ADDENDUM NO. 7 Date: July 31, 2017
TO THE CONTRACT DOCUMENTS Project No.: 674010
for the construction of

W.B. CASEY WATER RECLAMATION FACILITY POLISHING PLANT AND WAS THICKENING UPGRADES

CLAYTON COUNTY WATER AUTHORITY
CLAYTON COUNTY, GEORGIA

To All Planholders and/or Prospective Bidders:

The following changes, additions, and/or deletions are hereby made a part of the Contract Documents for the construction of the W.B. Casey Water Reclamation Facility Polishing Plant and WAS Thickening Upgrades dated May, 2017 as fully and completely as if the same were fully set forth therein:

A. REFERENCE INFORMATION

1. The geotechnical report related to the reference drawings (Volumes 5 & 6 – 2005) is being provided as additional reference information. This reference material represents information available to the Engineer in the design of the project. Any conclusions drawn from this information is the responsibility of the prospective bidder. Neither the Owner nor the Engineer makes any representations or warranties concerning the accuracy or completion of any such reports, test, or drawings. If there are any discrepancies or inconsistencies between the contents of these documents and the Bid Documents, the Bid Documents shall govern.

All Bidders shall acknowledge receipt and acceptance of this Addendum No. 7 in the Bid Form or by submitting the Addendum with the bid package. Bid Forms submitted without acknowledgment or without this Addendum will be considered in nonconformance.

CH2M HILL

_____
Project Manager

Appended hereto and part of Addendum No. 7:

Geotechnical Engineering Services Report for the Proposed W.B. Casey Water Reclamation Facility, PSI Project 472-05081 (October 2, 2000)

END OF ADDENDUM

Curt's

GEOTECHNICAL ENGINEERING SERVICES REPORT

Proposed W.B. Casey Water Reclamation Facility
Jonesboro, Georgia

MR. CURT BASNETT
PSI PROJECT 472-05081

Information To Build On
Engineering • Consulting • Testing

October 2, 2000

Mr. Curt Basnett
CH2M HILL
115 Perimeter Center Place, N.E.
Suite 700
Atlanta, GA 30346

Geotechnical Engineering Services Report
Proposed W.B. Casey Water Reclamation Facility
Clayton County, Georgia
PSI Project 472-05081

Dear Mr. Basnett:

Professional Service Industries, Inc. (PSI) has performed geotechnical engineering services for the referenced project. The results of this exploration, together with our recommendations, are included in the accompanying report.

Often, because of design and construction details that occur on a project, questions arise concerning subsurface conditions. PSI will be pleased to continue our role as geotechnical consultants during the construction phase of this project.

We trust that this report will assist you in the design and construction of the proposed project. PSI appreciates the opportunity to be of service on this project. Should you have any questions, please do not hesitate to contact us.

Respectfully submitted,
Professional Service Industries, Inc.

Brian K. Ingram, E.I.T.
Staff Engineer

Richard L. Curtis, P.E.
Senior Engineer

Information To Build On
Engineering • Consulting • Testing

October 10, 2000

Mr. Curt Basnett
CH2M HILL
115 Perimeter Center Place, N.E.
Suite 700
Atlanta, GA 30346

Geotechnical Engineering Services Report
Supplemental Letter
Proposed W.B. Casey Water Reclamation Facility
Clayton County, Georgia
PSI Project 472-05081

Dear Mr. Basnett:

Professional Service Industries, Inc. (PSI) has performed geotechnical engineering services for the referenced project. The additional information requested on October 5, 2000 is included in this supplemental letter.

The following table illustrates the proposed structures, proposed finished floor or bottom of structure elevation, approximate existing elevations, and planned dimensions:

Structure	Finished Floor or Bottom of Structure Elevation Feet (MSL)	Approximate Existing Elevations of Proposed Structures Feet (MSL)	Plan Dimension Square Feet (sf)
Administration Building	871	858 to 865	9,800
Chemical Buildings	878	872 to 877	4,800
Primary Clarifiers	865	862 to 874	27,000
Preliminary Treatment	870	866 to 874	10,500
Odor Control Area	875	874 to 882	22,500
Aeration Basin	850	847 to 881	117,500
Splitter Box	860	851 to 866	2,400
Final Clarifiers (4)	850	845 to 879	20,100 each
ML Split Box	864	868 to 871	400
Future Filters/Disinfection	846	840 to 862	22,500/22,500

Additional information was also requested for the use in design of the thrust blocks. The following is a list of the thrust restraint perimeters:

Φ	28°
Interface Friction Angle:	
Ductile Iron	18°
PVC	3° *
E'	1000 psi (5 ceo)
γ	95 pcf
γ'	32.6 pcf
Cohesion	0

*Based on the information readily available we have determined the value for PVC piping. This value is considered to be conservative and PVC pipe provider/manufacturer may have actual design values.

We trust that this additional information will assist you in the design and construction of the proposed project. PSI appreciates the opportunity to be of service on this project. Should you have any questions, please do not hesitate to contact us.

Respectfully submitted,
Professional Service Industries, Inc.

Brian K. Ingram, E.I.T.
Staff Engineer

Richard L. Curtis, P.E.
Senior Engineer

GEOTECHNICAL ENGINEERING SERVICES REPORT

for the

PROPOSED WATER RECLAMATION FACILITY CLAYTON COUNTY, GEORGIA

Prepared For

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PSI PROJECT 472-05081
October 2, 2000

Brian K. Ingram, E.I.T.
Staff Engineer

Richard L. Curtis, P.E.
Senior Engineer

GEOTECHNICAL ENGINEERING SERVICES REPORT
PROPOSED W.B. CASEY RECLAMATION FACILITY
CLAYTON COUNTY, GEORGIA

1.0 INTRODUCTION

1.1 Authorization

This report presents the findings of a subsurface exploration and recommendations based on our geotechnical engineering services performed at the site of the proposed water reclamation facility located on Flint River Road in Jonesboro, Georgia. The services for this project were performed in general accordance with our Proposal 472-00-065 dated August 25, 2000.

1.2 Purpose and Scope of Services

The purpose of this exploration was to evaluate subsurface conditions at the site and to provide recommendations regarding general site development and parameters for foundation design and site considerations for the proposed construction. The scope of the exploration and analysis included the following:

- We performed a site reconnaissance and reviewed available published geologic information.
- We performed a total of 27 soil test borings at locations in the proposed water reclamation facility. In addition, we performed 2 borings at the existing RL Jackson water treatment plant, and 1 boring at the existing Casey treatment plant and prepared boring logs for each test location describing the types of soil encountered and other pertinent information.
- Performed laboratory tests to determine general soil characteristics.
- We conducted a geotechnical engineering evaluation of the available data to provide recommendations regarding shallow foundation systems, pavement design, retaining wall design, and construction considerations, such as subgrade preparation, excavation characteristics, and fill placement at the site.

The geotechnical scope of services did not include an environmental assessment for determining the presence or absence of wetlands or hazardous or toxic materials in the soil, bedrock, surface water, groundwater, or air, on or below or around this site. Any statements in this report or on the boring logs regarding odors, colors, unusual or suspicious items or conditions are strictly for the information of the client.

2.0 GENERAL PROJECT INFORMATION

2.1 Site Locations

The primary project site is an approximately 66-acre tract located along Flint River Road in Clayton County, Georgia. The property is bounded and accessed on the northern border by Flint River Road and bounded on the south, east, and west by commercial and residential property. The site has previously been logged and has isolated wooded areas and large amounts of brush and wood piles.

Two pump stations are located at the existing RL Jackson water treatment plant. The RL Jackson Plant is located at the northeast corner of Thomas Road and Highway 54. One pump station is located at the existing Casey water treatment plant. The Casey plant is located at the southern end of Roberts Road just south of its intersection with Flint River Road.

The areas of new construction at the existing plants were grassed and relatively free of dense vegetation.

2.2 Project Description

2.2.1 Reclamation Facility

The water reclamation facility will consist primarily of the *Administration Building, Preliminary Treatment, Chemical Storage, Odor Control Building, Aeration Basins, Splitters, Final Clarifiers, ML Split Box, the future filters* and *disinfection* and the *Roadways.*

The structures will predominantly consist of precast and/or cast-in-place concrete. The following table summarizes anticipated approximate finished floor or finished grade elevations for these structures:

Structure	Finished Floor or Bottom of Structure Elevation Feet (MSL)
Administration Building	871
Chemical Buildings	878
Primary Clarifiers	865
Preliminary Treatment	870
Odor Control ~~Building~~ Area	~~870~~ 875
Aeration Basin	~~850~~
Splitter Box	860
Final Clarifiers	850
ML Split Box	~~855~~ 854
Future Filters/Disinfection	846

2.2.2 Water Pump Structures

The intake structures will consist of cast-in-place concrete.

Structure	Bottom of Structure Elevation Feet (MSL)
RL Jackson:	
Raw Sewage Pump Station	771
Transfer Pump Station	760
Casey	
Raw Waste Pump Station	782

2.3 SUBSURFACE CONDITIONS

2.3.1 General

The subsurface conditions were explored with widely spaced borings drilled at the approximate locations shown on the attached Boring Location Plan. The subsurface conditions encountered at each boring location are shown on the Boring Logs in the Appendix. These Boring Logs represent our interpretation of the subsurface conditions based on the field logs, visual classification and lab testing of field samples by an engineer. The lines designating the interface between the various strata on the Boring Logs represent the approximate interface location; the actual transition between strata may be gradual.

2.3.2 Area Geology

The site is located in the Southern Piedmont Geologic Province of Georgia. The parent rock in the vicinity of the site, according to the *Geology of the Greater Atlanta Region* (1984), belongs to the Clarkston Formation of the Atlanta Group. The bedrock of this formation consists of garnet-quartz-plagioclase-biotite-muscovite schist.

Soils in this area have been formed by the in-place weathering of the underlying rock and are generally termed "residual" soils. Near the ground surface, where the weathering is most advanced, residual soils may consist of clayey silt or silty clay. With increased depth, soils become less weathered and generally transition to coarser-grained sandy silt or silty sand. Partially weathered rock represents the transition zone between soil and the parent rock from which they are derived. The thickness of the zone of partially weathered rock and the depth to the relatively unweathered rock surface have both been found to vary greatly

over relatively short distances in the Piedmont region. Also, it is not unusual to find layers of partially weathered rock in the upper soil profile.

2.3.3 Field Exploration

Thirty borings were performed for the WB Casey Water Reclamation Facility. Twenty-seven borings were performed on the proposed WB Casey site and three borings were performed at the existing Casey and RL Jackson plants. All borings drilled are discussed in this final report. The borings drilled and their respective locations are listed in the table below. Borings may not be specifically located within the footprint of the various facilities; however, they are included in the discussion in the nearest facility component, as applicable. Also, we understand that some facility locations may be moved from their presently designated locations.

Structure	Boring Numbers
Administration Building	B-1, B-2
Chemical Buildings	B-8
Preliminary Treatment	B-3, B-4
Primary Clarifiers	B-5, B-6, B-7
Odor Control Building	B-9, B-10, B-11
Aeration Basins	B-12, B-13, B-14, B-15, B-16, B-17, B-18
Splitter Box	B-12
Final Clarifiers	B-19, B-20, B-21, B-23, B-24, B-25
ML Split Box	B-22
Future Filters/Disinfection	B-26, B-27
Jackson – Sewage Pump Station	RL-1
Jackson – Transfer Pump Station	RL-2
Casey – Waste Pump Station	WB-1

Ground surface elevations were approximated from a site plan provided by CH2M Hill and are located on the boring logs.

The subsurface conditions at each proposed structure location are discussed in the following sections.

2.3.3.1 Administration Building

The administration building finished floor elevation is proposed to be 871 feet msl. Based on this elevation, the building will require as much as 7 feet of fill to achieve finished grades.

Borings B-1 and B-2 were performed in the building footprint. The residual soils encountered in these borings consisted primarily of sandy silts and silty sands with minimal to abundant amounts of mica. Standard penetration test (SPT) resistances in these soils ranged from 8 to 66 blows per foot (bpf).

Partially Weathered Rock (PWR) was encountered at depths in excess of 40 feet below the existing grades (43 feet and 44.5 feet, respectively). PWR in this area is typically defined as any residual material having a SPT N-value of 100 bpf or greater. The borings were terminated at the planned depths of 60 feet in the partially weathered rock.

It should be noted that in this area it is not uncommon for rock depths to vary over short distances, and therefore PWR and/or rock may be encountered at higher (or deeper) elevations.

2.3.3.2 Chemical Buildings

The chemical building finished floor elevation is proposed to be 878 feet msl. Based this elevation, the building will require approximately 2 feet of cut and as much as 7 feet of fill to achieve finished grade.

Boring B-8 was performed in the building area. The residual soils encountered in the boring consisted primarily of sandy silts and silty sands with minimal to abundant amounts of mica. Standard penetration test (SPT) resistances in these soils ranged from 13 to 23 blows per foot (bpf).

Partially Weathered Rock (PWR) was encountered at approximate elevation 842 feet msl. PWR in this area is typically defined as any residual material having a SPT N-value of 100 bpf or greater. The boring encountered materials causing auger refusal at a depth of 55 feet (elevation 820 feet msl) below the existing ground surface.

