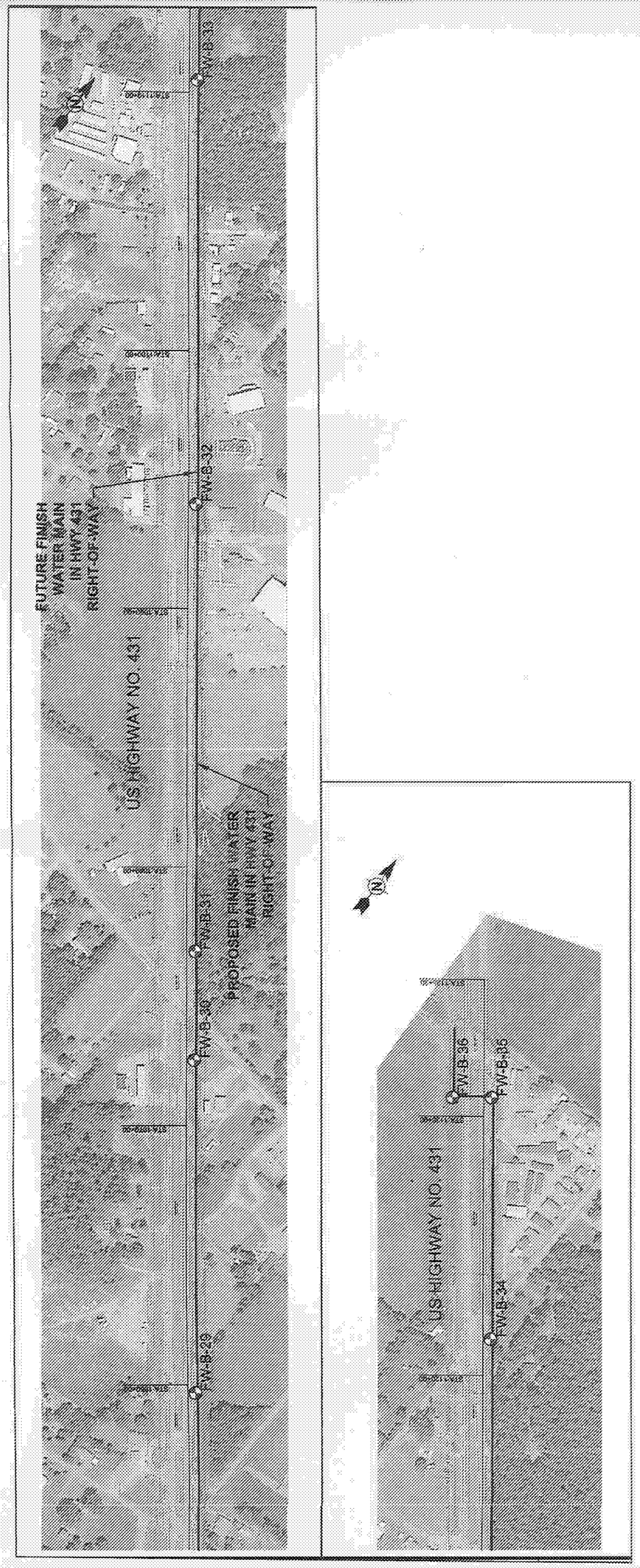


LEGEND

●-BORING LOCATION

NOTE: THIS DRAWING WAS REDRAWN FROM A DRAWING PROVIDED BY TETRA TECH, HUNTSVILLE, ALABAMA

BORING LOCATION PLAN
SOUTHEAST WATER TREATMENT PLANT
WATERLINES
U.S. HIGHWAY 431
MADISON & MARSHALL CO., ALABAMA

OMI, Inc.
5151 RESEARCH DRIVE
Huntsville, AL 35805
PH: (256) 837-7644
FAX (256) 837-7677

JOB NO:6759
DATE: 10-30-2013
SCALE: 1"= 400'
DRAWN BY: CCT
SHEET 3 OF 3

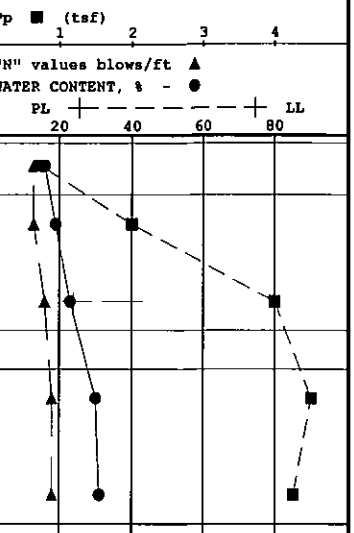
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: RW-B-1

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	13	16	0.75
			SANDY SILTY CLAY with trace oxide nodules, 30% fine sand, 70% fines, low plasticity, reddish brown, stiff, moist, residuum, CL	13	19	2.0
5				16	23	4.0
			SANDY SILTY CLAY, 35% sand, 65% fines, high plasticity, red and tan mottled, stiff, moist, residuum, CH	18	30	4.5
			SANDY SILTY CLAY with chert, 30% sand, 70% fines, high plasticity, orange and red, very stiff, moist, residuum, CH	18	31	4.25
10			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18/13 DEPTH TO WATERFINAL: DRY TO 6-FT ON 10/21/13

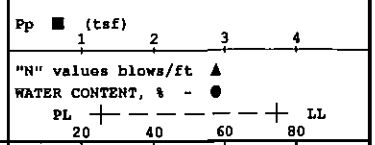
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: RW-B-2

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	7	14	2.5
			SANDY SILTY CLAY with traces of oxide nodules, 30% sand, 70% fines, low plasticity, orange and tan, stiff, moist, residuum, CL	14	14	2.25
5			SANDY SILTY CLAY, 40% sand, 60% fines, low plasticity, orange, tan and gray, stiff, moist, residuum, CL	19	21	4.5
				19	24	3.25
			SANDY SILTY CLAY, 30% sand, 70% fines, low plasticity, orange and gray, very stiff, moist, residuum, CL	17	30	3.0
10			SANDY SILTY CLAY with traces of chert and oxide nodules, 30% sand, 70% fines, high plasticity, orange and gray, very stiff, moist, residuum, CH			
15			BORING TERMINATED AT 10-FT			
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18/13 DEPTH TO WATERFINAL: DRY TO 7.5-FT ON 10/21/

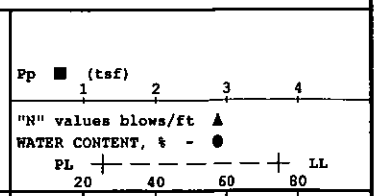
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: RW-B-3

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	8	15	2.75
			SANDY SILTY CLAY with trace oxide nodules, 30% sand, 70% fines, low plasticity, orange and tan, stiff, moist, residuum, CL	19	14	3.0
5			SANDY SILTY CLAY, 30% sand, 70% fines, low plasticity, orange, very stiff, moist, residuum, CL	18	20	4.5
			SANDY SILTY CLAY with oxide nodules, 30% sand, 70% fines, low plasticity, orange and gray, very stiff, moist, residuum, CL	23	18	4.5
10			BORING TERMINATED AT 10-FT	18	22	2.5
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18/13 DEPTH TO WATERFINAL: DRY TO 8-FT ON 10/21/13 Page 1 of 1

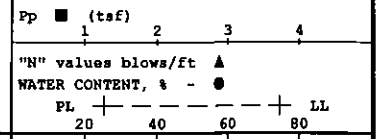
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: RW-B-4

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	16	22	4.5
			SANDY SILTY CLAY with traces of oxide nodules, 30% sand, 70% fines, low plasticity, orangish tan, very stiff, moist, residuum, CL	22	14	3.5
5				31	14	4.25
			SANDY SILTY CLAY with abundant oxides, 35% sand, 65% fines, low plasticity, orange and gray mottled, very stiff to hard, moist, residuum, CL	17	25	4.5
10			SANDY SILY CLAY with traces of chert, 30% sand, 70% fines, low plasticity, orange and gray, stiff to very stiff, moist, residuum, CL	23	20	4.5
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18//13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13 Page 1 of 1

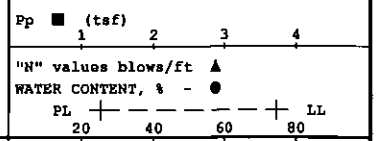
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-1

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	8	14	2.5
			SANDY SILTY CLAY, 25% sand, 75% fines, low plasticity, tan, stiff, moist, residuum, CL	22	10	1.0
5			SANDY SILTY CLAY, 40% fine sand, 60% fines, low plasticity, orange and gray, very stiff to hard, moist, residuum, CL	100+	13	0.75
			SANDY SILTY CLAY, 35% coarse to fine sand, 65% fines, low plasticity, orange and gray mottled, very stiff, moist, residuum, CL	17	15	4.5
10			SANDY SILTY CLAY, 40% sand, 60% fines, low plasticity, orange and gray, stiff, moist, residuum, CL	10	20	2.0
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18//13 DEPTH TO WATERFINAL: 6-FT ON 10/21/13 Page 1 of 1

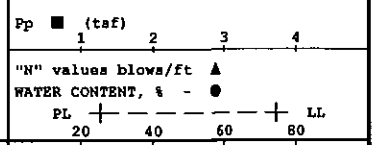
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-2

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			SANDY SILTY CLAY with oxide nodules, 35% sand, 65% fines, low plasticity, tan and red, stiff, moist, residuum, CL	11	12	3.0
				16	18	1.5
5			SANDY SILTY CLAY with trace oxide nodules, 30% sand, 70% fines, low plasticity, dark gray, very stiff, moist, residuum, CL	15	21	1.5
				15	23	1.75
10			SANDY SILTY CLAY with traces of chert, 30% sand, 70% fines, low plasticity, dark gray and orange, stiff, moist, residuum, CL	14	19	1.5
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18//13 DEPTH TO WATERFINAL: 5-FT ON 10/21/13 Page 1 of 1

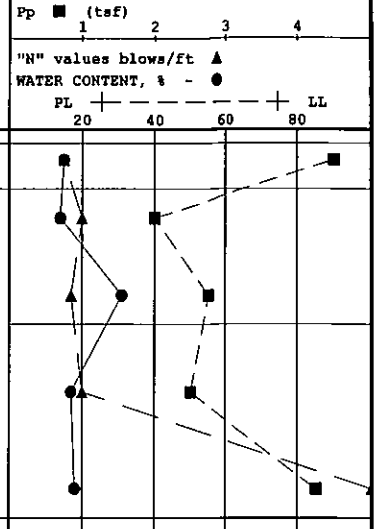
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-3

