Pier #8

Pier #8

Department of Transportation

PILE QUANTITY RECORD

P.8 - Cell #11

BM 78 in lieu of forms DH-OS-C78 and DH-OS-C78A

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Martinez Toll Bridge
Bridge No: 28-0153
Abut / Pier No: 8
N/A
Ftg Type: Ftg on CISS Pile
Bottom of Footing Eev.: - 15.0 ft
Sheet No:

ROUTED PIPE PILES

Drill Equipment(s):
Model(s):
Pile Driving Insp. By:
Pile Quantity Calc. By:
Date:
Pile Grout Placing Insp. By:
Pile Quantity Check By:
Date:

Pile No.	Date Shaft Drilled	Date Grout Placed	(1) Top of Pile Elev.	(2) Spec. Tip Elev.	(3) Theor. Length (2-1)	(4) Revised Spec. Tip Elev.	(5) Revised Theor. Length (4-1)	(6) Actual Tip Elev.(1-5)	(7) Actual Length (6-1)	(8) Pay Length *See Note 1	Field Splice Elev.	Remarks, (Note Where Additional Remarks are Input, i.e. EPEG)
1			+8	-205	213							
4			+8	-205	213							
5			+8	-205	213							
8			+8	-205	213							
Total												

Item # 24 Total: L.F.

Note 1: The Pay Length (8) is the revised theoretical length (5), unless otherwise revised.

CAISSONS

Item# 31 Description: 72" Perm. Steel Casing
Item #: 30 Description: 66" drilled shaft
Drilled Shaft Insp. By:
Reinf. Steel Insp. By:
Conc Placing Insp. By:
Quantity Calcs By:
Date:
Quantity Calcs Checked By:
Date:

				72" Perm. Steel Casing					66" Drilled Shaft							Reinf.		
Caisson No.	Date Shaft Drilled	Date Rebar Placed	Date Concrete Placed	(1) Top of Caisson Elev.	(2) Spec. Tip elevation	(3) Actual Tip Elev.	(4) Pay Length. (1-3)	Field Splice Elev.	(5) Spec. Tip Elev (Plan)	(6) Spec. Tip Elev (revised)	(7) Actual Tip Elev.	(8) Theor. Lgt. Of Shaft (2-6)	(9) Measured Lgt of Shaft (3-7)	(10) Pay Length (See Note 2)	Remarks, (Note Where Additional Remarks are Input, i.e. EPEG)	Field Splice Elev.	Theor. Length of Rebar Reqd (Lower Cage)	Actual Length of Rebar Req'd (Lower Cage)
11	1/31/00	2/4/00	2/5/00	0	-140	-140'	140	-50'/-15'	-205	-205	-206.5	65	66.5	65	EPEG		95'	95'
12	1/19/00	1/20/00	1/20/00	0	-140	-140'	140	-50'/-15	-205	-205	-200'	65	60	60	EPEG		95'	95'
13	1/24/00	1/26/00	1/27/00	0	-140	-139'	139	-49'/-14'	-205	~~-201.6~~ -204'	-201.6'	65	62.6	62.6	EPEG		95'	95'
14	10/15/99	10/19/99	10/19/99	0	-140	-139	139	-49/-14	-205	-204	-206	65	~~65~~ 67	65	EPEG		95'	95'
Sheet Total				Item #: 31		Total	558	LF		Item#: 30			Total	252.6	LF			

Note 2: The pay length (10) is the theoretical length (8), except that if the measured length (9) is less than the theoretical length (8) the measured length (9) will be the pay length (10)

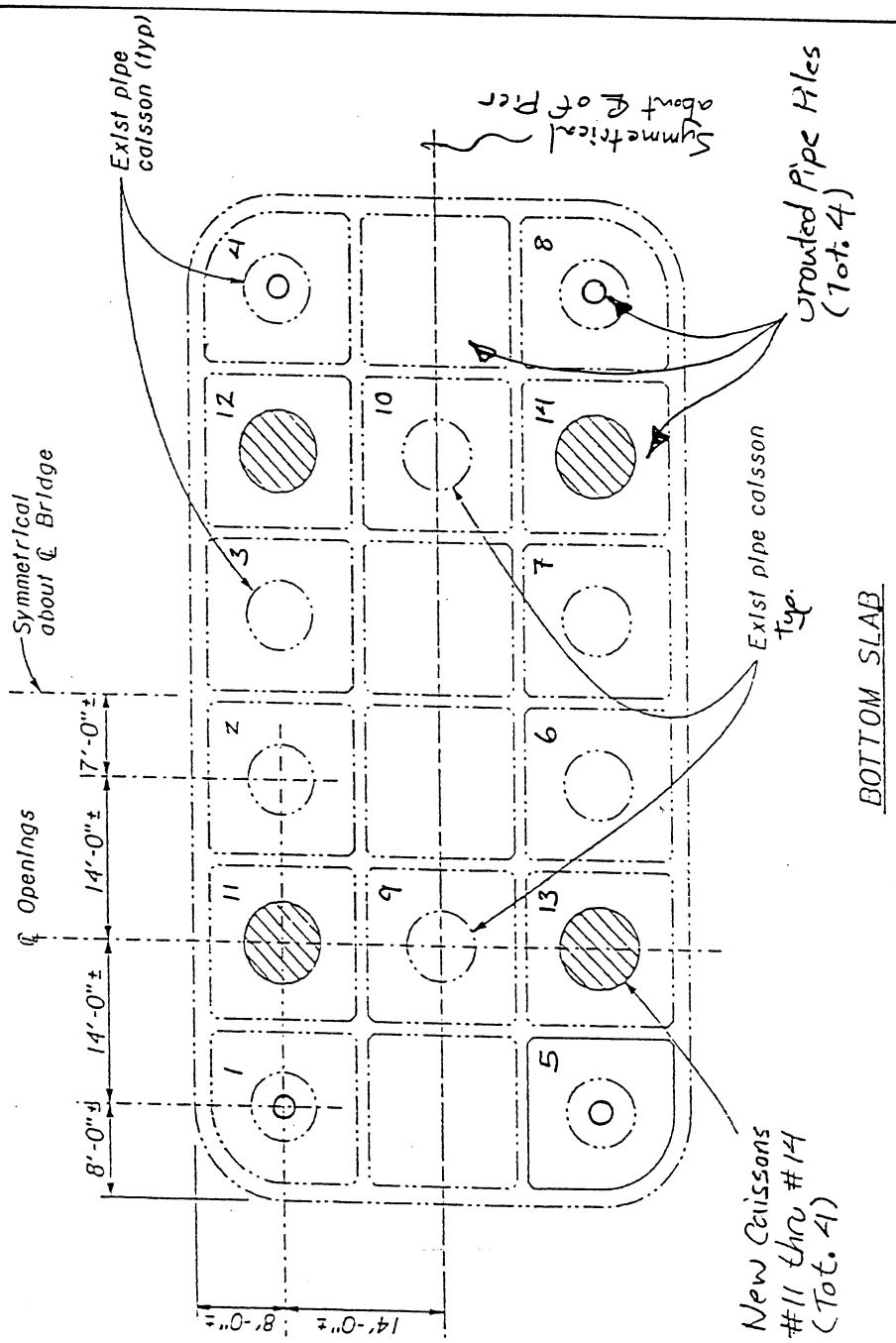
Additional Remarks:

