APPENDIX A

Boring Logs

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B1	2/29/00	2/29/00	BHINMAN, E GALLETA D BROOKS, R RUNNESTRAND	SR-7 EXPRESSWAY	11-068001

Top Hole Elev.	Location	Purpose of work	Dist. - Co. - Rte. - P.M.
5.323m	Offset & Station 25.57m Rt. 780+06.8 Ref Line I-8¢	GDR	11-IMP-7

Groundwater Level: Date Measured 3/3/00 | Depth to Water 2.41 m

Total Hole Depth ---- 15.7 m

Remarks: • Drilling remarks • Drill fluid • Color & additives • Rate & Difficulty • Loss of Circulation • Amount of Water encountered • Weather if pertinent

Graphic Log

1 Group Name 2 Group Symbol 3 Consistency/Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics — Lithologic Descriptions

Ft	Sample Number (1)(2)(3)(4)	DEPTH (meters)	SPT Blows per .3 meter: .15 m	SPT Total	Remarks	Graphic Log	Lithologic Descriptions
0					MOBILE B-47 BENTONITE 98.4mm TRICONE	SM	SILTY SAND, SM, LIGHT BROWN, DRY
5	1	1	SPT 3 6	12			SILTY SAND, SM, MEDIUM DENSE, STRONG BROWN, MOIST TO WET, FINE, GRADING TO SILT, ML, MOIST TO WET, NO PLASTIC
		2	6				
10	2	3	SPT 4 8	16			SILTY SAND, SM, MEDIUM DENSE, GRAYISH BROWN, WET, FINE, THIN LAMINATIONS OF CLAY AND SILT
		4	8			ML/CL	
15	3		SPT 2 3				SILT, ML, SOFT, BROWN, MOIST TO WET
		5	4	7		CL/CH	CLAY, CL/CH, STIFF, DARK BROWN, MOIST, MODERATE PLASTICITY, REDDISH BROWN ON IRREGULAR SURFACES - POSSIBLE ANCIENT DESICCATION CRACKS
		6					
20	4		SHELBY TUBE		FIRM PUSH TUBES II & III V. GOOD		CLAY, AS ABOVE
	5		SPT 5 8				SAME
		7	11	19			
25	6		SPT 6 17			SP	SAND, SP, MEDIUM DENSE, STRONG BROWN WET, FINE, POORLY GRADED
		8	12	29		CL/CH	CLAY, CL/CH, VERY STIFF, DARK BROWN MOIST, MODERATE PLASTICITY, LAMINATED
30	7	9	SPT 3 6				SILTY CLAY, CL, FIRM, GRAYISH BROWN, MOIST, LOW PLASTICITY, REDDISH BROWN ON IRREGULAR SURFACES, BEDDED WITH SILTY SAND, SM, MEDIUM DENSE, WET, FINE
			8	14			

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B1	2/29/00	2/29/00		SR-7 EXPRESSWAY	11-068001

Groundwater Level: Date Measured | Depth to Water

Total Hole Depth ------

Lab Test Results: ① Dry Unit Weight (pcf) ② Water Content (%) ③ Plastic Limits (%) ④ Liquid Limits (%) Direct Shear; GRADATION: %GRAVEL, % SAND, %< 200 (SILT & CLAY); Consolidation

Remarks: * Drilling remarks * Drill fluid * Color & additives * Rate & Difficulty * Loss of Circulation * Amount of Water encountered * Weather if pertinent

1 Group Name 2 Group Symbol 3 Consistency/ Relative Density 4 Color 5 Moisture 6 Particle size & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics — Lithologic Descriptions

feet	Sample Number	DEPTH (meters)	Tool	SPT Blows per .3 meter: .15 m	SPT Total	Remarks	Graphic Log	Lithologic Descriptions
33								
35	8	11	SPT	6 8	11 19			CLAY, CL, STIFF TO VERY STIFF, DARK BROWN, MOIST, LOW PLASTICITY, FAINT REDDISH BROWN IRREGULAR SURFACES
40	9	12	SHELBY TUBE	51 cm CAL		FIRM TO HARD PUSH		CLAY, CL/CH, VERY STIFF, DARK BROWN, MOIST, MODERATE PLASTICITY, REDDISH BROWN SURFACES
	10	13	SPT	5 9	13 22			SAME
45	11	14	SPT	5 22	21 43		SP	SAND, SP, MEDIUM DENSE, BROWN, MOIST, FINE, POORLY GRADED
							SM	
50	12	15	SPT	5 9	13 22			SAND AS ABOVE, FINELY LAMINAED WITH SILT
							TD	
		16						PIEZOMETER INSTALLED SCREENED 6.1 TO 9.1 m
55		17						
		18						
60		19						
65		20						

