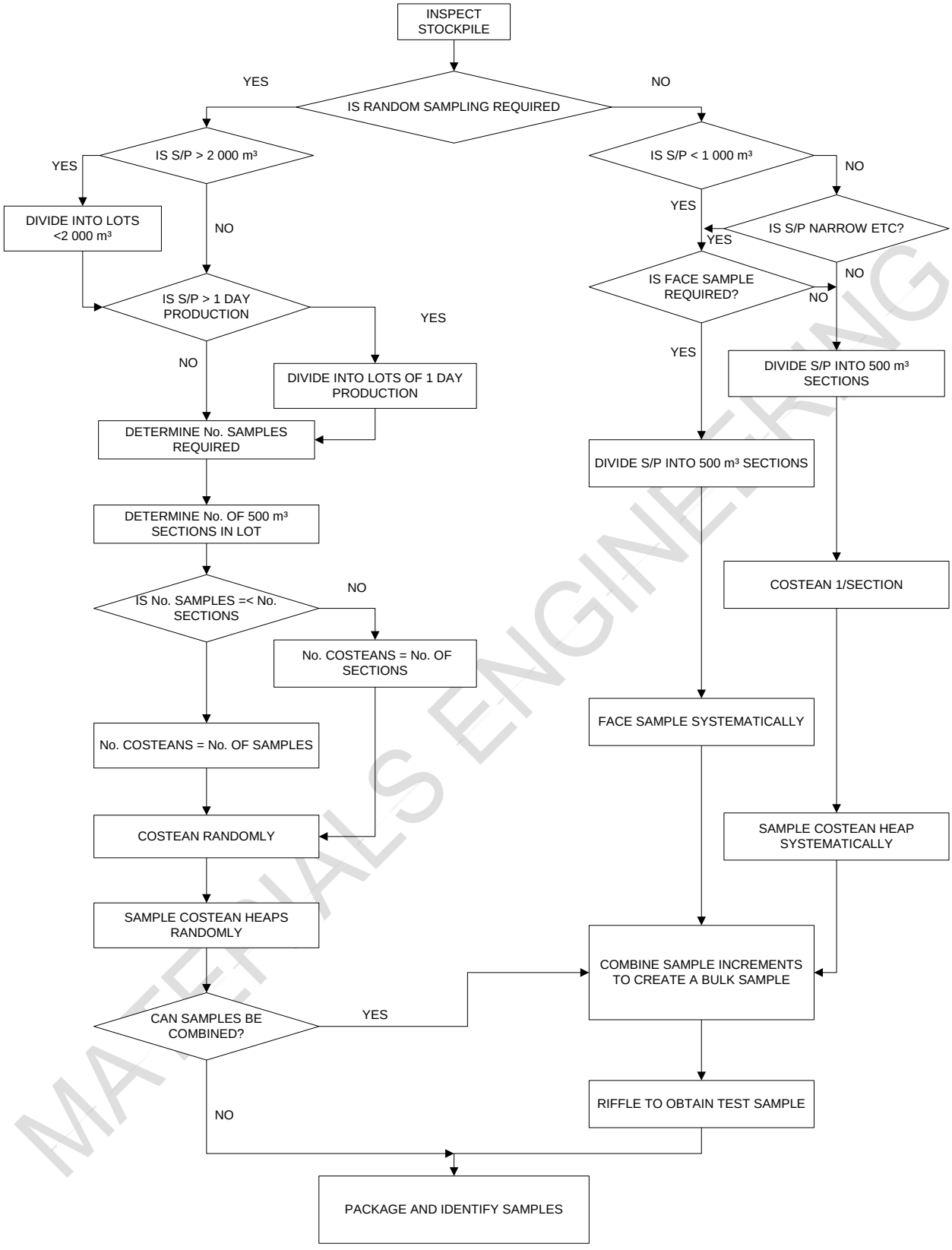


FIGURE 2
STOCKPILE SAMPLING
FLOW CHART

10 ISSUING AUTHORITY

Document Owner
Pavements Manager

11 REVISION STATUS RECORD

Page No.	Section	Revision Description / Reference
2	6.1	Add sampling requirements for WA 134.1 and WA 136.1