Department of Transportation
PILE LAYOUT SHEET
Form BM-C80 in lieu of DH-OS C80 (Rev.11 73)

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Drawn By: Justin Uyehara Date: 4/3/98 Sheet No.: 1/1
Checked By: Date: Abutment/Pier No.: 8
Bridge No.: 28-0153 Bridge Name: Benicia-Martinez Toll Bridge
Ftg. Type: Ftg. on CISS Pile Bottom of Ftg. Elev.: - 15 ft



Scale: N.T.S

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Martinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 1/12

Pile # 31 Description: 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
0	+10	Stabbed		8/18/99					
1	+9								
2	+8								
3	+7								
4	+6								
5	+5								
6	+4								
7	+3								
8	+2								
9	+1								
10	0	Stabbed		8/18/99					Lucas Stabbed 90' pipe pile section on 8/18/99
11	-1								
12	-2								
13	-3								
[illegible]	-4								
15	-5								
16	-6								
17	-7								
18	-8								
19	-9								
20	-10								
21	-11								
22	-12								
23	-13								
24	-14								
25	-15								
26	-16								
27	-17								
28	-18								
29	-19								
30	-20								
31	-21								
32	-22								
33	-23								
34	-24								
35	-25								
36	-26								
37	-27								
	-28								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Martinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 2/12

Item # 31 Description: 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
0	+10	
1	+9	
2	+8	
3	+7	
4	+6	
5	+5	
6	+4	
7	+3	
8	+2	
9	+1	
10	0	
11	-1	
12	-2	
13	-3	
[illegible]	-4	
15	-5	
16	-6	
17	-7	
18	-8	
19	-9	
20	-10	
21	-11	
22	-12	
23	-13	
24	-14	
25	-15	
26	-16	
27	-17	
28	-18	
29	-19	
30	-20	
31	-21	
32	-22	
33	-23	
34	-24	
35	-25	
36	-26	
37	-27	
	-28	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 3/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
39	-29	stabbed		9/19/99					
40	-30								
41	-31								
42	-32								
43	-33								
44	-34								
45	-35								
46	-36								
47	-37								
48	-38								
49	-39								
50	-40								
51	-41								
52	-42								
	-43								
54	-44								
55	-45								
56	-46								
57	-47								
58	-48								
59	-49								
60	-50								
61	-51								
62	-52								
63	-53								
64	-54								
65	-55								
66	-56								
67	-57								
68	-58								
69	-59								
70	-60								
71	-61								
72	-62								
73	-63								
74	-64								
75	-65								FCI began center relief drilling the caisson at 12:45, on 9/20/99.
76	-66								
	-67				10'/hr.	Mud	Wirth	9/20/99	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 4/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
39	-29	
40	-30	
41	-31	
42	-32	
43	-33	
44	-34	
45	-35	
46	-36	
47	-37	
48	-38	
49	-39	
50	-40	
51	-41	
52	-42	
	-43	
54	-44	
55	-45	
56	-46	
57	-47	
58	-48	
59	-49	
60	-50	
61	-51	
62	-52	
63	-53	
64	-54	
65	-55	
66	-56	
67	-57	
68	-58	
69	-59	
70	-60	
71	-61	
72	-62	
73	-63	
74	-64	
75	-65	
76	-66	
	-67	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 5/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
78	-68	Stabbed		8/18/99	10'/hr.	mud	With	9/20/99	
79	-69								
80	-70								
81	-71								
82	-72								
83	-73								
84	-74								
85	-75								
86	-76								
87	-77	Driven	14	9/26/99					Lucus has completed welding the 35' pipe pile section, and will drive the pile to weld the next section on.
88	-78		31						
89	-79		33						
90	-80		12						
[illegible]	-81		6						
[illegible]	-82		9						
93	-83		10						
94	-84		12						
95	-85		15						
96	-86		11						
97	-87		13						
98	-88		15						
99	-89		11						
100	-90		13						
101	-91		15						
102	-92		19						
103	-93		16						
104	-94		19						
105	-95		18						
106	-96		22						
107	-97		19						
108	-98		15						
109	-99		14						
110	-100		13						
111	-101		16						
112	-102		12						
113	-103		12						
114	-104		12						
115	-105		13						
	-106		14						52 blows/minute

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Project Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 6/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
78	-68	
79	-69	
80	-70	
81	-71	
82	-72	
83	-73	
84	-74	
85	-75	
86	-76	
87	-77	
88	-78	
89	-79	
90	-80	
[illegible]	-81	
[illegible]	-82	
93	-83	
94	-84	
95	-85	
96	-86	
97	-87	
98	-88	
99	-89	
100	-90	
101	-91	
102	-92	
103	-93	
104	-94	
105	-95	
106	-96	
107	-97	
108	-98	
109	-99	
110	-100	
111	-101	
112	-102	
113	-103	
114	-104	
115	-105	
	-106	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 7/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
117	-107	Driven	19	8/26/99	10'/hr.	Mud	Worth	9/20/99	
118	-108		21						
119	-109		18						
120	-110		16						
121	-111		17						
122	-112	Driven	66	8/30/99					
123	-113		34						
124	-114		40						
125	-115		26						
126	-116		24						
127	-117		22						
128	-118		22						
129	-119		19						
130	-120		20						
131	-121		36						
132	-122		41						
133	-123		51						
134	-124		44						
135	-125		42						
136	-126		43						FCI Stopped drilling at 18:30, at elevation -126'.
137	-127		36		1'/hr.	Mud	Worth	9/21/99	
138	-128		44						
139	-129		38						
140	-130		41						At 10:30, drilled to -130'.
141	-131		44		1.5'/hr	Mud			
142	-132		58						
143	-133		79						
144	-134		120			Rock			8/30/99
145	-135		151						Piet Haekman (FCI Sup.) stopped the
146	-136	Driven	57	10/1/99					Pile driving at -145' elevation, due to
147	-137		77						high blows counter. Specified tip elevation
148	-138		62						is -140'.
149	-139		58						
150	-140		56					9/22/99	10/1/99 Luna redrove pile to -140'
151	-141					Rock	Worth	1/29/00	
152	-142								FCI ~~comp~~ drilled to -140' at 10:30am, on 9/22/99.
153	-143								
154	-144								Sam Torchia (CT) covered 66" drilled shaft
155	-145								on 1/29/00.