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B3	3/3/00	3/3/00	BHINMAN EGALLETA DBROOKS R RUNNESTRAND	SR-7 EXPRESSWAY	11-068001

Top Hole Elev.	Location	Purpose of work	Dist. - Co. - Rte. - P.M.
1,643 m	Offset & Station 22.62m Lt. 717+24.5 Ref Line T-8 Q	GDR	11-IMP-7

Groundwater Level: Date Measured | Depth to Water

Total Hole Depth ------ 14.8 m

Remarks: • Drilling remarks • Drill fluid • Color & additives • Rate & Difficulty • Loss of Circulation • Amount of Water encountered • Weather if pertinent

1 Group Name 2 Group Symbol 3 Consistency/Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics

Lithologic Descriptions

Ft	Sample Number	DEPTH (meters)	SPT Blows per .3 meter: .15 m	SPT Total	Remarks	Graphic Log	Lithologic Descriptions
0					MOBILE B-47 BENTONITE 98.4mm TRICONE	SM	SILTY SAND, SM, LIGHT BROWN, DRY
		1					
5							SILT, ML, LOOSE, DARK BROWN, MOIST
	1		SPT 7 3				CLAY, CL, FIRM, DARK BROWN, MOIST, MODERATE PLASTICITY, REDDISH BROWN
		2	5	8		CL	IRREGULAR SURFACES
10							
	2	3	SJM CAL		SOFT PUSH SUSPECT SAMPLES		CLAY AS ABOVE
			SPT 3 5				CLAY AS ABOVE; BEDDED WITH SILT AND SILTY CLAY
		4	5	10			
15							
	3		SPT 2 3				CLAY, CL/CH, FIRM, DARK BROWN, MOIST, MODERATE PLASTICITY
		5	5	8			
20		6					
	4		SJM CAL		FIRM PUSH		CLAY, CL/CH, STIFF, DARK BROWN, MOIST, MODERATE PLASTICITY, FINE REDDISH BROWN LAMINATIONS.
	5		SPT 5 9				SAME
		7	13	22			
25							
	6		SPT 8 12			SP	SAND, SP, MEDIUM DENSE, BROWN, WET, FINE, SMALL MOLLUSK SHELLS, INTERBEDDED WITH CLAY AND SILT
		8	14	26			
						CL/CH	
30		9					
	7		SJM CAL		SOFT TO FIRM PUSH		CLAY, CL/CH, STIFF DARK BROWN, MOIST, MODERATE PLASTICITY, FINE REDDISH BROWN LAMINATIONS
	8		6				SAME WITH SAND BED

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B3	3/3/00	3/3/00		SR-7 EXPRESSWAY	11-068001

Groundwater Level: Date Measured ____ Depth to Water ____

Total Hole Depth ------

Remarks: * Drilling remarks * Drill fluid * Color & additives * Rate & Difficulty * Loss of Circulation * Amount of Water encountered * Weather if pertinent

Lab Test Results: ① Dry Unit Weight (pcf) ② Water Content (%) ③ Plastic Limits (%) ④ Liquid Limits (%) Direct Shear; GRADATION %GRAVEL % SAND %<200 (SILT & CLAY) Consolidation

feet	Sample Number	DEPTH (meters)	Tool	SPT Blows per .3 meter: .15 m	SPT Total	Graphic Log	Lithologic Descriptions
35							

35	9		SPT	4 7			CLAY, CL/CH, STIFF, DARK BROWN, MOIST, MODERATE PLASTICITY,
		11---		7	14		IRREGULAR REDDISH BROWN SURFACES