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	15	15	4.5
			SANDY SILTY CLAY, 30% sand, 70% fines, low plasticity, orange and tan, stiff, moist, residuum, CL	20	14	2.0
5			SANDY SILTY CLAY with oxide nodules, 35% sand, 65% fines, low to medium plasticity, orange, tan and gray, very stiff to hard, moist, residuum, CL	17	31	2.75
				20	17	2.5
10				100+	18	4.25
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18//13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13 Page 1 of 1

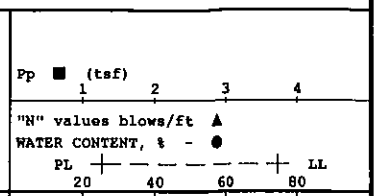
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-4

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, orangish tan, stiff, moist, residuum, CL	8	10	2.5
				10		2.1
5				8		2.0
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, yellowish tan, firm to stiff, moist, residuum, CL	5	20	0.5
10				9	18	1.0
			SANDY SILTY CLAY, 30% fine sand, 70% fines, high plasticity, yellowish tan, very stiff, moist, residuum, CH	22		---
15			BORING TERMINATED AT 15-FT			
20						
25						
30						
35						
40						



COMPLETION DEPTH: 15 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 10-FT ON 10/21/ Page 1 of 1

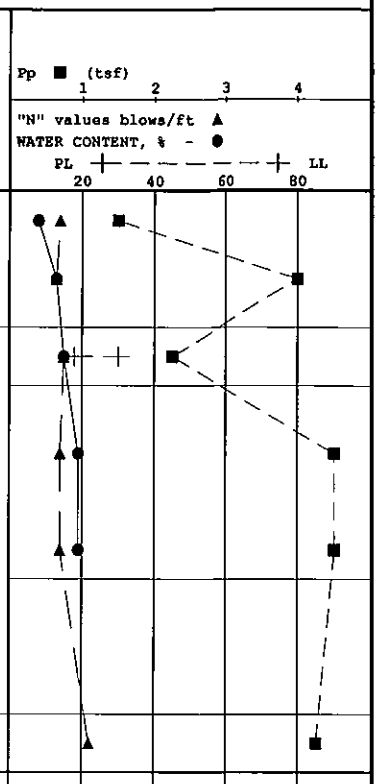
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-5

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			SILTY SANDY CLAY, 40% medium to fine sand, 60% fines, low plasticity, brownish tan, stiff, moist, residuum, CL	14	8	1.5
				13	13	4.0
5			SANDY SILTY CLAY with oxide nodules, 35% medium to fine sand, 65% fines, low plasticity, yellowish tan, stiff to very stiff, moist, residuum, CL	15	15	2.25
				14	19	4.5
10				14	19	4.5
15			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, gray and orangish tan, very stiff, moist, residuum, CL	22		4.25
			BORING TERMINATED AT 15-FT			
20						
25						
30						
35						
40						



COMPLETION DEPTH: 15 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/14/13 DEPTH TO WATERFINAL: DRY TO 11-FT ON 10/21/ Page 1 of 1

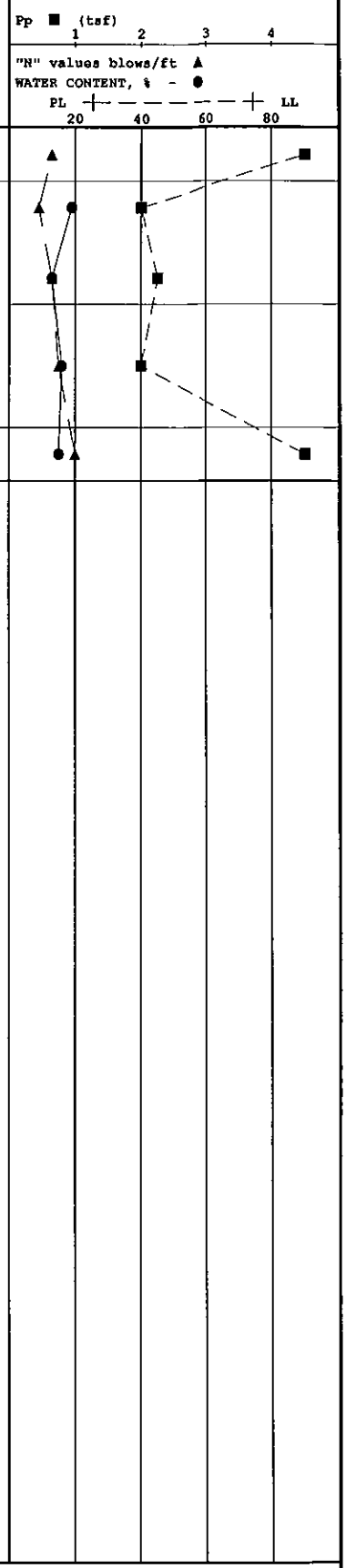
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-6

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			SANDY SILTY CLAY, 30% medium to ifne sand, 70% fines, low plasticity, brownish tan, stiff, moist, residuum, CL	13		4.5
				9	19	2.0
			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, orangish tan, stiff to very stiff, moist, residuum, CL	13	13	2.25
5				15	16	2.0
10			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, gray, yellowish tan and red, very stiff, moist, residuum, CL	20	15	4.5
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/14/13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13 Page 1 of 1

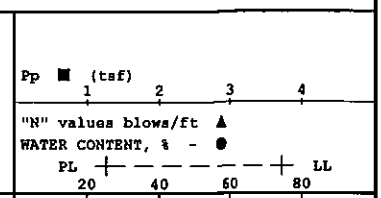
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-7

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	16		2.75
			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, orange, very stiff, moist, residuum, CL	24	15	4.5
5			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, gray, red, and orange mottled, very stiff, moist, residuum, CL	26	15	4.5
				22	21	4.5
10			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, orange and gray, very stiff, moist, residuum, CL	24	23	4.5
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/14/13 DEPTH TO WATERFINAL: DRY TO 8-FT ON 10/21/13 Page 1 of 1

OMI, Inc.

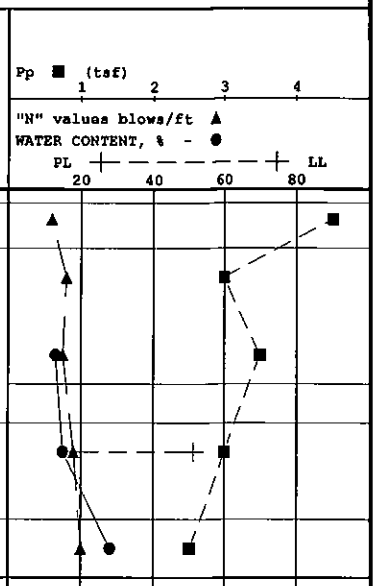
5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-8

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

Elevation=

DEPTH, FT	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
0	TOPSOIL	12		4.5
	SANDY SILTY CLAY, 30% medium to fine sand, 70% fines, low plasticity, brownish tan, stiff, moist, residuum, CL	16		3.0
5	SANDY SILTY CLAY with oxide nodules, 35% medium to fine sand, 65% fines, low plasticity, gray and orangish tan, very stiff, moist, residuum, CL	15	13	3.5
	SANDY SILTY CLAY with trace oxide nodules, 30% medium to fine sand, 70% fines, high plasticity, gray and orangish tan, very stiff, moist, residuum, CH	18	15	3.0
10	SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, high plasticity, tannish gray, very stiff, moist, residuum, CH	20	28	2.5
15	BORING TERMINATED AT 10-FT			
20				
25				
30				
35				
40				



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/14/13 DEPTH TO WATERFINAL: DRY TO 6-FT ON 10/21/13 Page 1 of 1

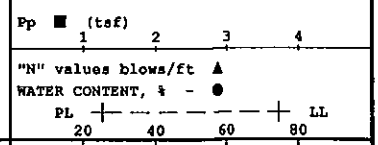
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-9

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	12		2.5
			SANDY SILTY CLAY with oxide nodules, 35% medium to fine sand, 65% fines, low plasticity, gray, red, and orangish tan mottled, stiff to very stiff, moist, residuum, CL	21		3.0
5				17	20	3.25
			SANDY SILTY CLAY with oxide nodules, 30% medium to fine sand, 70% fines, low plasticity, gray and orangish tan, very stiff, moist, residuum, CL	16	17	2.5
10			SANDY SILTY CLAY with trace chert, 30% coarse to fine sand, 70% fines, high plasticity, gray, tan, and orangish red, very stiff, wet, residuum, CH	16	37	1.25
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: 8-FT OMI,Inc.

DATE: 10/14/13 DEPTH TO WATERFINAL: 6-FT ON 10/21/13 Page 1 of 1

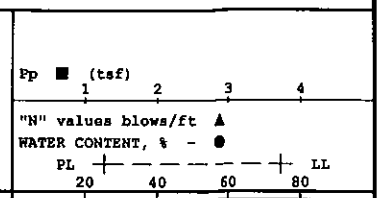
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-10

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	14		4.5
			SANDY SILTY CLAY with trace chert, 35% coarse to fine sand, 65% fines, low plasticity, gray, yellowish tan and red mottled, stiff to very stiff, moist, residuum, CL	25		4.5
5				27	27	4.5
				25	25	4.5
10			SANDY SILTY CLAY with oxide nodules, 30% medium to fine sand, 70% fines, low plasticity, gray, tan and orange mottled, very stiff, moist, residuum, CL	21	21	3.5
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/14/13 DEPTH TO WATERFINAL: DRY TO 8-FT ON 10/21/13 Page 1 of 1

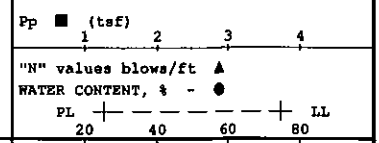
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-11

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			GRAVEL			
			SANDY SILTY CLAY, 35% fine sand, 75% fines, high plasticity, dark tan, very stiff, moist ,residuum, CH	14	34	4.0
5				20	25	4.0
				18	24	3.0
10				20	23	2.5
15			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, tan, stiff, moist, residuum, CL	7	23	1.5
20				8	22	1.5
25			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, tan, soft, wet, residuum, CL	4	22	0.0
30			AUGER REFUSAL AT 28-FT			
35						
40						



COMPLETION DEPTH: 28 DEPTH TO WATERINITIAL: 18-FT OMI,Inc.