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 8/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
117	-107	
118	-108	
119	-109	
120	-110	
121	-111	
122	-112	
123	-113	
124	-114	
125	-115	
126	-116	
127	-117	
128	-118	
129	-119	
[illegible]	-120	
[illegible]	-121	
132	-122	
133	-123	
134	-124	
135	-125	
136	-126	
137	-127	9/21/99 - FCI driller (Delbert Phillips) informs me that the drill is
138	-128	clogging up due to wood supports left inside the caisson.
139	-129	
140	-130	
141	-131	
142	-132	
143	-133	
144	-134	
145	-135	
146	-136	
147	-137	
148	-138	9/22/99 - Delbert Phillips (FCI Driller) informed me yesterday at ≈ 17:00,
149	-139	the drill steam froze up at elevation -139'. Drill would not turn
150	-140	in either direction. FCI removed the drill ~~string~~ steam to check for
151	-141	a bent stabilizer or other problems. At 7:00, FCI is re-installing the
152	-142	the drill steams; FCI found no problems with the drill steam. At 9:00
153	-143	FCI resumed drilling. At 10:30, completed center relief drilling to -140'.
154	-144	
[illegible]	-145	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Project Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 9/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
156	-146					Rock	Wirth	1/31/00	
157	-147								
158	-148								
159	-149								
160	-150								
161	-151								
162	-152								
163	-153								
164	-154								
165	-155								
166	-156								
167	-157								
168	-158								
[illegible]	-159								
[illegible]	-160								
171	-161								
172	-162								
173	-163								
174	-164								
175	-165								
176	-166								
177	-167								
178	-168								
179	-169								
180	-170								
181	-171								
182	-172								
183	-173								
184	-174								
185	-175								
186	-176								
187	-177								
188	-178								
189	-179								
190	-180								
191	-181				5'/hr	Rock	Wirth	1/31/00	EC began drilling at 07:45 at -181', on 1/31/00.
192	-182								
193	-183								
	-184								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

ge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 10/12

n # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
156	-146	
157	-147	
158	-148	
159	-149	
160	-150	
161	-151	
162	-152	
163	-153	
164	-154	
165	-155	
166	-156	
167	-157	
168	-158	
[illegible]	-159	
[illegible]	-160	
171	-161	
172	-162	
173	-163	
174	-164	
175	-165	
176	-166	
177	-167	
178	-168	
179	-169	
180	-170	
181	-171	
182	-172	
183	-173	
184	-174	
185	-175	
186	-176	
187	-177	
188	-178	
189	-179	
190	-180	
191	-181	
192	-182	
193	-183	
	-184	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Project Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 11/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
195	-185				5'/hr	Rock	Wrath	1/31/00	
196	-186								
197	-187				2'/hr.				
198	-188								
199	-189								
200	-190								
201	-191								
202	-192								
203	-193								
204	-194								
205	-195								
206	-196								
207	-197								At 1300, drilled to -196'.
[illegible]	-198								
[illegible]	-199								
210	-200								
211	-201								
212	-202								
213	-203								
214	-204								
215	-205								
216	-206								FCI completed drilling the 66" shaft at 1500, at elevation -206'.
217	-207								
218	-208								
219	-209								
220	-210								
221	-211								
222	-212								
223	-213								
224	-214								
225	-215								
226	-216								
227	-217								
228	-218								
229	-219								
230	-220								
231	-221								
232	-222								
[illegible]	-223								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Project Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 12/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 11

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
195	-185	
196	-186	
197	-187	
198	-188	
199	-189	
200	-190	
201	-191	
202	-192	
203	-193	
204	-194	
205	-195	
206	-196	
207	-197	
208	-198	
[illegible]	-199	
210	-200	
211	-201	
212	-202	
213	-203	
214	-204	
215	-205	
216	-206	
217	-207	
218	-208	
219	-209	
220	-210	
221	-211	
222	-212	
223	-213	
224	-214	
225	-215	
226	-216	
227	-217	
228	-218	
229	-219	
230	-220	
231	-221	
232	-222	
[illegible]	-223	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Martinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 1/12

31 Description: 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
0	+10								
1	+9								
2	+8								
3	+7								
4	+6								
5	+5								
6	+4								
7	+3								
8	+2								
9	+1								
10	0	Stabbed		8/17/99					Lucus Stabbed 90' pipe pile section-
11	-1								
12	-2								
13	-3								
	-4								
15	-5								
16	-6								
17	-7								
18	-8								
19	-9								
20	-10								
21	-11								
22	-12								
23	-13								
24	-14								
25	-15								
26	-16								
27	-17								
28	-18								
29	-19								
30	-20								
31	-21								
32	-22								
33	-23								
34	-24								
35	-25								
36	-26								
37	-27								
	-28								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Martinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 2/12

Item # 31 Description: 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
0	+10	
1	+9	
2	+8	
3	+7	
4	+6	
5	+5	
6	+4	
7	+3	
8	+2	
9	+1	
10	0	
11	-1	
12	-2	
13	-3	
	-4	
15	-5	
16	-6	
17	-7	
18	-8	
19	-9	
20	-10	
21	-11	
22	-12	
23	-13	
24	-14	
25	-15	
26	-16	
27	-17	
28	-18	
29	-19	
30	-20	
31	-21	
32	-22	
33	-23	
34	-24	
35	-25	
36	-26	
37	-27	
	-28	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 3/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
39	-29	Skidded		9/17/99					
40	-30								
41	-31								
42	-32								
43	-33								
44	-34								
45	-35								
46	-36								
47	-37								
48	-38								
49	-39								
50	-40								
51	-41								
52	-42								
	-43								
54	-44								
55	-45								
56	-46								
57	-47								
58	-48								
59	-49								
60	-50								
61	-51								
62	-52								
63	-53								
64	-54								
65	-55								
66	-56								
67	-57								
68	-58								
69	-59								
70	-60								
71	-61								
72	-62								
73	-63								
74	-64								
75	-65								
76	-66								
	-67								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