		12--					
40	10		SPT	5 10			CLAY, AS ABOVE WITH 100 mm LAYER OF SILTY SAND
		---		9	19		
		13--					

45	11		SJ CAL				SOFT TO FIRM PUSH — CLAY, CL/CH, STIFF TO VERY STIFF, DARK BROWN, MOIST, MODERATE PLASTICITY
		14---					IRREGULAR REDDISH BROWN AND BLACK SURFACES.
	12	---	SPT	6 11			CLAY, AS ABOVE
				13	24		
		15---				TD	
50							

		16--					

55							
		17---					

		18--					
60							

		19--					

65							
		20--					

1 Group Name 2 Group Symbol 3 Consistency/ Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B5	3/1/00	3/1/00	BHINMAN EGALLETA DBROOKS	SR-7 EXPRESSWAY	11-068001

Top Hole Elev.	Location	Purpose of work	Dist. - Co. - Rte. - P.M.
4.997 m	Offset & Station 51m Lt. 111+10 Ref Line "AW"	GPR	11 - IMP - 7

Groundwater Level: Date Measured 3/3/00 | Depth to Water 2.19 m

Total Hole Depth ---- 15.7m

Remarks: • Drilling remarks • Drill fluid • Color & additives • Rate & Difficulty • Loss of Circulation • Amount of Water encountered • Weather if pertinent

Graphic Log

Lithologic Descriptions: 1 Group Name; 2 Group Symbol; 3 Consistency/Relative Density; 4 Color; 5 Moisture; 6 Particle size: & shape; 7 Gradation; 8 Plasticity; 9 Structure; 10 Cementation; 11 Organics; 12 Fill Material; 13 Other Characteristics

Ft	Sample Number (1 2 3 4)	DEPTH (meters)	SPT Blows per .3 meter .15 m	SPT Total	Remarks	Graphic Log	Lithologic Description
0					MOBILE B-47 BENTONITE 98.4mm TRICONE	ML	SANDY SILT, ML; LIGHT BROWN, SLIGHT MOIST
		1					
5	1		SPT 1, 2			CH/CL	CLAY, CH; FIRM, STRONG BROWN, MOIST, HIGHLY PLASTIC, INTEBEDDED WITH SILTY SAND, SM, LOOSE, STRONG BROWN, WET, FINE
		2	1, 3		▽		
		3					
10	2		SPT 2, 4				CLAY, CL/CH, FIRM, FINELY LAMINATED GRAYISH BROWN AND REDDISH BROWN, MOIST, MODERATE PLASTICITY
		4	5, 9				
15	3		51mm CAL		SOFT PUSH		CLAY, AS ABOVE
		5					
	4		2, 4				CLAY, AS ABOVE WITH MODERATE TO HIGH PLASTICITY
			7, 11				
20	5	6	8, 13			SM	SILTY SAND, SM, MEDIUM DENSE, BROWN, WET, FINE, POORLY GRADED
			16, 29			CL/CH	
		7					
25	6		51mm CAL		SOFT PUSH		CLAY, CL/CH, FIRM, FINELY LAMINATED GRAYISH BROWN AND REDDISH BROWN, MOIST, MODERATE TO HIGH PLASTICITY
		8					
	7		3, 5				CLAY, CL, FIRM, GRAYISH BROWN, MOIST, MODERATE PLASTICITY, REDDISH BROWN AND BLACK ON IRREGULAR SURFACES.
			4, 9				
30	8	9	SPT 7, 7			SP-SM	POORLY GRADED SAND WITH SILT, SP-SM, MEDIUM DENSE, BROWN, WET, FINE
			14, 21			CL/	

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B5	3/1/00	3/1/00		SR-7 EXPRESSWAY	11-068001

Lab Test Results: (1) Dry Unit Weight (pcf); (2) Water Content (%); (3) Plastic Limits (%); (4) Liquid Limits (%); Direct Shear; GRADATION: %GRAVEL, % SAND, % < 200 (SILT & CLAY); Consolidation

Groundwater Level: Date Measured | Depth to Water

Total Hole Depth ------

Remarks: * Drilling remarks; * Drill fluid; * Color & additives; * Rate & Difficulty; * Loss of Circulation; * Amount of Water encountered; * Weather if pertinent