2.3.3.3 Preliminary Treatment

The preliminary treatment structure bottom elevation is proposed to be approximately 870 feet msl. Based on this elevation, the bottom of the preliminary treatment structure will require as much as 5 feet of cut/fill to achieve finished grades.

Borings B-3 and B-4 were performed in the preliminary treatment area. The residual soils encountered in these borings consisted primarily of sandy silts and clays and silty sands with minimal to abundant amounts of mica. The surficial layer of silts and clays in borings B-3 and B-4 extended to depths of 8 feet and 3

feet, respectively. These surficial silts are highly plastic (Unified Soil Classification of CH and MH), having a liquid limit of approximately 58/78 and a plasticity index of 31/26, respectively. Standard penetration test (SPT) resistances in these soils ranged from 8 to 65 blows per foot (bpf).

Partially Weathered Rock (PWR) was encountered in boring B-3 at a depth of 53 feet (elevation 818 feet msl) below the existing grades. PWR in this area is typically defined as any residual material having a SPT N-value of 100 bpf or greater. Borings B-3 and B-4 were terminated at the planned depths of 60 feet and 20 feet, repectively.

2.3.3.4 Primary Clarifiers

The primary clarifiers bottom elevation is proposed to be approximately 865 feet msl. Based on this elevation, the bottom of the primary clarifiers will require as much as 10 feet of cut and 4 feet of fill to achieve finished grades.

Borings B-5, B-6, and B-7 were performed in the are of the primary clarifiers. The residual soils encountered in these borings consisted primarily of sandy silts and silty sands with minimal to abundant amounts of mica. The surficial layer of silts in boring B-6 extended to a depth of 3 feet. These surficial silts are highly plastic (Unified Soil Classification of MH), having a liquid limit of approximately 75 and a plasticity index of 36. Standard penetration test (SPT) resistances in these soils ranged from 9 to 75 blows per foot (bpf).

Partially Weathered Rock (PWR) was encountered in borings B-5 and B-7 at depths of 53 feet and 33 feet (elevations 820 feet and 830 feet msl) below the existing grades, respectively. Boring B-7 encountered materials causing auger refusal at a depth of 37 feet (elevation 826 feet msl) below the existing ground surface. Borings B-5 and B-6 were terminated at planned depths of 60 and 20 feet, respectively.

2.3.3.5 Odor Control Building

The odor control building is designated to have a finished floor elevation of 870 feet msl. Therefore, as much as 12 feet of cut will be required to achieve finished grade.

Borings B-9, B-10 and B-11 were performed in the area of the building. Boring B-11 encountered fill soils consisting of clayey sands and extended to a depth of 3 feet. SPT resistance in these fill soils was 6 bpf.

Beneath the fill soils and at the ground surface in borings B-9 and B-10, residual soils were encountered. These soils consisted primarily of silty sands and sandy silts with minimal to abundant amounts of mica. The surficial layer of silts in boring B-10 and beneath the fill in B-11 extended to depths of 8 feet. These surficial silts are highly plastic (Unified Soil Classification of MH), having a liquid limit of approximately 64 and a plasticity index of 23. SPT resistances in these upper soils ranged from 13 to 25 bpf.

Partially Weathered Rock (PWR) was encountered in boring B-10 at a depth of 47 feet (elevation 834 feet msl) below the existing grades. The borings were terminated at planned depths of 20 and 60 feet.

2.3.3.6 Aeration Basins

The aeration basin bottom elevation is proposed to be approximately 850 ft msl, and as much as 30 feet of cut and 5 feet of fill will be required to achieve finished grade.

Borings B-12 through B-18 were performed in the area of the basins. Borings B-12, B-15, B-16, and B-18 encountered fill and possible fill soils consisting of clayey sands, sandy clays and silts and extended to depths of 2.5 to 3 feet. SPT resistances in these fill soils ranged from 4 to 11 bpf. The fill soils in boring B-16 contained an abundant amount of wood fragments.

Beneath the fill soils and at the ground surface in borings B-13, B-14, and B-17 residual soils encountered in this boring consisted primarily of silty sands and sandy silts with minimal to abundant amounts of mica. SPT resistances in these soils ranged from 9 to 65 bpf.

Partially Weathered Rock (PWR) was encountered in borings B-13, B-14, B-17, and B-18 at depths ranging from 37 to 53 feet (elevations of 823 feet to 832 feet msl) below the existing grades. The borings were terminated at planned depths of 20 and 60 feet.

2.3.3.7 Splitter Box

The splitter box bottom elevation is proposed to be approximately 860 ft msl, with as much as 5 feet of cut/fill required to achieve finished grade.

Boring B-12 was performed in the area of the box. The boring encountered possible fill soils (sandy clays) and extended to a depth of 3 feet. SPT resistance in these fill soils was 6 bpf.

Beneath the fill soils, residual soils encountered in this boring consisted primarily of silty sands and sandy silts with minimal to abundant amounts of mica. SPT resistances in these soils ranged from 9 to 22 bpf. The boring was terminated at the planned depth of 20 feet.

2.3.3.8 Final Clarifiers

The final clarifiers bottom elevation is proposed to be approximately 850 feet msl. Based on this elevation, the bottom of the final clarifiers will require as much as 30 feet of cut and 7 feet of fill to achieve finished grades.

Borings B-19, B-20, B-21, B-23, B-24, and B-25 were performed in the preliminary treatment area. Borings B-19, B-20, and B-23 encountered fill soils to a depth of 3 feet. The fill soils generally consisted of clayey sands, sandy silts and clays with SPT resistances ranging from 7 to 15 bpf. The fill soils in boring B-23 contained wood fragments.

Beneath the fill soils and at the ground surface in the remaining borings residual soils encountered consisting primarily of sandy silts and clays and silty sands with minimal to abundant amounts of mica. The surficial layer of clay in boring B-25 extended to a depth of 3 feet. The surficial clays are highly plastic (Unified Soil Classification of CH), having a liquid limit of 60 and a plasticity index of 31. Standard penetration test (SPT) resistances in these soils ranged from 7 to 64 blows per foot (bpf).

Partially Weathered Rock (PWR) was encountered in borings B-19, B-20, B-24 and B-25 at depths ranging from 8 to 52 feet (elevations of 826 feet to 856 feet msl) below the existing grades.

Auger refusal was encountered in borings B-19, B-20 and B-24 at depth of 12 feet (elevation 840 feet msl), 53 feet (elevation 817 feet msl), and 48 feet (elevation 820 feet msl), respectively. The remaining borings were terminated at the planned depths of 20 to 60 feet.

It should be noted that in this area it is not uncommon for rock depths to vary over short distances, and therefore PWR and/or rock may be encountered at higher (or deeper) elevations. Difficult excavation should be anticipated in the area of borings B-20 and B-24. Excavation recommendations will be addressed later in this report.

2.3.3.9 ML Split Box

The ML split box bottom elevation is proposed to be 855 feet msl. Based on this elevation, the box will require approximately 15 feet of cut to achieve finished grade.

Boring B-22 was performed in the box area. The residual soils encountered in the boring consisted primarily of sand silts and silty sands with minimal to abundant amounts of mica. Standard penetration test (SPT) resistances in these soils ranged from 7 to 35 blows per foot (bpf). The boring was terminated at the planned depth of 25 feet.

2.3.3.10Future Filters/Disinfection

The future filter and disinfection structures bottom elevation is assumed to be 846 feet msl. Based on this elevation, the structures will require approximately 15 feet of cut and as much as 6 feet of fill to achieve finished grade.

Borings B-26 and B-27 were performed in the area of these structures. Boring B-26 encountered fill soils consisting of silty sands to a depth of 3 feet. SPT resistance in these soils were 7 bpf. The fill soils contained topsoil.

Beneath the fill soils in B-26 and at the ground surface in boring B-27, residual soils were encountered in the borings consisting primarily of sandy silts and silty sands with minimal to abundant amounts of mica. Standard penetration test (SPT) resistances in these soils ranged from 7 to 25 blows per foot (bpf). The borings were terminated at the planned depth of 20 feet.

2.3.3.11 Water Pump Structures

Borings RL-1 and RL-2 were performed at the RL Jackson plant. The raw sewage pump station (boring RL-1) and transfer pump station (boring RL-2) bottom elevations are approximately 771 feet and 760 feet msl, respectively. Based on these finished grades, the sewage pump station will have 27 feet of cut and the transfer pump station will require approximately 32 feet of cut to achieve finished grade.

Borings RL-1 and RL-2 were performed in the area of these structures. The borings encountered fill soils consisting of silty sands and sandy silts to a depth of 3 feet. SPT resistance in these soils ranged from 8 to 9 bpf.

Beneath the fill soils, residual soils were encountered in the borings consisting primarily of sandy silts and silty sands with minimal to abundant amounts of mica. Beneath the fill in RL-1 and extending to a depth of 6 feet are highly plastic silts (Unified Soil Classification of MH), having a liquid limit of approximately 64 and a plasticity index of 26. Standard penetration test (SPT) resistances in these soils ranged from 6 to 39 blows per foot (bpf). Boring RL-2 encountered materials causing auger refusal at a depth of 36 feet. Boring RL-1 was terminated at the planned depth of 45 feet.

Boring WB-1 was performed at the existing Casey plant for the proposed waste pump station. Bottom elevation is approximately 782 feet msl. Based this elevation, the structure will require approximately 20 feet of cut to achieve finished grade.

Boring WB-1 was performed in the pump station area. The boring encountered fill soils consisting of silty sands with burnt wood fragments to a depth of 4.5 feet. SPT resistance in these soils ranged from 6 to 18 bpf.

Beneath the fill, soils residual soils were encountered in the boring consisting primarily of sandy silts and silty sands with minimal to abundant amounts of mica. Standard penetration test (SPT) resistances in these soils ranged from 16 to 19 blows per foot (bpf). The boring encountered materials causing auger refusal at a depth of 27 feet.

3.0 GEOTECHNICAL CONSIDERATIONS

The existing site topography and variable finished subgrade elevations for the planned facilities will present two primary concerns with regards to design and construction at the water treatment plant site: excavation below the depth of PWR; and the potential for differential settlements beneath individual structures and/or between adjacent structures.

In areas of cut across the project site, shallow foundations may be used for support of many of the planned structures. Even in areas of fill it may be practical to use shallow foundations, depending on loading and settlement tolerances. It is in the areas where grading will result in both fill and cut sections beneath individual structures, or variable cut/fill conditions beneath adjacent and adjoined structures where the decision as to foundation type and achievement of desired performance must be carefully considered.

Settlement will occur even in well compacted soil, rock or soil/rock fills. A portion for the settlement which will occur will be compression of the soil layer on which fill is placed and, to a lesser degree, compression of underlying rock due to the

deeper fill surcharges. These settlements should occur during fill construction, and based on estimated properties of the on-site materials, the major portion of settlement should have occurred at the completion of fill placement.

In addition, the fill will settle as it is constructed due to compaction and surcharge loading with the addition of each fill lift. However, longer term settlement of the fill continues after construction. The magnitude of this settlement and the time frame over which the major portion of it occurs is dependent on several factors including: fill material type (soil or rock), material gradation, material moisture content, relative degree of field compaction achieved, compaction methods utilized, etc.

The geotechnical considerations summarized above should be used in conjunction with recommendations contained in subsequent sections of this report.

3.1 FOUNDATION RECOMMENDATIONS

3.1.1 General

The depth to PWR and the depth of fill required will vary across the site with the given planned finished grades. Some areas will require cuts into PWR, some cuts into soil and others fill above soil in order to achieve planned grade.

Settlement of the foundations and structures will be dependent on numerous factors including foundation type and size, structural loads applied and the subsurface conditions beneath the foundation bearing level, including the depth of fill in which the foundation is constructed. Specific structural loading information has not been provided; however, we have been given generalized structural information such as tank sizes, water depths, etc. The following paragraphs contain foundation recommendations for each building or plant component based upon information available at this time.

3.1.2 Administration, Chemical, and Odor Control Buildings

We understand that all of these buildings will be of masonry construction. We have assumed the bulk chemical building will contain plastic tanks having diameters on the order of 12 feet in diameter, with side water depths on the order of 15 to 20 feet. The specific gravity of the stored materials will be 2. Light to moderate loads are expected for these areas.

Based on planned finish grades, exposed soils at the finish subgrade and/or foundation bearing level will likely be stiff (fine-grained) or medium dense to

dense (coarse-grained) residual soils, or newly placed, properly compacted fill. Therefore, these buildings and their components may be supported on soil bearing footings. The footings should be sized for a net allowable bearing pressure of 3 ksf. Some highly plastic clays/silts (CH/MH) were encountered in this area. If highly plastic clays are present at the finish subgrade and/or foundation bearing elevation, they should be undercut to a depth of 2 feet below finish or bearing grade, and replaced with properly compacted fill.

Anticipated settlements are on the order of 1 inch or less, with differential settlements of about ½ inch or less.

3.1.3 Preliminary Treatment

We understand the preliminary treatment structure will have water depths on the order of 10 feet. Plans are to place one side of the structure in approximately 5 feet of cut and ant the other side on 5 feet of fill.

The expected soils at this level are medium dense silty sands or sandy silts. Therefore, these buildings and their components may be supported on soil bearing footings. The footings should be sized for a net allowable bearing pressure of 3 ksf. Some highly plastic silts (MH) were encountered in this area. If highly plastic soils are present at the finish subgrade and/or foundation bearing elevation, they should be undercut to a depth of 2 feet below finish or bearing grade, and replaced with properly compacted fill.