DATE: 10/17/13 DEPTH TO WATERFINAL: 10-FT ON 10/21/13 Page 1 of 1

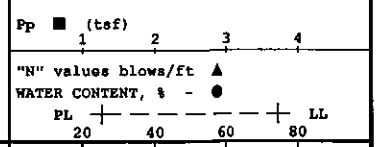
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-12

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 25% fine sand, 75% fines, low plasticity, dark brown, stiff, moist, FILL, CL	10	25	2.5
				12	26	2.5
				11	21	2.0
5				10	20	2.0
			SANDY SILTY CLAY, 25% fine sand, 75% fines, low plasticity, dark brown, very stiff, moist, residuum, CL	17	24	3.0
10						
				16	25	2.5
15						
				20	22	3.5
20						
				18	25	4.0
25						
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, yellowish tan, very stiff, moist, residuum, CL	20	22	3.0
30						
				100+	23	2.5
35						
			BORING TERMINATED AT 38-FT			
40						



COMPLETION DEPTH: 38 DEPTH TO WATERINITIAL: 30-FT OMI,Inc.

DATE: 10/17/13 DEPTH TO WATERFINAL: 20-FT ON 10/21/13 Page 1 of 1

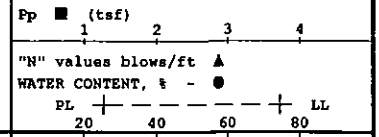
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-13

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, brown, stiff, moist, FILL, CL	14		4.0
				9		3.0
5			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, orangish tan, stiff to very stiff, moist, residuum, CL	12	23	3.0
				13	24	3.0
10				16	22	4.0
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13 Page 1 of 1

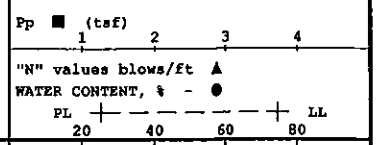
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-14

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, orangish tan, very stiff, moist residuum, CL	20		3.5
				22		4.0
5				26	20	4.0
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, orangish tan, very stiff, moist, residuum, CL	22	21	4.5
10				25	21	4.5
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 6-FT ON 10/21/13 Page 1 of 1

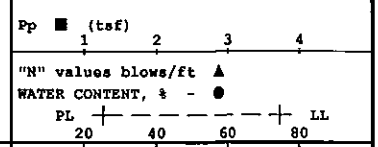
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-15

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, gray and yellowish tan, stiff to very stiff, moist, residuum, CL	10		4.0
				11		4.25
5				16		3.5
			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, brownish tan and yellowish tan, very stiff, moist, residuum, CL	16	17	2.75
10				23	20	4.5
			SANDY SILTY CLAY, 35% medium to fine sand, 65% fines, low plasticity, gray, yellowish tan and red, very stiff, moist, residuum, CL			
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/14/13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13

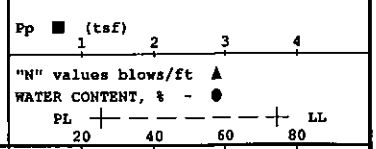
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-16

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	12		4.25
			SANDY SILTY CLAY with oxide nodules, 35% medium to fine sand, 65% fines, low plasticity, orangish red, stiff to very stiff, moist, residuum, CL	14		2.5
5				14	26	2.25
				16	26	2.25
10			SANDY SILTY CLAY with abundant oxide nodules, 35% medium to fine sand, 65% fines, low plasticity, orangish tan and red, very stiff, moist, residuum, CL	24	28	4.5
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/14/13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13 Page 1 of 1

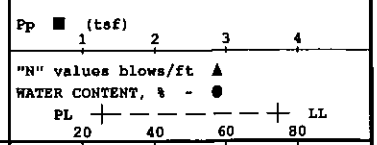
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-17

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, tan, very stiff, moist, residuum, CL	18		3.5
				22		4.0
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, tan with red inclusions, very stiff, residuum, CL	25		4.0
5				26	21	---
				26	23	---
10			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/14/13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13 Page 1 of 1

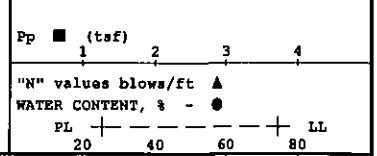
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-18

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, tannish brown, stiff, moist, residuum, CL	10		4.5
				16		1.5
5			SANDY SILTY CLAY, 25% fine sand, 75% fines, low plasticity, tannish brown, very stiff, moist, residuum, CL	15	20	2.0
				14	18	3.0
			SANDY SILTY CLAY, 25% fine sand, 75% fines, low plasticity, tan and black, stiff to very stiff, moist, residuum, CL	13	21	2.0
10			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, yellowish tan, stiff, moist, residuum, CL			
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/14/13 DEPTH TO WATERFINAL: 6-FT ON 10/21/13 Page 1 of 1

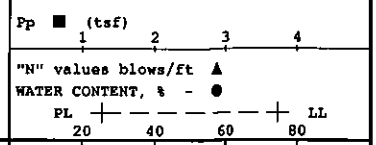
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-19

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	11		3.25
			SANDY SILTY CLAY, 30% sand, 70% fines, low plasticity, tan, stiff, moist, residuum, CL	18		4.5
5			SANDY SILTY CLAY with traces of chert, 30% sand, 70% fines, low plasticity, orange, red, and tan, very stiff, moist, residuum, CL	20	25	4.5
				17	23	3.0
10			SANDY SILTY CLAY, 10% chert, 30% fine sand, 60% fines, low plasticity, very stiff, moist, residuum, CL	17	28	4.0
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18/13 DEPTH TO WATERFINAL: DRY TO 8-FT ON 10/21/13

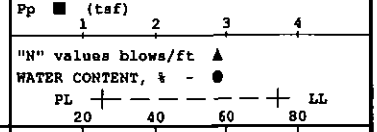
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-20

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	4		N.S.
			SANDY SILTY CLAY, 35% fine sand, 65% fines, low plasticity, brownish tan, soft to stiff, moist, residuum, CL	9		4.0
5			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, yellowish tan, very stiff, moist, residuum, CL	16	20	4.0
			SANDY SILTY CLAY, 25% fine sand, 75% fines, low plasticity, tan, gray and black, very stiff, moist, residuum, CL	17	20	3.5
10			BORING TERMINATED AT 10-FT	18	23	2.0



15 20 25 30 35 40

COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18/13 DEPTH TO WATERFINAL: 6-FT ON 10/21/13 Page 1 of 1

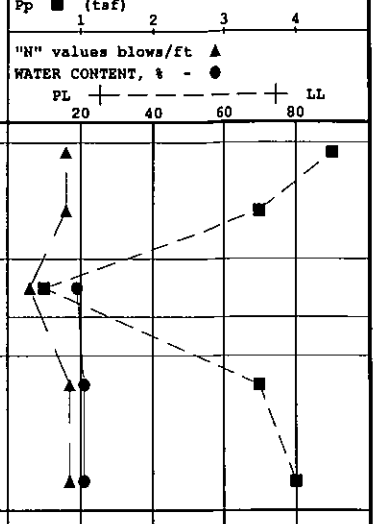
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-21

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	16		4.5
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, brown, very stiff, moist, residuum, CL	16		3.5
5			SANDY SILTY CLAY, 25% fine sand, 75% fines, low plasticity, brownish tan, firm, moist, residuum, CL	6	19	0.5
			SANDY SILTY CLAY, 35% fine sand, 65% fines, low plasticity, very stiff, moist, residuum, CL	17	21	3.5
10			BORING TERMINATED AT 10-FT	17	21	4.0



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18/13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13 Page 1 of 1

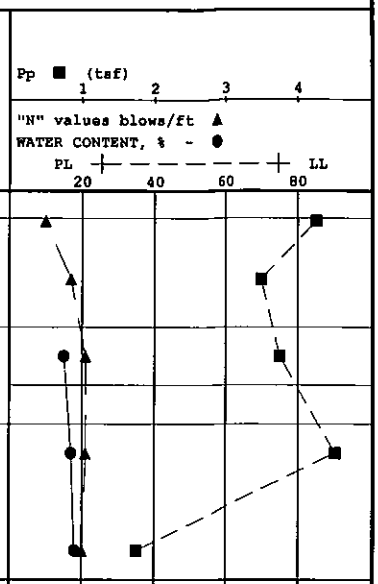
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-22

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY with traces of gravel, 35% sand, 65% fines, low plasticity, orange and tan, stiff to very stiff, moist, residuum, CL	10		4.25
				17		3.5
5			SANDY SILTY CLAY, 30% sand, 70% fines, low plasticity, orange and light gray to dark gray, very stiff, moist, residuum, CL	21	15	3.75
				21	17	4.5
10			SANDY SILTY CLAY, 30% sand, 70% fines, low plasticity, orange and tan, very stiff, moist, residuum, CL	20	18	1.75
			BORING TERMINATED AT 10-FT			



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18/13 DEPTH TO WATERFINAL: 5-FT ON 10/21/13 Page 1 of 1

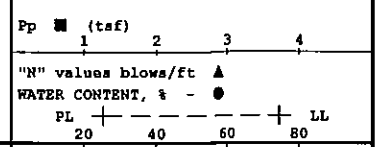
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-23

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	8		4.25
			SANDY SILTY CLAY, 30% sand, 70% fines, low plasticity, tan, stiff, moist, residuum, CL	8	23	0.5
5			SANDY SILTY CLAY, 25% sand, 70% fines, low plasticity, orange and tan, stiff, moist, residuum, CL	9	21	0.75
				14	19	0.5
10			SANDY SILTY CLAY with traces of chert, 40% sand, 60% fines, low plasticity, orange and tan, hard, moist, residuum, CL	100+	14	0.5
			BORING TEMRINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18/13 DEPTH TO WATERFINAL: DRY TO 8-FT ON 10/21/13 Page 1 of 1

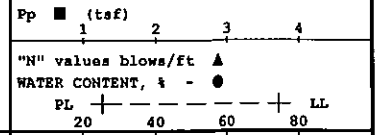
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-24

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY with traces of chert, 30% sand, 70% fines, low plasticity, tan and orange, stiff to very stiff, moist, residuum, CL	12		3.5
				18		4.5
5				20	29	4.5
			SANDY SILTY CLAY, 35% sand, 65% fines, low plasticity, orange and gray, very stiff, moist, residuum, CL	24	31	3.75
10				24	23	4.25
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/18/13 DEPTH TO WATERFINAL: DRY TO 6-FT ON 10/21/13 Page 1 of 1

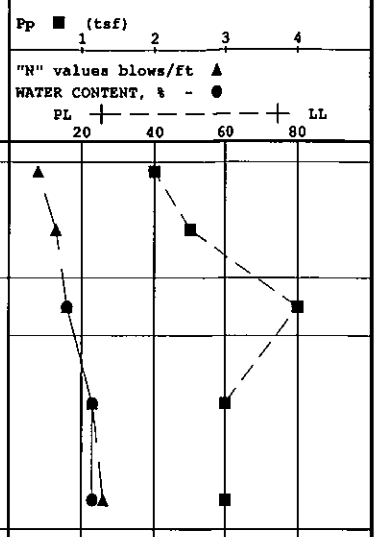
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-25

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, yellowish tan, stiff, moist, residuum, CL	8		2.0
				13		2.5
5			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, red and tan, very stiff, moist, residuum, CL	16	16	4.0
				23	23	3.0
10				26	23	3.0
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 8-FT ON 10/21/13 Page 1 of 1

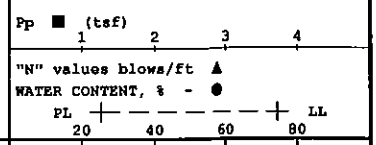
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-26

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	12		3.5
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, tannish brown, stiff, moist, residuum, CL	12		4.0
5			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, tan, very stiff, moist, residuum, CL	16	19	3.0
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, red and tan, very stiff, moist, residuum, CL	20	21	4.5
10			BORING TERMINATED AT 10-FT	26	21	4.0
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13 Page 1 of 1

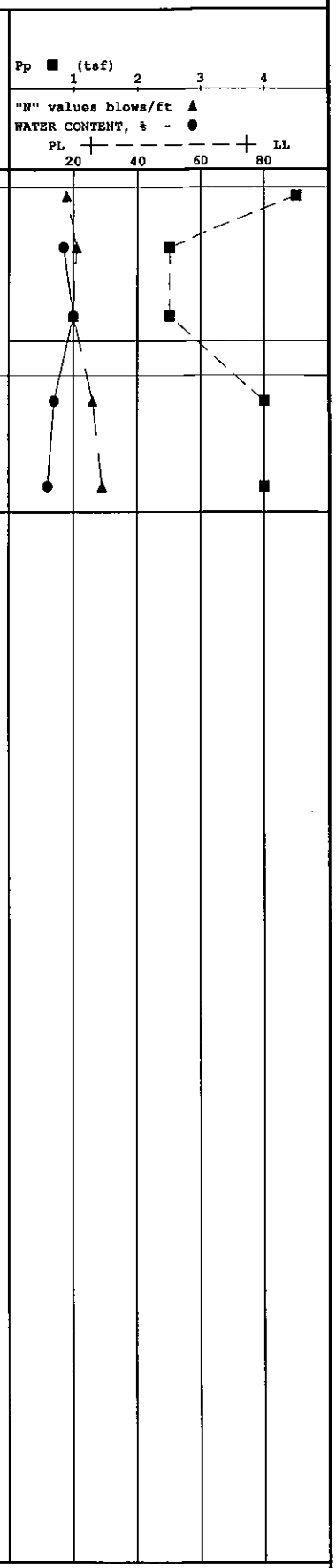
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-27

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 25% fine sand, 75% fines, low plasticity, tannish gray, very stiff, moist, residuum, CL	18		4.5
				21	17	2.5
5				20	20	2.5
			SANDY SILTY CLAY, 30% fine sand, 70% fines, high plasticity, gray with tan inclusions, very stiff to hard, moist, residuum, CL	26	14	4.0
10				29	12	4.0
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 6-FT ON 10/21/13

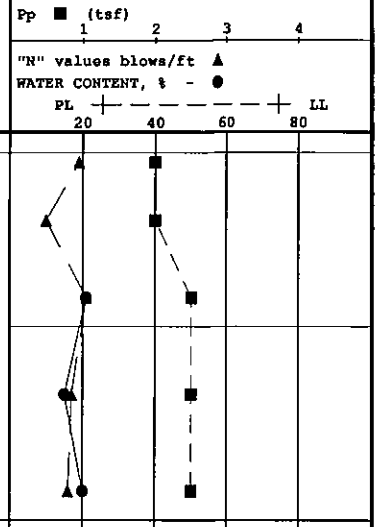
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-28

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY with trace amount chert, 30% fine sand, 70% fines, low plasticity, reddish tan, stiff to very stiff, moist, residuum, CL	19		2.0
				10		2.0
5				21	21	2.5
				17	15	2.5
10				16	20	2.5
			BORING TERMINATED AT 10-FT			



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13 Page 1 of 1

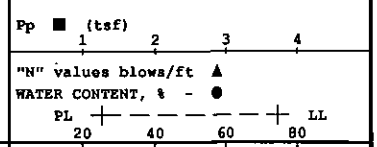
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-29

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	8		2.0
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, tannish brown, stiff, moist, residuum, CL	10		2.0
5			SANDY SILTY CLAY, 25% fine sand, 75% fines, high plasticity, tan, stiff to very stiff, moist, residuum, CH	16	31	1.5
				9	34	1.0
10				11	34	1.0
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 6-FT ON 10/21/13 Page 1 of 1

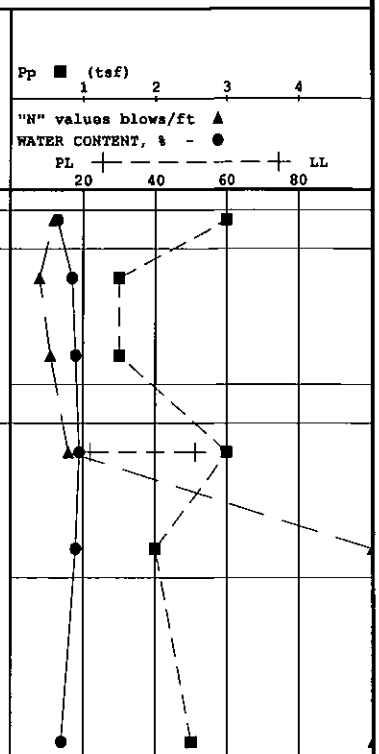
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-30

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	12	13	3.0
			SANDY SILTY CLAY, 35% fine sand, 65% fines, low plasticity, reddish tan, stiff, moist, FILL, CL	8	17	1.5
5			SANDY SILTY CLAY, 25% fine sand, 75% fines, low plasticity, yellowish tan, stiff, moist, residuum, CL	11	18	1.5
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, tan, very stiff to hard, moist, residuum, CL	16	19	3.0
10				100+	18	2.0
15				100+	14	2.5
			BORING TERMINATED AT 15-FT			
20						
25						
30						
35						
40						



COMPLETION DEPTH: 15 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 12-FT ON 10/21/ Page 1 of 1

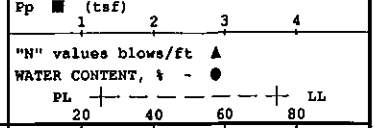
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-31

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	10	10	2.0
			SANDY SILTY CLAY, 25% fine sand, 75% fines, low plasticity, brown, stiff, moist, FILL, CL	22	18	2.0
5			SANDY SILTY CLAY with oxide nodules, 30% fine sand, 70% fines, low plasticity, yellowish tan, very stiff, moist, residuum, CL	17	11	2.0
				18	15	2.5
10			SANDY SILTY CLAY, 30% fine sand, 70% fines, high plasticity, tan, very stiff, moist, residuum, CH	26	17	4.5
15			BORING TERMINATED AT 15-FT	25		4.5
20						
25						
30						
35						
40						



COMPLETION DEPTH: 15 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 11-FT ON 10/21/

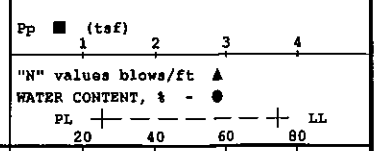
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-32

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, grayish tan, stiff to very stiff, moist, residuum, CL	14	21	2.5
				8	23	2.5
5				14	23	3.0
				14		2.0
10				20		2.5
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 8-FT ON 10/21/13 Page 1 of 1

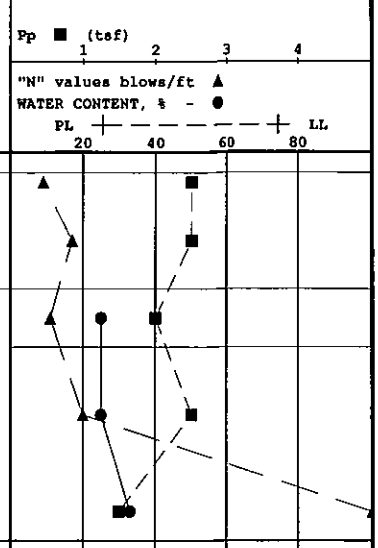
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-33

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 30% fine sand, 70% fines, low plasticity, reddish tan, stiff to very stiff, moist, residuum, CL	9		2.5
				17		2.5
5			SANDY SILTY CLAY, 30% fine sand, 70% fines, high plasticity, yellowish tan, stiff to very stiff, moist, residuum, CH	11	25	2.0
				20	25	2.5
10				100+	33	1.5
			BORING TERMINATED AT 10-FT			
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 7.5-FT ON 10/21/

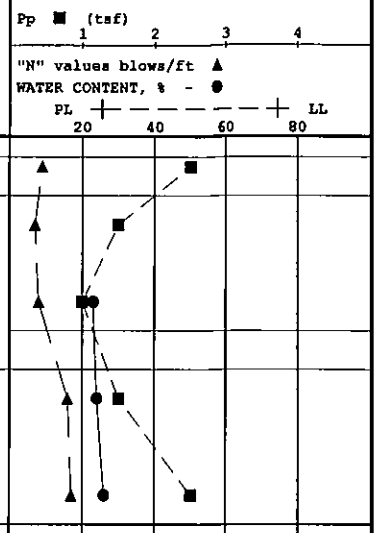
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-34

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	9		2.5
			SANDY SILTY CLAY, 35% fine sand, 65% fines, low plasticity, reddish tan, firm to stiff, moist, FILL, CL	7		1.5
5			SANDY SILTY CLAY, 20% fine sand, 80% fines, low plasticity, dark gray, firm to stiff, moist, residuum, CL	8	23	1.0
			SANDY SILTY CLAY, 30% fine sand, 70% fines, high plasticity, yellowish tan, stiff, moist, residuum, CH	16	24	1.5
10			BORING TERMINATED AT 10-FT	17	26	2.5
15						
20						
25						
30						
35						
40						



COMPLETION DEPTH: 10 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 7-FT ON 10/21/13 Page 1 of 1

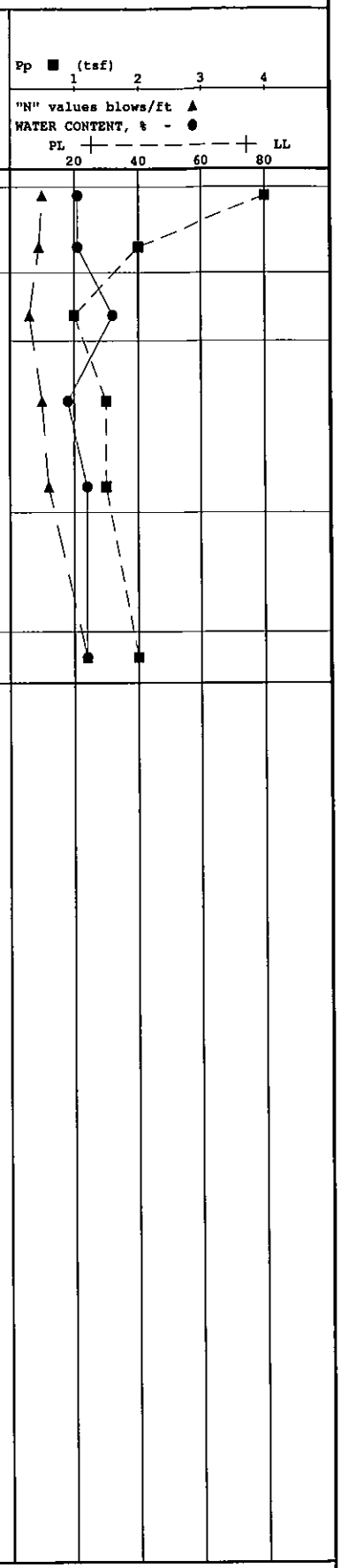
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-35

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL	10	21	4.0
			SANDY SILTY CLAY, 35% fine sand, 65% fines, low plasticity, reddish tan, stiff, moist, FILL, CL	9	21	2.0
			SANDY SILTY CLAY, 25% fine sand, 75% fines, high plasticity, grayish tan, firm to stiff, moist, residuum, CH	6	32	1.0
5				10	18	1.5
10				12	24	1.5
			SANDY SILTY CLAY, 25% fine sand, 75% fines, high plasticity, grayish tan, very stiff, moist, residuum, CH	24	24	2.0
15			BORING TERMINATED AT 15-FT			
20						
25						
30						
35						
40						



COMPLETION DEPTH: 15 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 9-FT ON 10/21/13 Page 1 of 1

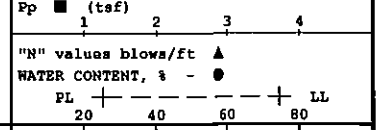
OMI, Inc.

5151 Research Drive, N.W. Huntsville, AL 35805

JOB NO.: 6759 JOB: SE WTP Water Mains LOG OF BORING: FW-B-36

JOB LOCATION: Marshall County, Alabama BORING LOCATION:

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	NATURAL MOISTURE	POCKET PENT TSF
			Elevation=			
0			TOPSOIL			
			SANDY SILTY CLAY, 30% fine sand, 70% fines, high plasticity, tan, very stiff, moist, residuum, CH	12	19	3.0
				9	28	2.0
5				13	18	2.0
			SANDY SILTY CLAY, 30% fine sand, 70% fines, high plasticity, yellowish tan, very stiff, moist, residuum, CH	17	23	2.5
				22	24	3.0
10						
15				26	27	2.5
			BORING TERMINATED AT 15-FT			
20						
25						
30						
35						
40						



COMPLETION DEPTH: 15 DEPTH TO WATERINITIAL: DRY OMI,Inc.

DATE: 10/19/13 DEPTH TO WATERFINAL: DRY TO 8-FT ON 10/21/13 Page 1 of 1

BORING LEGEND

SOIL SYMBOLS

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAIN SOILS — MORE THAN 50% RETAINED ON NO. 200 SIEVE	GRAVELS — 50% OR MORE OF COARSE FRACTION RETAINED ON #4 SIEVE	CLEAN GRAVELS	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS AND GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS — MORE THAN 50% OF COARSE FRACTION PASSES #4 SIEVE	CLEAN SANDS	SW	WELL-GRADED SANDS AND GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS AND GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAIN SOILS — 50% OR MORE PASSES NO. 200 SIEVE	SILTS AND CLAYS — LIQUID LIMIT 50% OR LESS		ML	INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS — LIQUID LIMIT GREATER THAN 50%		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDS OR SILTS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT	PEAT, MUCK AND OTHER HIGHLY ORGANIC SOILS

ABBREVIATIONS:

SS- SPLIT SPOON SAMPLE

UD- UNDISTURBED SAMPLE

REC-SAMPLE RECOVERY

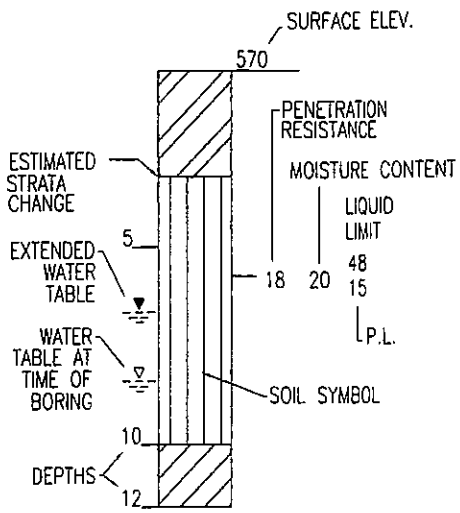
USC-VISUAL UNIFIED SOIL CLASSIFICATION

POCKET PENET- POCKET PENETROMETER READING, TSF

RQD-ROCK QUALITY DESIGNATION

FF- FRACTURE FREQUENCY PER FOOT OF CORE

KEY TO BORING RECORDS OR PROFILES



ROCK SYMBOLS

SANDSTONE

SHALE

GNEISS OR SCHIST

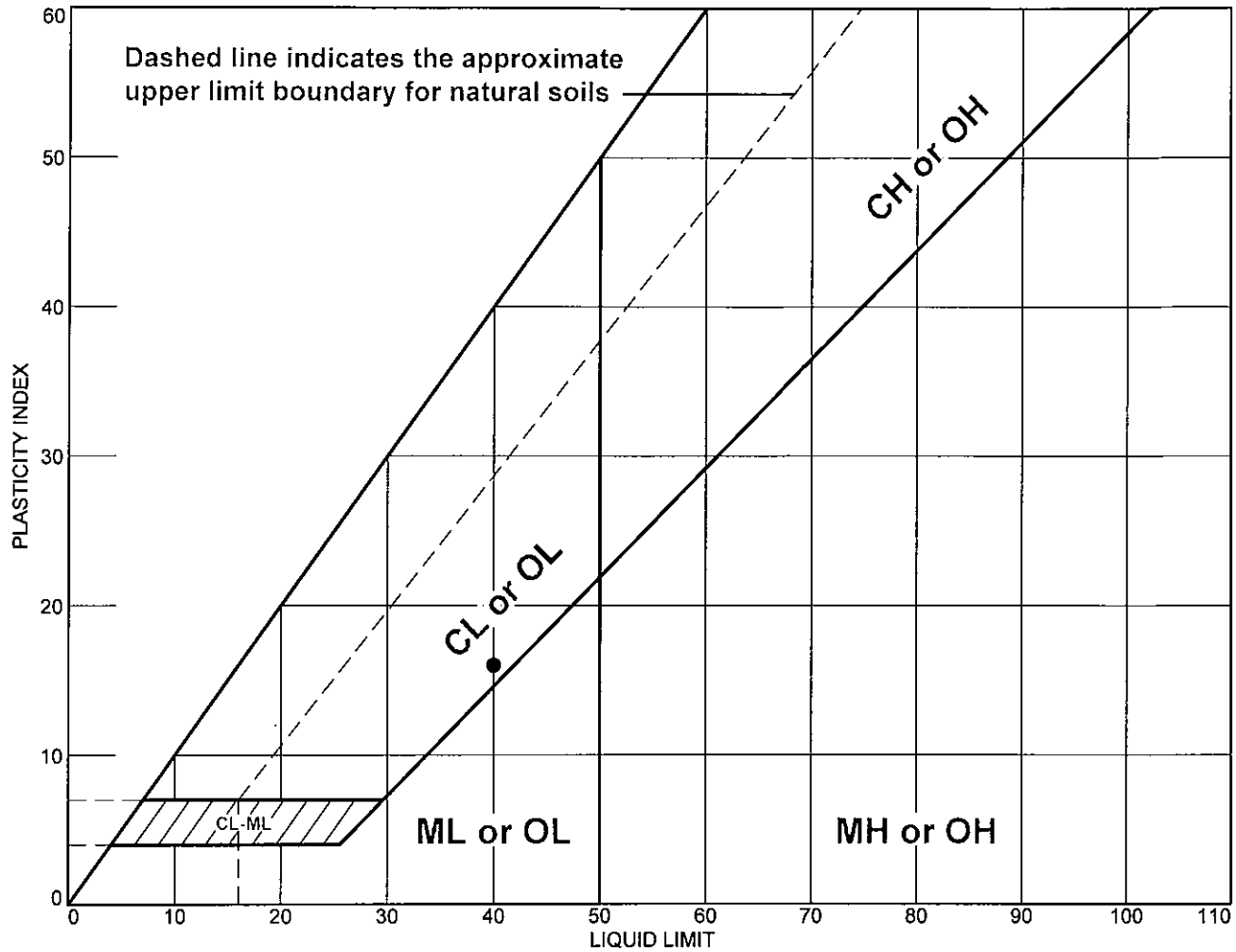
CONGLOMERATE

LIMESTONE OR DOLOMITE

OMI, INC.

5151 Research Drive
Huntsville, AL 35805

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SANDY SILTY CLAY with chert, 30% sand, 70% fines, high plasticity, orange and red, very stiff, moist,	40	24	16			

Project No. 6759 **Client:**

Project: SE WTP Water Mains

● **Source of Sample:** RW-B-1 **Depth:** 3.5

Remarks:

● Tested 10/25/13

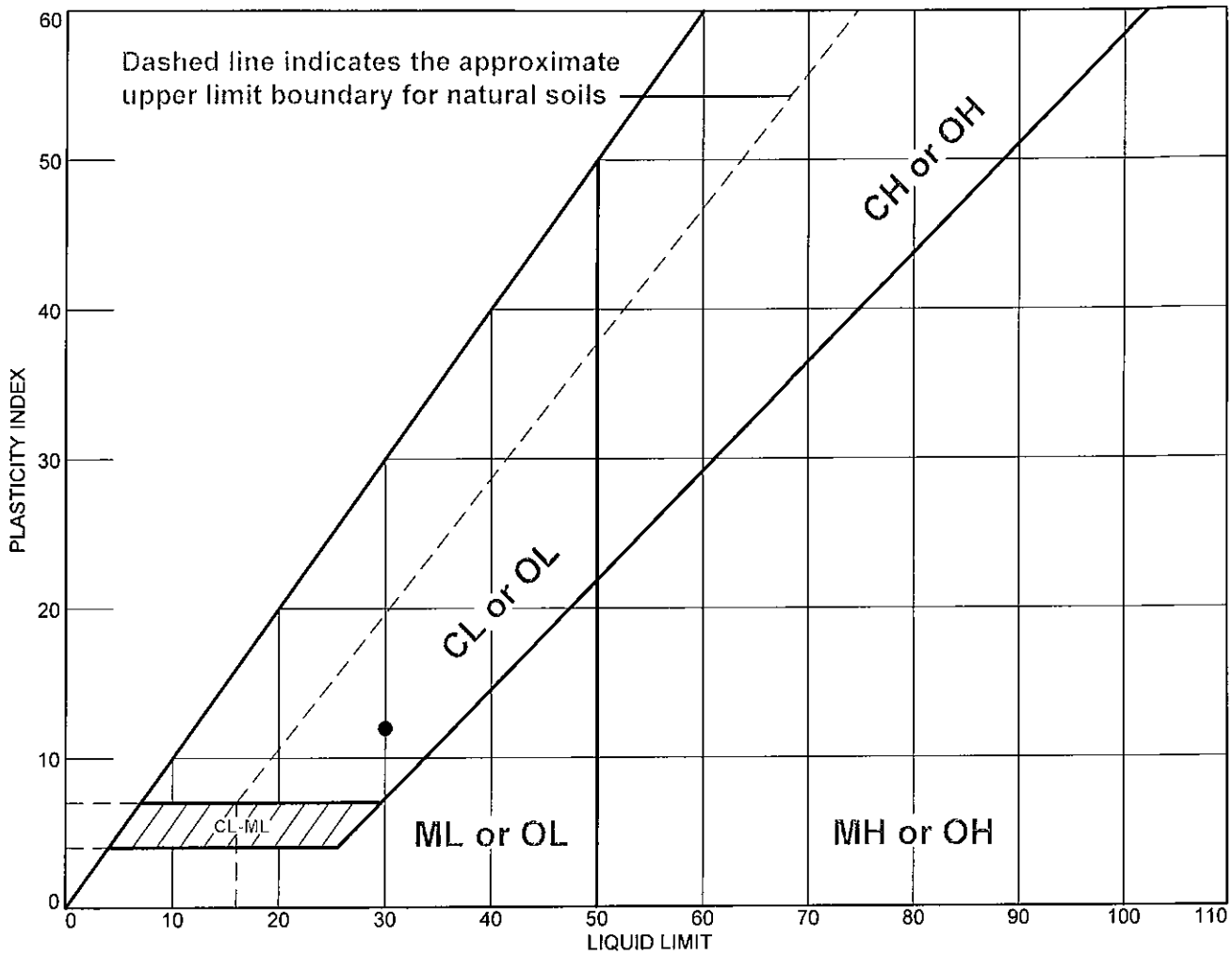
OMI, Inc.

Huntsville, AL

Figure

Tested By: SS **Checked By:** CJ

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SANDY SILTY CLAY with oxides, 35% medium to fine sand, 65% fines, low plasticity, yellowish tan, stiff to	30	18	12			CL

Project No. 6759 **Client:**

Project: SE WTP Water Mains

● **Source of Sample:** FW-B-5 **Depth:** 3.5

Remarks:

● Tested 10/25/13

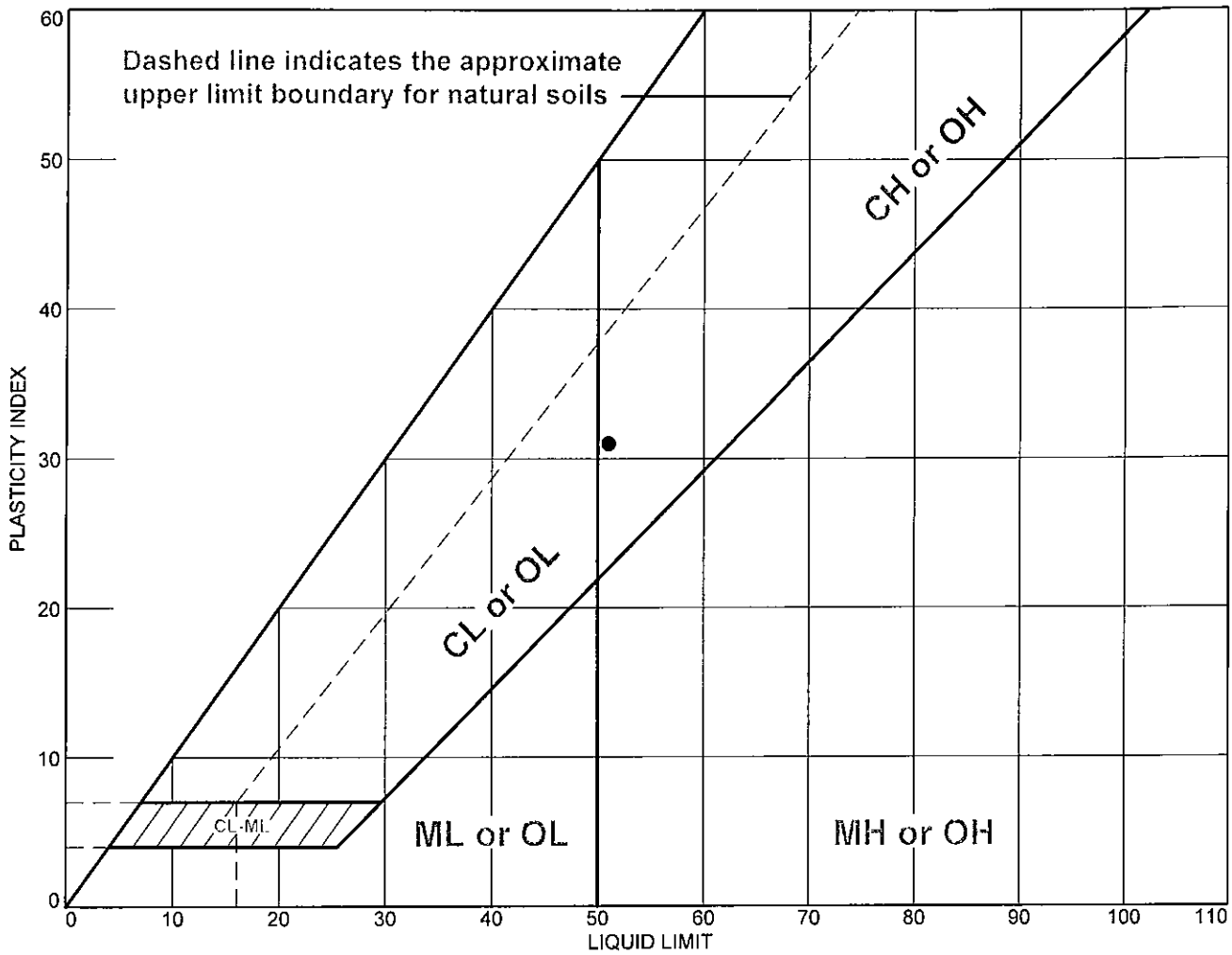
OMI, Inc.

Huntsville, AL

Figure

Tested By: SS **Checked By:** CJ

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SANDY SILTY CLAY with trace oxides, 30% medium to fine sand, 70% fines, high plasticity, gray and orangish	51	20	31			CH

Project No. 6759 **Client:**

Project: SE WTP Water Mains

● **Source of Sample:** FW-B-8 **Depth:** 6.0

Remarks:

● Tested 10/25/13

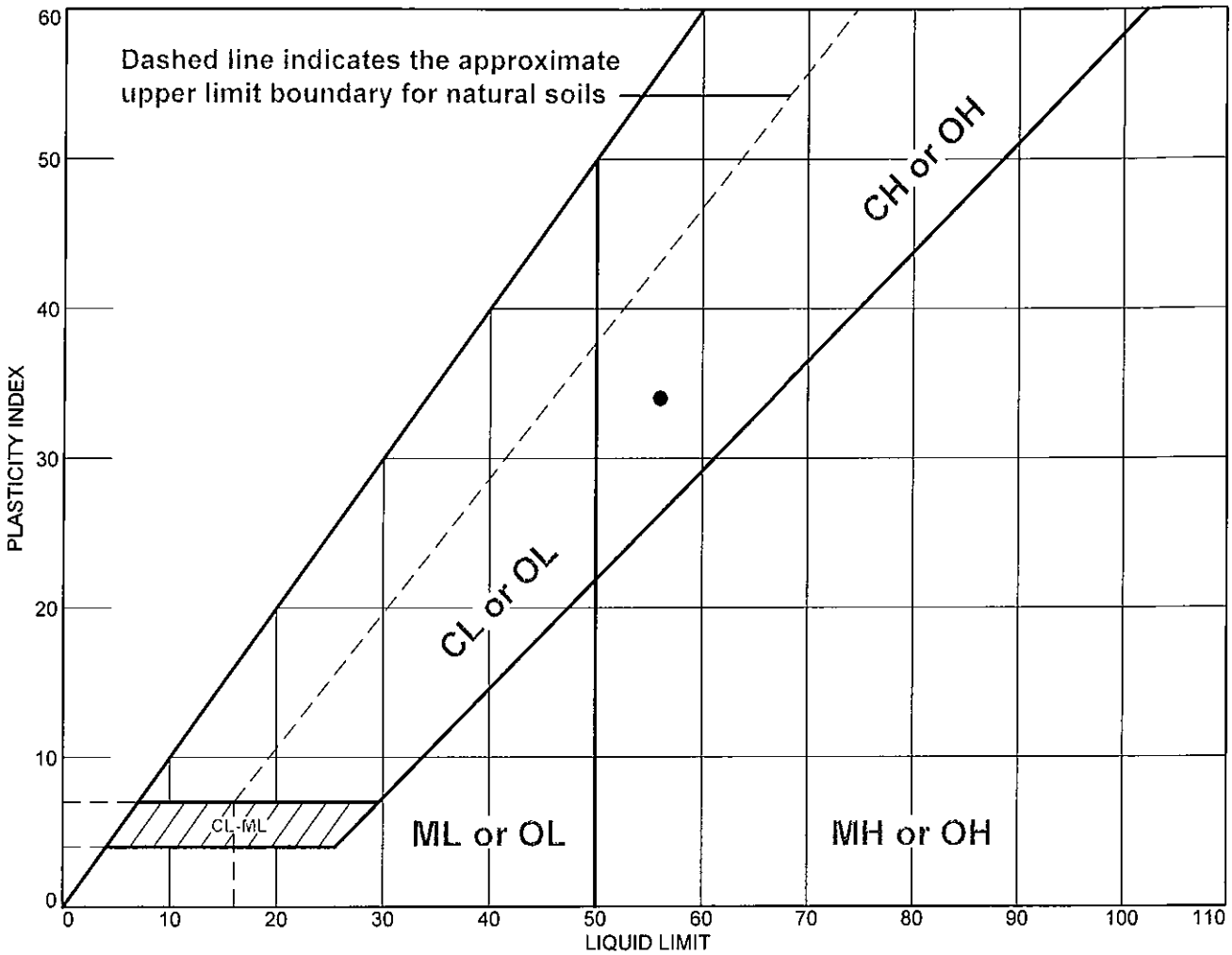
OMI, Inc.

Huntsville, AL

Figure

Tested By: SS **Checked By:** CJ

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SANDY SILTY CLAY, 35% fine sand, 75% fines, high plasticity, dark tan, residuum, CH	56	22	34			

Project No. 6759 **Client:**

Project: SE WTP Water Mains

● **Source of Sample:** FW-B-11 **Depth:** 3.5

Remarks:

● Tested 10/26/13

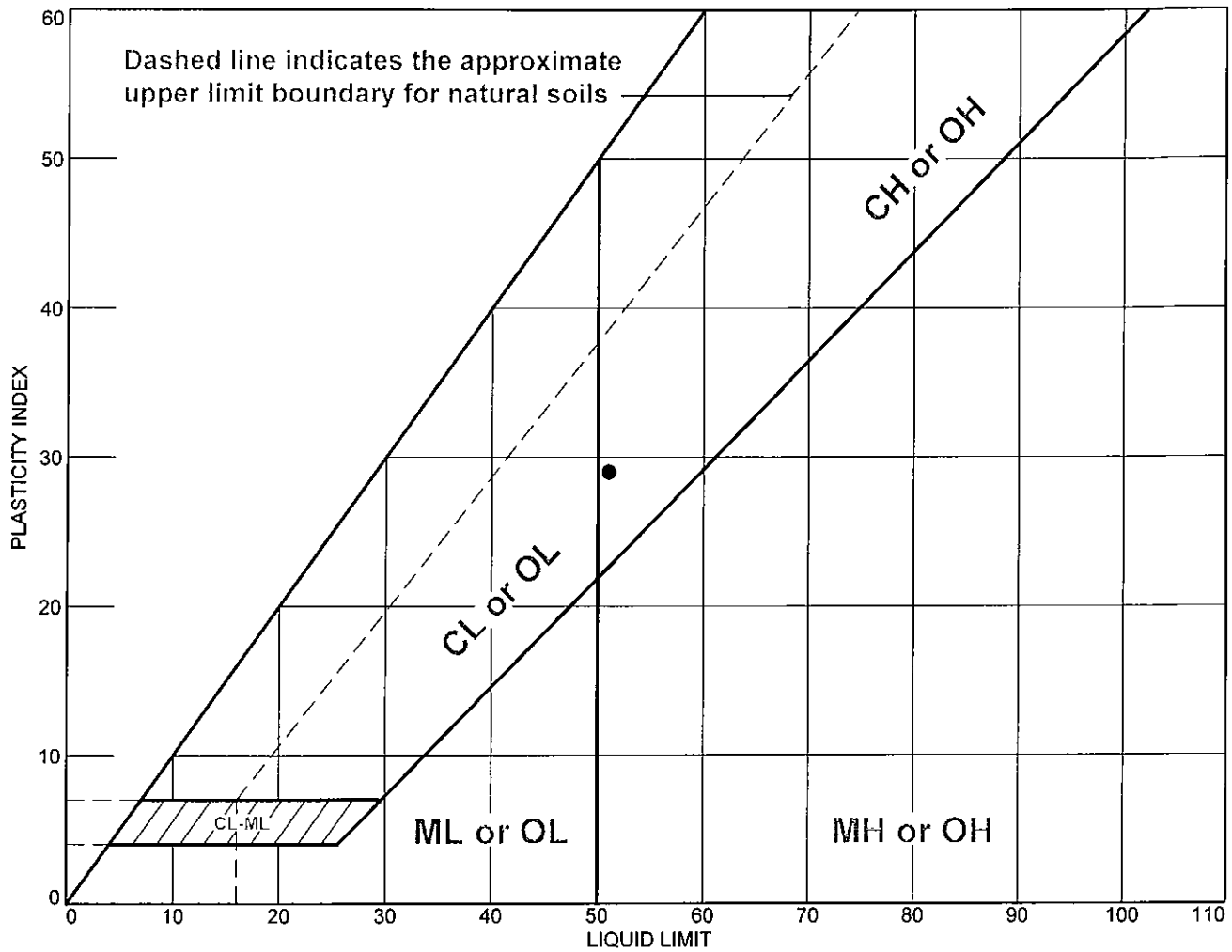
OMI, Inc.

Huntsville, AL

Figure

Tested By: SS **Checked By:** CJ

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●		51	22	29			

Project No. 6759 **Client:**

Project: SE WTP Water Mains

● **Location:** B30 **Depth:** 6.0/7.5 **Sample Number:** 4

Remarks:

● Tested 10/25/13

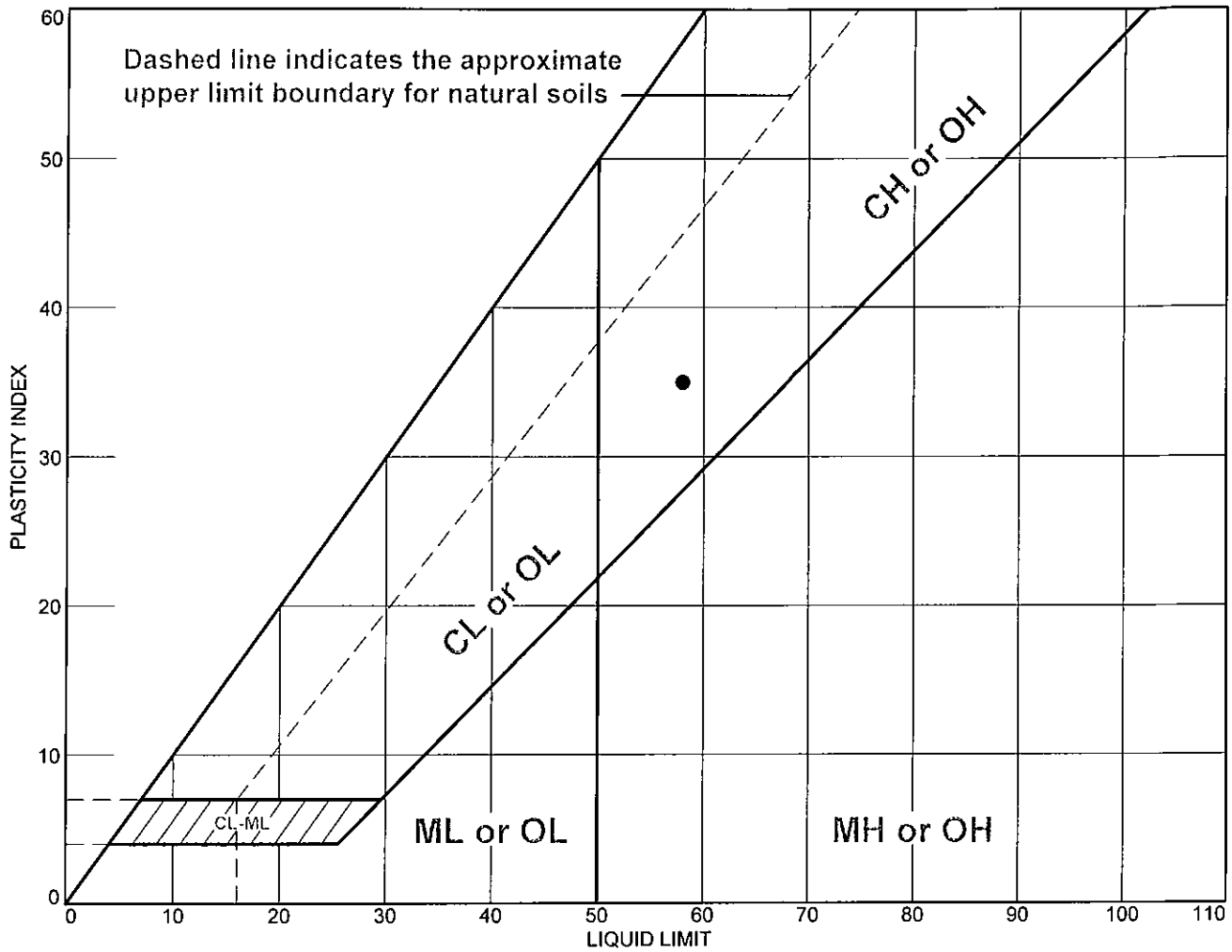
OMI, Inc.

Huntsville, AL

Figure

Tested By: SS **Checked By:** CJ

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●		58	23	35			

Project No. 6759 **Client:**

Project: SE WTP Water Mains

● **Location:** B36 **Depth:** 6.0/7.5 **Sample Number:** 4

Remarks:

● Tested 10/25/13

OMI, Inc.

Huntsville, AL

Figure

Tested By: SS **Checked By:** CJ

FIELD TEST PROCEDURES

OMI, Inc., generally follows field and laboratory testing procedures as outlined by the American Society for Testing and Materials (ASTM) and the U. S. Army Corps of Engineers. Field procedures are outlined and an overview description is provided in ASTM Standard D-420, "Standard Guide to Site Characterization for Engineering, Design, and Construction Purposes." This document is a guide to the selection of various standards for investigating soil, rock, and ground water for earth related construction. Applicable procedures include geophysical, in-situ, and boring methods. A summary of each procedure used during this study is presented below.

SOIL DRILLING PROCEDURES

Several techniques are used to advance borings for collection of soil, rock, or ground water samples. Different techniques are used, depending on the samples desired and the soil and water conditions. Depths for sample intervals, strata changes, and boring termination or refusal are recorded to the nearest 1/10 of a foot. The project utilized the following.

Soil Borings

A) Solid stem continuous flight augers (ASTM D-1452)

B) Hollow stem continuous flight augers (ASTM D-1452)

C) Rotary drilling techniques using roller cone bits or drag bits and water with or without drilling mud or other additives to flush the hole

D) Hand augers

E) Backhoes or other excavating equipment.

Rock Borings

A) Core borings with diamond bits with double or triple core barrels (ASTM D-2113)

B) Rock borings with roller cone bit

C) Rotary hammer drilling.

Hollow and Solid Stem Auger: An auger is a center post with a continuous spiral flange wrapped around it. The post is called the stem. Augers are usually constructed in 5-foot long sections that can be coupled together. As the auger is turned and advanced into the ground; the soil "cuttings" are brought to the surface. Solid stem augers have a solid core and have to be removed from the boring to allow access for sampling tools. Hollow stem augers have the spiral flange connected to a hollow tube (stem). Sampling tools can access the bottom of the boring without removing the augers from the hole.

Rotary Borings: Rotary drilling involves the use of roller cone or drag type drill bits attached to the end of hollow drill rods. A flushing medium, normally water or bentonite slurry, is pumped through the rods to clear the cuttings from the bit face and flush them to the surface. Casing is sometimes set behind the advancing bit to prevent the hole from collapsing and to restrict the penetration of the drilling fluid into the surrounding soils. Cuttings returned to the surface by the drilling fluid are usually collected in a settling tank to allow the fluid to be re-circulated.

Hand Auger Borings: Hand auger borings are advanced by manually twisting a 4-inch diameter steel bucket auger into the ground and withdrawing it when filled to observe the sample collected. Other equipment such as post-hole diggers is sometimes used in lieu of augers to obtain shallow soil samples. Occasionally, these hand auger borings are used for driving 3-inch diameter steel tubes to obtain intact soil samples.

Test Pits: A backhoe or other construction equipment is sometimes used to excavate into soils to observe the soil and collect samples.

Core Drilling: Soil drilling methods are not normally capable of penetrating through hard cemented soil, weathered rock, coarse gravel or boulders, thin rock seams, or sound continuous rock. Material which cannot be penetrated by auger or rotary soil drilling methods at a reasonable rate is designated as "refusal material." Core drilling procedures are required to penetrate and sample refusal materials.

Prior to coring, casing may be set in the drilled hole through the overburden soils to keep the hole from caving and to prevent excessive water loss. The refusal materials are then cored according to ASTM D-2113 using a diamond bit fastened to the end of a hollow, double, or triple tube core barrel. This device is rotated at high speeds and the cuttings are brought to the surface by circulating water. Core samples of the material penetrated are protected and retained in the swivel-mounted inner tube. Upon completion of each drill run, the core is brought to the surface, recovery is measured, and the core is sequentially placed in boxes and transported to our laboratory for review and storage.

SAMPLING AND TESTING IN BOREHOLES

Several techniques are used to obtain samples and data in soils; however, the following methods were utilized in this project:

A) Standard Penetration Testing
B) Undisturbed Sampling
C) Dynamic Cone Penetration Testing
D) Pocket Penetrometer Testing
E) Hand-Held Static Cone Penetrometer
F) Water Level Readings.

These procedures are presented below. Any additional testing techniques employed during this exploration are contained in other sections of the Appendix.

Standard Penetration Testing: At regular intervals, the drilling tools are removed and soil samples are obtained with a standard 2-inch diameter split tube or "split spoon" sampler connected to a drill rod. The sampler is first seated 6 inches to penetrate any loose cuttings then driven an additional 12 inches with blows of a 140 pound safety hammer falling 30 inches. Generally, the number of hammer blows required to drive the sampler the final 12 inches is designated the "penetration resistance" or "N" value, defined in blows per foot (bpf). The split spoon sampler is designed to retain the soil penetrated so it may be returned to the surface for observation. Representative portions of the soil samples obtained from each split spoon sample are placed in jars, sealed, and transported to the laboratory.

The standard penetration test, when properly evaluated, provides an indication of the soil strength and compressibility. The tests are conducted according to ASTM Standard D-1586. The depths and N-values of standard penetration tests are shown on the Boring Records. Split spoon samples are suitable for visual observation and classification tests, but generally are not sufficiently intact for quantitative laboratory testing.

Undisturbed Sampling: Relatively undisturbed samples are obtained by pushing 3 inch outside diameter (OD), 30 inch long steel tubes with hydraulic pressure supplied by the drill rig into the soil at the desired sampling levels (ASTM Standard D-1587). These tubes are also known as Shelby tubes. Each tube, together with the encased soil, is removed from the ground, sealed, and transported to the laboratory. Locations and depths of undisturbed samples are shown on the Boring Records.

Dynamic Cone Penetrometer: The dynamic cone is a hand-operated penetrometer used in hand auger borings and observation pits. This test is intended to provide data that can be correlated to the standard penetration test. A 1.5-inch OD cone is seated to penetrate any loose cuttings, and then driven for 3 intervals of 1.75 inch with blows from a 15-pound weight falling 20 inches. The average number of blows required to drive the cone over 1 increment is an index to soil strength and compressibility.

Pocket Penetrometer Testing: The pocket penetrometer is a hand operated penetrometer used in test pits and on split spoon and undisturbed samples. This test is intended to provide data that can be correlated to the unconfined compressive strength test. A ¼-in diameter shaft is pressed into the soil ¼-in deep. The shaft pushes against a spring with a constant of 12 pounds per inch to provide a compressive strength value in tons per square foot. The penetrometer is capable of providing readings between 0.25 tons per square foot and 4.5 tons per square foot.

Water Level Readings: Water table readings are normally taken in the borings and are recorded on the Boring Records. In sandy soils, these readings indicate the approximate location of the hydrostatic water table at the time of the field exploration. In clayey soils, the rate of water seepage into the borings is low and it is generally not possible to establish the location of the hydrostatic water table through short-term water level readings. Also, fluctuation in the water table should be expected with variations in precipitation, surface run-off, evaporation, and other factors. For long-term monitoring of water levels, it is necessary to install piezometers.

The water level reported on the Boring Records is determined by field crews immediately after the drilling tools are removed, and again several hours after the borings are completed, if possible. The time lag is

intended to permit stabilization of the ground water table which may have been disrupted by the drilling operation.

Occasionally, the borings will cave in, preventing water level readings from being obtained or trapping drilling water above the cave-in zone. The cave-in depth is measured and recorded on the Boring Records.

BORING RECORDS

The subsurface conditions encountered during drilling are reported on a Boring Record. The record contains information concerning the boring method, samples attempted and recovered, indications of the presence of coarse gravel, cobbles, etc., and observations of ground water. It also contains the driller's and the geotechnical engineer's interpretation of soil conditions between samples. Therefore, these boring records contain both factual and interpretative information. A geotechnical engineer visually classifies the soil samples and prepares the Boring Records which are the basis for all evaluations and recommendations.

LABORATORY TEST PROCEDURES

OMI, Inc., generally follows laboratory testing procedures as outlined by the American Society for Testing and Materials (ASTM), the U. S. Army Corps of Engineers, and other applicable procedures. All work is initiated and supervised by qualified engineers. Laboratory tests are performed by technicians trained to perform the work according to the appropriate procedures. The equipment is well maintained and inspected and calibrated annually or as specified by ASTM.

A description of the procedures used during this exploration or study are included in this Appendix.

SOIL CLASSIFICATION

Classification of soils provides a record and general guide to the engineering properties of the soils encountered during this study. Samples obtained during the field testing (drilling) operations are visually examined and classified by the geotechnical engineer. OMI, Inc., generally follows ASTM procedure No. D-2488 "Visual-Manual Procedure for Classifying Soils." Soil consistency and relative density is based on the number of blows from the standard penetration test. Representative or special samples are then selected for laboratory testing. Soil Boring Records are developed which present the data from the field testing as well as the soil description, water level information, and other data.

MOISTURE CONTENT

Moisture content values, when used in conjunction with other data, can be a useful and inexpensive tool to the engineer as an indicator of the engineering characteristics and parameters of the soil when compared to other data. Moisture content is performed by weighing a moist sample, drying, then re-weighing the dry sample. The moisture content is expressed as a percent of the dry weight of the soil. ASTM Method D-2216 is used to determine the moisture content of soil.

ATTERBERG LIMITS

Atterberg limits include the liquid limit (LL), plastic limit (PL), and shrinkage limit (SL) tests. These tests are performed to aid in the classification of soils and to determine the plasticity and volume change characteristics of the soil. The liquid limit is the minimum moisture content at which the soil will flow as a heavy viscous fluid. The plastic limit is the minimum moisture content at which the soil behaves as a plastic material. The shrinkage limit is the moisture content below which no further volume change will occur with continued drying. The plasticity index (PI) is the difference between the liquid limit and the plastic limit. The PI is the range of moisture at which the soil remains plastic. Many engineering characteristics have been correlated to the Atterberg limits. These are ASTM procedures D-4318, D-4943, and D-427.

STANDARD PROCTOR COMPACTION TEST

This test is used to establish a curve that predicts the effect of moisture and compactive effort on the dry density of the soil sample. It is useful as a comparative value in monitoring contractors' efforts during fill placement and compaction during construction. Also, correlations of engineering parameters such as strength, compressibility, and permeability are related to the percent compaction and soil type.

A representative sample of the proposed fill material (soil or stone) is collected. The sample is divided into four or more samples. Each sample is then brought to a different moisture content about 2% apart. Each sample is then placed in a standard 4-inch diameter mold in 3 equal layers with each layer being compacted with 25 blows from a 5.5-pound hammer falling 12 inches. The sample is trimmed to a known volume of 1/30 cubic foot then weighed. The moisture content of the sample is determined and the dry density is calculated. A graph of dry density (pcf) versus moisture content is developed. The maximum density and its corresponding moisture content known as the optimum moisture content are derived from the curve. A graph of the moisture-density relationship is given in the Appendix. ASTM D-698 describes the procedure.

UNCONFINED COMPRESSION TESTS - ROCK CORES

The strength of rock is important in many engineering applications. This strength is usually desired and reported as the unconfined or simple shear strength. Selected samples of rock cores are cut using a diamond saw. The cores are usually cut to a length equal to about twice the core diameter. The capped length and diameter of each core is measured and recorded. The cores are then loaded to failure in a compression machine. The unconfined compressive strength is calculated by dividing the cross-sectional area of the core

into the maximum load required to crush the sample. If the length to diameter ratio is less than 2.0, then the maximum strength is adjusted mathematically. The results are reported in psi. This procedure is similar to ASTM D-2938.

CONSOLIDATION TESTING

The consolidation test provides data for estimating the settlement and time rate of settlement of the soil in response to the applied loads. Representative soil samples are collected from undisturbed samples, trimmed into a disk about 2.5 inches in diameter and 1 inch thick, then placed in the consolidometer. The disk is confined in a brass ring and sandwiched by porous stones on the top and bottom. The sample ring and stones are placed in a testing device, inundated, then loaded in increments. The sample height is measured as each load caused it to compress. The resulting loads and deformations are reduced to a graph which is presented in the Appendix. These results may be presented in load versus percent strain or load versus void ration. This procedure is described in ASTM D-2435.