1 Group Name; 2 Group Symbol; 3 Consistency/ Relative Density; 4 Color; 5 Moisture; 6 Particle size: & shape; 7 Gradation; 8 Plasticity; 9 Structure; 10 Cementation; 11 Organics; 12 Fill Material; 13 Other Characteristics

Lithologic Descriptions

feet	Sample Number	DEPTH (meters)	Tool	SPT Blows per .3 meter: .15 m	SPT Total	Remarks	Graphic Log	Lithologic Descriptions
33								
35	9		SJ CAL	mm		SOFT PUSH		CLAY, CL/CH, FIRM, GRAYISH BROWN, MOIST, MODERATE PLASTICITY,
		11						IRREGULAR SURFACES OF REDDISH BROWN AND BLACK
	10		SPT	3 7				CLAY, AS ABOVE BUT FIRM TO STIFF
				10	17			
40		12						
	11		SPT	7 13				CLAY, CL/CH, STIFF TO VERY STIFF, GRAYISH BROWN, MOIST, MODERATE
				15	28			PLASTICITY, FINELY LAMINATED
		13						
45								
	12		SPT	7 10				SILT, ML, NON PLASTIC INTERBEDDED WITH
		14		12	22			CLAY, CL/CH, STIFF TO VERY STIFF, GRAYISH BROWN, MOIST, MODERATE
								PLASTICITY, FINELY LAMINATED
		15						
50	13		SPT	5 12				CLAY, CL/CH, VERY STIFF, GRAYISH
				15	27			BROWN, MOIST, MODERATE PLASTICITY,
		16					TD	REDDISH BROWN & BLACK IRREGULAR SURFACES
								PIEZOMETER INSTALLED
55								SCREENED 4.6 TO 10.7 m
		17						
60		18						
		19						
65								
		20						

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	Geologist & Crew	Project Name	EA
B7	2/28/00	2/28/00	BHINMAN, EGALLETA DBROOKS, RRUNNESTRAND	SR-7 EXPRESSWAY	11-068001

Top Hole Elev.	Location	Purpose of work	Dist. - Co. - Rte. - P.M.
6.490 m	Offset & Station 3.767m Rt. 102+90 Ref Line "A"	GDR	11-IMP-7

Groundwater Level: Date Measured 3/3/00; Depth to Water 3.05 m; Total Hole Depth ------ 11.1 m

Remarks: * Drilling remarks * Drill fluid * Color & additives * Rate & Difficulty * Loss of Circulation * Amount of Water encountered * Weather if pertinent

Lithologic Descriptions: 1 Group Name; 2 Group Symbol; 3 Consistency/Relative Density; 4 Color; 5 Moisture; 6 Particle size: & shape; 7 Gradation; 8 Plasticity; 9 Structure; 10 Cementation; 11 Organics; 12 Fill Material; 13 Other Characteristics

Ft	Sample Number	DEPTH (meters)	SPT Blows per .3 meter (.15 m)	SPT Total	Remarks	Graphic Log	Lithologic Descriptions
0					MOBILE B-47 BENTONITE 98.4mm TRICONE	SM	SILTY SAND, LIGHT BROWN, MOIST (FARM FIELD)
		1					
5	1		SPT 2 3				POORLY GRADED SAND WITH SILT, SP-SM LOOSE, BROWN, MOIST, FINE, FAINTLY STRATIFIED
		2	2	5			
		3					
10	2		SPT 3 5				SILT, ML, FIRM, DARK GRAYISH BROWN MOIST, LOW PLASTICITY, GRADING TO SAND, SM, MEDIUM DENSE, BROWN, WET FINE
			9	14			
		4					
15	3		51mm CAL		SOFT PUSH	CL/CH	
		5					
	4		SPT 2 4				CLAY, CL/CH, STIFF, GRAYISH BROWN, MOIST, MODERATE PLASTICITY
			7	11			
20	5	6	SPT 3 7				CLAY, AS ABOVE WITH IRREGULAR REDDISH BROWN SURFACES
			7	14			
		7					
25	6		SPT 3 7				CLAY, AS ABOVE WITH BLACK ORGANIC SEAM - CHARCOAL ?
		8	9	16			
		9					
30	7		SPT 5 9			SP	SAND, SP, MEDIUM DENSE, STRONG BROWN, WET, FINE, WITH SPARSE THIN LAYERS O CLAY
			10	19			
						CL	