'ge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 4/12

31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
39	-29	
40	-30	
41	-31	
42	-32	
43	-33	
44	-34	
45	-35	
46	-36	
47	-37	
48	-38	
49	-39	
50	-40	
51	-41	
52	-42	
	-43	
54	-44	
55	-45	
56	-46	
57	-47	
58	-48	
59	-49	
60	-50	
61	-51	
62	-52	
63	-53	
64	-54	
65	-55	
66	-56	
67	-57	
68	-58	
69	-59	
70	-60	
71	-61	
72	-62	
73	-63	
74	-64	
75	-65	
76	-66	
	-67	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 5/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
78	-68	Staged		8/17/99					
79	-69								
80	-70								
81	-71								
82	-72								
83	-73								
84	-74								FCI began center relief drilling at -75' on 9/23/99
85	-75				10'/hr.	mud	Worth	9/23/99	
86	-76								Lucus finish welding 35' pipe pile section, and then drove the pile to weld the next section.
87	-77	Driven	65	8/24/99					
88	-78		27						
89	-79		26						
90	-80		25						
[illegible]	-81		23						
[illegible]	-82		22						
93	-83		18						
94	-84		20						
95	-85		24						
96	-86		21						
97	-87		15						
98	-88		23						
99	-89		22						
100	-90		23						
101	-91		22						
102	-92		24						
103	-93		23						
104	-94		26						51 blow/minute
105	-95		22						At 12:00, drilled to -95'
106	-96		19		7.5'/hr				
107	-97		12						
108	-98		13						48 blows/minute
109	-99		10						
110	-100		10						
111	-101		9						
112	-102		11						
113	-103		10						
114	-104		12						
115	-105		14						
	-106		19						

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

ne Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 6/12

31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
78	-68	
79	-69	
80	-70	
81	-71	
82	-72	
83	-73	
84	-74	
85	-75	
86	-76	
87	-77	
88	-78	
89	-79	
90	-80	
[illegible]	-81	
[illegible]	-82	
93	-83	
94	-84	
95	-85	
96	-86	
97	-87	
98	-88	
99	-89	
100	-90	
101	-91	
102	-92	
103	-93	
104	-94	
105	-95	
106	-96	
107	-97	
108	-98	
109	-99	
110	-100	
111	-101	
112	-102	
113	-103	
114	-104	
115	-105	
	-106	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 7/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft) *	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
117	-107	Driven	21	8/24/99	7.5'/hr	mud	Watts	9/23/00	
118	-108		24						
119	-109		21						
120	-110		26						
121	-111	Driven	50	8/27/99	3.6'/hr				Lucas has complete welding the section to 72" Φ pipe pile. Lucas began driving the pile at 11:50 Am and stopped at 12:30 pm.
122	-112		42						
123	-113		39						
124	-114		29						
125	-115		31						
126	-116		29						
127	-117		24						
128	-118		16						
129	-119		20						
[illegible]	-120		68						48 blows/minute
[illegible]	-121		39						
132	-122		45						
133	-123		51						
134	-124		43						
135	-125		47						
136	-126		56						
137	-127		48						
138	-128		46						
139	-129		49						
140	-130		45						FCI stopped drilling at -130' at 19:30.
141	-131		49		1.5'/hr	mud	Watts	9/24/99	
142	-132		54						41 blows/minute, Hammer at 81% efficiency
143	-133		70						
144	-134		99			Rock			
145	-135		99						
146	-136		108		1'/hr				
147	-137		122						Piet Hoekman (FCI Sup.) stopped the pile driving at -137', due the high blow counts. The pile tip is 3' above the specified tip elevation of -140'.
148	-138	Driven	63	9/28/99					
149	-139		54						
150	-140		44						
151	-141				5.3'/hr	Rock	Watts	11/4/00	9/28/99 Lucas redrove 72" pipe pile to -140'.
152	-142								9/24/99 - Completed the center relief drilling to -140'.
153	-143								
154	-144								
	-145				3.3'/hr				

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

ge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 8/12

n # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
117	-107	
118	-108	
119	-109	
120	-110	
121	-111	
122	-112	
123	-113	
124	-114	
125	-115	
126	-116	
127	-117	
128	-118	
129	-119	
[illegible]	-120	
[illegible]	-121	
132	-122	
133	-123	
134	-124	
135	-125	
136	-126	
137	-127	
138	-128	
139	-129	
140	-130	
141	-131	
142	-132	
143	-133	
144	-134	
145	-135	
146	-136	
147	-137	
148	-138	
149	-139	
150	-140	
151	-141	
152	-142	
153	-143	
154	-144	
[illegible]	-145	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 9/12

31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
156	-146				3.3'/hr.	Rock	Wirth	1/4/00	
157	-147								
158	-148								
159	-149								FCI stopped drilling at 17:30.
160	-150				25'/hr.	Rock	Wirth	1/5/00	FCI began drilling at 5:30 Am
161	-151								
162	-152								
163	-153								
164	-154								At 9:30, stopped drilling for 1 hour to repair outflow line.
165	-155				1'/hr.				
166	-156								
167	-157								
168	-158								
[illegible]	-159								
[illegible]	-160								
171	-161								
172	-162								
173	-163								
174	-164								FCI Stopped drilling at 17:30, at -164'.
175	-165				1'/hr.	Rock	Wirth	1/6/00	Started drilling at 06:30.
176	-166								
177	-167								
178	-168								
179	-169								
180	-170								
181	-171								
182	-172								
183	-173								FCI Stopped drilling at 17:30 at -173'.
184	-174				1'/hr.	Rock	Wirth	1/7/00	
185	-175								
186	-176								
187	-177								
188	-178								
189	-179				1.3'/hr.				
190	-180								
191	-181								
192	-182								
193	-183								
	-184								FCI Stopped drilling at 16:30.