Anticipated settlements are on the order of 1 inch or less, with differential settlements of about ½ inch or less.

3.1.4 Splitter Box and ML Split Box

We understand the splitter box and ML split box will have water depths on the order of 23 feet and 10 feet, respectively. The splitter box will be a cut/fill balance of as much as 5 feet. The ML Split box will have 15 feet of cut to achieve finished grades.

Based on planned grades and the findings of our borings (specifically B-12 and B-22), we anticipate these structures to be supported on medium dense silty sands or on newly compacted fill soils. Therefore, shallow foundations can be used for these structures. The footings should be sized for a net allowable bearing pressure of 3 ksf.

Anticipated settlements are on the order of 1 inch or less, with differential settlements of about ½ inch or less.

3.1.5 Aeration Basins

We understand the aeration basins will have water depths on the order of 20 feet. Plans are to place one side of the structure in approximately 5 feet of fill and the other in 30 feet of cut.

The expected soils at this level are medium dense silty sands or sandy silts. Therefore, these buildings and their components may be supported on soil bearing footings. The footings should be sized for a net allowable bearing pressure of 3 ksf. Some highly plastic silts (MH) were encountered in this area. If highly plastic soils are present at the finish subgrade and/or foundation bearing elevation, they should be undercut to a depth of 2 feet below finish or bearing grade, and replaced with properly compacted fill.

Anticipated settlements are on the order of 1 inch or less, with differential settlements of about ½ inch or less.

3.1.6 Final Clarifiers

We understand the final clarifiers will have water depths on the order of 15 feet. Plans are to have one portion of the basins in as much as 30 feet of cut and the other side in as much as 7 feet of fill.

Based on planned grades and the findings of our borings (specifically B-20 and B-24), we anticipate that partially weathered rock will be present at or just below finish grade and/or foundation bearing level. Therefore, shallow foundations can be used for these structures.

If PWR and/or rock is present at finish subgrade level, an allowable bearing pressure of as much as 6 ksf can be used to size foundations. Settlements of foundations bearing in this harder material will be nominal. Therefore, there does exist the possibility of differential settlements greater than ½ inch between this area and adjoining areas. However, we anticipate that the differential settlements will be less than 1 inch.

3.1.7 Future Filters/Disinfection

Again, specific structural information was not provided for these components. However, as much as 15 feet of cut and 6 feet of fill is anticipated to achieve desired finish grade. The expected soils at this level are medium dense silty sands or sandy silts. Therefore, these buildings and their components may be

supported on soil bearing footings. The footings should be sized for a net allowable bearing pressure of 3 ksf.

Anticipated settlements are on the order of 1 inch or less, with differential settlements of about ½ inch or less.

3.1.8 RL Jackson Pump Station

We understand the RL Jackson pump stations will have 27 feet of cut for the sewage pump station and the transfer pump station will have as much as 32 feet of cut to achieve finished grades.

Based on planned finish grades for the raw sewage pump station, exposed soils at the foundation bearing level will likely be stiff (fine-grained) or medium dense to dense (coarse-grained) residual soils. Therefore, the pump station may be supported on soil bearing footings. The footings should be sized for a net allowable bearing pressure of 3 ksf.

Anticipated settlements are on the order of 1 inch or less, with differential settlements of about ½ inch or less.

Based on planned grades and the findings of our borings for the transfer pump station, we anticipate that partially weathered rock will be present at finish grade and/or foundation bearing level. Therefore, shallow foundations can be used for this structure.

If PWR and/or rock is present at finish subgrade level, an allowable bearing pressure of as much as 6 ksf can be used to size foundations. Settlements of foundations bearing in this harder material will be nominal. Therefore, there does exist the possibility of differential settlements greater than ½ inch between this area and adjoining areas. However, we anticipate that the differential settlements will be less than 1 inch.

3.1.9 Casey Pump Station

We understand the Casey pump station will have 20 feet of cut for the pump station to achieve finished grades.

Based on planned grades and the findings of our borings for the transfer pump station, we anticipate that partially weathered rock will be present at finish grade and/or foundation bearing level. Therefore, shallow foundations can be used for this structure.

If PWR and/or rock is present at finish subgrade level, an allowable bearing pressure of as much as 6 ksf can be used to size foundations. Settlements of foundations bearing in this harder material will be nominal. Therefore, there does exist the possibility of differential settlements greater than ½ inch between this area and adjoining areas. However, we anticipate that the differential settlements will be less than 1 inch.

3.1.10 General Foundation Design and Construction Considerations

We recommend that the minimum widths for individual column and continuous wall footings be 24 and 16 inches, respectively. The minimum widths are recommended to provide a margin of safety against localized shear failure of the foundation soils.

All exterior footings should be founded at least 18 inches below finished exterior grade to protect against frost heave and to provide protective embedment. Interior footings may be founded at nominal depths unless the completed foundation subgrade will be exposed to freezing weather or to severe evaporation during construction.

Several borings indicated the presence of highly plastic soils at the ground surface. These highly plastic soils should not be present within about 5 feet of the finished subgrades or foundation bearing surface elevations in the areas of buildings, parking, water tanks or any other structural areas. If encountered during foundation excavation, the highly plastic soils should be removed to depth 3 feet or greater below the foundation bearing surface and replaced will clean, properly compacted structural fill or No. 57 stone.

Exposure to the environment may weaken the soils at the footing bearing level if the foundation excavations remain open for too long. Therefore, foundation concrete should be placed the same day that excavations are dug. If the bearing soils are softened by surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom immediately prior to placement of concrete. If the excavation must remain open overnight or if rainfall becomes imminent while bearing soils are exposed, we recommend that a 2 to 4-inch thick "mud-mat" of "lean" (2000 psi) concrete be placed on the bearing soils before the placement of reinforcing steel.

We recommend that the geotechnical engineer observe the footing excavations immediately after excavation and prior to placing reinforcing steel and concrete. He should compare the soils exposed with those encountered in the soil test borings and document the results. Any significant differences should be brought to the attention of the owner's representative along with appropriate

recommendations. The foundation bearing area should be level or suitably benched. It should also be free of loose soil, ponded water and debris prior to the observation.

3.2 SITEWORK CONSIDERATIONS

3.2.1 Site Preparation

Initial site preparation procedures should include removal of trees, underbrush, topsoil, and any other unsuitable materials from the construction area. Topsoil may be stockpiled for later use in landscape areas, or may be removed from the site. Under no circumstances should topsoil or other organic-laden soils be placed as fill beneath or within 5 horizontal feet of building, parking, or other "structural" areas.

Areas of the site that will receive new fill should be proofrolled before new fill is placed. Areas of the site requiring mass excavation should be proofrolled after subgrade elevations have been achieved (if PWR or rock is exposed at the finish subgrade elevation in areas of cut, proofrolling will likely not be necessary). Proofrolling should be performed using a loaded dump truck, or similar rubber-tired equipment, weighing at least 15 tons. A representative of PSI should observe proofrolling operations. Soils observed to pump or deflect will require compaction, removal, or stabilization prior to continuing site grading.

Soft surficial soils may be encountered, as indicated by several test borings and our visual observations. Initial sitework and grading in these areas should be performed using light, tracked equipment to reduce mobility problems. Proofrolling of these areas may not be feasible. Stabilization and/or undercutting may be required prior to placing new fill in these areas. Stabilization methods should be based on the actual conditions encountered, but will typically include the placement of soil and geotextiles, crushed stone materials, or a combination thereof over the soft soils. Appropriate methods will be directly influenced by weather conditions at the time of sitework and the effect of dewatering measures.

During site preparation, other trash pits, burn pits etc. may be encountered. It is not uncommon for such buried material to occur outside the boring locations. Any such material encountered during sitework should be excavated and removed from the site.

3.2.2 Compacted Fill Recommendations

3.2.2.1 Soil Fill

Soil materials selected for use as structural fill should not contain more than 3 percent by weight of organic matter, waste construction debris, or other deleterious materials. Fill materials should have a Proctor maximum dry density greater than 90 pounds per square foot (pcf), an Atterberg Liquid Limit less than 50, a Plasticity Index less than 30, and a maximum particle size of 3 inches or less (particle size exclusive of "rock fill", as discussed in a later section).

The moisture content of fill soils at the time of placement and compaction should generally be within plus or minus 3 percentage points of their optimum moisture content. More stringent moisture limits may be necessary with certain soil types.

Fill material in "mass" fill areas should be placed in individual lifts of 8 inches or less loose measurement and compacted using a vibratory sheepsfoot or smooth-drum roller (appropriate types of compaction equipment will vary with soil type.) Within small excavations such as in utility trenches, around manholes, or behind retaining walls, we recommend the use of smaller, hand or remote-guided equipment. A loose lift thickness of 4 inches is recommended when using such equipment.

When placing structural fill against existing slopes, we recommend that the fill be "benched in" to the existing side slopes to provide a more stable cut-fill interface. Furthermore, we recommend that new fill slopes be constructed beyond their horizontal limits and then be excavated back to their final configuration, to obtain better compaction at the face of the slope and to reduce the potential for problems associated with erosion.

We recommend that structural fill be compacted to a minimum of 98 percent of the standard Proctor maximum dry density (ASTM D-698). A representative of PSI should observe fill placement operations and perform density tests concurrently to document that the specified compaction is being achieved.

3.2.2.2 Reuse of Excavated Soils as Structural Fill

Most of the residual soils at the site will, in our opinion, be suitable for reuse as structural fill materials. The exception of the highly plastic soil encountered at the ground surface in several of the borings. These highly plastic soils should not be used as fill in structural areas, including beneath buildings, pavements, or in reservoir slopes. Routine adjustment of moisture content will generally be

necessary to allow compaction in accordance with project specifications. The planned fill soils should be evaluated to see that they meet the recommended material properties.

Partially weathered rock materials will be suitable for reuse as structural fill provided they can be broken down into a reasonably well-graded material that can be compacted in accordance with project specifications. A representative of PSI should be present during excavation of partially weathered rock to determine its suitability for reuse as structural fill.

3.2.3 Excavation Characteristics of On-site Soils

The results of our test borings, in conjunction with our understanding of proposed grading plans indicates that the soils encountered are excavatable using standard excavation techniques. However, borings B-20 and B-24 encountered partially weathered rock above finished grades, so in that area difficult excavation should be anticipated.

Based on our field exploration, most residual soils should generally be excavatable using conventional excavation equipment, such as scrapers, front end loaders, bulldozers, etc. However, soils having SPT resistances greater than 50 blows per foot may require pre-loosening with heavy equipment in order to achieve excavation. Ripping should generally be performed using a Caterpillar D-8 or equivalent large bulldozer equipped with a single-tooth ripper blade. Trackhoes or pneumatic jackhammers may need to be employed in small area excavations, such as in foundation excavations or in utility trenches. Contingency funds for difficult excavation should be set aside for these areas.

For the purposes of this report, we recommend that subsurface materials causing auger refusal be considered unrippable rock. Based on the test borings, lenses of rock or mass rock should not be encountered above planned finished elevations. However, in this area the depth of partially weathered rock and rock can vary over short horizontal distances.

3.3 Excavations

3.3.1 Federal Temporary Excavation Regulations

In Federal Register Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, Part 1926, Subpart P." This document was issued to better insure the safety of workmen entering trenches or excavations. It is mandated by this federal regulation that

all excavations, whether they be utility trenches, basement excavations, or footing excavations, be constructed in accordance with the revised OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in these local, state, and federal safety regulations.

We are providing this information solely as a service to our client. PSI is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

3.3.2 Cut Slopes

If the design of cut slopes for residual soils, partially weathered rock and intact rock is done with a complete stability analysis, it would require extensive exploration, special undisturbed sampling, shear strength testing, and stability calculations. Since the existing area above proposed excavations is undeveloped, we have recommended slopes based on precedent which should reflect the influence of weathering that has most likely occurred. Inherent with this slope design is the recognition and acceptance of potential slope failures because of geologic structures that could not be discovered and sampled by a limited exploration program.

Because of the irregularity of the interfaces between rock and weathered rock, and between weathered rock and partially weathered rock, it may be convenient to design all cut slopes for the angle suitable for a partially weathered rock slope. Field flexibility should exist to flatten any apparently distressed slopes or steepen a slope when extensive, relatively sound rock is encountered.

Slopes of 2H:1V or flatter should be used in stiff or medium-dense residual soils. In partially weathered rock, slopes of 1H:1V may be used. In relatively unweathered rock, rock slopes as steep as 0.25H:1V may be utilized provided the rock bedding or cross jointing does not dip steeply into the cut.

We recommend that benches be incorporated into any rock cuts 1(H):1(V) or steeper and over about 40 feet in height. Benches should be placed at approximately the mid-height of the rock portion of the cut and at the transition from soil to rock slopes. An equivalent bench width should also be provided at the base of the cut between the toe of the cut and edge of any pavement or structures. Minimum bench widths should be on the order of 20 feet.

Cut faces should be protected from run-off by means of diversion ditches at the top of the slope.