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B7	2/28/00	2/28/00		SR-7 EXPRESSWAY	11-068001

Lab Test Results: ① Dry Unit Weight (pcf) ② Water Content (%) ③ Plastic Limits (%) ④ Liquid Limits (%) Direct Shear; GRADATION: %GRAVEL, % SAND, %<200 (SILT & CLAY); Consolidation

Groundwater Level: Date Measured | Depth to Water

Total Hole Depth ------

Remarks: * Drilling remarks * Drill fluid * Color & additives * Rate & Difficulty * Loss of Circulation * Amount of Water encountered * Weather if pertinent

Graphic Log

1 Group Name 2 Group Symbol 3 Consistency/ Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics — Lithologic Descriptions

feet	Sample Number	DEPTH (meters)	Tool	SPT Blows per .3 meter: .15 m	SPT Total	Lithologic Descriptions
35						

35	8		SPT	5 8		CLAY, CL/CH, VERY STIFF, GRAYISH BROWN, MOIST, MODERATE PLASTICITY,
		11---		15	23	IRREGULAR REDDISH BROWN SURFACES
		---				TD
						PIEZOMETER INSTALLED.
		12--				SCREENED 7.6 TO 10.7 m
40		---				
		13--				

45		14---				

		15---				
50		---				
		16--				

55		17---				

		18--				
60		---				
		19--				

65		20--				

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B10	2/29/00	2/29/00	BHINMAN EGALLETA DBROOKS R RUNNESTRAND	SR-7 EXPRESSWAY	11-068001

Top Hole Elev.	Location	Purpose of work	Dist. - Co. - Rte. - P.M.
10.701 m	Offset & Station 1.11 m Lt. 78+94 Ref Line "A"		11-IMP-7

Groundwater Level: Date Measured 3/3/00 | Depth to Water 2.07 m

Total Hole Depth ---- 11.1 m

Remarks: • Drilling remarks • Drill fluid • Color & additives • Rate & Difficulty • Loss of Circulation • Amount of Water encountered • Weather if pertinent

1 Group Name 2 Group Symbol 3 Consistency/Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics

Lithologic Descriptions

Ft	Sample Number	DEPTH (meters)	SPT Blows per .3 meter (.15 m)	SPT Total	Remarks	Graphic Log	Lithologic Descriptions
0					MOBILE B-47 BENTONITE 98.4mm TRICONE	SM	SILTY SAND, LIGHT BROWN, DRY
5	1	1	SPT 5, 7	14			SILTY SAND, SM, MEDIUM DENSE, GRAYISH BROWN, MOIST TO WET, FINE
10	2	2, 3	SPT 3, 6				SILTY SAND, AS ABOVE BUT WET
			10	16		SP	POORLY GRADED SAND, SP, MEDIUM DENSE, GRAYISH BROWN, WET, FINE
15	3	4, 5	SPT 10, 17				POORLY GRADED SAND, SP, DENSE, BROWN, WET, FINE, SMALL MOLLUSK SHELLS
			18	35			
						CL/CH	
20	4	6	SPT 8, 8				CLAY, CL/CH, STIFF, STRONG BROWN, MOIST, MODERATE PLASTICITY
			10	18		SP	POORLY GRADED SAND, SP, MEDIUM DENSE, BROWN, WET, FINE, SMALL MOLLUSK SHELLS
		7				ML	
25	5		SPT 1, 3				SANDY SILT, ML, LOOSE TO MEDIUM DENSE, BROWN, WET, FINE, NON PLASTIC
		8	5	8			
		9					
30	6		SPT 4, 4			CL/CH	CLAY, CL/CH, FIRM TO STIFF, GRAYISH BROWN, MOIST, MODERATELY PLASTIC
			4	8			