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

ge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 10/12

n # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
156	-146	
157	-147	
158	-148	
159	-149	
160	-150	
161	-151	
162	-152	
163	-153	
164	-154	
165	-155	
166	-156	
167	-157	
168	-158	
[illegible]	-159	
[illegible]	-160	
171	-161	
172	-162	
173	-163	
174	-164	
175	-165	
176	-166	
177	-167	
178	-168	
179	-169	
180	-170	
181	-171	
182	-172	
183	-173	
184	-174	
185	-175	
186	-176	
187	-177	
188	-178	
189	-179	
190	-180	
191	-181	
192	-182	
193	-183	
	-184	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 11/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
195	-185				1'/hr.	Rock	Wash	1/10/00	
196	-186								
197	-187								
198	-188								
199	-189				0.5'/hr				
200	-190								
201	-191								
202	-192								
203	-193								
204	-194								
205	-195								
206	-196				1'/hr.	Rock	Wash	1/11/00	FCI stopped drilling at 17:30.
207	-197								FCI started drilling at 04:30.
[illegible]	-198								
[illegible]	-199								
210	-200								
211	-201								
212	-202				0.6'/hr				At 10:30, drilled to -201'.
213	-203								
214	-204								
215	-205								
216	-206								At 16:30, drilled to -205'.
217	-207								
218	-208								
219	-209								
220	-210								
221	-211								
222	-212								
223	-213								
224	-214								
225	-215								
226	-216								
227	-217								
228	-218								
229	-219								
230	-220								
231	-221								
[illegible]	-222								
[illegible]	-223								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Line Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 12/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
195	-185	
196	-186	
197	-187	
198	-188	
199	-189	
200	-190	
201	-191	
202	-192	
203	-193	
204	-194	
205	-195	
206	-196	
207	-197	
208	-198	
	-199	
210	-200	
211	-201	
212	-202	
213	-203	
214	-204	
215	-205	1/11/00 - Delbert Phillips (FCI Driller) informs me that he is having
216	-206	problems rotating the drill. (see EPEG Notes).
217	-207	
218	-208	-1/12/00 - At 13:00, Delbert Phillips (FCI Driller) informed me that while
219	-209	removing the drill string, four (4) stabilizer arms were missing
220	-210	and at the bottom of the 66" shaft with 10' of material that
221	-211	caved-in during removal of the drill string.
222	-212	
223	-213	-1/13/00 - Sounded drilled shaft at -193' elevation (Specified tip -205')
224	-214	FCI will try ~~to~~ excavate the caved-in material.
225	-215	
226	-216	1/14/00 - Sounded drilled shaft at -190'.
227	-217	1/15/00 - Sounded drilled shaft at - 189, material continues caving-in.
228	-218	
229	-219	1/18/00 - At 10:00Am FCI began drilling through the caved-in material.
230	-220	FCI believes they have drilled to -205'.
231	-221	
232	-222	1/19/00 - flushed caisson and sounded drilled shaft at -200'3".
	-223	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Martinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 1/12

Item # 31 Description: 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Pile Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
0	+10								
1	+9								
2	+8								
3	+7								
4	+6								
5	+5								
6	+4								
7	+3								
8	+2								
9	+1								
10	0	Stabbed		9/2/99					Lucas Stabbed 90' pipe pile section.
11	-1								
12	-2								
13	-3								
[illegible]	-4								
15	-5								
16	-6								
17	-7								
18	-8								
19	-9								
20	-10								
21	-11								
22	-12								
23	-13								
24	-14								
25	-15								
26	-16								
27	-17								
28	-18								
29	-19								
30	-20								
31	-21								
32	-22								
33	-23								
34	-24								
35	-25								
36	-26								
37	-27								
	-28								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Martinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 2/12

Item # 31 Description: 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
0	+10	
1	+9	
2	+8	
3	+7	
4	+6	
5	+5	
6	+4	
7	+3	
8	+2	
9	+1	
10	0	
11	-1	
12	-2	
13	-3	
	-4	
15	-5	
16	-6	
17	-7	
18	-8	
19	-9	
20	-10	
21	-11	
22	-12	
23	-13	
24	-14	
25	-15	
26	-16	
27	-17	
28	-18	
29	-19	
30	-20	
31	-21	
32	-22	
33	-23	
34	-24	
35	-25	
36	-26	
37	-27	
	-28	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

'ge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 3/12

.1 # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
39	-29	Stubbed		9/2/99					
40	-30								
41	-31								
42	-32								
43	-33								
44	-34								
45	-35								
46	-36								
47	-37								
48	-38								
49	-39								
50	-40								
51	-41								
52	-42								
	-43								
54	-44								
55	-45								
56	-46								
57	-47								
58	-48				20'/hr.	Mud	with	12/1/99	Began drilling inside the caisson at 08:30.
59	-49								
60	-50								
61	-51								
62	-52								
63	-53								
64	-54								
65	-55								
66	-56								
67	-57								
68	-58								
69	-59								
70	-60								
71	-61								
72	-62								
73	-63								
74	-64								
75	-65								
76	-66								
	-67								

.ditional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 4/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
39	-29	
40	-30	
41	-31	
42	-32	
43	-33	
44	-34	
45	-35	
46	-36	
47	-37	
48	-38	
49	-39	
50	-40	
51	-41	
52	-42	
	-43	
54	-44	
55	-45	
56	-46	
57	-47	
58	-48	
59	-49	
60	-50	
61	-51	
62	-52	
63	-53	
64	-54	
65	-55	
66	-56	
67	-57	
68	-58	
69	-59	
70	-60	
71	-61	
72	-62	
73	-63	
74	-64	
75	-65	
76	-66	
	-67	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Project Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 5/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
78	-68	Stabbed		9/2/99	20'/hr.	mud	with	12/1/99	
79	-69								
80	-70								
81	-71								
82	-72								
83	-73								
84	-74								
85	-75								
86	-76	Driven	3	9-9-99					
87	-77		6						At 10:00, drilled to -78'.
88	-78		7						
89	-79		14						55 blows/minute
90	-80		8						
[illegible]	-81		11						
[illegible]	-82		6						
93	-83		11						
94	-84		12						
95	-85		9						
96	-86		24						
97	-87	~~3~~	~~Driven~~ 26	9-9-99					9-99-99 Lucas drove 90' and 35' welded section.
98	-88	~~6~~	23						
99	-89	~~7~~	21						
100	-90	~~14~~	26						~~55 blows/minute~~
101	-91	~~8~~	~~12~~						
102	-92	Driven	25						
103	-93		24						
104	-94		24						
105	-95		23						
106	-96		21						
107	-97		21						
108	-98		20						
109	-99		24						
110	-100		32						
111	-101		33						
112	-102		21						
113	-103		18						
114	-104		17						
115	-105		12						
	-106		16						

Additional Remarks:

