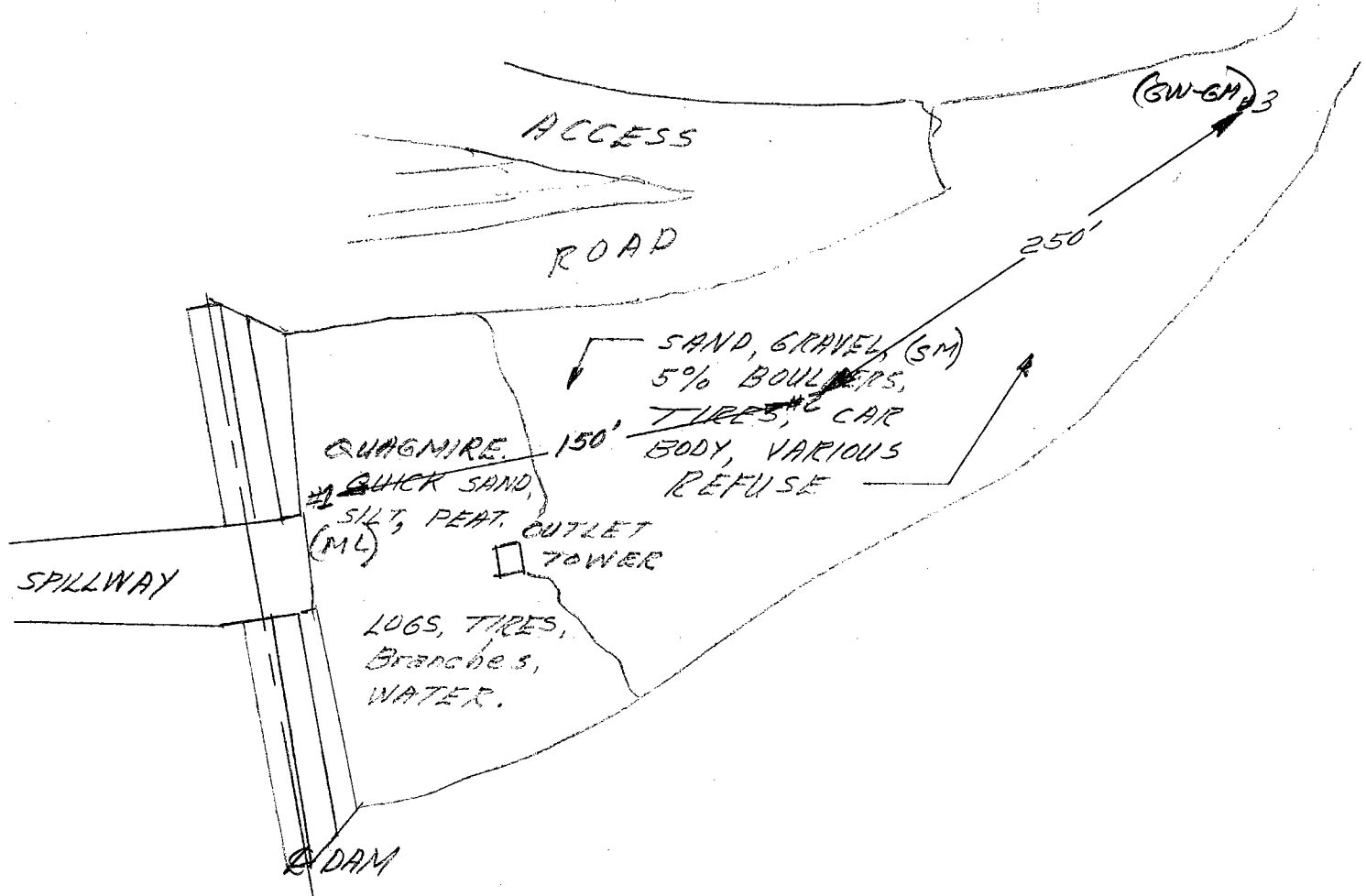


Turnbull Canyon Debris Basin

2/24/69
from 2/21/69

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N
JAL & JB

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
Soils and Materials Engineering Division

SAND EQUIVALENT WORK SHEET

Lab. Serial No. 22921 Job TURNBULL DB
 Sampled By JAL-VUB Date 2/21/69 Boring No. 1 Sample No.
 Date Received 2/21/69 Station Depth
 Intended Use Location
 Field Classification ML Tested By R Date 3/10/69
 Checked By Date

$$\text{Sand Equivalent} = \frac{\text{Sand Reading } (R_2) \times 100}{\text{Clay Reading } (R_1)}$$

T₁ = Starting Time (Place Material)

T₂ = Begin Agitation (1/2 minute, 90 strokes) (T₁ + 10 min.)