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B10	2/29/00	2/29/00		SR-7 EXPRESSWAY	11-068001

Lab Test Results: ① Dry Unit Weight (pcf) ② Water Content (%) ③ Plastic Limits (%) ④ Liquid Limits (%) Direct Shear

GRADATION: %GRAVEL % SAND %<200 (SILT & CLAY) Consolidation

Groundwater Level: Date Measured | Depth to Water

Total Hole Depth ------

Remarks: * Drilling remarks * Drill fluid * Color & additives * Rate & Difficulty * Loss of Circulation * Amount of Water encountered * Weather if pertinent

1 Group Name 2 Group Symbol 3 Consistency/ Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics

Lithologic Descriptions

Sample Number	DEPTH (meters)	Tool	SPT Blows per .3 meter: .15 m	SPT Total	Graphic Log	Lithologic Descriptions
	feet 33					
	35					
7		SPT	2 6			CLAY, AS ABOVE
	11		7	13	TD	
						PIEZOMETER INSTALLED SCREENED 3.0 TO 6.1 m
	40					
	12					
	13					
	45					
	14					
	15					
	50					
	16					
	55					
	17					
	18					
	60					
	19					
	65					
	20					

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B11	3/2/00	3/2/00	BHINMAN EGALLETA DBROOKS RRUNNESTRAND	SR-7 EXPRESSWAY	11-068001

Top Hole Elev.	Location	Purpose of work	Dist. - Co. - Rte. - P.M.
10.642 m	Offset & Station 22.2 m Lt. 70+30 Ref Line "A"	GDR	11 - IMP - 7

Groundwater Level: Date Measured 3/3/00 | Depth to Water 1.71 m.
Total Hole Depth ---- 14.2 m

Remarks: • Drilling remarks • Drill fluid • Color & additives • Rate & Difficulty • Loss of Circulation • Amount of Water encountered • Weather if pertinent

Graphic Log

1 Group Name 2 Group Symbol 3 Consistency/Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics

Ft	Sample Number (1)(2)(3)(4)	DEPTH (meters)	SPT Blows per .3 meter .15 m	SPT Total	Remarks	Graphic Log	Lithologic Descriptions
0					MOBILE B-47 BENTONITE 98.4mm TRICONE	SM	SILTY SAND, LIGHT BROWN, MOIST
5	1	1	SPT 6 8	16			POORLY GRADED SAND WITH SILT, SP-SM, MEDIUM DENSE, STRONG BROWN, WET, FINE
10	2	3	SPT 5 7				SAME
		4	9	16			
15					SOFT PUSH SAMPLE DROPPED DOWN HOLE	CL/CH	
	3	5	5J mm CAL		DISTURBED SAMPLES		CLAY, CL/CH, STRONG BROWN, FIRM, MOIST, MODERATE PLASTICITY
						SP-SM	
20	4	6	SPT 10 13				POORLY GRADED SAND WITH SILT, SP-SM, MEDIUM DENSE, STRONG BROWN, WET, FINE
			9	22			
		7					
25	5		SPT 3 9				POORLY GRADED SAND, SP, MEDIUM DENSE, BROWN, WET, FINE, SMALL MOLLUSK SHELL INTERBEDDED WITH STIFF CLAY.
		8	12	21			
30	6	9	SPT 3 11			SM	SILTY SAND, SM, MEDIUM DENSE, STRONG BROWN, WET, FINE, GRADING TO POORLY GRADED SAND, SP
			13	24			

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B11	3/2/00	3/2/00		SR-7 EXPRESSWAY	11-068001

Groundwater Level: Date Measured | Depth to Water

Total Hole Depth ------

Lab Test Results: (1) Dry Unit Weight (pcf); (2) Water Content (%); (3) Plastic Limits (%); (4) Liquid Limits (%); Direct Shear; GRADATION: %GRAVEL, % SAND, %<200 (SILT & CLAY); Consolidation

Remarks: * Drilling remarks * Drill fluid * Color & additives * Rate & Difficulty * Loss of Circulation * Amount of Water encountered * Weather if pertinent