Department of Transportation

LOG PiLE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

ne Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 6/12

31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
78	-68	
79	-69	
80	-70	
81	-71	
82	-72	
83	-73	
84	-74	
85	-75	
86	-76	
87	-77	
88	-78	
89	-79	
90	-80	
[illegible]	-81	
[illegible]	-82	
93	-83	
94	-84	
95	-85	
96	-86	
97	-87	
98	-88	
99	-89	
100	-90	
101	-91	
102	-92	
103	-93	
104	-94	
105	-95	
106	-96	
107	-97	
108	-98	
109	-99	
110	-100	
111	-101	
112	-102	
113	-103	
114	-104	
115	-105	
	-106	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 7/12

Pile # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
117	-107	Driven	22	9-9-99	20'/hr	Mud	Wirth	12/1/99	
118	-108		28						
119	-109		31		9'/hr.				
120	-110		39						
121	-111		36						
122	-112		32						
123	-113	Driven	56	9/15/99					
124	-114		68						
125	-115		36						
126	-116		32						
127	-117		25						
128	-118		20						
129	-119		17						
	-120		16						
	-121		17						
132	-122		15						
133	-123		21						
134	-124		44						
135	-125		43						
136	-126		33						
137	-127		40						
138	-128		42		8'/hr.				
139	-129		40						
140	-130		42						
141	-131		42						
142	-132		44						
143	-133		46						
144	-134		68						
145	-135		70						
146	-136		56						
147	-137		69			Rock	Wirth	12/2/99	
148	-138		101		1.3'/hr				41 blows/minute 81% efficiency
149	-139		139						Pile Hoelman (FCI) stopped pile driving
150	-140								at -139' (1' high), due to high blow counts.
151	-141								
152	-142								
153	-143								
	-144								
	-145								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

ge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 8/12

n # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
117	-107	
118	-108	
119	-109	
120	-110	
121	-111	
122	-112	
123	-113	
124	-114	
125	-115	
126	-116	
127	-117	
128	-118	
129	-119	
[illegible]	-120	
[illegible]	-121	
132	-122	
133	-123	
134	-124	
135	-125	
136	-126	
137	-127	
138	-128	
139	-129	
140	-130	
141	-131	
142	-132	
143	-133	
144	-134	
145	-135	
146	-136	
147	-137	
148	-138	
149	-139	
150	-140	
151	-141	
152	-142	
153	-143	
154	-144	
[illegible]	-145	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Project Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 9/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
156	-146				1.3'/hr.	Rock	Wirth	12/2/99	
157	-147								
158	-148				1.2'/hr.				
159	-149								
160	-150								
161	-151								
162	-152								FCI Stopped drilling at 17:30 at -152'.
163	-153				1.1'/hr.	Rock	Wirth	12/3/99	
164	-154								
165	-155								
166	-156								
167	-157								
168	-158								
[illegible]	-159								
[illegible]	-160								
171	-161								
172	-162								
173	-163								
174	-164								
175	-165								FCI Stopped drilling at 17:00, at -165'. FCI begin drilling at 04:30AM.
176	-166				1'/hr.	Rock	Wirth	12/4/99	
177	-167								
178	-168				1'/hr	Rock	Wirth	12/6/99	
179	-169								
180	-170								
181	-171								
182	-172								
183	-173				0.75'/hr				At 11:30, drilled to -172'.
184	-174								
185	-175								
186	-176								FCI Stopped drilling at 17:30, at -176'.
187	-177				0.3'/hr			12/7/99	
188	-178								
189	-179				0.8/hr.				FCI Stopped at 17:30, to make repairs.
190	-180								
191	-181				1.2'/hr	Rock	Wirth	12/8/99	
192	-182								
193	-183								
[illegible]	-184								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 10/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
156	-146	
157	-147	
158	-148	
159	-149	
160	-150	
161	-151	
162	-152	
163	-153	
164	-154	
165	-155	
166	-156	
167	-157	
168	-158	
[illegible]	-159	
[illegible]	-160	
171	-161	
172	-162	
173	-163	
174	-164	
175	-165	
176	-166	12/4/99
177	-167	At 8:00, Delbert Phillips (FCI Driller) informed me that the drill has
178	-168	been closing up since 06:30. At 11:30, at a depth of -167,
179	-169	FCI does not know why the drill is closing up. FCI stopped drilling
180	-170	at 11:30. FCI will resume drilling on Monday.
181	-171	
182	-172	
183	-173	
184	-174	
185	-175	
186	-176	
187	-177	
188	-178	
189	-179	
190	-180	
191	-181	
192	-182	
193	-183	
	-184	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 11/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
195	-185				1.2'/hr.	Rock	Wirth	12/9/99	
196	-186								Drill is still clogging up.
197	-187								
198	-188								
199	-189								
200	-190								
201	-191				0.6'/hr	Rock	Wirth	12/9/99	
202	-192								
203	-193								
204	-194								
205	-195				0.4'/hr.				
206	-196								
207	-197								FCI stopped drilling at 17:30.
[illegible]	-198				0.5'/hr	Rock	Wirth	12/10/99	FCI Started drilling at 15:30. FCI removed
[illegible]	-199								the drill string to repair a gasket.
210	-200								
211	-201				1.6'/hr	Rock	Wirth	12/11/99	FCI began drilling at 04:30
212	-202								
213	-203								
214	-204								
215	-205								Complete drilling at 06:00.
216	-206								
217	-207								
218	-208								
219	-209								
220	-210								
221	-211								
222	-212								
223	-213								
224	-214								
225	-215								
226	-216								
227	-217								
228	-218								
229	-219								
230	-220								
231	-221								
232	-222								
[illegible]	-223								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Line Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 12/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 13

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
195	-185	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
196	-186	
197	-187	
198	-188	12/13/99 - I arrived at Pier #8 at 07:00 to sound the drilled
199	-189	shaft. Sounded the drilled shaft at -197'6". Piet Hoekman (FCI)
200	-190	informed me that they will pour concrete in the drilled shaft
201	-191	(to the tip of the caisson), and then will redrill the 66" shaft.
202	-192	The concrete pour began at 10:30 and finished at 13:30.
203	-193	
204	-194	1/21/00 - FCI began drilling through the concrete at 05:30.
205	-195	
206	-196	1/22/00 - Sam Torchia (CT) caught the drilling through the
207	-197	Concrete. FCI completed drilling the 66" shaft at -205'
208	-198	
[illegible]	-199	
210	-200	
211	-201	
212	-202	
213	-203	
214	-204	
215	-205	
216	-206	
217	-207	
218	-208	
219	-209	
220	-210	
221	-211	
222	-212	
223	-213	
224	-214	
225	-215	
226	-216	
227	-217	
228	-218	
229	-219	
230	-220	
231	-221	
232	-222	
[illegible]	-223	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Martinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 1/12

