Materials Sampling Guide

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Section 13

Granular Base, Granular Fill, Granular Backfill, Sand Blanket & MSE Walls

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DATE: 08-23-00 REVISED: 02-12-04

Sand Blanket and MSE walls FIELD PERSONNEL BRANCH LAB LINCOLI LAB No. No. 1) All - Mineral Aggregates & Soll Binder Experimental Base Course Contractor to submit the 60 pound sample of soll binder needed to perform the testing shown under the Lincoln lab column. The contractor needs to submit the anticipated performages of granular material and soll binder that material and soll binder that performages of granular material and soll binder that approximately 60.			Minimum Material	Certificate, Sample	and Inspection	Requirements		
Sand Blanket and MSE Walls FIELD PERSONNEL BRANCH LAB LINCOLU LAB No. No. 1) All- Mineral Aggregates & Soil Binder Experimental Base Course Contractor to submit the 60 pound sample of sand perform the testing shown under the Lincoln lab oclumm. The contractor needs to submit the anticipated perform the testing shown under the Lincoln lab oclumm. Approximately 60 pounds of soil binder for EECM mix design. To be submitted proto: the submitted proto: mixture production. 2) Mineral Aggregates (Commercial Production) Quality & Gradation (if specified) Quality & Gradation (if specified)	_					ADDIT	IONAL	
1) All- Mineral Aggregates & Soil Binder Contractor costs and the 20 pound sample of soil binder medded to perform the testing abrow under the Lincon lab perform the testing abrow under the Lincon lab perform the testing abrow under the Lincon lab				FIELD PERSONNEL	BRANCH LAB	LINCOLN LAB		PAGE No.
2) Mineral Aggregates (Commercial Production) Quality & (if specified) Image: Commercial Commercial Production) One 60 pound sample for quality tests first is to be mixed with other materials One 60 pound sample for quality tests first is to be mixed with other materials One 60 pound sample for quality tests first is to be mixed with other materials 2) Mineral Aggregates (Commercial Production) Quality & (if specified) Image: Commercial Production) One 60 pound sample for quality tests first is to be mixed with other materials One 60 pound sample for quality tests first is to be mixed with other materials Image: Commercial production Production) Quality & (if specified) Image: Commercial production One 10 pound sample for gradation material has not occurred product in corporation into the work. One 10 pound sample for gradation test each 1000 cubic yard or fraction thereof.	Mineral Aggregates &	Base Course Mixtures (When mix design	and the 20 pound sample of soil binder needed to perform the testing shown under the Lincoln lab column. The contractor needs to submit the anticipated percentages of granular material and soil binder that			pounds of each aggregate and approximately 20 pounds of soil binder for EBCM mix design. To be submitted prior to		
Laboratory samples must be submitted in a canvas bag or clean five gallon bucket with lid.	Aggregates (Commercial	Gradation		each 300 cubic yards either at the source or on the project. A minimum of one check sample for each 1000 cubic yards or fraction thereof shall be taken at the point material is incorporated in the work or at the point the materials is to be mixed with other materials. The gradation sample required may also serve as this acceptance and job control sample if it is taken at the point indicated above. Additional samples should be taken at the discretion of the Project Manager to confirm his judgment that segregation, degradation or contamination of the material has not occurred prior to incorporation into the work. Project personnel will submit the 10 and 60 pound samples needed to perform the testing shown under the Lincoln Lab column.		for quality tests first 1000 cubic yards if so designated on DR FORM 324 "Source of Aggregates to be Used", or when changes in quality or characteristics occur. One 10 pound sample for gradation tests each 1000 cubic yard or fraction thereof. (Duplicate of sample tested in the field)		

		Minimum Material Certificate, Sample and Inspection Requirements							
MATERIAL	TYPE OF TEST	Q.C. SAMPLING AND TESTING BY CONTRACTOR	VERIFICATION SAMPLING AND TESTING BY NDOR			LOCATION (ADDITIONA INFORMATION			
		se, Granular Fill, Granular Backfill, alls (continued)	FIELD PERSONNEL	BRANCH LAB	LINCOLN LAB	NOTE No.	PAGE No.		
3) Coarse Sand	Quality & Gradation (if specified)		One sample for gradation tests each 300 cubic yards or fraction thereof. Project personnel will submit the 10 and 60 pound samples needed to perform the testing shown under the Lincoln Lab column. Sample shall be taken at the project.		One 60 pound sample for quality tests first 1000 cubic yards if so designated on DR FORM 324"Source of Aggregates to be Used", or when changes in quality or characteristics occur. One 10 pound sample for gradation tests each 1000 cubic yard or fraction thereof. (Duplicate of sample tested in the field)	1 4	1 4		
4) Fine Sand	Gradation (if specified)		One sample for gradation tests each 300 cubic yards or fraction thereof. Project personnel to submit the 10 pound sample needed to perform the testing shown under the Lincoln lab column. Sample shall be taken at the project.		One 10 pound sample for gradation tests each 1000 cubic yards or fraction thereof (Duplicate of sample tested in the field)	1 4	1 4		
5) Soil Binder	Plasticity Index & Gradation		One sample for gradation tests each 50 cubic yards or fraction thereof. If less than 10 percent retained on the No. 200 sieve, one sample for each 200 cubic yards or fraction thereof. Project personnel to submit the 10 pound sample needed to perform the testing shown under the Lincoln lab column. Samples shall be taken at the project.		One 10 pound sample for gradation test (lab to run P.I.) each 1000 cubic yards or fraction thereof (Duplicate of sample tested in the field)				
		Laboratory samples must be submitted i	the project.	ve gallon bucket with	lid.				

		Minimum Material Certificate, Sample and Inspection Requirements							
MATERIAL TYPE OF TEST	Q.C. SAMPLING AND TESTING BY CONTRACTOR	VERIFICAT	ION SAMPLING AND BY NDOR	TESTING	ADDI	TION OF TIONAL MATION			
		se, Granular Fill, Granular Backfill, /alls (continued)	FIELD PERSONNEL	BRANCH LAB	LINCOLN LAB	NOTE No.	PAGE No.		
6) Granular Base, Granular Fill, Granular Backfill and Sand Blanket	Moisture – Density		In place moisture density tests for each 1000 feet, or less and for each one foot in thickness, or fraction thereof. In cases of short section, moisture density tests to confirm the Project Managers judgment on compliance with specification requirements. NOTE: If the layer is 2" or less, in thickness, density tests may be omitted. If curve data is not furnished, as in cases of some pit run materials, it will be necessary for the project personnel to submit the necessary samples to the Lincoln or Branch laboratories for the determination of this information.	One sample to be submitted if necessary to perform curve data.	One sample to be submitted if necessary to perform curve data.				
	Gradation (if specified)	Laboratory samples must be submitted i	Each fifth station for gradation or in cases of short sections the number of samples is to be increased to adequately represent the material in the fill. Project personnel will supply the 10 pound sample needed to perform the testing shown under the Lincoln Lab column. Sample to be taken at the project.		One 10 pound sample for gradation test each mile, or in cases of short sections the number of samples is to be increased to adequately correlate the samples taken in the field (Duplicate of sample tested in the field)	1 4	1 4		

		Minimum Material Certificate, Sample and Inspection Requirements							
MATERIAL	TYPE OF TEST	Q.C. SAMPLING AND TESTING BY CONTRACTOR	VERIFICATION SAMPLING AND TESTING BY NDOR		TESTING	LOCATION OF ADDITIONAL INFORMATION			
		se, Granular Fill, Granular Backfill, alls (continued)	FIELD PERSONNEL	BRANCH LAB	LINCOLN LAB	NOTE No.	PAGE No.		
	Moisture – Density		In place moisture-density tests for each 1000 feet, or less, or in cases of short sections, moisture-density tests to confirm the Project Manager's judgment on compliance with specification requirements. If tested layer is disturbed by construction operations, rain etc., check tests shall be taken to assure compliance with specifications prior to subsequent construction. The sample shall be taken at the project.						
Granular Backfill and Sand Blanket	Gradation (if specified)		One sample each fifth station for gradation, or in cases of short sections the number of samples is to be increased to adequately represent the material in the field. Project personnel will supply the 10 pound sample needed to perform the testing shown under the Lincoln Lab column. The sample shall be taken at the project.		One 10 pound sample for gradation test each mile, or in case of short sections the number of samples is to be increased to adequately correlate the samples taken in the field. (Duplicate of sample tested in the field)				

		Minimum Materia	Minimum Material Certificate, Sample and Inspection Requirements							
MATERIAL	TYPE OF TEST	Q.C. SAMPLING AND TESTING BY CONTRACTOR	VERIFICATION SAMPLING AND TESTING BY NDOR			ADDIT	TION OF TIONAL MATION			
		se, Granular Fill, Granular Backfill, alls (continued)	FIELD PERSONNEL	BRANCH LAB	LINCOLN LAB	NOTE No.	PAGE No.			
8) Granular	Quality & Gradation		One sample for gradation tests each 50 cubic yards or fraction thereof. Project personnel will submit the 10 and 60 pound samples needed to perform the testing shown under the Lincoln lab column. The sample shall be taken at the project.		One 60 pound sample for quality tests if so designated on DR FORM 324 "Source of Aggregates to be Used", or when changes in quality or characteristics occur. One 10 pound sample for gradation tests each 150 cubic yards or fraction thereof (Duplicate of sample tested in the field)	1 4	1 4			
Backfill for Structures	Moisture – Density	Laboratory samples must be submitted i	In place density test each lift of aggregate placed. In case of short sections moisture density tests to confirm compliance with specifications. Project personnel will supply the 60 pound sampled needed to perform the testing shown under the Lincoln Lab column. The sample shall be taken on the project.		One 60 pound sample for compaction curve data.					

		Certificate, Sample	and Inspection	Requirements	1	
TYPE OF TEST	Q.C. SAMPLING AND TESTING BY CONTRACTOR	VERIFICATION SAMPLING AND TESTING BY NDOR		TESTING	LOCATION (ADDITIONA INFORMATIO	
		FIELD PERSONNEL	BRANCH LAB	LINCOLN LAB	NOTE No.	PAGE No.
Gradation & Quality		One sample for gradation tests each 50 cubic yards or fraction thereof. Project personnel will supply the 10 and 60 pound samples needed to perform the testing shown under the Lincoln Lab column. The sample shall be taken at the project.		One 60 pound sample for quality tests if so designated on DR FORM 324"Source of Aggregates to be Used", or when changes in quality or characteristics occur. One 10 pound sample for gradation tests each 150 cubic yards of aggregate. (Duplicate of sample tested in the field)	1 4	1 4
Gradation & Quality		One sample for gradation tests each 50 cubic yards or fraction thereof. Project personnel will supply the 10 and 60 pound samples needed to perform the testing shown under the Lincoln lab column. The sample shall be taken at the project.		One 60 pound sample for quality tests if so designated on DR FORM 324 "Source of Aggregates to be Used", or when changes in quality or characteristics occur. One 10 pound sample for gradation tests each 150 cubic yards of aggregate. (Duplicate of sample tested in the field)	1 4	1 4
	TEST Granular Bas and MSE W Gradation & Quality Gradation &	TEST CONTRACTOR Granular Base, Granular Fill, Granular Backfill, and MSE Walls (continued) Gradation & Quality Gradation & Quality	TEST CONTRACTOR Granular Base, Granular Fill, Granular Backfill, and MSE Walls (continued) FIELD PERSONNEL Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction thereof. Project personnel will supply the 10 and 60 pound samples needed to perform the testing shown under the Lincoln Lab column. Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction thereof. Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction thereof. Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction thereof. Froject personnel will supply the 10 and 60 pound samples needed to perform the testing shown under the Lincoln lab column. The sample shall be taken at the project.	TEST CONTRACTOR BY NDOR Granular Base, Granular Fill, Granular Backfill, and MSE Walls (continued) FIELD PERSONNEL BRANCH LAB Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction thereof. One sample for gradation tests each 50 cubic yards or fraction thereof. Image: Control of the string shown under the Lincoln Lab column. Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction the testing shown under the Lincoln Lab column. Image: Control of the string shown under the Lincoln Lab column. Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction thereof. Image: Control of the string shown under the Lincoln lab column. Gradation & Quality Image: Control of the string shown under the Lincoln lab column. Image: Control of the string shown under the Lincoln lab column. The sample shall be taken at the project. Image: Control of the string shown under the Lincoln lab column. Image: Control of the string shown under the Lincoln lab column.	TEST CONTRACTOR BY NDOR Granular Base, Granular Fill, Granular Backfill, and MSE Walls (continued) FIELD PERSONNEL BRANCH LAB LINCOLN LAB Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction thereof. One sample for gradation tests each 50 cubic yards or fraction thereof. One 60 pound sample for quality tests if so designated on DR FORM 324 "Source of Aggregates to be Used", or when changes in to clumn. Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction thereof. One 60 pound sample for quality tests if so designated on DR FORM 324"Source of Aggregates to be Used", or when changes in the sample shall be taken at the project. One 60 pound sample for quality tests if so designated on DR FORM 324"Source of Aggregates to be Used", or when changes in quality or characteristics occur. Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction thereof. One 60 pound sample for quality tests if so designated on DR FORM 324"Source of Aggregates to be Used", or when changes in quality or characteristics occur. Gradation & Quality One sample for gradation tests each 50 cubic yards or fraction thereof. One 60 pound sample for quality tests if so designated on DR FORM 324"Source of aggregates to be Used", or when changes in quality or characteristics occur. Gradation & Quality One 10 pound sample for gradation tests each 150 cubic yards of aggregate. One 10 pound sample for gradation tests each 150 cubic yards of aggregate.<	TPE OF TEST U.C. SAMPLING AND TESTING ADDITION SAMPLING AND TESTING ADDITION Granular Base, Granular Fill, Granular Backfill, and MSE Walls (continued) FIELD PERSONNEL BRANCH LAB LINCOLN LAB NOTE NEO Gradation & Quality

		Minimum Material	Certificate, Sample	and Inspection	Requirements		
MATERIAL	TYPE OF TEST	Q.C. SAMPLING AND TESTING BY CONTRACTOR	VERIFICATION SAMPLING AND TESTING BY NDOR		TESTING	LOCATION ADDITIONA INFORMATION	
		se, Granular Fill, Granular Backfill, alls (continued)	FIELD PERSONNEL	BRANCH LAB	LINCOLN LAB	NOTE No.	PAGE No.
11) Select & Random Granular Backfill for MSE Walls	Quality Gradation Compaction Chemical Friction Angle	Before the wall is constructed, the Contractor shall furnish to the Engineer a Certificate of Compliance certifying that the Granular backfill material complies with Section 714 or 715 of the Specifications. If more than one source is used, a Certificate of Compliance is Required from each Source.	Project personnel will submit one 60 pound sample per Wall needed to perform the testing shown under the Lincoln Lab column. No further samples required if material is from the same source (pit location) or unless changes in Quality or Characteristics occur. One Gradation for every 1000 cubic yards of material or portion thereof.		One 60 pound sample for quality, gradation, compaction and chemical tests.		
		Laboratory samples must be submitted ir	a canvas bag or clean fi	ve gallon bucket with	lid.		