1 Group Name 2 Group Symbol 3 Consistency/ Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics — Lithologic Descriptions

feet	Sample Number	DEPTH (meters)	Tool	SPT Blows per .3 meter: .15 m	SPT Total	Graphic Log	Lithologic Descriptions
33						CL/CH	
35	7	11	HH				CLAY, CL/CH, STIFF, GRAYISH BROWN, MOIST, MODERATE PLASTICITY, IRREGULAR REDDISH BROWN SURFACES
	8		SPT	7 11	13 24	SP	POORLY GRADED SAND, SP, MEDIUM DENSE, BROWN, WET, FINE
40		12					
	9		SPT	5 5	11 16	SM	SILTY SAND, SM, MEDIUM DENSE, STRONG BROWN, MOIST TO WET, FINE
		13					
45							
	10		SPT	5 7	11 18		CLAY, CL/CH, STIFF, GRAYISH BROWN, MOIST, MODERATE PLASTICITY
		14				TD	
							PIEZOMETER INSTALLED SCREENED 3.0 TO 6.1 m
50		15					
		16					
55		17					
		18					
60							
		19					
65		20					

State of California - Department of Transportation - Office of Structure foundation

SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B15	3/2/00	3/2/00	BHINMAN EGALLETA DBROOKS RRUNNESTRAND	SR-7 EXPRESSWAY	11-068001

Top Hole Elev.	Location	Purpose of work	Dist. - Co. - Rte. - P.M.
9.789 m	Offset & Station 29.88m Lt. 53+87 Ref Line "A"	GDR	11-IMP-7

Groundwater Level: Date Measured 3/3/00 | Depth to Water 3.05 m

Total Hole Depth ---- 11.1 m

Remarks: • Drilling remarks • Drill fluid • Color & additives • Rate & Difficulty • Loss of Circulation • Amount of Water encountered • Weather if pertinent

Graphic Log

1 Group Name 2 Group Symbol 3 Consistency/Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics — Lithologic Descriptions

Ft	Sample Number (1)(2)(3)(4)	DEPTH (meters)	SPT Blows per .3 meter: .15 m	SPT Total	Remarks	Graphic Log	Lithologic Descriptions
0					MOBILE B-47 BENTONITE 98.4 mm TRICONE	SP-SM	SAND, LIGHT BROWN, DRY
		1					
5	1		SPT 7 8				POORLY GRADED SAND WITH SILT, SP-SM, MEDIUM DENSE, BROWN, WET, FINE
		2	9	17			
10	2	3	SPT 5 3				SANDY SILT, ML, SOFT, BROWN, WET, LOW PLASTICITY
			4	7		CL/CH	CLAY, CL/CH, FIRM TO STIFF, BROWN, MOIST, MODERATELY PLASTIC
		4					
15	3		SPT 4 5				CLAY, AS ABOVE, INTERBEDDED WITH SILT, ML, LOOSE, BROWN, WET, NON PLASTIC
		5	7	12			
						SP	
20	4	6	SPT 16 13				POORLY GRADED SAND, SP, DENSE, BROWN, WET, FINE, TINY MOLLUSK SHELLS
			18	33			
		7					
25	5		SPT 5 5			CL/CH	CLAY, CL/CH, STIFF, DARK BROWN, MOIST, MODERATELY PLASTIC
		8	9	14			
30	6	9	SPT 9 15				CLAY, AS ABOVE WITH INTERBEDDED SILT
			18	33		SP-SM	POORLY GRADED SAND WITH SILT, SP-SM, DENSE, BROWN, WET, FINE

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SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B15	3/2/00	3/2/00		SR-7 EXPRESSWAY	11-068001

Lab Test Results

Sample Number	① Dry Unit Weight (pcf)	② Water Content (%)	③ Plastic Limits (%)	④ Liquid Limits (%)	Direct Shear	GRADATION %GRAVEL	GRADATION % SAND	GRADATION %< 200 (SILT & CLAY)	Consolidation
7									

Groundwater Level

Date Measured | Depth to Water

Total Hole Depth ------

feet	DEPTH (meters)	Tool	SPT Blows per .3 meter .15 m	SPT Total
33				
35	---			
	11---	SPT	8 9	
			12	21