Item # 31 Description: 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 14

Log By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
0	+10								
1	+9								
2	+8								
3	+7								
4	+6								
5	+5								
6	+4								
7	+3								
8	+2								
9	+1								
10	0	Stabbed		9/3/99					Lucas Stabbed 90' pipe pile section.
11	-1								
12	-2								
13	-3								
	-4								
15	-5								
16	-6								
17	-7								
18	-8								
19	-9								
20	-10								
21	-11								
22	-12								
23	-13								
24	-14								
25	-15								
26	-16								
27	-17								
28	-18								
29	-19								
30	-20								
31	-21								
32	-22								
33	-23								
34	-24								
35	-25								
36	-26								
37	-27								
	-28								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Martinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 2/12

Item # 31 Description: 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 14

Op. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
0	+10	
1	+9	
2	+8	
3	+7	
4	+6	
5	+5	
6	+4	
7	+3	
8	+2	
9	+1	
10	0	
11	-1	
12	-2	
13	-3	
	-4	
15	-5	
16	-6	
17	-7	
18	-8	
19	-9	
20	-10	
21	-11	
22	-12	
23	-13	
24	-14	
25	-15	
26	-16	
27	-17	
28	-18	
29	-19	
30	-20	
31	-21	
32	-22	
33	-23	
34	-24	
35	-25	
36	-26	
37	-27	
	-28	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 3/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 14

Op. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
39	-29	Stabbed		9/3/99					
40	-30								
41	-31								
42	-32								
43	-33								
44	-34								
45	-35								
46	-36								
47	-37								
48	-38								
49	-39								
50	-40								
51	-41								
52	-42								
[illegible]	-43								
54	-44								
55	-45								
56	-46								
57	-47								
58	-48								
59	-49								
60	-50								
61	-51								
62	-52								
63	-53								
64	-54								
65	-55								
66	-56								
67	-57								
68	-58								
69	-59								
70	-60								
71	-61				11'/hr.	Mud Width		10/2/99	FCI began drilling + inside the caisson at -60' on 10/2/99.
72	-62								
73	-63								
74	-64								
75	-65								
76	-66								
	-67								

Additional Remarks:

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

P ge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 4/12

31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

ill Equipment(s): Model(s): Caisson / Shaft No.: 14

. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
39	-29	
40	-30	
41	-31	
42	-32	
43	-33	
44	-34	
45	-35	
46	-36	
47	-37	
48	-38	
49	-39	
50	-40	
51	-41	
52	-42	
	-43	
54	-44	
55	-45	
56	-46	
57	-47	
58	-48	
59	-49	
60	-50	
61	-51	
62	-52	
63	-53	
64	-54	
65	-55	
66	-56	
67	-57	
68	-58	
69	-59	
70	-60	
71	-61	
72	-62	
73	-63	
74	-64	
75	-65	
76	-66	
	-67	

ditional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Project Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 5/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 14

Op. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)*	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
78	-68	Stabbed		9/3/99	11'/hr.	Mud	Worth	10/2/99	
79	-69								
80	-70								
81	-71								
82	-72								
83	-73								
84	-74								
85	-75								
86	-76								9-10-99 Lucas drove 90' + 35' pitched sections
87	-77	Driven	29	9-10-99					
88	-78		22						
89	-79		24						
90	-80		21						
[illegible]	-81		17						
[illegible]	-82		26						
93	-83		21		6.5'/hr				51 blows/minute
[illegible]	-84		12						
95	-85		9						
96	-86		10						
97	-87		15						
98	-88		13						
99	-89		15						
100	-90		23						
101	-91		21						
102	-92		21						
103	-93		22		10'/hr.				At 12:00, drilled to -92'
104	-94		22						
105	-95		24						
106	-96		23						
107	-97		27						
108	-98		18						
109	-99		21						
110	-100		31						
111	-101		34						
112	-102		32						
113	-103		32		2'/hr.				48 blows/minute
114	-104		24						
115	-105		28					10/4/00	
	-106		33						

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

ne Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 6/12

31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 12

. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
78	-68	
79	-69	
80	-70	
81	-71	
82	-72	
83	-73	
84	-74	
85	-75	
86	-76	
87	-77	
88	-78	
89	-79	
90	-80	
[illegible]	-81	
[illegible]	-82	
93	-83	
[illegible]	-84	
95	-85	
96	-86	
97	-87	
98	-88	
99	-89	
100	-90	
101	-91	
102	-92	
103	-93	
104	-94	
105	-95	
106	-96	
107	-97	
108	-98	
109	-99	
110	-100	
111	-101	
112	-102	
113	-103	
114	-104	10/2/99 - FCI Stopped drilling at 14:00 at -104'. The wirth drill is clogging
115	-105	up, so FCI blew out the air lift line.
	-106	

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Bridge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 7/12

Pile # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 14

Stp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
117	-107	Driven	32	9-10-98	10'/hr.	mud	Worth	10/4/98	FCI informed me that they drilled through an old tire. FCI was blowing the old tire out from 06:30 to 08:45. See EPEG for more notes.
118	-108		31						
119	-109		41						
120	-110		36						
121	-111		33						
122	-112		48						
123	-113	Driven	68	9/14/98					
124	-114		48						At 9:45, drilled to -114'.
125	-115		55		10'/hr.				
126	-116		58						
127	-117		46						
128	-118		39						
129	-119		31						
[illegible]	-120		26						
[illegible]	-121		30						
132	-122		39						
[illegible]3	-123		40						
134	-124		40						At 12:45, drilled to -124'.
135	-125		43		9'/hr.				
136	-126		44						
137	-127		45						
138	-128		41						
139	-129		46						
140	-130		44						
141	-131		49						
142	-132		47						
143	-133		50						
144	-134		49						
145	-135		58						
146	-136		66						
147	-137		79						
148	-138		138			Rock			41 blows/minute 81% efficiency
149	-139		149						
150	-140								Piet Hoekman (FCI) stopped pile advancing at -139' (1' high) due to high blow counts.
151	-141								
152	-142								
153	-143				1'/hr.				
154	-144								
	-145								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