T₃ = Settlement Starting Time

T₄ = Take Clay Reading & Sand Reading (T₃ + 20 min.)

Run No.	T ₁	T ₂	T ₃	T ₄	R ₁	R ₂	S.E.
1	1245	1255	12:56:30	1:16:30	12.2	0.4	4
2	1248	1258	12:59:30	1:19:30	11.9	0.4	4
3	1251	1261	1:02:30	1:22:30	11.8	0.4	4

Average Sand Equivalent = 4

Required Sand Equivalent =

Remarks

*0 1/2 M tried wellpointing this material to dewater the basin - No success. They then moved to Boring #2 and are having moderate success, but nothing like they had hoped for. SE @ #2 = 36
 SE @ #3 = 56*

Noted

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LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

Soils and Materials Engineering Division

ML

SIEVE ANALYSIS WORK SHEET

LAB SERIAL NO. 22921

Total Weight of Sample 2.14 lbs.

Project Turnball

grams.

Station

Moisture Content of Fines %.

Location

Date Tested 3/12 Plotted By

Boring No. Sample No.

Remarks

Sampled By Lab Tested By

Intended Use

GRAVEL (Plus No. 4)

ASTM SIEVE NUMBER	SIZE (mm)	RETAINED		% OF TOTAL OVEN-DRY RETAINED	ACCUM. % RETAINED	ACCUM. % PASSING	
		LBS.	GRAMS			ACTUAL	SPEC. REQ.
3"	76.2						
1 1/2"	38.1						
(1")	(25.4)						
3/4"	19.1						
3/8"	9.52						
No. 4	4.76					100.0	
Pan	0	2.14		xxxxx			
Total Fractions				xxxxx			
Sieve Loss-Gain							
Calc. Oven-Dry Fines		1.45		100.0			
Total Oven-Dry		1.45		100.00			

Moisture Determination of Fines:

Cup No. 61
 Dry Weight 141.8 grams
 Moisture 48.0%
 174.0
 141.8
 32.2
 68.8

WEIGHT, GRAMS 100 FINES (Minus No. 4) (CALC.) OVEN-DRY WEIGHT 67.6 grams.

WEIGHT OF TOTAL SAMPLE REPRESENTED BY FINES, OVEN-DRY 67.6 grams.

ASTM SIEVE NUMBER	SIZE (mm)	RETAINED GRAMS	% OF TOTAL SAMPLE RETAINED	ACCUM. % OF TOTAL RETAINED	ACCUM. % PASSING	
					ACTUAL	SPEC. REQ.
8	2.38					
16	1.19	0.3	.4	.4		
30	0.59	0.7	1.0	1.4		
50	.297	3.9	5.8	7.2		
100	.149	9.5	14.1	21.3		
200	.074	6.5	9.6	30.8	68.8	
Pan	0	0.3				
Total Fractions		21.2				
Total Dry Weight After Wet Sieving		141.3	31.2			
Sieve Loss-Gain		120.2	+ .1			

Calculated by RB Date 3/24/69

Checked by JLB Date 3/25/69

Note: Cross out sieve numbers not used.