40	12--			

	13--			

45	14---			

	15---			
50				

	16--			

55	17---			

	18--			
60				

	19--			

65	20--			

Remarks

- * Drilling remarks
- * Drill fluid
- * Color & additives
- * Rate & Difficulty
- * Loss of Circulation
- * Amount of Water encountered
- * Weather if pertinent

Graphic Log

TD

Lithologic Descriptions

1 Group Name
2 Group Symbol
3 Consistency/ Relative Density
4 Color
5 Moisture
6 Particle size: & shape
7 Gradation
8 Plasticity
9 Structure
10 Cementation
11 Organics
12 Fill Material
13 Other Characteristics

SILTY SAND, SM, MEDIUM DENSE, BROWN WET, FINE

PIEZOMETER INSTALLED SCREENED 3.0 TO 6.1 m

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SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B18	3/1/00	3/1/00	BHINMAN EGALLETA DBROOKS	SR-7 EXPRESSWAY	11-068001

Top Hole Elev.	Location	Purpose of work	Dist. - Co. - Rte. - P.M.
9.826 m	Offset & Station 10.22m Rt. 38+20 Ref Line "A"	GDR	11-IMP-7

Groundwater Level: Date Measured 3/3/00 | Depth to Water 1.62 m | Total Hole Depth ——

Remarks: • Drilling remarks • Drill fluid • Color & additives • Rate & Difficulty • Loss of Circulation • Amount of Water encountered • Weather if pertinent

Graphic Log

1 Group Name 2 Group Symbol 3 Consistency/Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics — Lithologic Descriptions

Ft	Sample Number	DEPTH (meters)	SPT Blows per .3 meter (.15 m)	SPT Total	Remarks	Graphic Log	Lithologic Descriptions
0					MOBILE B-47 BENTONITE 98.4mm TRICONE	SP-SM	SILTY SAND, LIGHT BROWN, DRY
		1					
5	1	2	4, 7, 9	16			POORLY GRADED SAND WITH SILT, SP-SM, MEDIUM DENSE, BROWN, WET, FINE
10	2	3	3, 3, 4	7			SAND, AS ABOVE BUT LOOSE
		4					
15	3	5	2, 5, 5	10		CL/CH	CLAY, CL/CH, FIRM, GRAYISH BROWN, MOIST, MODERATE PLASTICITY, INTERBEDDE WITH FINE SAND
		6					
20	4		3, 6, 7	13			CLAY, AS ABOVE BUT STIFF AND LAMINATED
		7					
25	5		5, 8, 8	16			CLAY, AS ABOVE
		8					
30	6	9	4, 8, 12	20			CLAY, AS ABOVE

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SOILS AND GEOLOGICAL EXPLORATION LOG

Boring No.	Date Started	Date Ended	: Geologist & Crew	Project Name	EA
B18	3/1/00	3/1/00		SR-7 EXPRESSWAY	11-068001

Lab Test Results: ① Dry Unit Weight (pcf) ② Water Content (%) ③ Plastic Limits (%) ④ Liquid Limits (%) Direct Shear

GRADATION: %GRAVEL % SAND %<200 (SILT & CLAY) Consolidation

Groundwater Level: Date Measured | Depth to Water

Total Hole Depth ------

Remarks: * Drilling remarks * Drill fluid * Color & additives * Rate & Difficulty * Loss of Circulation * Amount of Water encountered * Weather if pertinent

1 Group Name 2 Group Symbol 3 Consistency/ Relative Density 4 Color 5 Moisture 6 Particle size: & shape 7 Gradation 8 Plasticity 9 Structure 10 Cementation 11 Organics 12 Fill Material 13 Other Characteristics

Sample Number	DEPTH (meters)	feet	Tool	SPT Blows per .3 meter: .15 m	SPT Total	Graphic Log	Lithologic Descriptions
		33					

		35					
7			SPT	4 7			CLAY, AS ABOVE
	11---			13	20		
						TD	PIEZOMETER INSTALLED SCREENED 3.0 TO 6.1 m

	12--	40					

	13--						

		45					
	14---						

	15---						
		50					

	16--						

		55					
	17---						

	18--						
		60					

	19--						

		65					
	20--						