[illegible]ge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 8/12

[illegible]n # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

[illegible]rill Equipment(s): Model(s): Caisson / Shaft No.: 14

[illegible]. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
117	-107	
118	-108	
119	-109	
120	-110	
121	-111	
122	-112	
123	-113	
124	-114	
125	-115	
126	-116	
127	-117	
128	-118	
129	-119	
[illegible]	-120	
[illegible]	-121	
132	-122	
[illegible]3	-123	
[illegible]34	-124	
135	-125	
136	-126	
137	-127	
138	-128	
139	-129	
140	-130	
141	-131	
142	-132	
143	-133	
144	-134	
145	-135	
146	-136	
147	-137	
148	-138	
149	-139	
150	-140	
151	-141	
152	-142	
153	-143	
154	-144	
[illegible]	-145	

[illegible]dditional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Project Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 9/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 14

Log By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft), (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
156	-146				1'/hr.	Rock	Wirth	10/4/99	
157	-147								FCI stopped drilling at 17:50 at -147' on 10/4/99.
158	-148				1.2'/hr.	Rock	Wirth	10/5/99	
159	-149								
160	-150								At 8:00, drilled to -150' on 10/5/99.
161	-151				1'/hr.				
162	-152								
163	-153								
164	-154								
165	-155								At 13:00, drilled to -155'
166	-156				0.5'/hr				
167	-157								
168	-158								
[illegible]	-159								FCI stopped drilling at 18:00, at -159' on 10/5/99.
[illegible]	-160				1'/hr.			10/6/99	
171	-161								
[illegible]2	-162								
173	-163								
174	-164								
175	-165				0.7'/hr.				
176	-166								
177	-167								At 17:30, drilled to -167' on 10/6/99
178	-168				4'/hr.			10/8/99	FCI stopped drilling at 17:45 at -167'.
179	-169								
180	-170								
181	-171								
182	-172								
183	-173								
184	-174								
185	-175								
186	-176								
187	-177								
188	-178				1'/hr.				
189	-179								At 11:05, FCI has drilled to -179'.
190	-180								
191	-181				1'/hr.				
192	-182								
193	-183								At 15:00, drilled to -183'
[illegible]	-184				1'/hr.				

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

ge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 10/12

n # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

rill Equipment(s): Model(s): Caisson / Shaft No.: 14

p. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
156	-146	
157	-147	
158	-148	
159	-149	
160	-150	
161	-151	
162	-152	
163	-153	
164	-154	
165	-155	
166	-156	
167	-157	
168	-158	
[illegible]	-159	
[illegible]	-160	
171	-161	
2	-162	
173	-163	
174	-164	
175	-165	
176	-166	
177	-167	10/7/99- FCI began removing the drill bit at 6:30 am. FCI will replace
178	-168	several of the ~~cutter~~ cutters on the drill bit at Sanders Yard. See
179	-169	EPEG notes for 10/7/99.
180	-170	
181	-171	
182	-172	
183	-173	
184	-174	
185	-175	
186	-176	
187	-177	
188	-178	
189	-179	
190	-180	
191	-181	
192	-182	
193	-183	
	-184	

ditional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:

04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-0440U4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

ge Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 11/12

an # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 14

p. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

		72" Perm. Steel Casing			Cassion (Material Removal)				Comments
Penetration (ft)	Elev. (ft)	Placement Method (Driven/others)	Production Rate (blows/ft); (min./ft)	Date	Production Drilling/Coring Rate (Min./ft)	Material Removed (conc./soil)	Equip. Used	Date	Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
195	-185				1'/hr	Rock	Wirth	10/8/99	FCI Stopped drilling at 17:00 at -185', on 10/8/99.
196	-186							10/9/99	At 6:30 am
197	-187								
198	-188								
199	-189								
200	-190				0.8'/hr				At 12:00, drilled to -190'.
201	-191								
202	-192				1'/hr.				At 14:00, drilled to -192'. FCI stopped at 14:00.
203	-193				1.5'/hr			10/11/99	
204	-194								
205	-195				1'/hr.				
206	-196								At 9:30, drilled to -196' on 10/11/99
207	-197								
[illegible]	-198								
[illegible]	-199								
210	-200								At 13:30, drilled to -200'
1	-201				1'/hr.			10/13/99	At 14:20 drilled to -201' (See next page).
212	-202								10/12/99 Began drilling at 11:00.
213	-203								
214	-204								
215	-205								At 16:00, drilled to -205', specified tip elevation.
216	-206								
217	-207								
218	-208								
219	-209								
220	-210								
221	-211								
222	-212								
223	-213								
224	-214								
225	-215								
226	-216								
227	-217								
228	-218								
229	-219								
230	-220								
231	-221								
232	-222								
	-223								

Additional Remarks:

Department of Transportation

LOG PILE SHEET(CAISSONS)

Form BM 79 IN LIEU OF DH-OS-C79

Job Stamp:
-
04-CC, SOL-680, 780-25 0/25-5, 0.0/0.6
04-044OU4 SEISMIC RETROFIT
BENICIA BRIDGE STRUCTURE

Project Name: Benicia-Marinez Toll Bridge Bridge No.: 28-0153 Abut/Pier No.: 8 Sheet No.: 12/12

Item # 31 Description 72" Perm. Steel Casing Item #: 30 Description 66" Drilled Shaft

Drill Equipment(s): Model(s): Caisson / Shaft No.: 14

Insp. By: Date: Reference Point Description: Top of Footing Elevation: + 10.0 ft

Penetration (ft)	Elev. (ft)	Comments
		Note: equipment breakdown, changes in productivity rates, changes in methods or equipment, reasons for changes, equipment mob/demob, when groundwater is encountered, whether temporary casings or slurries were used, whether soils samples were taken or saved, equip. start/stop times, or any other relevant info.
195	-185	
196	-186	
197	-187	
198	-188	
199	-189	
200	-190	
201	-191	
202	-192	
203	-193	
204	-194	
205	-195	
206	-196	
207	-197	
208	-198	
	-199	
210	-200	
1	-201	10/11/99 at 14:20, Drilling fluid is running over the top of the drilling
212	-202	platform. FCI shuts down the drilling operation. One of the stabilizer
213	-203	arm fell off and broke the air lift line, therefore the air lift system
214	-204	failed. FCI recovered the stabilizer arm. FCI quit at 18:00. (see SPEF).
215	-205	
216	-206	10/12/99 - At 11:15, FCI completed repairs to the stabilizer arms. FCI
217	-207	will install the drill string and drill bit today, but will begin drilling
218	-208	on 10/13/99. (see epgs Notes).
219	-209	
220	-210	
221	-211	
222	-212	
223	-213	
224	-214	
225	-215	
226	-216	
227	-217	
228	-218	
229	-219	
230	-220	
231	-221	
232	-222	
	-223	

Additional Remarks: