APPEINDIX C

Laboratory Test Data

TABLE I
SUMMARY OF LABORATORY MOISTURE CONTENT AND DRY DENSITY TEST RESULTS
(ASTM D 2937-00, CALIFORNIA TEST METHOD 226)

Boring No.	Sample No.	Tube No.	Dry Density (pcf)	Moisture Content (%)
111-1-B1	MC 1	3	99.3	24.5
111-1-B1	MC 1	5	97.7	26.6
111-1-B1	MC 1	6	100.5	25.1
111-1-B3	MC 1	3	100.3	24.3
111-1-B3	MC 1	4	100.3	24.3
111-1-B3	MC 1	5	96.3	26.7
111-1-B4	MC 1	4	85.1	34.9
111-1-B4	MC 1	5	93.3	27.7
111-1-B5	MC 1	3	87.9	33.1
111-1-B5	MC 1	5	91.7	30.0
111-1-B5	MC 2	3	Not required	25.4
111-1-B5	MC 2	4	95.4	27.8
111-1-B5	MC 2	5	101.3	24.1
111-2-B3	MC 1	4	86.7	32.7
111-2-B3	MC 1	5	89.3	31.6
111-2-B3	MC 1	6	93.4	28.9
111-2-B3	MC 2	5	99.8	26.4
111-2-B3	MC 2	6	95.2	26.7
111-2-B5	MC 1	4	96.1	28.0
111-2-B5	MC 1	5	93.9	29.0
111-2-B5	MC 2	5	97.8	26.3
111-2-B5	MC 2	6	101.1	23.6
111-2-B6	MC 1	4	94.1	28.0
111-2-B6	MC 1	5	94.5	27.9
111-2-B6	MC 1	6	91.6	27.9

TABLE II
SUMMARY OF LABORATORY SPECIFIC GRAVITY TEST RESULTS
(ASTM D 854-00, CALIFORNIA TEST METHOD 209)

Boring No.	Sample No.	Tube No.	Specific Gravity
111-1-B1	SPT 4	--	2.66
111-1-B1	MC 1	5	2.71
111-1-B3	SPT 3	--	2.66
111-1-B4	SPT 4	--	2.61
111-1-B4	MC 1	5	2.69
111-1-B5	SPT 3	--	2.69
111-1-B5	MC 1	3	2.69
111-2-B1	Bag 2	--	2.64
111-2-B1	Bag 4	--	2.63
111-2-B3	MC 1	5	2.68
111-2-B3	MC 2	5	2.61
111-2-B5	MC 1	5	2.68
111-2-B6	MC 1	5	2.65

TABLE IIIA
SUMMARY OF GRAIN SIZE ANALYSIS RESULTS
(ASTM D 422-63 [1998], CALIFORNIA TEST METHODS 202 AND 203)

SAMPLE ID		SAMPLE ID		SAMPLE ID		SAMPLE ID	
111-1-B1 (SPT 4)		111-1-B1 (MC1 Tube 5)		111-1-B3 (SPT 3)		111-1-B3 (MC1 Tube 3)	
Sieve Size	% Pass	Sieve Size	% Pass	Sieve Size	% Pass	Sieve Size	% Pass
3"	100	3"	100	3"	100	3"	100
2"	100	2"	100	2"	100	2"	100
1.5"	100	1.5"	100	1.5"	100	1.5"	100
1"	100	1"	100	1"	100	1"	100
¾"	100	¾"	100	¾"	100	¾"	100
½"	100	½"	100	½"	100	½"	100
3/8"	100	3/8"	100	3/8"	100	3/8"	100
#4	100	#4	100	#4	100	#4	100
#10	100	#10	100	#10	100	#10	100
#20	100	#20	100	#20	100	#20	100
#40	100	#40	100	#40	100	#40	99.9
#60	100	#60	100	#60	100	#60	99.8
#80	100	#80	99.9	#80	100	#80	99.8
#100	100	#100	99.9	#100	100	#100	99.8
#200	92.7	#200	99.8	#200	89.7	#200	99.6
0.05 mm	73.2	0.05 mm	99.5	0.05 mm	58.8	0.05 mm	95.2
0.005 mm	19.0	0.005 mm	82.0	0.005 mm	16.0	0.005 mm	44.0
0.001 mm	11.0	0.001 mm	47.5	0.001 mm	11.0	0.001 mm	27.5

TABLE IIIB
SUMMARY OF GRAIN SIZE ANALYSIS RESULTS
(ASTM D 422-63 [1998], CALIFORNIA TEST METHODS 202 AND 203)

SAMPLE ID		SAMPLE ID		SAMPLE ID		SAMPLE ID	
111-1-B3 (MC1 Tube 5)		111-1-B4 (SPT 4)		111-1-B4 (MC1 Tube 4)		111-1-B4 (MC1 Tube 5)	
Sieve Size	% Pass	Sieve Size	% Pass	Sieve Size	% Pass	Sieve Size	% Pass
3"	100	3"	100	3"	100	3"	100
2"	100	2"	100	2"	100	2"	100
1.5"	100	1.5"	100	1.5"	100	1.5"	100
1"	100	1"	100	1"	100	1"	100
¾"	100	¾"	100	¾"	100	¾"	100
½"	100	½"	100	½"	100	½"	100
3/8"	100	3/8"	100	3/8"	100	3/8"	100
#4	100	#4	100	#4	100	#4	100
#10	100	#10	100	#10	100	#10	100
#20	100	#20	100	#20	100	#20	100
#40	100	#40	100	#40	100	#40	100
#60	100	#60	99.8	#60	99.9	#60	99.9
#80	100	#80	99.7	#80	99.8	#80	99.7
#100	100	#100	99.5	#100	99.8	#100	99.5
#200	99.9	#200	86.5	#200	99.7	#200	98.8
0.05 mm	95.0	0.05 mm	52.5	0.05 mm	99.5	0.05 mm	98.6
0.005 mm	47.0	0.005 mm	15.0	0.005 mm	84.0	0.005 mm	81.0
0.001 mm	28.0	0.001 mm	11.0	0.001 mm	57.5	0.001 mm	56.0

TABLE IV
SUMMARY OF LABORATORY ATTERBERG LIMITS TEST RESULTS
(ASTM D 4318-00, CALIFORNIA TEST METHOD 204)

Boring No.	Sample No.	Tube No.	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
111-1-B1	MC 1	5	72	20	52
111-1-B3	MC 1	3	46	16	30
111-1-B3	MC 1	5	51	17	34
111-1-B4	MC 1	4	82	21	61
111-1-B4	MC 1	5	74	19	55
111-1-B5	MC 1	3	82	20	62
111-1-B5	MC 2	3	54	17	37
111-1-B5	MC 2	4	51	17	34
111-2-B1	Bag 2	--	71	18	53
111-2-B3	MC 1	4	71	19	52
111-2-B3	MC 1	5	69	20	49
111-2-B3	MC 2	5	81	20	61
111-2-B5	MC 1	4	83	22	61
111-2-B5	MC 1	5	87	22	65
111-2-B5	MC 2	5	73	19	54
111-2-B5	MC 2	6	69	21	48
111-2-B6	SPT 3	--	61	19	42
111-2-B6	MC 1	4	68	19	49
111-2-B6	MC 1	6	68	18	50

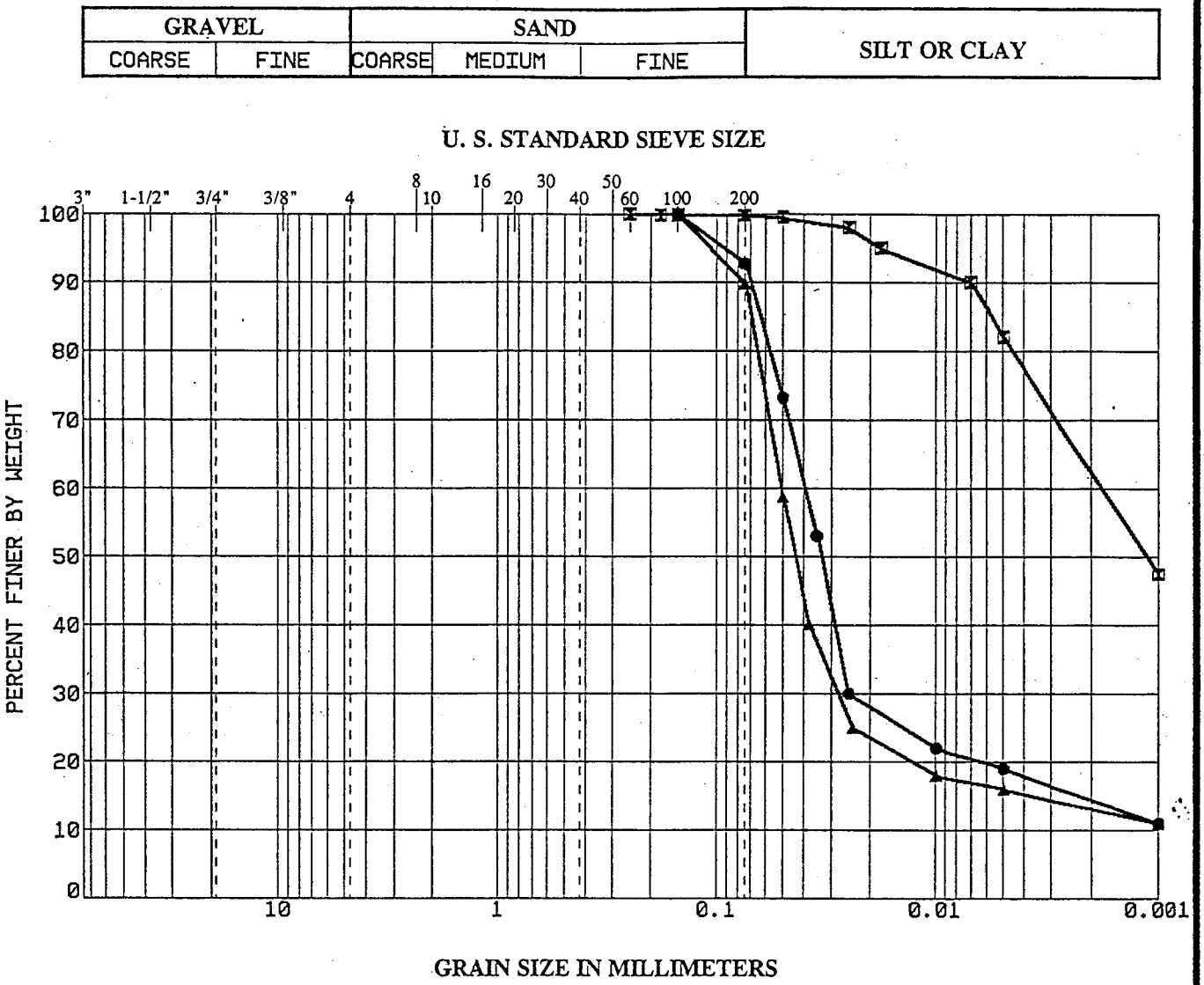
TABLE IIIC
SUMMARY OF GRAIN SIZE ANALYSIS RESULTS
(ASTM D 422-63 [1998], CALIFORNIA TEST METHODS 202 AND 203)

SAMPLE ID		SAMPLE ID		SAMPLE ID		SAMPLE ID	
111-1-B5 (SPT 3)		111-1-B5 (MC1 Tube 3)		111-1-B5 (MC2 Tube 3)		111-1-B5 (MC2 Tube 4)	
Sieve Size	% Pass	Sieve Size	% Pass	Sieve Size	% Pass	Sieve Size	% Pass
3"	100	3"	100	3"	100	3"	100
2"	100	2"	100	2"	100	2"	100
1.5"	100	1.5"	100	1.5"	100	1.5"	100
1"	100	1"	100	1"	100	1"	100
¾"	100	¾"	100	¾"	100	¾"	100
½"	100	½"	100	½"	100	½"	100
3/8"	100	3/8"	100	3/8"	100	3/8"	100
#4	100	#4	100	#4	100	#4	100
#10	100	#10	100	#10	100	#10	100
#20	100	#20	100	#20	99.9	#20	100
#40	100	#40	100	#40	99.9	#40	100
#60	100	#60	99.9	#60	97.9	#60	100
#80	100	#80	99.9	#80	97.3	#80	99.9
#100	100	#100	99.8	#100	96.9	#100	99.9
#200	94.1	#200	99.7	#200	96.5	#200	99.6
0.05 mm	58.8	0.05 mm	97.0	0.05 mm	95.0	0.05 mm	97.0
0.005 mm	17.5	0.005 mm	82.0	0.005 mm	57.0	0.005 mm	49.0
0.001 mm	14.0	0.001 mm	52.5	0.001 mm	39.0	0.001 mm	28.0

TABLE V
SUMMARY OF LABORATORY CONSOLIDATION TEST PERFORMED
(ASTM D 2435-00, CALIFORNIA TEST METHOD 219)

Boring No.	Sample No.	Tube No.	Detailed Results
111-1-B1	MC 1	5	Figures 9 to 11
111-1-B3	MC 1	3	Figures 12 to 14
111-1-B3	MC 1	5	Figures 15 to 17
111-1-B4	MC 1	4	Figures 18 to 20
111-1-B5	MC 1	3	Figures 21 to 23
111-1-B5	MC 2	4	Figures 24 to 26
111-2-B3	MC 1	4	Figures 27 to 29
111-2-B3	MC 1	5	Figures 30 to 32
111-2-B3	MC 2	5	Figures 33 to 35
111-2-B5	MC 2	5	Figures 36 to 38
111-2-B6	MC 1	4	Figures 39 to 41
111-2-B6	MC 1	6	Figures 42 to 44

PROJECT NO. 09200-06-05



	SAMPLE IDENTIFICATION
●	111-1-B1 (SPT 4)
⊠	111-1-B1 (MC1 Tube 5)
▲	111-1-B3 (SPT 3)

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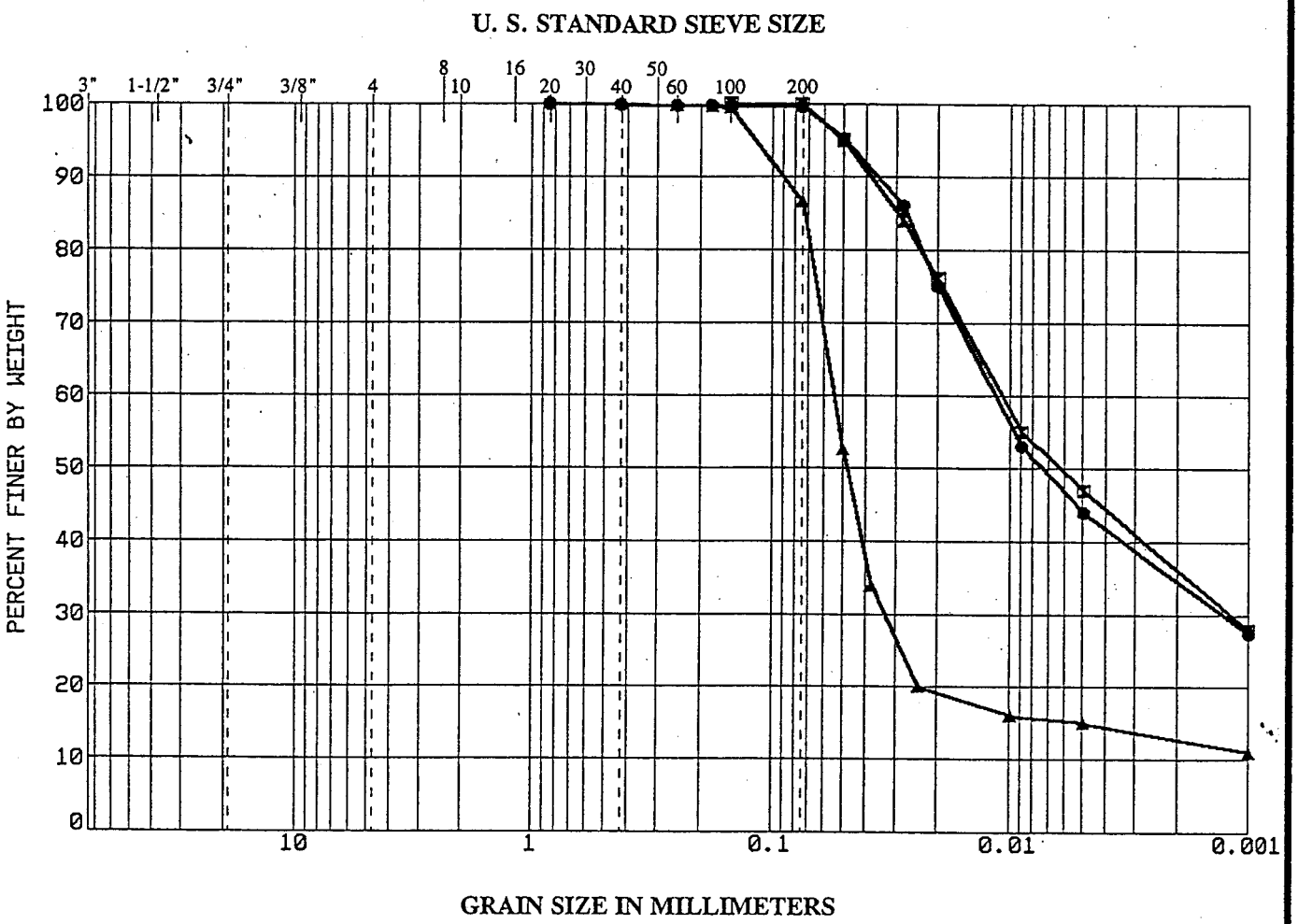
GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



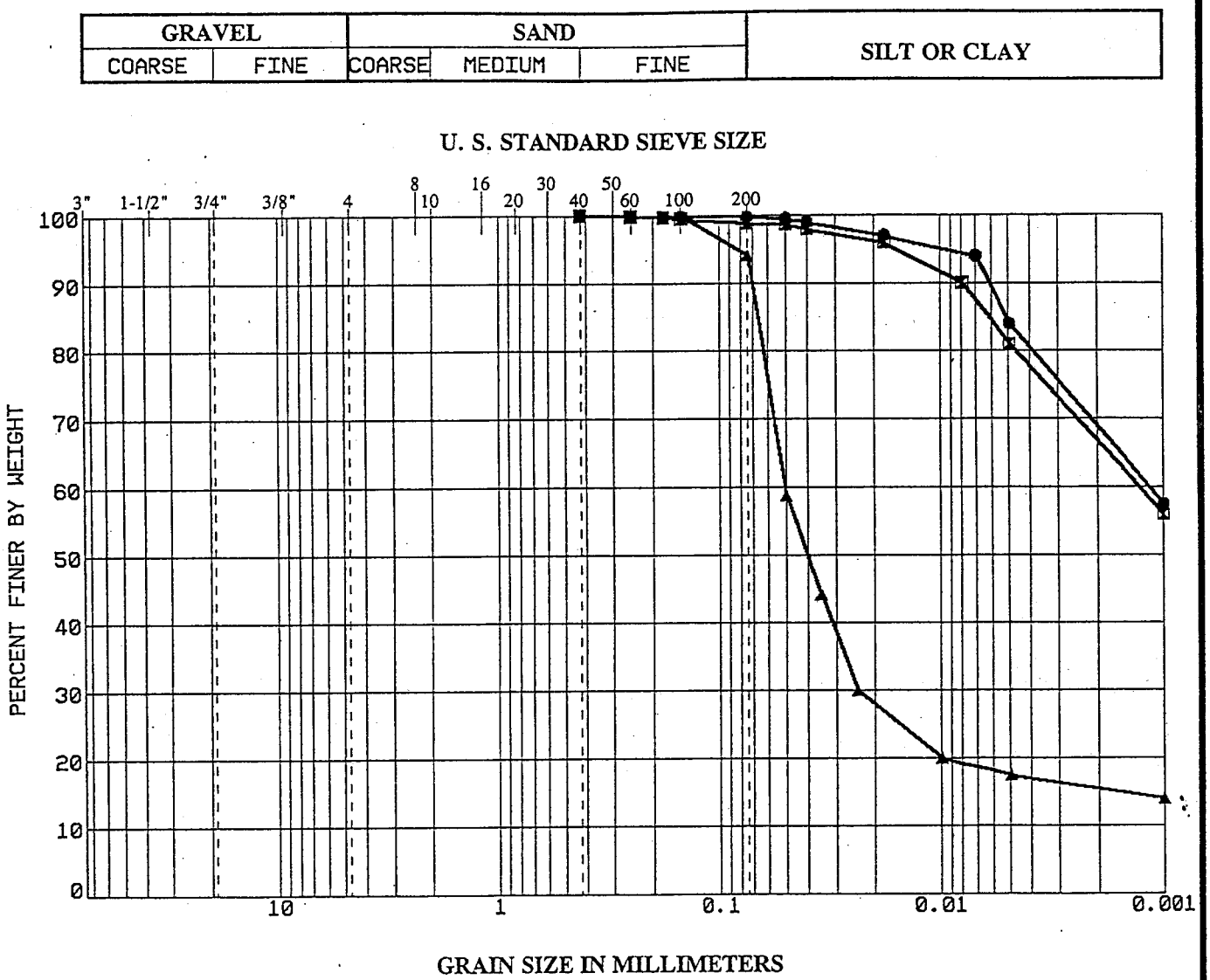
	SAMPLE IDENTIFICATION
●	111-1-B3 (MC1 Tube 3)
⊠	111-1-B3 (MC1 Tube 5)
▲	111-1-B4 (SPT 4)

GRADATION CURVE

BRAWLEY BYPASS

IMPERIAL COUNTY, CALIFORNIA

PROJECT NO. 09200-06-05



	SAMPLE IDENTIFICATION
●	111-1-B4 (MC1 Tube 4)
⊠	111-1-B4 (MC1 Tube 5)
▲	111-1-B5 (SPT 3)

GRADATION CURVE

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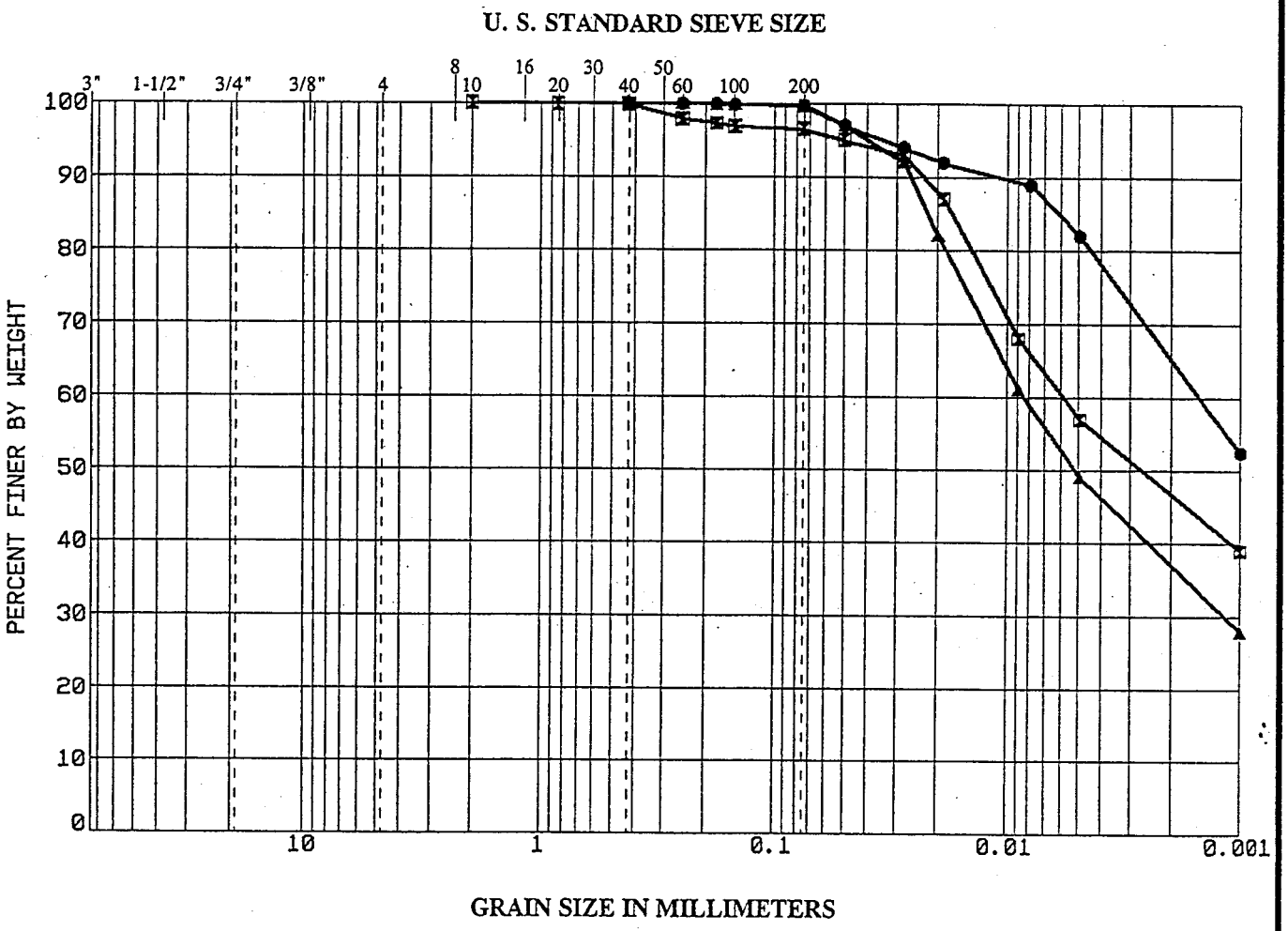
PROJECT NO. 09200-06-05

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



	SAMPLE IDENTIFICATION
●	111-1-B5 (MC1 Tube 3)
⊠	111-1-B5 (MC2 Tube 3)
▲	111-1-B5 (MC2 Tube 4)

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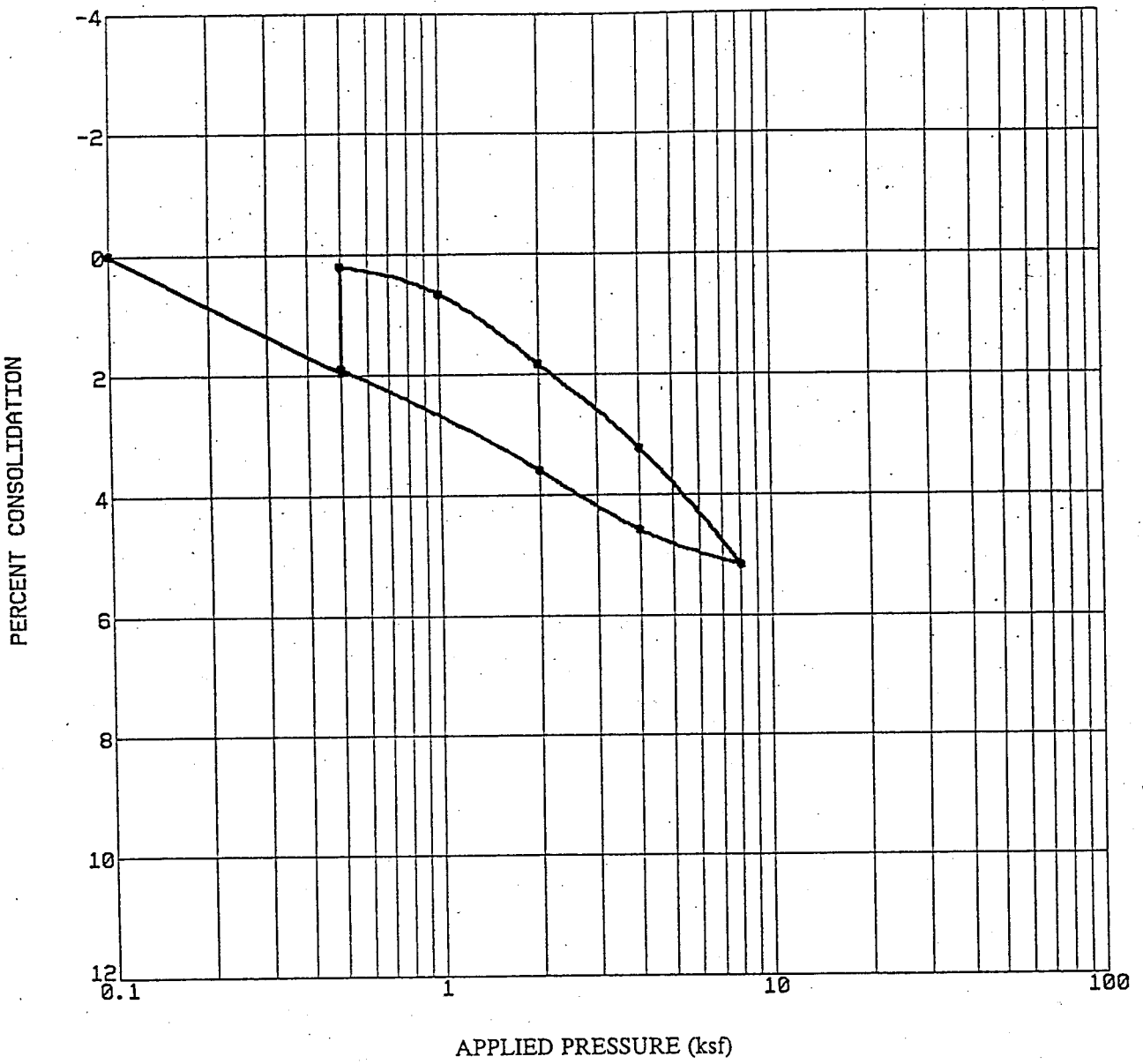
Figure 4

PROJECT NO. 09200-06-05

SAMPLE ID. 111-1-B1 (MC1 Tube 5)



Initial Dry Density (pcf)	100.9
Initial Water Content (%)	26.6

Initial Saturation (%)	88.2
Sample Saturated at (ksf)	0.5

CONSOLIDATION CURVE

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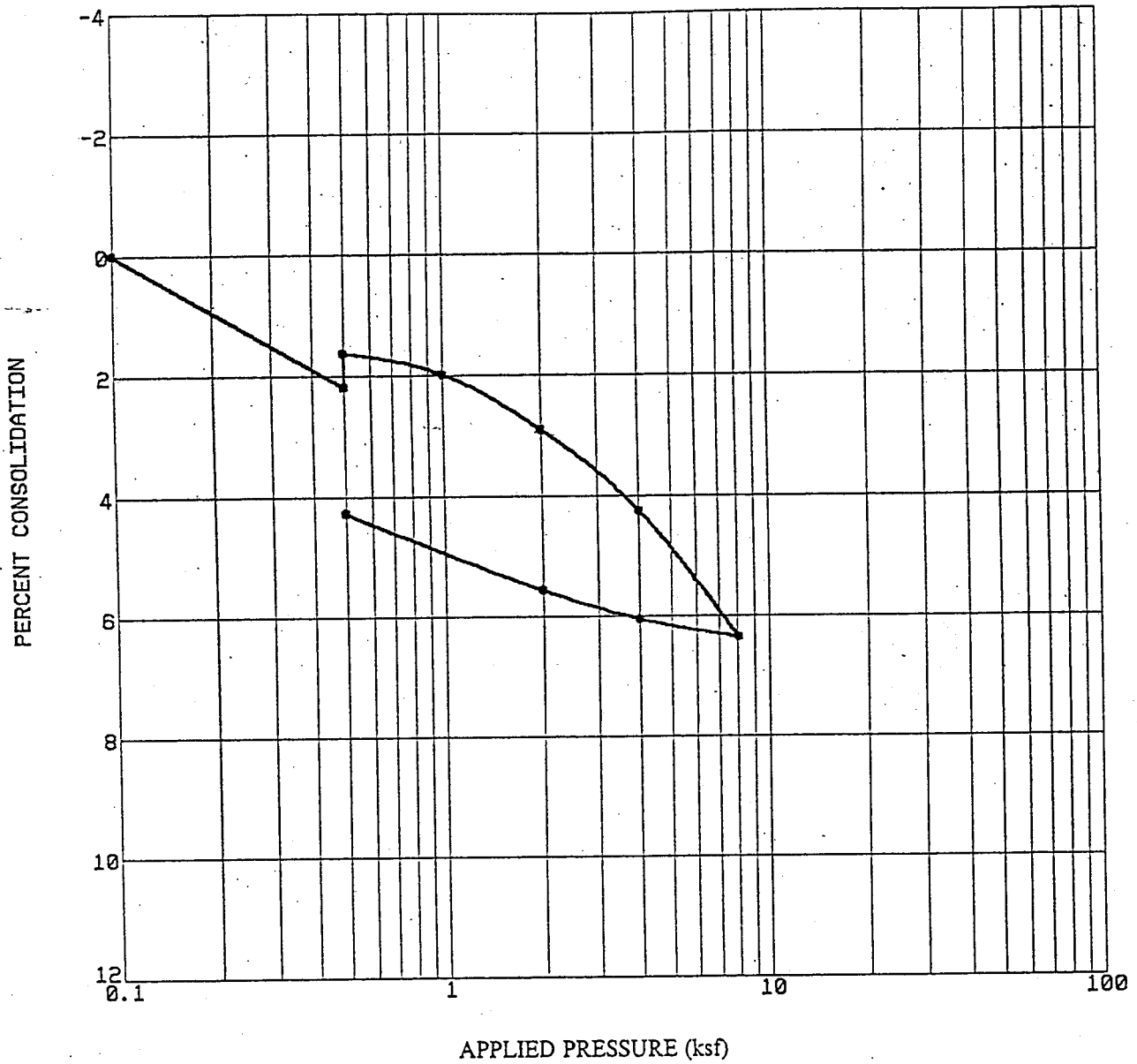
Figure 9

PROJECT NO. 09200-06-05

SAMPLE ID. 111-1-B3 (MC1 Tube 3)



Initial Dry Density (pcf)	104.5
Initial Water Content (%)	24.3

Initial Saturation (%)	95.2
Sample Saturated at (ksf)	0.5

CONSOLIDATION CURVE

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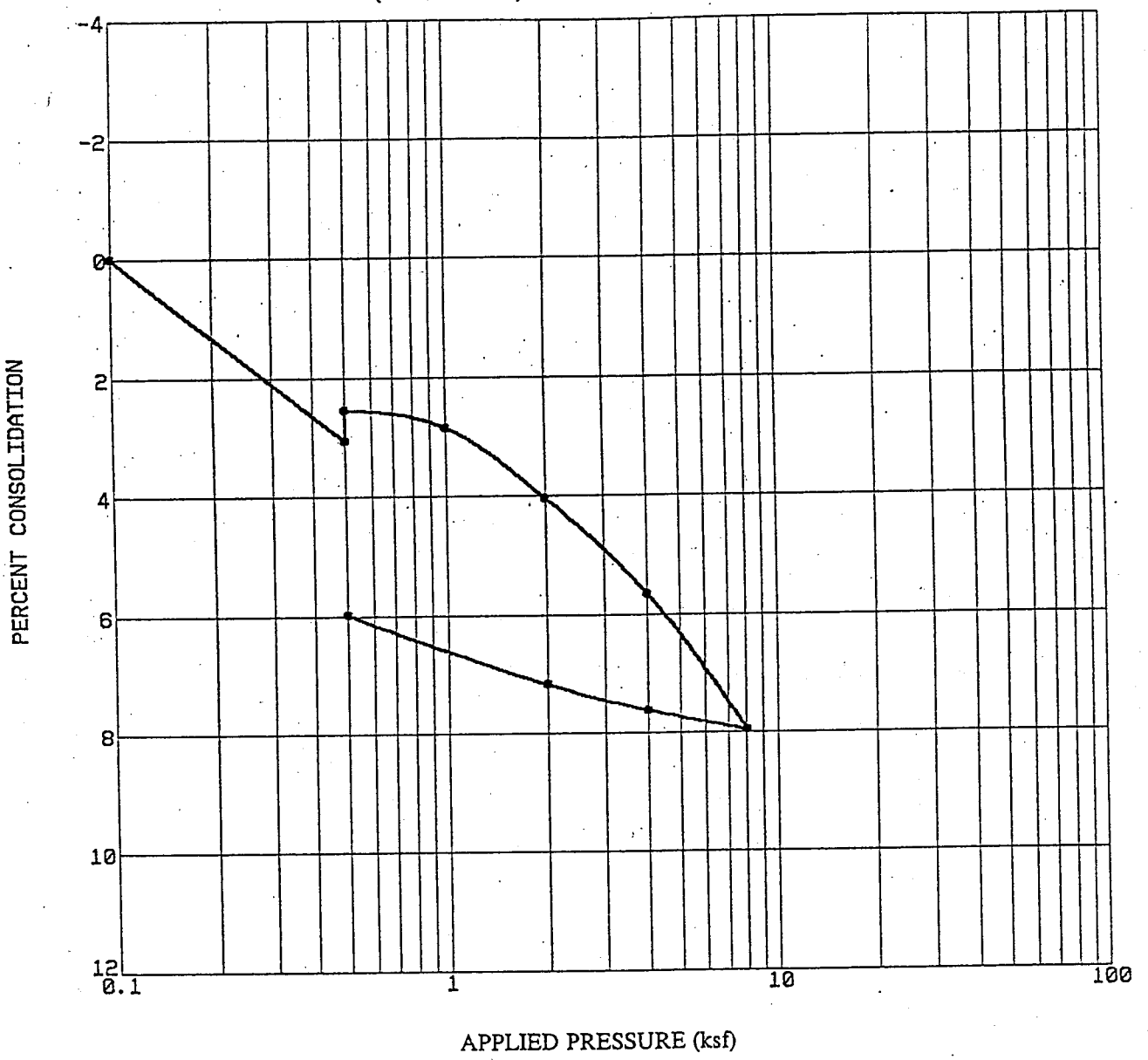
Figure 12

PROJECT NO. 09200-06-05

SAMPLE ID. 111-1-B3 (MC1 Tube 5)



Initial Dry Density (pcf)	105.5
Initial Water Content (%)	26.7

Initial Saturation (%)	98.4
Sample Saturated at (ksf)	0.5

CONSOLIDATION CURVE

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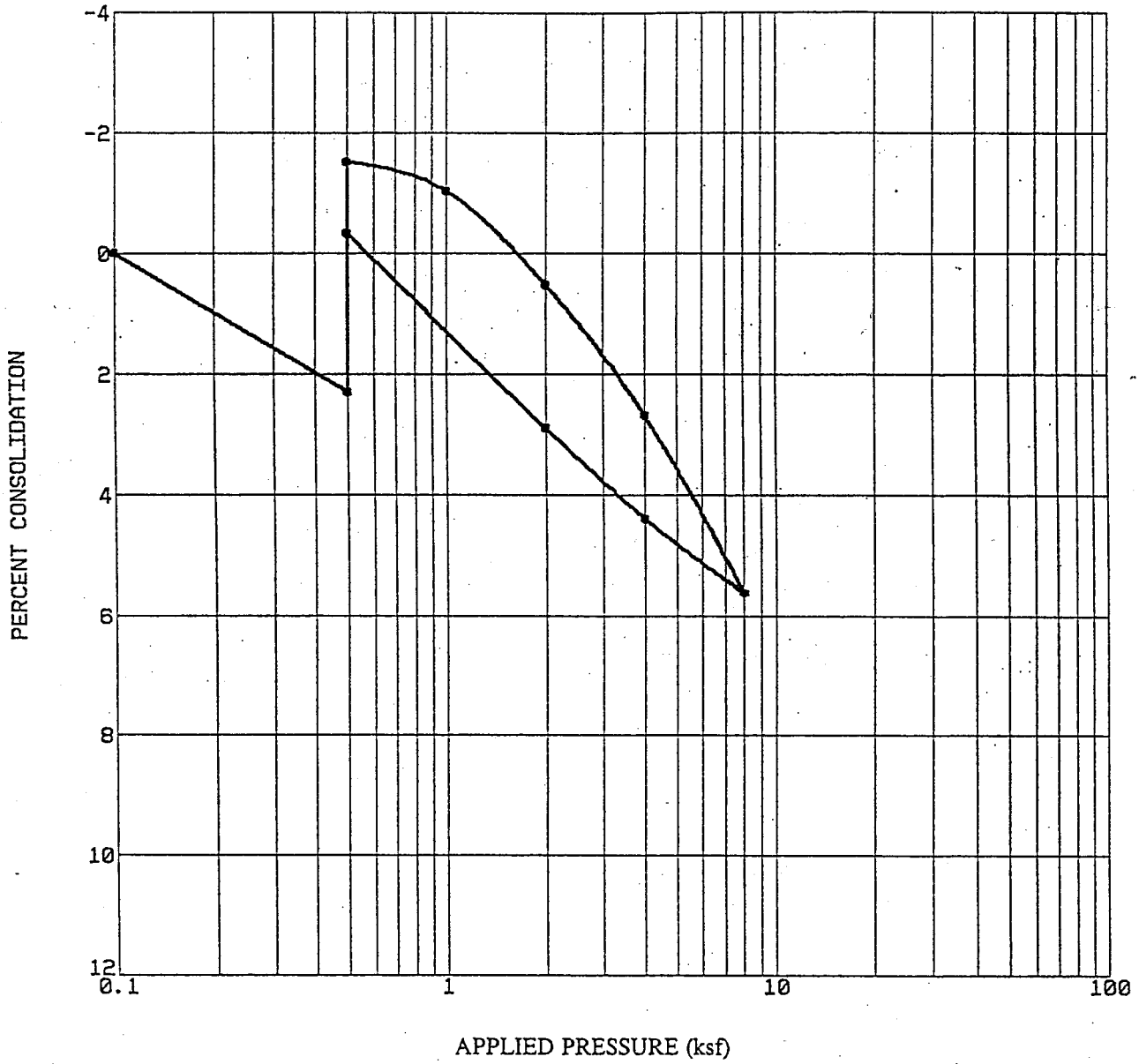
Figure 15

SAMPLE ID. 111-1-B4 (MC1 Tube 4)



Initial Dry Density (pcf)	91.0
Initial Water Content (%)	34.2

Initial Saturation (%)	94.4
Sample Saturated at (ksf)	0.5

CONSOLIDATION CURVE

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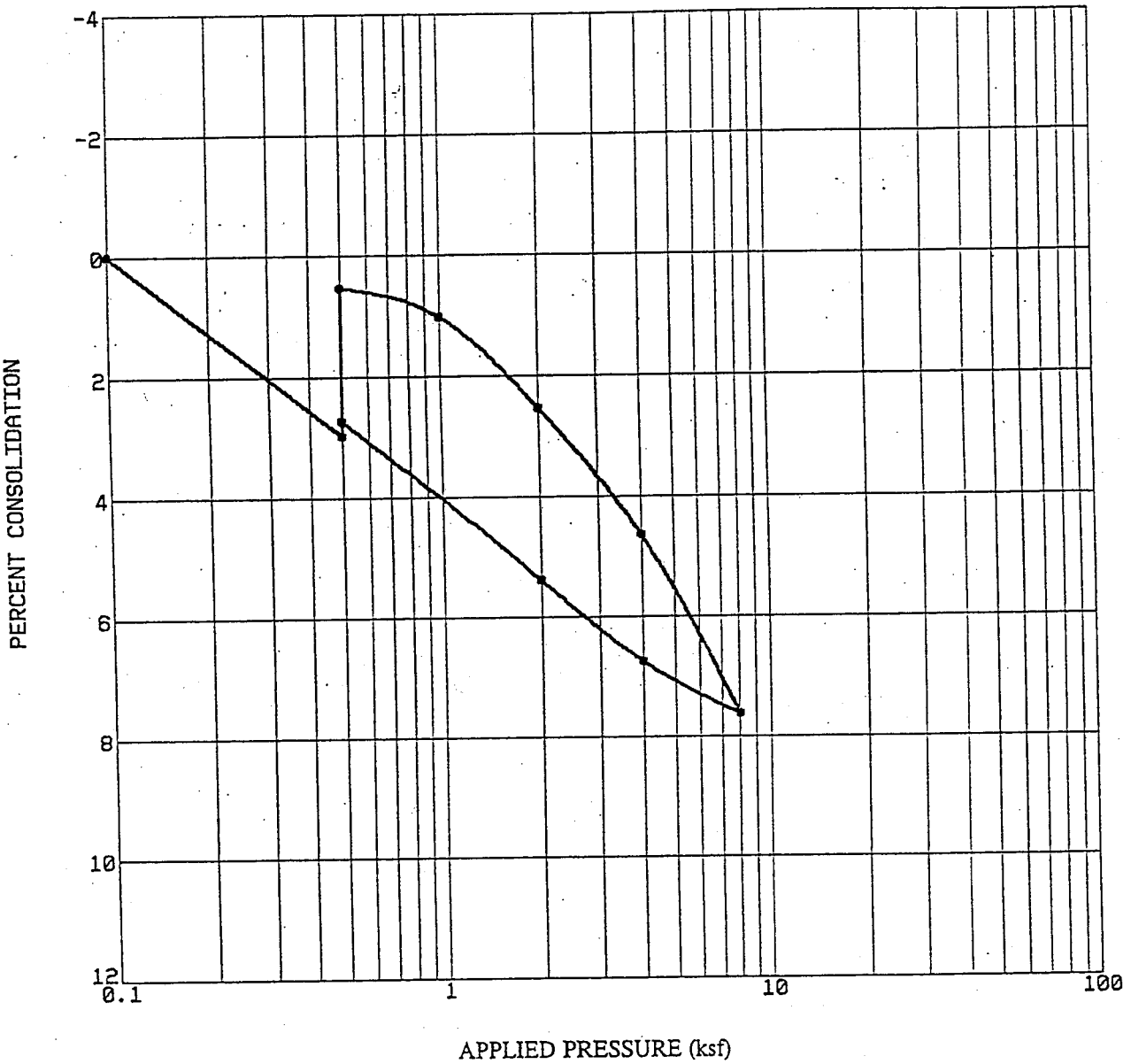
PROJECT NO. 09200-06-05

SAMPLE ID. 111-1-B5 (MC1 Tube 3)



Initial Dry Density (pcf)	93.1
Initial Water Content (%)	33.4

Initial Saturation (%)	94.8
Sample Saturated at (ksf)	0.5

CONSOLIDATION CURVE

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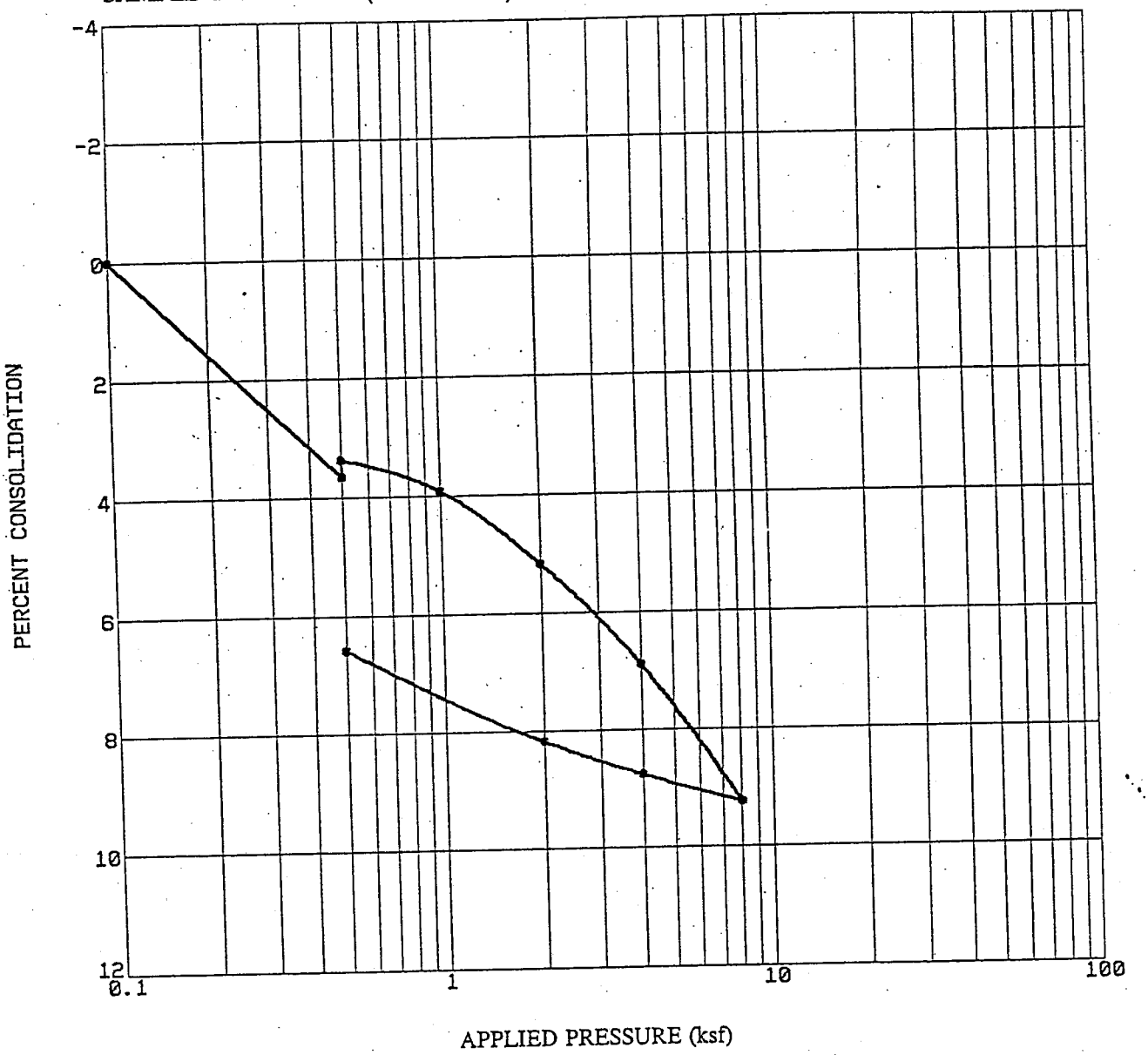
Figure 21

PROJECT NO. 09200-06-05

SAMPLE ID. 111-1-B5 (MC2 Tube 4)



Initial Dry Density (pcf)	104.0
Initial Water Content (%)	27.8

Initial Saturation (%)	95.0
Sample Saturated at (ksf)	0.5

CONSOLIDATION CURVE

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IMPERIAL COUNTY, CALIFORNIA

Figure 24

BBP

APPEINDIX D

References

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