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LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
Foundation and Testing Division

HYDROMETER ANALYSIS WORK SHEET

ASTM Method D422-54T
(Modified)

LAB. SERIAL NO. 22921
Project _____
Limits _____
Boring _____ Sample _____
Depth _____
Sampled by _____ Date _____
Field Description _____

Initial Weight of Sample Passing
No. 4 Sieve _____ grams
Remarks APPROX 10% OF SAMPLE
LOST IN TRANSFER

Set up by NR Date 3/12/69
Lab. Tested by NR Date 3/22/69

Moisture Cup No. 61
Dry Weight, grams 141.8
Moisture Content, % _____
Oven-Dry Weight
Passing No. 4 grams _____
Percent Passing No. 4 _____; No. 10 _____ = P₁₀
Oven-Dry Weight of total
Sample represented,
W = 67.6 grams

Type Calgon
Dispersing Agent Volume, cc 125
Strength, % _____
Correction, gm/l = C_d -8.0
Soil Specific Gravity = G 2.65
S. G. Correction factor = a 1.0
Meniscus correction, gm/l = C_m +1.3 -6.7
Peroxide Treatment Used (Yes) (No) _____
HYDROMETER NO. _____ JAR NO. _____

Time	11:50	11:53	12:05	12:53	4:05	8:49	
Temperature, °C	19.6	19.6	20.0	18.9	20.2	20.1	
Temp. correc. Factor = C _t	-1.1	-1.1	0	-1.2	0	0	
Elapsed Time, Minutes = T	1	4	16	64	256	1260	
Hydrometer Reading, gm/l = R	46.0	35.5	25.0	19.0	16.5	13.5	
Effective Depth, cm = <u>L</u>	2.97	3.24	3.49	3.63	3.685	3.755	
Total Correction C = C _d + C _m + C _t	-6.8	-6.8	-6.7	-6.9	-6.7	-6.7	
Corrected Reading R _c = R + C	39.2	28.7	18.3	12.1	9.8	6.8	
K	.01365	.01365	.01365	.01382	.01365	.01365	
Diameter in mm = D	.0405	.0201	.0119	.00626	.00315	.00145	
Percent in Suspension = P	58.0	42.8	27.1	17.9	14.5	10.1	
Percent of (-10) = P'							

$$P = \frac{(R_c)(a)(100)}{(W)}$$

$$P' = \frac{(P)(100)}{(P_{10})}$$

$$D = K \sqrt{\frac{L}{T}}$$

Computed by NR Date 3/24/69
Plotted by _____ Date _____

Checked by JTB
Date 3/25/69

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

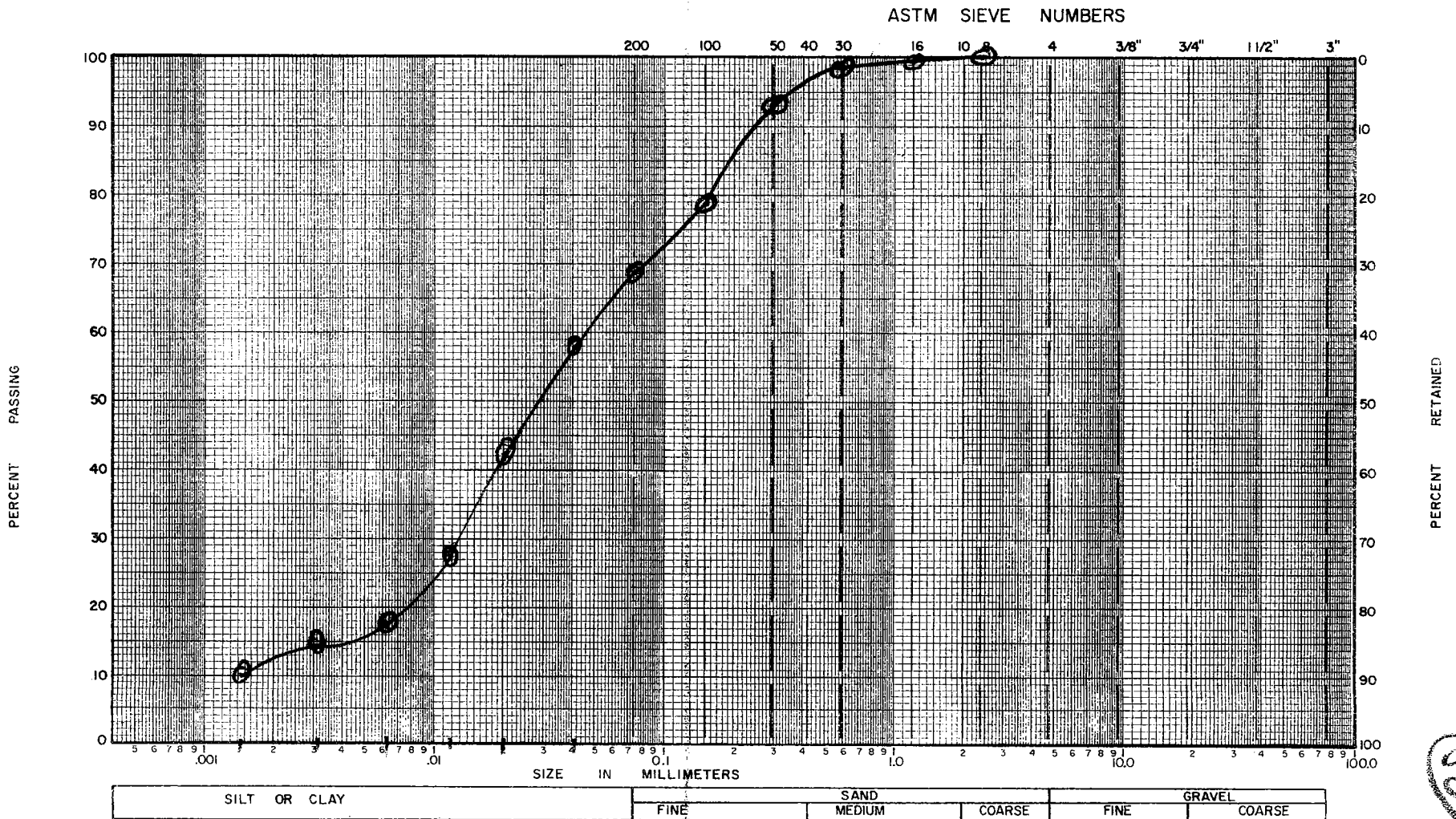
Soils and Materials Engineering Division

MECHANICAL ANALYSIS

LAB. SERIAL NO. 22921
 JOB _____
 BORING NO. _____ SAMPLE NO. _____
 STATION _____ DEPTH _____ FT.
 LOCATION _____
 SAMPLED BY _____ DATE _____
 FIELD CLASSIFICATION _____ BY _____
 PLAS. IND. _____ LIQ. LIM. _____
 REMARKS _____

CLASSIFICATION DATA

PERCENT (+) NO. 200 _____ PERCENT (+) NO. 4 _____
 % (+) NO. 4 / % (+) NO. 200 _____ D_{10} _____ mm
 D_{30} _____ mm D_{60} _____ mm
 $C_u = D_{60}/D_{10}$ _____ PLOTTED BY LR
 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ _____ CHECKED BY _____
 GROUP SYMBOL _____ DATE _____
 NOTE: D_x = PARTICLE DIA. AT X% PASSING



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LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
Soils and Materials Engineering Division

SM 58

SIEVE ANALYSIS WORK SHEET

LAB SERIAL NO. 22922
Project TURNBULL D.B.
Station _____
Location _____
Boring No. _____ Sample No. _____
Sampled By JB Lab Tested By FK-IV

Total Weight of Sample 1.72 lbs.
_____ grams.
Moisture Content of Fines _____ %.
Date Tested 3-6-68 Plotted By _____
Remarks IP
Intended Use _____

GRAVEL (Plus No. 4)

ASTM SIEVE NUMBER	SIZE (mm)	RETAINED		% OF TOTAL OVEN-DRY RETAINED	ACCUM. % RETAINED	ACCUM. % PASSING	
		LBS.	GRAMS			ACTUAL	SPEC. REQ.
3"	76.2						
1½"	38.1						
(1")	(25.4)						
¾"	19.1						
⅜"	9.52						
No. 4	4.76	0.04		2.8	2.8	97.2	
Pan	0	1.68		xxxxx			
Total Fractions		1.72		xxxxx			
Sieve Loss-Gain		—					
Calc. Oven-Dry Fines		1.40		97.2			
Total Oven-Dry		1.44		100.00			

Moisture Determination of Fines:
Cup No. 1
Dry Weight 157.3 grams
Moisture 20.0 %

FINES (Minus No. 4)

WEIGHT, GRAMS 100 (CALC.) OVEN-DRY WEIGHT 83.3 grams.
WEIGHT OF TOTAL SAMPLE REPRESENTED BY FINES, OVEN-DRY 85.7 grams.

ASTM SIEVE NUMBER	SIZE (mm)	RETAINED GRAMS	% OF TOTAL SAMPLE RETAINED	ACCUM. % OF TOTAL RETAINED	ACCUM. % PASSING	
					ACTUAL	SPEC. REQ.
8	2.38	2.1	2.5	5.3		
16	1.19	7.4	8.6	13.9		
30	0.59	23.1	27.0	40.9		
50	.297	20.2	23.6	64.5		
100	.149	10.0	11.7	76.2		
200	.074	4.0	4.7	82.4	17.6	
Pan	0	1.1	—			
Total Fractions		67.9				
Total Dry Weight After Wet Sieving		188.4	79.6			
Sieve Loss-Gain		120.2	- .3			

Calculated by AK Date 3/10/69
Checked by RJT Date 3/10

Note: Cross out sieve numbers not used.

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
Soils and Materials Engineering Division

SAND EQUIVALENT WORK SHEET

Lab. Serial No. 22922 Job Furnace #11
 Sampled By Date Boring No. 2 Sample No. 1
 Date Received Station Depth
 Intended Use Location
 Field Classification Tested By PIT-NR Date 3/7/69
 Checked By JM Date 3/7

$$\text{Sand Equivalent} = \frac{\text{Sand Reading (R}_2\text{)} \times 100}{\text{Clay Reading (R}_1\text{)}}$$

- T₁ = Starting Time (Place Material)
- T₂ = Begin Agitation (1/2 minute, 90 strokes) (T₁ + 10 min.)
- T₃ = Settlement Starting Time
- T₄ = Take Clay Reading & Sand Reading (T₃ + 20 min.)

Run No.	T ₁	T ₂	T ₃	T ₄	R ₁	R ₂	S.E.
1	11:10	11:20	11:21:30	11:41:30	6.5	26	40
2	11:13	11:23	11:24:30	11:44:30	7.3	2.5	35
3	11:16	11:26	11:27:30	11:47:30	8.3	2.7	33

$\frac{36}{3/108}$

Average Sand Equivalent = 36

Required Sand Equivalent =

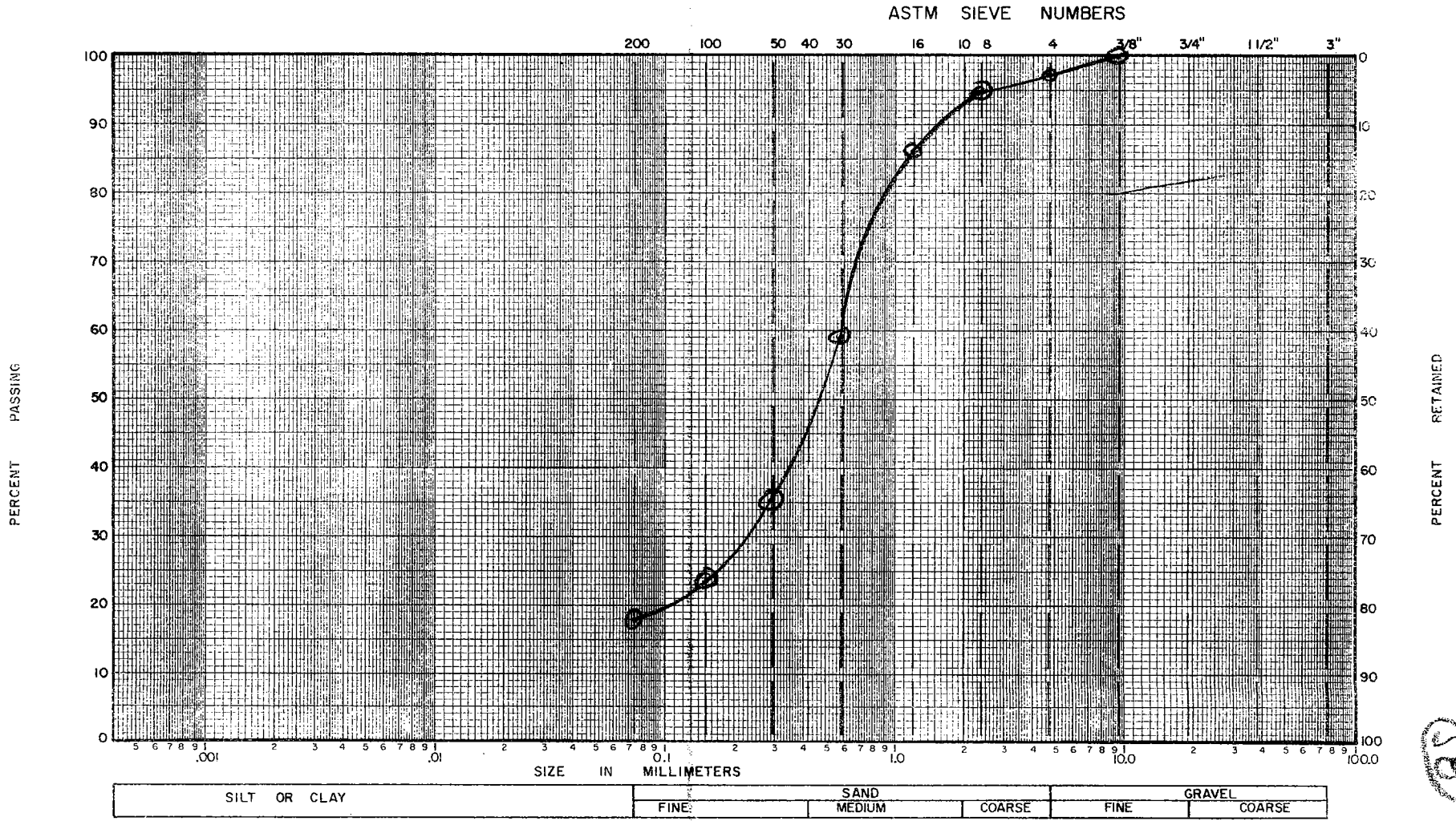
Remarks

*Info Passed on to Berglund 3:20 PM
 O & M @ 3-7-69*

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
Soils and Materials Engineering Division
MECHANICAL ANALYSIS

LAB. SERIAL NO. 22922
 JOB _____
 BORING NO. _____ SAMPLE NO. _____
 STATION _____ DEPTH _____ FT.
 LOCATION _____
 SAMPLED BY _____ DATE _____
 FIELD CLASSIFICATION _____ BY _____
 PLAS. IND. _____ LIQ. LIM. _____
 REMARKS _____

CLASSIFICATION DATA
 PERCENT (+) NO. 200 _____ PERCENT (+) NO. 4 _____
 %(+)NO.4/%(+)NO.200 _____ D_{10} _____ mm
 D_{30} _____ mm D_{60} _____ mm
 $C_u = D_{60}/D_{10}$ _____ PLOTTED BY AK
 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ _____ CHECKED BY RJ
 GROUP SYMBOL _____ DATE 2/19/03
 NOTE: D_x = PARTICLE DIA. AT X% PASSING



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LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
Soils and Materials Engineering Division

GM-6W 

SIEVE ANALYSIS WORK SHEET

LAB SERIAL NO. 22523 Total Weight of Sample 1.92 lbs.
 Project TURNBULL D.B. _____ grams.
 Station _____ Moisture Content of Fines _____ %.
 Location _____ Date Tested 3-6-69 Plotted By _____
 Boring No. _____ Sample No. _____ Remarks AP
 Sampled By JJB Lab Tested By FK-IR Intended Use _____

GRAVEL (Plus No. 4)

ASTM SIEVE NUMBER	SIZE (mm)	RETAINED		% OF TOTAL OVEN-DRY RETAINED	ACCUM. % RETAINED	ACCUM. % PASSING	
		LBS.	GRAMS			ACTUAL	SPEC. REQ.
3"	76.2						
1½"	38.1						
(1")	(25.4)						
¾"	19.1	<u>0.08</u>		<u>4.4</u>	<u>4.4</u>		
⅜"	9.52	<u>0.47</u>		<u>26.0</u>	<u>30.4</u>		
No. 4	4.76	<u>0.45</u>	<u>1.00</u>	<u>24.9</u>	<u>55.3</u>	<u>44.8</u>	
Pan	0	<u>0.92</u>		xxxxx			
Total Fractions		<u>1.92</u>		xxxxx			
Sieve Loss-Gain							
Calc. Oven-Dry Fines		<u>.81</u>		<u>44.8</u>			
Total Oven-Dry		<u>1.81</u>		<u>100.00</u>			

Moisture Determination of Fines:
 Cup No. 18
 Dry Weight 162.1 grams
 Moisture 13.5 %

FINES (Minus No. 4)

WEIGHT, GRAMS 100 (CALC.) OVEN-DRY WEIGHT 88.1 grams.
 WEIGHT OF TOTAL SAMPLE REPRESENTED BY FINES, OVEN-DRY 196.7 grams.

ASTM SIEVE NUMBER	SIZE (mm)	RETAINED GRAMS	% OF TOTAL SAMPLE RETAINED	ACCUM. % OF TOTAL RETAINED	ACCUM. % PASSING	
					ACTUAL	SPEC. REQ.
8	2.38	<u>20.4</u>	<u>10.4</u>	<u>65.7</u>		
16	1.19	<u>18.0</u>	<u>9.2</u>	<u>74.9</u>		
30	0.59	<u>14.7</u>	<u>7.5</u>	<u>82.4</u>		
50	.297	<u>11.7</u>	<u>5.9</u>	<u>88.3</u>		
100	.149	<u>7.5</u>	<u>3.8</u>	<u>92.1</u>		
200	.074	<u>3.3</u>	<u>1.7</u>	<u>94.0</u>	<u>6.0</u>	
Pan	0	<u>0.3</u>				
Total Fractions		<u>75.9</u>				
Total Dry Weight After Wet Sieving		<u>196.3</u>	<u>38.7</u>			
Sieve Loss-Gain		<u>120.2</u>	<u>-1.2</u>			

Calculated by RR Date 3/10/69
 Checked by RJT Date 3/10/69

Note: Cross out sieve numbers not used.

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
Soils and Materials Engineering Division

SAND EQUIVALENT WORK SHEET

Lab. Serial No. 22923 Job Turbell
 Sampled By _____ Date _____ Boring No. 3 Sample No. 1
 Date Received _____ Station _____ Depth _____
 Intended Use _____ Location _____
 Field Classification _____ Tested By RJT-NP Date 3/7/69
 _____ Checked By JAL Date 3/7/69

$$\text{Sand Equivalent} = \frac{\text{Sand Reading } (R_2)}{\text{Clay Reading } (R_1)} \times 100$$

- T₁ = Starting Time (Place Material)
- T₂ = Begin Agitation (1/2 minute, 90 strokes) (T₁ + 10 min.)
- T₃ = Settlement Starting Time
- T₄ = Take Clay Reading & Sand Reading (T₃ + 20 min.)

Run No.	T ₁	T ₂	T ₃	T ₄	R ₁	R ₂	S.E.
1	11:19	11:29	11:30:30	11:50:30	5.5	2.8	51'
2							
3							

Average Sand Equivalent = 51'

Required Sand Equivalent = _____

Remarks _____

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

Soils and Materials Engineering Division

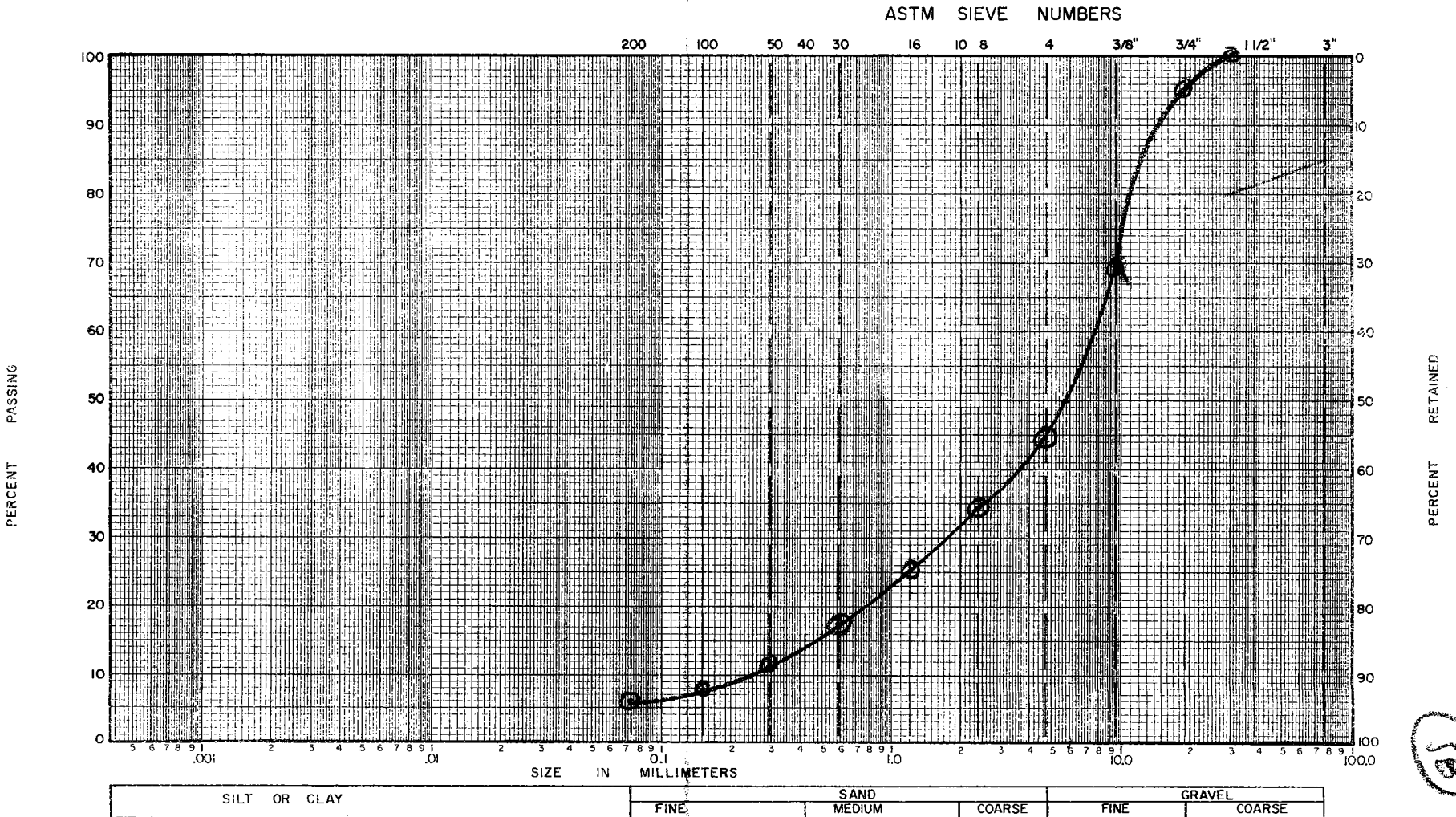
MECHANICAL ANALYSIS

LAB. SERIAL NO. 22923
 JOB _____
 BORING NO. _____ SAMPLE NO. _____
 STATION _____ DEPTH _____ FT.
 LOCATION _____
 SAMPLED BY _____ DATE _____
 FIELD CLASSIFICATION _____ BY _____
 PLAS. IND. _____ LIQ. LIM. _____
 REMARKS _____

CLASSIFICATION DATA

PERCENT (+) NO. 200 _____ PERCENT (+) NO. 4 _____
 %(+)NO.4/%(+)NO.200 _____ D_{10} 1.24 mm
 D_{30} 1.8 mm D_{60} 2.7 mm
 $C_u = D_{60}/D_{10}$ 32.1 PLOTTED BY AP
 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ 1.8 CHECKED BY RJT
 GROUP SYMBOL _____ DATE 2/10/69
 NOTE: D_x = PARTICLE DIA. AT X% PASSING

3.24
1.85



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