3.4 ADDITIONAL CONSIDERATIONS

3.4.1 Floor Slabs

Based on the results of the test borings, the laboratory testing, and our experience with the local soils, we expect the subgrade soils in the building area will consist primarily of silty sands. Based on correlation to published data, and our analysis, the soils at the site should exhibit a modulus of subgrade reaction of 150 pci, (130 TCF) assuming the upper 12 inches of subgrade soils are uniformly compacted to at least 98 percent of the standard Proctor maximum dry density. If the highly plastic soils are exposed at building (or tank) subgrade, they should be undercut and replaced with properly compacted fill.

We recommend that all soil supported grade slabs or tank/basin bottoms, even if supported on partially weathered rock or rock, be underlain by a minimum of 4 inches of graded aggregate base or No. 57 stone to provide a more uniform bearing surface and to reduce potential stress concentrations.

We caution that the slab subgrades be protected from inclement weather and construction traffic. Such activities can degrade the subgrade to a much lower subgrade modulus value. The contractor must take precautions to protect the completed subgrade prior to concrete placement. We recommend that subgrades be evaluated by a representative of PSI immediately prior to beginning final slab construction. If low consistency soils are encountered which cannot be adequately densified in place, such soils should be removed and replaced with well-compacted fill material or with well-compacted crushed stone materials.

3.4.2 Below Grade Walls

Below grade walls restrained at the top should be designed for "at rest" earth pressure conditions. Retaining walls that are free to deflect should be designed for "active" earth pressure conditions. The "passive" earth pressure state should be used for soils supporting the retaining structure, such as toe backfill.

The table below presents recommended values of earth pressure coefficients based on our experience with soils in the area. Equivalent fluid densities are frequently used for the calculation of lateral earth pressures for the "at-rest" and "active" conditions, and are also provided.

Earth Pressure State	Earth Pressure Coefficient	Equivalent Fluid Density (pcf)
At-Rest	0.53	64
Active	0.36	43
Passive	2.75	--

These design recommendations have assumed that the wall has horizontal backfill and no surcharge loads, using soils with an approximate angle of internal friction of 28 degrees, no cohesion, a total unit weight of 120 pcf, no factor of safety, and a permanent drainage system behind the retaining wall that will allow no development of hydrostatic pressure. For analysis of sliding resistance of the base of the retaining walls, the ultimate coefficient of friction may be taken as 0.4 between concrete and soil.

3.4.3 Seismic Design Considerations

Based on the subsurface conditions encountered at the site, we recommend using the following site coefficients for seismic design based on the Standard Building Code (Revised 1996):

Soil Profile Type	S_1
Site Coefficient, S	1.0
A_v	0.10
A_a	0.10
Seismic Hazard Exposure Group	Group II or III
Seismic Performance Category	B or C (depending upon Hazard Exposure Group)

Based on information obtained from our soil test borings and our review and knowledge of local geology, it is our opinion that the potential for liquefaction of the soils at the site due to earthquake activity is relatively low.

3.4.4 Pavements

Our recommendations pertaining to sections have been based on estimated soil properties and our experience with similar pavements in the general area. Expected laboratory CBR values for the silty sands are on the order of 4 to 6.

We anticipate the need for both standard duty (primarily automobile parking) and heavy duty (entrance drives and truck delivery routes) pavement sections. The recommended minimum pavement sections for standard and heavy duty pavements are presented below. The sections represent minimum thicknesses representative of typical, local construction practices, and as such periodic maintenance should be anticipated. All pavement materials and construction procedures should conform to Georgia DOT and/or appropriate city or county requirements.

Standard Duty Pavement Sections

Material	Thickness
Type "F" Asphaltic Topping Course	1¼ inches
Type "B" Asphaltic Binder Course	1¾ inches
Graded Aggregate Base (GAB)	6 inches

Heavy Duty Pavement Sections

Material	Thickness
Type "F" Asphaltic Topping Course	1½ inches
Type "B" Asphaltic Binder Course	2 inches
Graded Aggregate Base (GAB)	8 inches

The GAB should be compacted to a minimum of 100 percent modified Proctor maximum dry density.

Rigid pavement sections merit consideration for areas to receive relatively highly concentrated sustained loads such as dumpster pads, loading areas and storage areas. The rigid pavement section should be sized to hold the full length and width of the trucks utilizing the space. In addition, this rigid pavement should extend outwards to include the turning areas that would be affected by such trucks during ingress and egress. Based on the subsurface conditions encountered and the PCA design method for rigid pavement design, we recommend a rigid pavement section consisting of a minimum of 6 inches of concrete. The concrete should be underlain by a minimum of 6 inches of GAB. Pavement joints, reinforcing, and details should be designed in accordance with the applicable American Concrete Institute (ACI) standards.

The concrete used for rigid pavements should have a minimum 28 day flexural strength of 500 PSI, a maximum slump of 4 inches, and air entrainment of 4 to 6

percent. The GAB under the concrete pavements should be compacted to a minimum of 100 percent modified Proctor maximum dry density.

All pavements should be sloped a minimum of one percent to provide adequate surface drainage. Water allowed to pond on or adjacent to the pavement could saturate the subgrade and cause premature pavement deterioration.

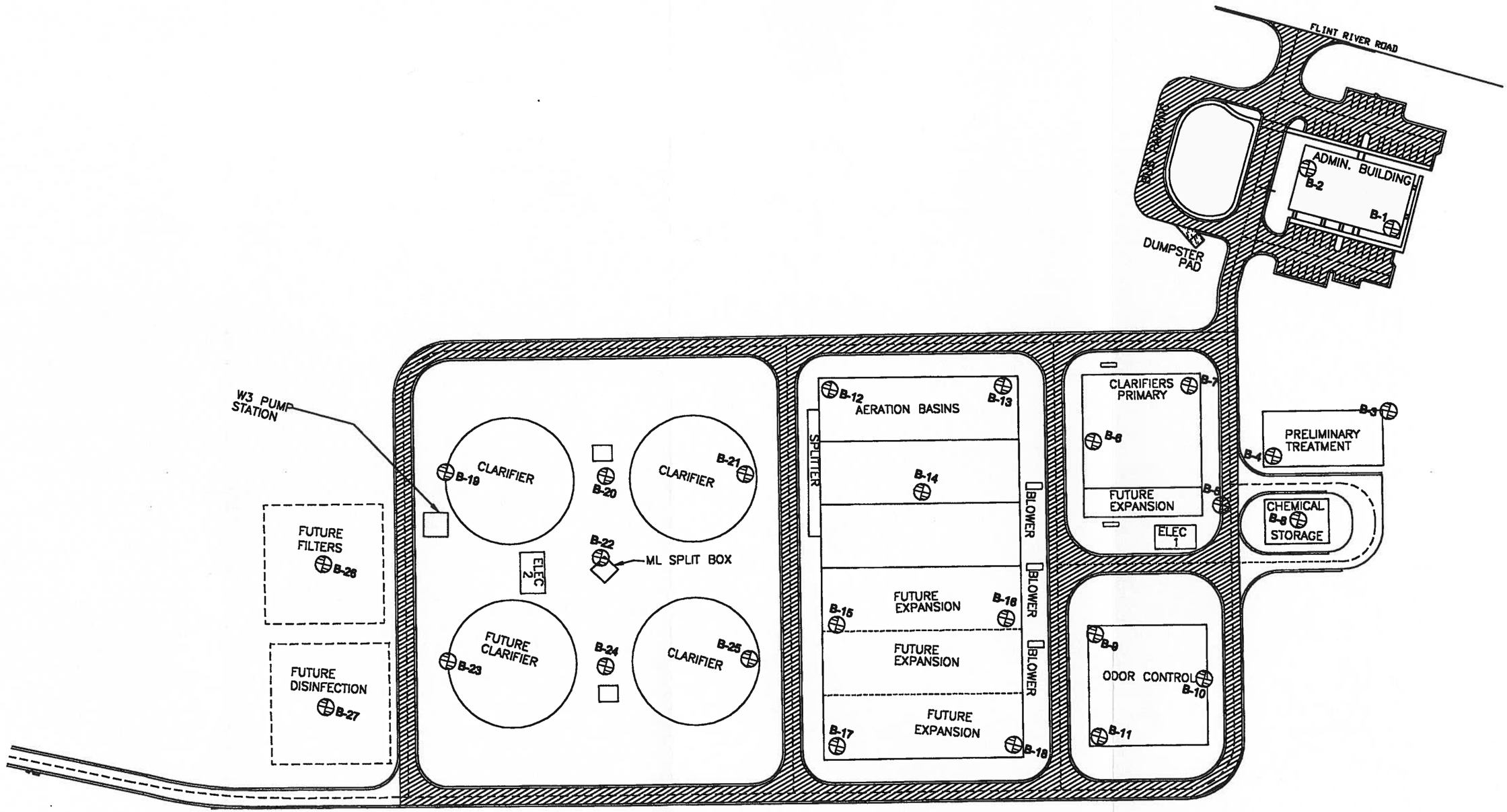
We recommend the pavement subgrade be evaluated by a representative of PSI immediately prior to placing GAB. If low consistency soils are encountered which cannot be adequately compacted in-place, such soils should be removed and replaced with properly compacted soil fill or crushed stone. We note that the subgrade surface should be prepared and/or constructed in accordance with the applicable recommendations previously presented in this report.

4.0 REPORT LIMITATIONS

The recommendations submitted are based on the available soil information obtained by PSI, information and design details furnished by *CH2M HILL* for the proposed project. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, PSI should be notified immediately to determine if changes in the foundation, or other, recommendations are required. If PSI is not retained to perform these functions, PSI can not be responsible for the impact of those conditions on the performance of the project.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

After the plans and specifications are more complete, the geotechnical engineer should be provided the opportunity to review the final design plans and specifications to assess that our engineering recommendations have been properly incorporated into the design documents. At that time, it may be necessary to submit supplementary recommendations. This report has been prepared for the exclusive use of CH2M HILL for the specific application to the proposed WB Casey Water Reclamation Facility on Flint River Road in Clayton County, Georgia.



LEGEND:
⊕ SOIL TEST BORING

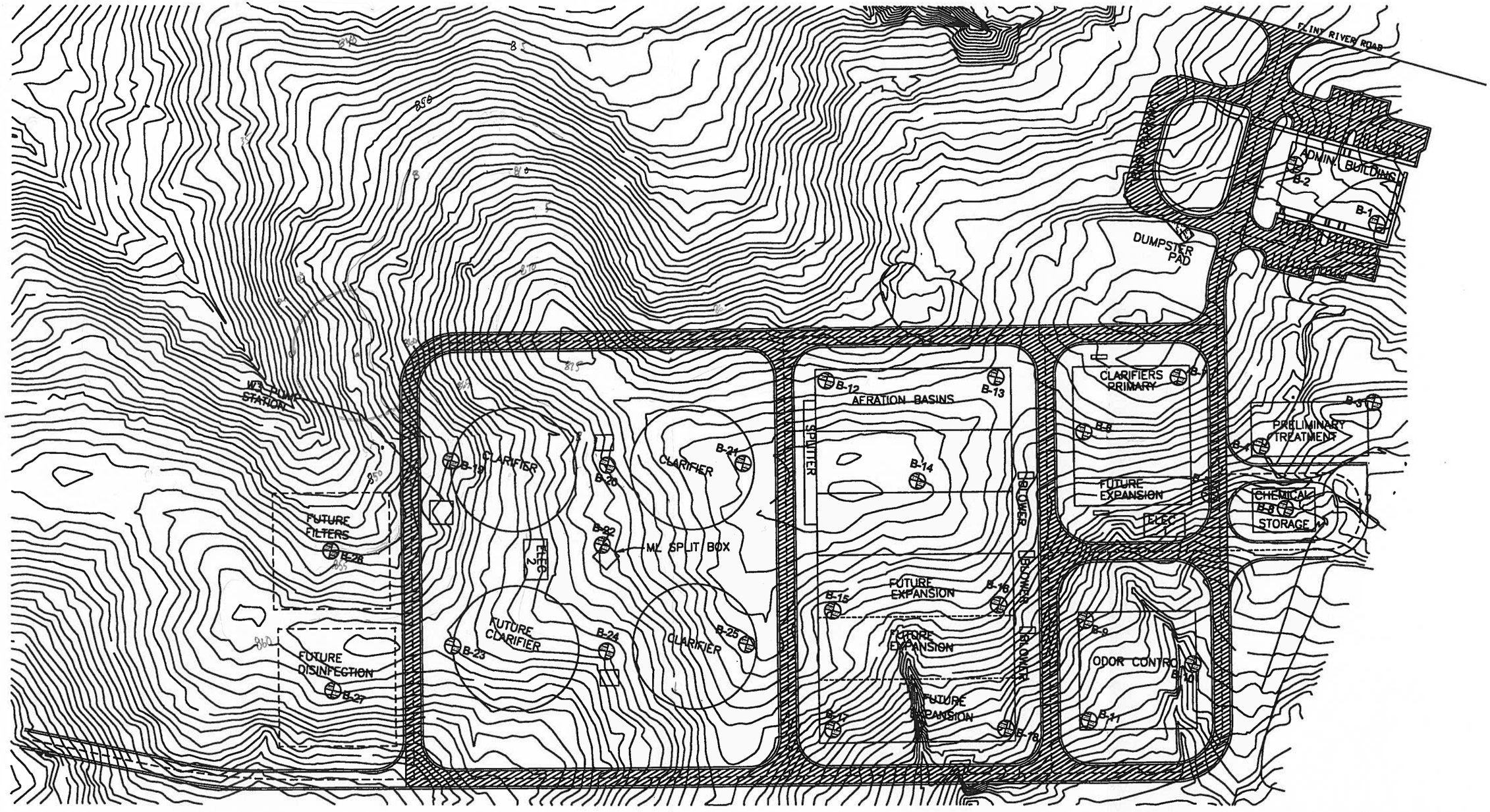
BORING LOCATION PLAN

WB Casey Water Reclamation Facility

Flint River Road
Jonesboro, Georgia

PROFESSIONAL SERVICE INDUSTRIES, INC.
95 CHASTAIN ROAD
KENNESAW, GEORGIA 30144

DRAWN BY:	SCALE:	PROJ. NO.:
B. Ingram	NTS	472-05081
CHECKED BY:	DATE:	DWG. NO.:
R. Curtis	9-26-00	1 OF 1



LEGEND:

⊕ SOIL TEST BORING

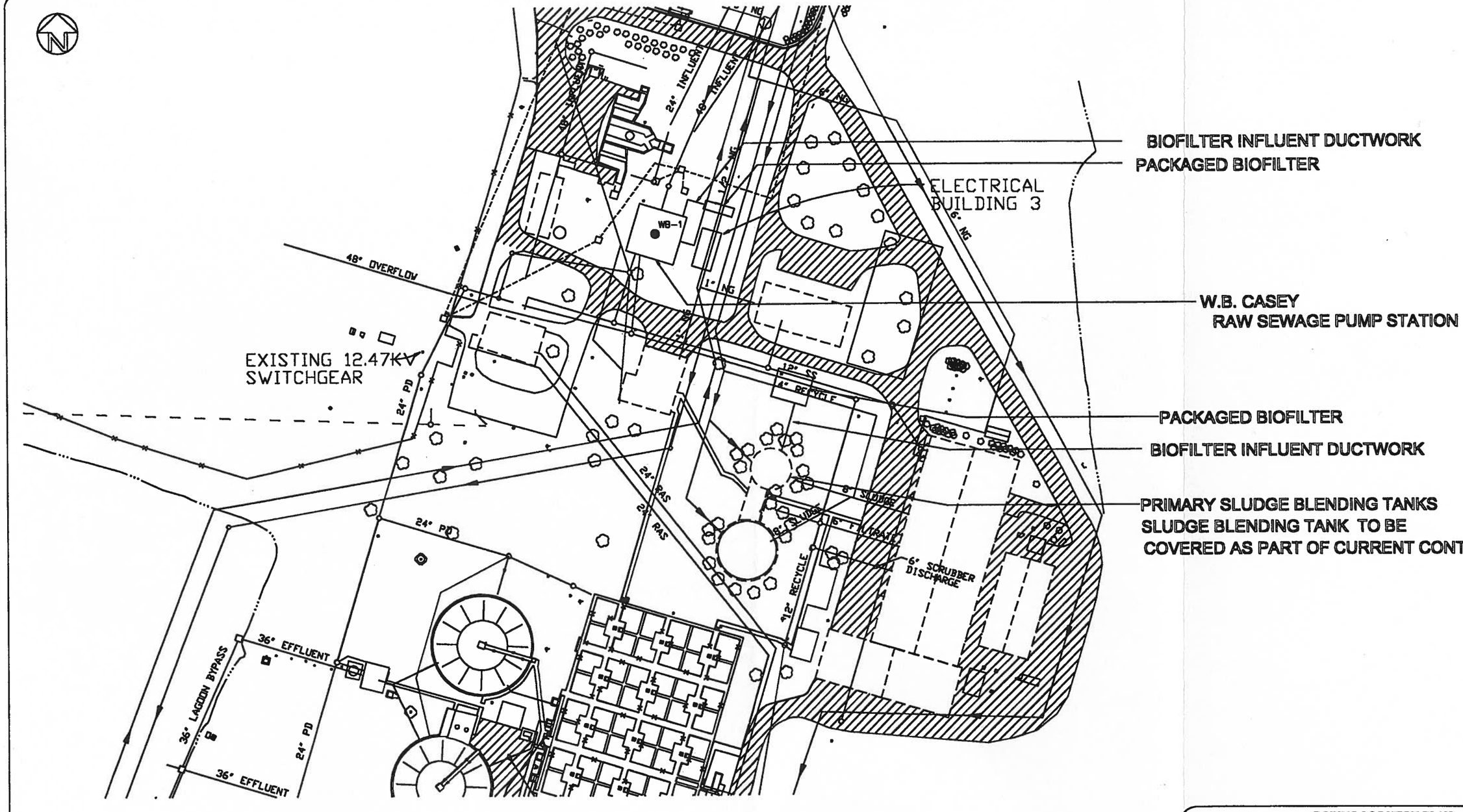
BORING LOCATION PLAN

WB Casey Water Reclamation Facility

Flint River Road
Jonesboro, Georgia

PROFESSIONAL SERVICE INDUSTRIES, INC.
95 CHASTAIN ROAD
KENNESAW, GEORGIA 30144

DRAWN BY:	SCALE:	PROJ. NO.:
B. Ingram	NTS	472-05081
CHECKED BY:	DATE:	DWG. NO.:
R. Curtis	9-26-00	1 OF 3



LEGEND:
● SOIL TEST BORING

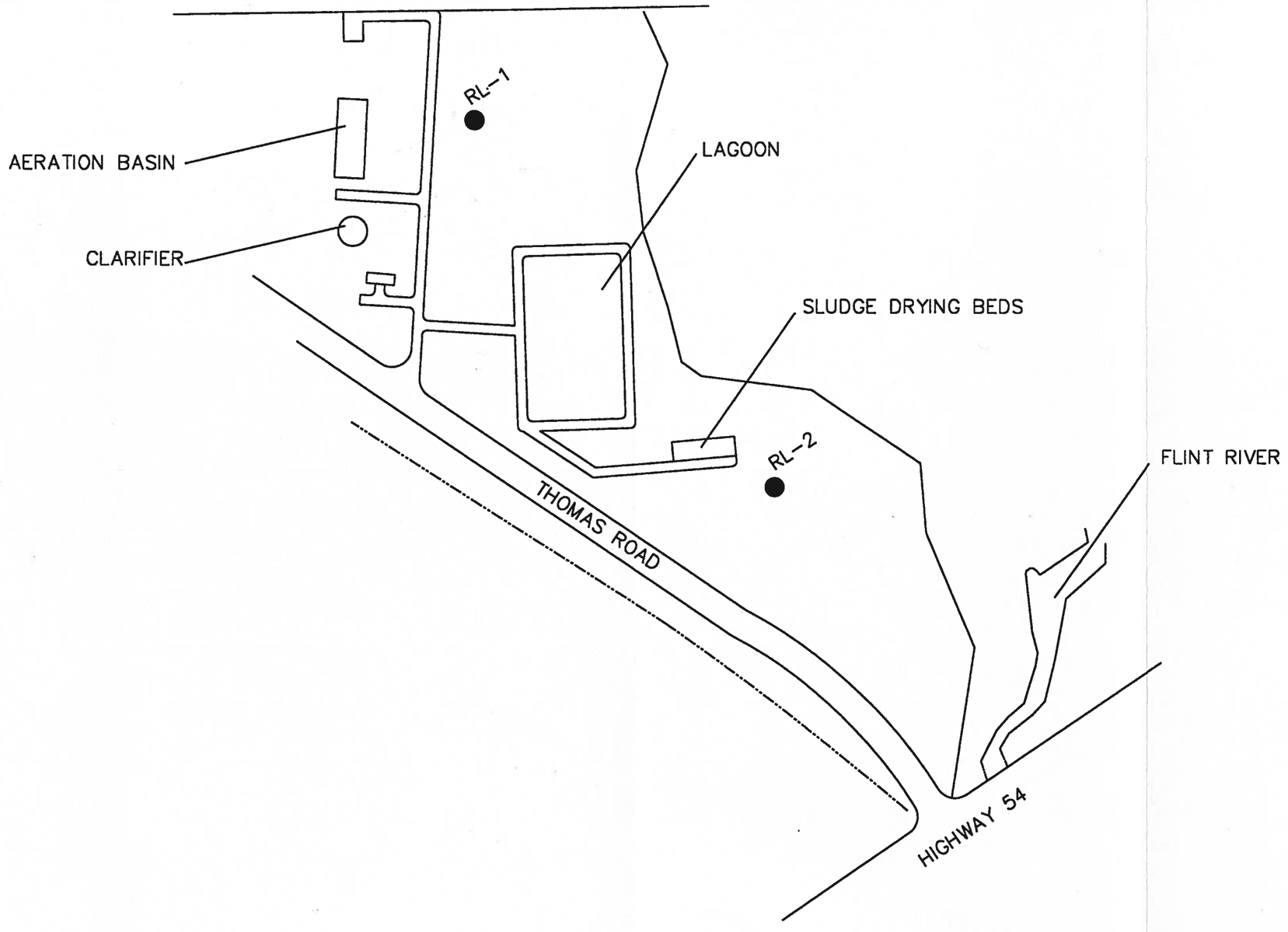
BORING LOCATION PLAN

PROPOSED CASEY PUMP STATION

EXISTING CASEY WATER TREATMENT PLANT
CLAYTON COUNTY, GEORGIA

psi
PROFESSIONAL SERVICE INDUSTRIES, INC.
95 CHASTAIN ROAD
KENNESAW, GEORGIA 30144

DRAWN BY:	SCALE:	PROJ. NO.:
B. INGRAM	1"=200'	472-05081
CHECKED BY:	DATE:	DWG. NO.:
R. CURTIS	10-5-00	2 OF 3

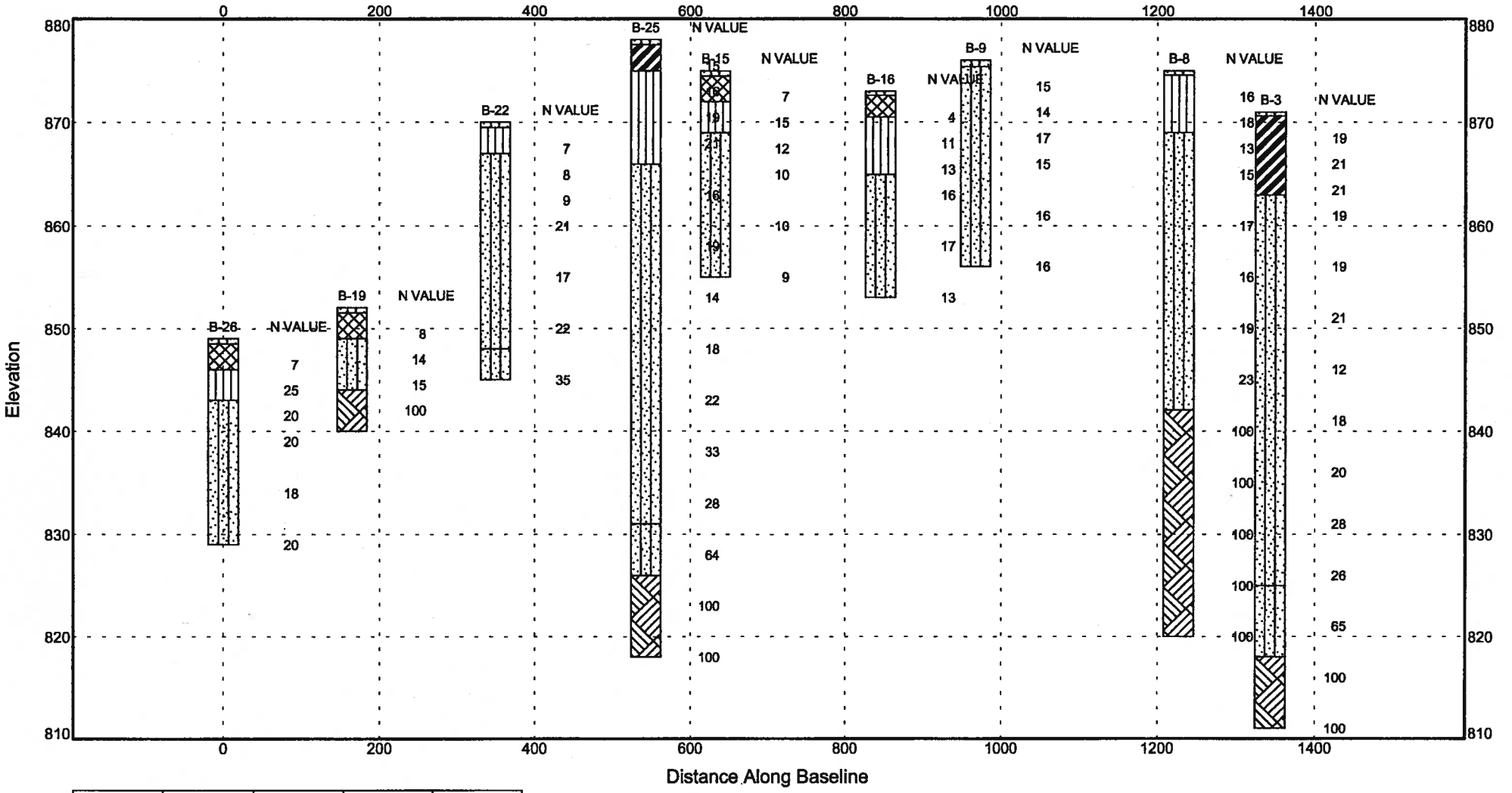


LEGEND:
● SOIL TEST BORING

BORING LOCATION PLAN
RL JACKSON PUMP STATIONS
HWY 54
CLAYTON COUNTY, GEORGIA

PROFESSIONAL SERVICE INDUSTRIES, INC.
95 CHASTAIN ROAD
KENNESAW, GEORGIA 30144

DRAWN BY:	SCALE:	PROJ. NO.:
B. INGRAM	NTS	472-05081
CHECKED BY:	DATE:	DWG. NO.:
R. CURTIS	10-6-00	3 of 3



Borehole	North	East	Elev.	Depth
B-15	-820	-735	875.0	20.0
B-16	-780	-525	873.0	20.0
B-19	-770	-1240	852.0	12.0
B-22	-840	-1025	870.0	25.0
B-25	-900	-805	878.0	60.0
B-26	-940	-1360	849.0	20.0
B-3	-400	-120	871.0	60.0
B-8	-570	-190	875.0	55.0
B-9	-740	-410	876.0	20.0

DISTANCES:

Beginning	0
Ending	1400

VIEWING ANGLES (degrees):

Horizontal	0.0
Vertical	0.0

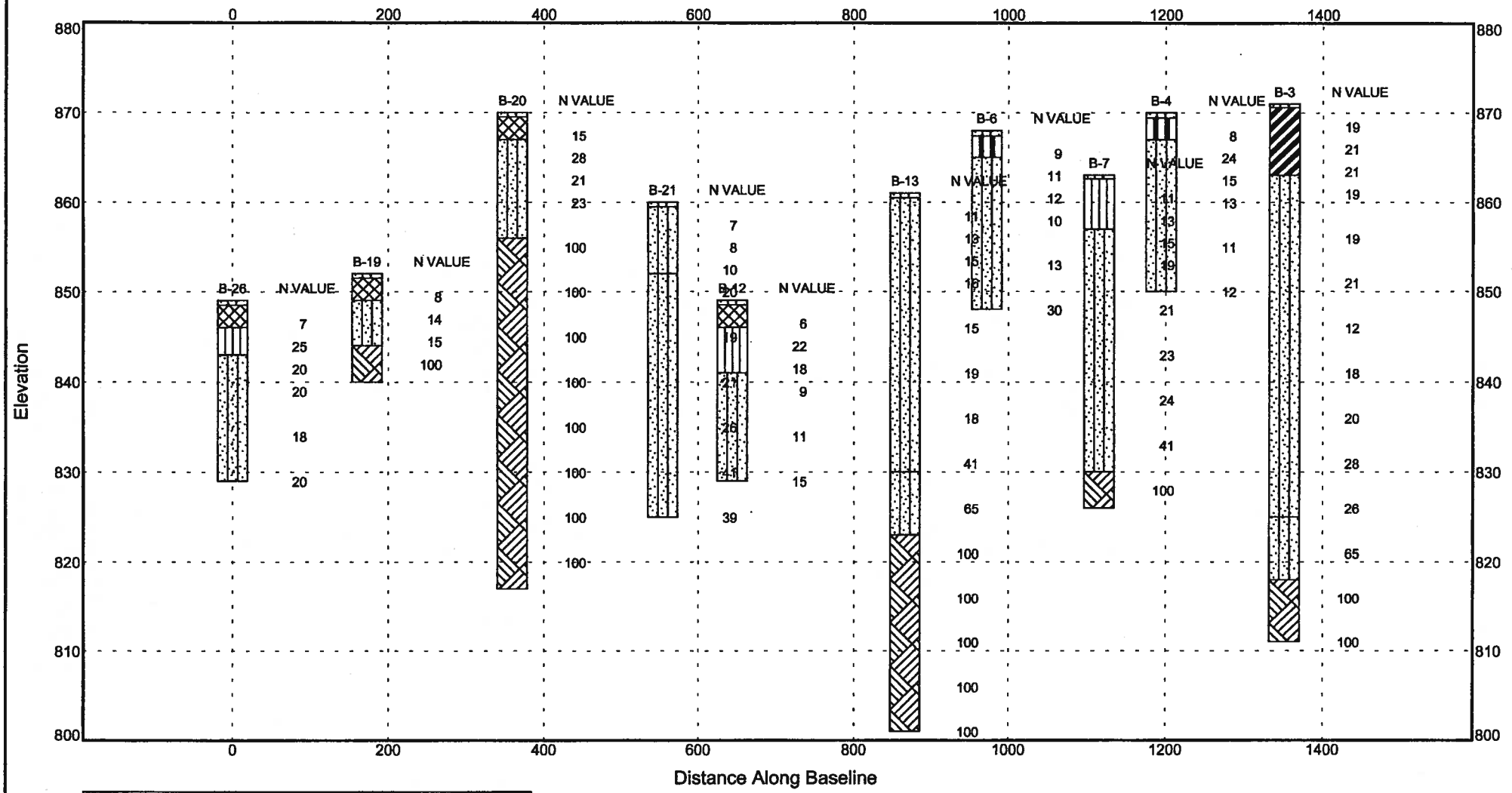
Position	North	East
Left, Front	-949	-1357
Right, Front	-539	-19
Left, Back	-949	-1357
Right, Back	-539	-19

SUBSURFACE FENCE DIAGRAM

WB Casey Water Reclamation Facility

PROJECT #	DATE	PLATE
472-05081	Oct 00	1

FAGWGN01 05081.GPJ FAGWGN01.GDT 10/6/00



Borehole	North	East	Elev.	Depth
B-12	-550	-820	849.0	20.0
B-13	-490	-605	861.0	60.0
B-19	-770	-1240	852.0	12.0
B-20	-720	-1060	870.0	53.0
B-21	-670	-870	860.0	35.0
B-26	-940	-1360	849.0	20.0
B-3	-400	-120	871.0	60.0
B-4	-500	-250	870.0	20.0
B-6	-520	-480	868.0	20.0
B-7	-420	-365	863.0	37.0

DISTANCES:

Beginning	0
Ending	1400

VIEWING ANGLES (degrees):

Horizontal	0.0
Vertical	0.0

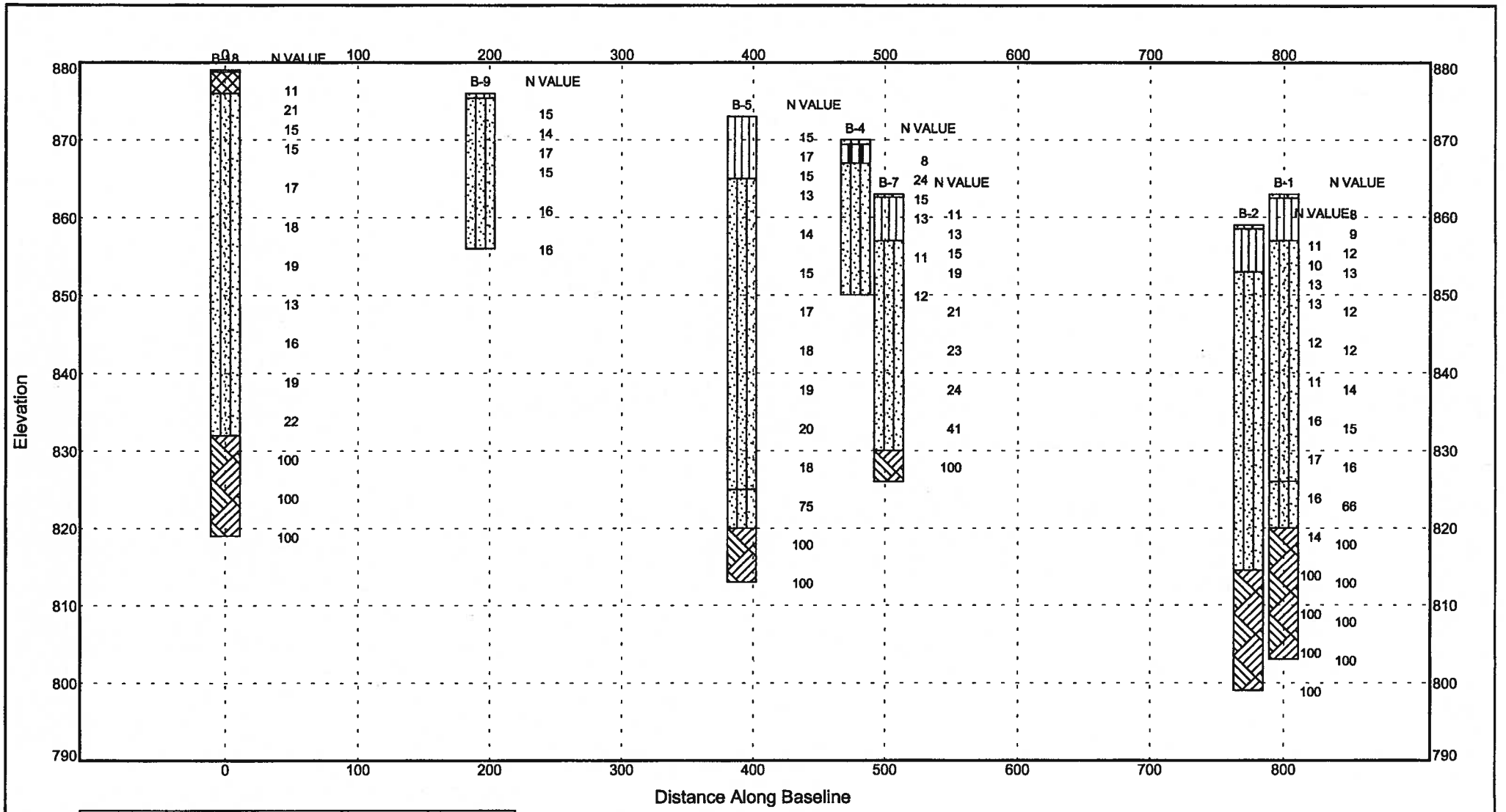
Position	North	East
Left, Front	-857	-1392
Right, Front	-356	-85
Left, Back	-857	-1392
Right, Back	-356	-85

SUBSURFACE FENCE DIAGRAM

WB Casey Water Reclamation Facility

PROJECT #	DATE	PLATE
472-05081	Oct 00	2

FAGWGN01 05081.GPJ FAGWGN01.GDT 10/6/00



Borehole	North	East	Elev.	Depth
B-1	-180	-175	863.0	60.0
B-18	-920	-480	879.0	60.0
B-2	-150	-305	859.0	60.0
B-4	-500	-250	870.0	20.0
B-5	-570	-305	873.0	60.0
B-7	-420	-365	863.0	37.0
B-9	-740	-410	876.0	20.0

DISTANCES:

Beginning	0
Ending	800

VIEWING ANGLES (degrees):

Horizontal	0.0
Vertical	0.0

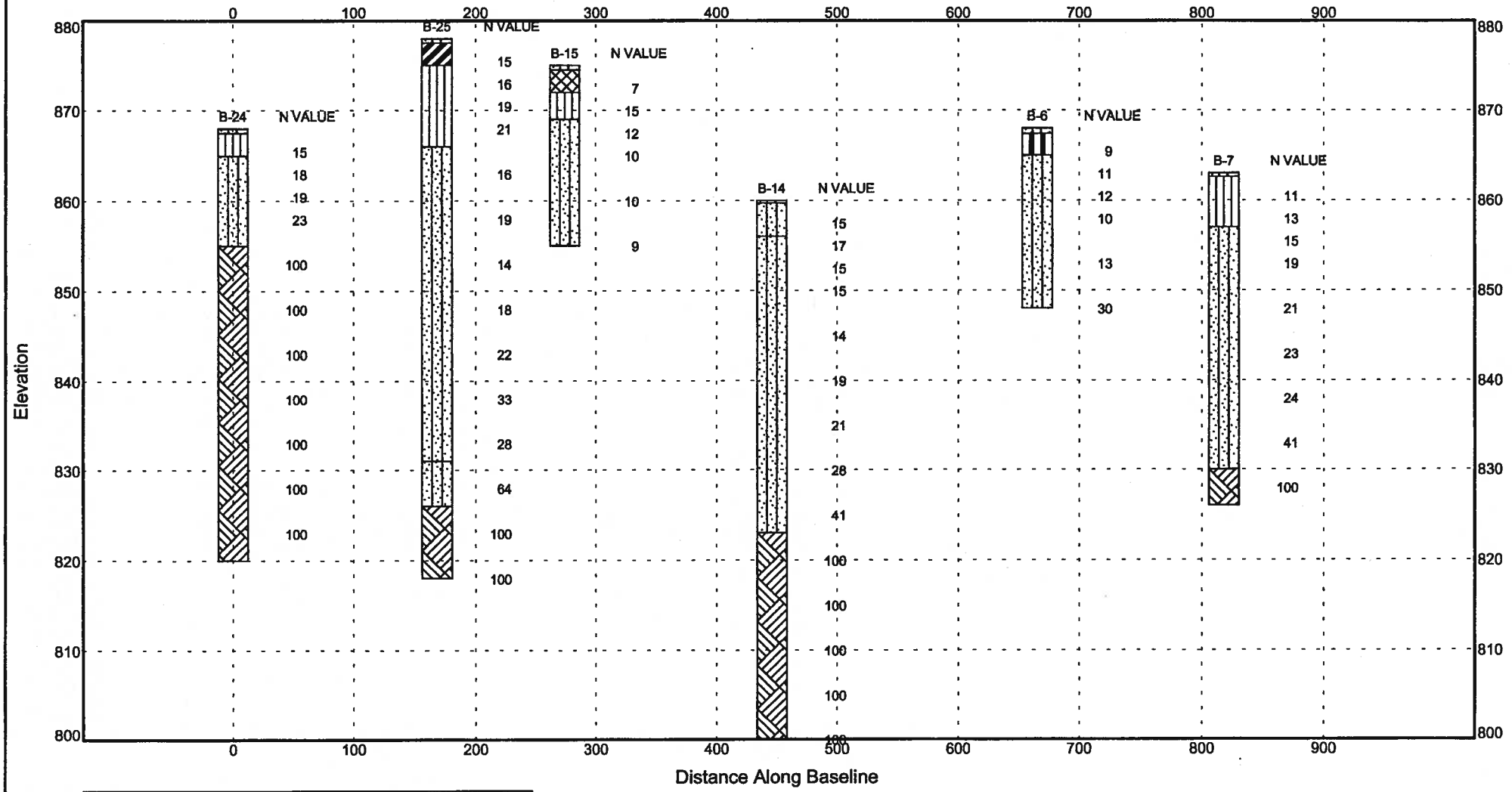
Position	North	East
Left, Front	-905	-512
Right, Front	-177	-182
Left, Back	-905	-512
Right, Back	-177	-182

SUBSURFACE FENCE DIAGRAM

WB Casey Water Reclamation Facility

PROJECT #	DATE	PLATE
472-05081	Oct 00	3

FAGWGN01 05081.GPJ FAGWGN01.GDT 10/6/00



Borehole	North	East	Elev.	Depth
B-14	-660	-650	860.0	60.0
B-15	-820	-735	875.0	20.0
B-24	-960	-980	868.0	48.0
B-25	-900	-805	878.0	60.0
B-6	-520	-480	868.0	20.0
B-7	-420	-365	863.0	37.0

DISTANCES:

Beginning	0
Ending	900

VIEWING ANGLES (degrees):

Horizontal	0.0
Vertical	0.0

Position	North	East
Left, Front	-986	-956
Right, Front	-366	-303
Left, Back	-986	-956
Right, Back	-366	-303

SUBSURFACE FENCE DIAGRAM

WB Casey Water Reclamation Facility

PROJECT #	DATE	PLATE
472-05081	Oct 00	4

FAGWGN01 05081.GPJ FAGWGN01.GDT 10/6/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-1** (1 of 1) | Total Depth **60.0'** | Elev: **863 ±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/11/00** | Completed: **9/11/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows / REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
862.5	0.5	TOPSOIL - 5 inches				
		RESIDUUM: Firm to Stiff, Red-tan, Micaceous, Sandy SILT (ML)	3-3-5			8
			5-5-4			9
857.0	6.0	Medium Dense, Gray, Highly Micaceous, Silty fine to medium SAND (SM)	4-5-7			12
			6-6-7			13
			5-5-7			12
			6-5-7			12
			5-6-8			14
			6-7-8			15
			6-7-9			16
826.0	37.0	Very Dense, Gray, Highly Micaceous to Slightly Micaceous, Silty fine to medium SAND (SM)	31-39-27			66
820.0	43.0	PARTIALLY WEATHERED ROCK: Sampled as Gray, Highly Micaceous, Silty fine to medium SAND (SM)	50/3			100
			50/2			100
			50/2			100
803.0	60.0		50/0			100
		Boring Terminated at 60 feet				
		Groundwater: Time of Drilling - 36 feet After 1 day - Caved at 21				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-2** (1 of 1) | Total Depth **60.0'** | Elev: **859±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/11/00** | Completed: **9/11/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
858.5	0.5	TOPSOIL - 6 inches				
		RESIDUUM: Stiff, Tan, Slightly Micaceous, Sandy SILT (ML)	5-5-6			11
853.0	6.0		4-5-5			10
		Medium Dense, Gray, Highly Micaceous, Silty fine to medium SAND (SM)	6-6-7			13
			6-5-7			13
			6-6-6			12
			5-5-6			11
			7-8-8			16
			8-9-8			17
			7-8-8			16
			6-6-8			14
814.5	44.5	PARTIALLY WEATHERED ROCK sampled as Gray, Highly Micaceous, Silty fine to medium SAND (SM)	12-31-50/4			100
			50/5			100
			50/0			100
799.0	60.0		50/0			100
		Boring Terminated at 60 feet				
		Groundwater: Time of Drilling - 32 feet After 1 day - Caved at 17 feet				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD_05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-3** (1 of 1) | Total Depth **60.0'** | Elev: **871 ±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/12/00** | Completed: **9/12/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
870.6	0.4	TOPSOIL - 4 inches				
		RESIDUUM: Very Stiff, Red-tan, Sandy CLAY (CH) with rock fragments	6-9-10			19
			6-11-10			21
863.0	8.0		10-10-11			21
		Medium Dense, Gray, Highly Micaceous, Silty fine to medium SAND (SM)	8-9-10			19
			9-9-10			19
			10-11-10			21
			6-6-6			12
			6-9-9			18
			9-10-10			20
			7-14-14			28
825.0	46.0		10-11-15			26
		Very Dense, Gray, Highly Micaceous, Silty fine to medium SAND (SM)	20-31-34			65
818.0	53.0					
		PARTIALLY WEATHERED ROCK Sampled as Gray, Highly Micaceous, Silty fine to medium SAND (SM)	50/5			100
811.0	60.0		50/0			100
		Boring Terminated at 60 feet				
		Groundwater: Time of Drilling - 37 feet				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-4** (1 of 1) | Total Depth **20.0'** | Elev: **870±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
869.4	0.6	TOPSOIL - 6 inches				
		RESIDUUM: Firm, Red-tan, Sandy SILT (MH)	3-3-5			8
867.0	3.0	Medium Dense, Tan to Brown, Silty fine to medium SAND (SM)	10-11-13			24
			5-7-8			15
			4-6-7			13
			3-5-6			11
850.0	20.0		4-6-6			12
		Boring Terminated at 20 feet				
		Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-5** (1 of 1) | Total Depth **60.0'** | Elev: **873±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/12/00** | Completed: **9/12/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
		RESIDUUM: Stiff to Very Stiff, Red-tan to Tan, Slightly Micaceous, Sandy SILT (ML)	7-8-7			15
			8-8-9			17
865.0	8.0		6-7-8			15
		Medium Dense, Gray, Highly Micaceous, Silty fine to medium SAND (SM)	8-6-7			13
			6-7-7			14
			7-7-8			15
			8-9-8			17
			9-8-10			18
			9-9-10			19
			10-11-9			20
			9-9-9			18
825.0	48.0	Very Dense, Gray, Highly Micaceous, Silty fine to medium SAND (SM)	21-35-40			75
820.0	53.0	PARTIALLY WEATHERED ROCK Sampled as Gray, highly Micaceous, Silty fine to medium SAND (SM)	50/1			100
813.0	60.0	Boring Terminated at 60 feet	50/0			100
		Groundwater: Time of Drilling - 38 feet After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-6** (1 of 1) | Total Depth **20.0'** | Elev: **868±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL	N
867.4	0.6	TOPSOIL - 6 inches				
		RESIDUUM: Stiff, Red-tan, Sandy SILT (MH)	3-4-5			9
865.0	3.0	Loose to Medium Dense, Tan to Gray, Slightly Micaceous to Highly Micaceous, Silty fine to medium SAND (SM)	5-6-5			11
			6-6-6			12
			3-5-5			10
			5-6-7			13
848.0	20.0		9-15-15			30
		Boring Terminated at 20 feet				

Groundwater:
Time of Drilling - Not Encountered
After 1 day - Not Encountered

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_SHD 05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-7** (1 of 1) | Total Depth **37.0'** | Elev: **863±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/12/00** | Completed: **9/12/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
862.6	0.4	TOPSOIL - 4 inches				
		RESIDUUM: Stiff, Tan, Micaceous, Sandy SILT (ML)	5-5-6			11
			6-6-7			13
857.0	6.0	Medium Dense, Tan to Gray, Micaceous to Highly Micaceous, Silty fine to medium SAND (SM)	7-8-7			15
			8-9-10			19
			10-10-11			21
			11-11-12			23
			10-11-13			24
			19-21-20			41
830.0	33.0	PARTIALLY WEATHERED ROCK: No Sampled Recovered	50/0			100
826.0	37.0	Auger Refusal at 37 feet				
		Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD_05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-8** (1 of 1) | Total Depth **55.0'** | Elev: **875±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/12/00** | Completed: **9/12/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL 10 20 30 40 50 60 70 80 90	N
874.6	0.4	TOPSOIL - 4 inches RESIDUUM: Very Stiff, Tan, Sandy SILT (ML) with rock fragments	7-8-8			16
869.0	6.0	Medium Dense, Tan-brown to Gray, Micaceous to Highly Micaceous, Silty fine to medium SAND (SM)	6-8-10			18
			5-6-7			13
			6-7-8			15
			8-8-9			17
			7-8-8			16
			15-11-8			19
			10-11-12			23
842.0	33.0	PARTIALLY WEATHERED ROCK: Sampled as Gray, Micaceous, Silty fine to medium SAND (SM)	50/4			100
			50/1			100
			50/2			100
			50/1			100
820.0	55.0		50/1			100
		Auger Refusal at 55 feet Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-9** **(1 of 1)** | Total Depth **20.0'** | Elev: **876±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/12/00** | Completed: **9/12/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL 10 20 30 40 50 60 70 80 90	N
875.4	0.6	TOPSOIL - 6 inches RESIDUUM: Medium Dense, Tan to Gray, Micaceous to Highly Micaceous, Silty fine to medium SAND (SM)	7-8-7			15
			7-7-7			14
			7-8-9			17
			8-8-7			15
			7-8-8			16
856.0	20.0		7-7-9			16
		Boring Terminated at 20 feet Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-10** (1 of 1) | Total Depth **60.0'** | Elev: **881 ±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/12/00** | Completed: **9/12/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
880.4	0.6	TOPSOIL - 6 inches RESIDUUM: Very Stiff, Tan, Micaceous, Sandy SILT (MH)	8-7-9			16
			10-14-11			25
873.0	8.0		8-10-11			21
		Medium Dense, Tan-brown, Micaceous to Highly Micaceous, Silty fine to medium SAND (SM)	7-8-5			13
			5-8-8			16
			8-8-8			16
			8-9-10			19
			5-6-7			13
			6-7-7			14
			10-10-11			21
			11-12-11			23
834.0	47.0	PARTIALLY WEATHERED ROCK: Sampled as Tan, Micaceous, Silty fine to medium SAND (SM)	50/5			100
			50/0			100
821.0	60.0		50/0			100
		Boring Terminated at 60 feet Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-11** (1 of 1) | Total Depth **20.0'** | Elev: **875±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL 10 20 30 40 50 60 70 80 90	N
874.4	0.6	TOPSOIL - 6 inches FILL: Black, Clayey fine to medium SAND (SC)	2-3-3		●	6
872.0	3.0	RESIDUUM: Very Stiff, Red-tan, Sandy SILT (MH)	6-10-12		●	22
			6-8-9		●	17
867.0	8.0	Medium Dense, Tan to Tan-gray, Micaceous, Silty fine to medium SAND (SM)	5-7-8		●	15
			5-7-7		●	14
855.0	20.0		5-6-8		●	14
		Boring Terminated at 20 feet Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-12** (1 of 1) | Total Depth **20.0'** | Elev: **849±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
848.5	0.5	TOPSOIL - 6 inches POSSIBLE FILL: Brown, Sandy CLAY (CL)	2-3-3			6
846.0	3.0	RESIDUUM: Very Stiff, Tan to Red-tan, Slightly Micaceous, Sandy SILT (ML)	6-10-12			22
841.0	8.0	Loose to Medium Dense, Gray, Highly Micaceous, Silty fine to medium SAND (SM)	6-8-10			18
			3-4-5			9
			4-5-6			11
829.0	20.0		5-8-7			15
		Boring Terminated at 20 feet				

Groundwater:
Time of Drilling - Not Encountered
After 1 day - Not Encountered

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: 472-05081

Client: CH2M HILL

Project: WB Casey Water Reclamation Facility - Clayton County, GA

Boring No.: B-13 (1 of 1) | Total Depth 60.0' | Elev: 861± | Location: See Boring Location Plan

Type of Boring: Hollow Stem Auger | Started: 9/13/00 | Completed: 9/13/00 | Driller: GABLE

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
860.5	0.5	TOPSOIL - 5 inches				
		RESIDUUM: Medium Dense, Tan, Micaceous to Highly Micaceous, Silty fine to medium SAND (SM)	5-5-6			11
			6-6-7			13
			7-8-7			15
			7-8-8			16
			8-8-7			15
			8-9-10			19
			9-9-9			18
830.0	31.0	Very Dense, Gray, Highly Micaceous, Silty fine to medium SAND (SM)	10-17-24			41
			31-30-35			65
823.0	38.0	PARTIALLY WEATHERED ROCK: Sampled as Gray, Micaceous to Highly Micaceous, Silty fine to medium SAND (SM)	50/4			100
			50/5			100
			50/0			100
			50/1			100
801.0	60.0		50/0			100
		Boring Terminated at 60 feet				
		Groundwater: Time of Drilling - 29 feet After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD_05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-14** (1 of 1) | Total Depth **60.0'** | Elev: **860 ±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL 10 20 30 40 50 60 70 80 90	N
859.7	0.3	TOPSOIL - 3 inches				
856.0	4.0	RESIDUUM: Medium Dense, Tan, Micaceous, Silty fine to medium SAND (SM) with rock fragments	7-7-8			15
		Medium Dense to Dense, Gray, Micaceous to Highly Micaceous, Silty fine to medium SAND (SM)	8-8-9			17
			9-8-7			15
			7-8-7			15
			7-7-7			14
			8-9-10			19
			10-10-11			21
			10-13-15			28
			17-21-20			41
823.0	37.0	PARTIALLY WEATHERED ROCK: Sampled as Gray, Highly Micaceous, Silty fine to medium SAND (SM)	50/5			100
			50/5			100
			50/0			100
			50/0			100
800.0	60.0		50/0			100
		Boring Terminated at 60 feet				
		Groundwater: Time of Drilling - 30 feet After 1 day - Not Encountered				

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-15** (1 of 1) | Total Depth **20.0'** | Elev: **875±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
874.5	0.5	TOPSOIL - 6 inches POSSIBLE FILL: Brown, Clayey fine to medium SAND (SC) with roots	3-3-4			7
872.0	3.0	RESIDUUM: Stiff, Tan, Slightly Micaceous, Sandy SILT (ML)	5-7-8			15
869.0	6.0	Loose to Medium Dense, Tan, Slightly Micaceous to Micaceous, Silty fine to medium SAND (SM)	5-6-6			12
			4-5-5			10
			4-5-5			10
855.0	20.0		4-5-4			9
		Boring Terminated at 20 feet Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-16 (1 of 1)** | Total Depth **20.0'** | Elev: **873 ±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/12/00** | Completed: **9/12/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows / REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
872.6	0.4	TOPSOIL - 4 inches				
870.5	2.5	FILL: Tan, Micaceous, Sandy SILT (ML) with abundant wood fragments	1-2-2		●	4
		RESIDUUM: Stiff, Tan, Micaceous, Sandy SILT (ML)	4-5-6		●	11
			6-6-7		●	13
865.0	8.0	Medium Dense, Red-tan to Gray, Micaceous to Highly Micaceous, Silty fine to medium SAND (SM)	7-8-8		●	16
			8-8-9		●	17
853.0	20.0		5-6-7		●	13
		Boring Terminated at 20 feet				
		Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-17** (1 of 1) | Total Depth **60.0'** | Elev: **880±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
879.6	0.4	TOPSOIL - 4 inches				
		RESIDUUM: Medium Dense, Tan-brown, Slightly Micaceous to Micaceous, Silty fine to medium SAND (SM)	6-7-7			14
			7-8-8			16
872.0	8.0		8-9-8			17
		Medium Dense, Brown-gray, Highly Micaceous to Micaceous, Silty fine to medium SAND (SM)	9-10-11			21
			10-10-12			22
			10-10-11			21
			7-10-10			20
			8-9-10			19
			10-10-11			21
			10-11-11			22
			11-12-13			25
833.0	47.0	Very Dense, Brown-gray, Micaceous, Silty fine to medium SAND (SM)	17-19-37			56
827.0	53.0	PARTIALLY WEATHERED ROCK: Sampled as Brown-gray, Micaceous, Silty fine to medium SAND (SM)	50/1			100
820.0	60.0		50/1			100
		Boring Terminated at 60 feet				
		Groundwater: Time of Drilling - Caved at 37 feet After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-18** (1 of 1) | Total Depth **60.0'** | Elev: **879±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/12/00** | Completed: **9/12/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
878.7	0.3	TOPSOIL - 3 inches				
876.0	3.0	FILL: Brown, Slightly Micaceous, Sandy SILT (ML) with roots	5-5-6			11
		Medium Dense, Brown-gray, Highly Micaceous, Silty fine to medium SAND (SM)	10-10-11			21
			7-8-7			15
			8-8-7			15
			7-8-9			17
			8-9-9			18
			9-10-9			19
			6-6-7			13
			7-8-8			16
			8-9-10			19
			10-11-11			22
832.0	47.0	PARTIALLY WEATHERED ROCK: Sampled as Brown-gray, Highly Micaceous, Silty fine to medium SAND (SM)	50/3			100
			50/0			100
819.0	60.0		50/0			100
		Boring Terminated at 60 feet				
		Groundwater: Time of Drilling - Caved at 36 feet After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-19** (1 of 1) | Total Depth **12.0'** | Elev: **852 ±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows / REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
851.5	0.5	TOPSOIL - 6 inches FILL: Brown, Sandy CLAY (CL) with trace roots	3-4-4			8
849.0	3.0	RESIDUUM: Medium Dense, Tan, Micaceous, Silty fine to medium SAND (SM)	4-7-7			14
			5-7-8			15
844.0	8.0	PARTIALLY WEATHERED ROCK: Sampled as Tan-white, Silty fine to medium SAND (SM)	50/5			100
840.0	12.0	Auger Refusal at 12 feet Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-20** (1 of 1) | Total Depth **53.0'** | Elev: **870 ±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/14/00** | Completed: **9/14/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows / REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
869.5	0.5	TOPSOIL - 6 inches				
867.0	3.0	FILL: Red-brown, Clayey fine to medium SAND (SC)	7-7-8			15
		RESIDUUM: Medium Dense, Tan-brown to Brown-gray, Micaceous, Silty fine to medium SAND (SM)	12-13-15			28
			10-10-11			21
			7-10-13			23
856.0	14.0	PARTIALLY WEATHERED ROCK: Sampled as Gray-brown, Micaceous, Silty fine to medium SAND (SM)	19-50/5			100
			50/3			100
			50/2			100
			50/5			100
			50/5			100
			50/0			100
			50/0			100
			50/0			100
817.0	53.0	Auger Refusal at 53 feet				

Groundwater:
Time of Drilling - Not Encountered
After 1 day - Not Encountered

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-21 (1 of 1)** | Total Depth **35.0'** | Elev: **860 ±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL 10 20 30 40 50 60 70 80 90	N
859.5	0.5	TOPSOIL - 6 inches RESIDUUM: Loose, Tan, Micaceous, Silty fine to medium SAND (SM)	3-3-4			7
			4-4-4			8
			4-5-5			10
852.0	8.0	Medium Dense to Dense, Gray to White, Slightly Micaceous to Micaceous, Silty fine to medium SAND (SM)	7-9-11			20
			5-9-10			19
			8-9-12			21
			9-11-15			26
			14-19-22			41
825.0	35.0		15-18-21			39
		Boring Terminated at 35 feet Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-22** (1 of 1) | Total Depth **25.0'** | Elev: **870±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
869.5	0.5	TOPSOIL - 6 inches				
		RESIDUUM: Firm, Tan, Brown, Micaceous, Sandy SILT (ML)	2-3-4		●	7
867.0	3.0	Loose to Medium Dense, Tan-gray to Gray, Highly Micaceous to Slightly Micaceous, Silty fine to medium SAND (SM)	3-4-4		●	8
			4-4-5		●	9
			8-10-11		●	21
			4-8-9		●	17
			5-10-12		●	22
848.0	22.0	Very Dense, Gray, Slightly Micaceous, Silty fine to medium SAND (SM)				
845.0	25.0		13-16-19		●	35
		Boring Terminated at 25 feet				
		Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-23** (1 of 1) | Total Depth **20.0'** | Elev: **854±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/13/00** | Completed: **9/13/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
853.5	0.5	TOPSOIL - 6 inches				
		FILL: Black, Sandy SILT (ML) with wood fragments	2-3-4		●	7
851.0	3.0	RESIDUUM: Medium Dense, tan to gray, Slightly Micaceous to Micaceous, Silty fine to medium SAND (SM)	6-8-8		●	16
			6-8-8		●	16
			5-6-6		●	12
			7-8-9		●	17
834.0	20.0		8-8-10		●	18
		Boring Terminated at 20 feet				
		Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

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*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-24** (1 of 1) | Total Depth **48.0'** | Elev: **868±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/14/00** | Completed: **9/14/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows / REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
867.5	0.5	TOPSOIL - 6 inches				
865.0	3.0	RESIDUUM: Stiff, Red-tan, Slightly Micaceous, Sandy SILT (ML)	7-7-8			15
		Medium Dense, Tan-brown to Brown-gray, Micaceous, Silty fine to medium SAND (SM)	8-9-9			18
			9-9-10			19
			10-11-12			23
855.0	13.0	PARTIALLY WEATHERED ROCK: Sampled as Brown-gray, Micaceous, Silty fine to medium SAND (SM)	50/4			100
			50/5			100
			50/3			100
			50/5			100
			50/4			100
			50/4			100
			50/0			100
820.0	48.0	Auger Refusal at 48 feet				
		Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-25 (1 of 1)** | Total Depth **60.0'** | Elev: **878±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/14/00** | Completed: **9/14/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL 10 20 30 40 50 60 70 80 90	N
877.5	0.5	TOPSOIL - 6 inches				
875.0	3.0	RESIDUUM: Stiff, Brown, Sandy CLAY (CH) with trace roots	7-7-8			15
		Very Stiff, Red-tan to Tan-brown, Slightly Micaceous, Sandy SILT (ML)	7-8-8			16
			8-9-10			19
			10-10-11			21
866.0	12.0	Medium Dense, Tan to Tan-gray, Micaceous, Silty fine to medium SAND (SM)	7-8-8			16
			8-9-10			19
			7-7-7			14
			7-8-10			18
			10-11-11			22
			11-21-12			33
			10-13-15			28
831.0	47.0	Very Dense, Tan-gray, Micaceous, Silty fine to medium SAND (SM)	19-31-33			64
826.0	52.0	PARTIALLY WEATHERED ROCK: No Sample Recovered	50/0			100
818.0	60.0	Boring Terminated at 60 feet	50/0			100

Groundwater:
Time of Drilling - Caved at 29 feet
After 1 day - Not Encountered

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-26** (1 of 1) | Total Depth **20.0'** | Elev: **849±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/14/00** | Completed: **9/14/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows / REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
848.5	0.5	TOPSOIL - 6 inches				
		FILL: Brown, Silty fine to medium SAND (SM) with topsoil	3-3-4			7
846.0	3.0	RESIDUUM: Very Stiff, Tan, Slightly Micaceous, Sandy SILT (ML)	9-11-14			25
843.0	6.0	Medium Dense, Brown to Brown-gray, Slightly Micaceous to Micaceous, Silty fine to medium SAND (SM)	7-8-12			20
			3-7-13			20
			5-8-10			18
829.0	20.0		8-9-11			20
		Boring Terminated at 20 feet				
		Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **B-27** (1 of 1) | Total Depth **20.0'** | Elev: **858±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/14/00** | Completed: **9/14/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows / REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
857.5	0.5	TOPSOIL - 6 inches				
		RESIDUUM: Loose, Brown, Clay fine to medium SAND (SC)	3-3-4			7
855.0	3.0	Stiff, Red-tan, Sandy SILT (ML)	6-7-8			15
852.0	6.0	Medium Dense, Tan to gray, Micaceous, Silty fine to medium SAND (SM)	7-8-8			16
			6-7-9			16
			7-9-9			18
838.0	20.0		8-10-12			22
		Boring Terminated at 20 feet				
		Groundwater: Time of Drilling - Not Encountered After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **RL-1** (1 of 1) | Total Depth **45.0'** | Elev: **798±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/14/00** | Completed: **9/14/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
797.5	0.5	TOPSOIL - 6 inches				
795.0	3.0	FILL: Brown, Slightly Micaceous, Silty fine to medium SAND (SM)	4-4-5			9
		RESIDUUM: Stiff, Tan, Sandy SILT (MH)	5-7-8			15
792.0	6.0	Stiff, Tan, Silty CLAY (CL)	4-6-7			13
			3-4-5			9
			4-5-6			11
			12-6-3			9
776.0	22.0	Loose, Tan, Silty fine to medium SAND (SM)				
			3-3-3			6
772.0	26.0	Medium Dense, Gray-black, Silty fine to medium SAND (SM)				
			3-10-15			25
			3-6-7			13
			3-5-8			13
753.0	45.0		4-6-8			14
		Boring Terminated at 45 feet				
		Groundwater: Time of Drilling - 20 feet After 1 day - Not Encountered				

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **RL-2 (1 of 1)** | Total Depth **36.0'** | Elev: **792 ±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/14/00** | Completed: **9/14/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
791.5	0.5	TOPSOIL - 6 inches				
789.0	3.0	FILL: Brown, Sandy SILT (ML) with rock fragments	4-4-4		●	8
		RESIDUUM: Medium Dense to Dense, Tan-brown, Silty fine to medium SAND (SM)	11-20-19		●	39
			8-15-15		●	30
783.0	9.0	Loose, White, Silty fine to coarse SAND (SM)	4-5-5		●	10
			5-5-5		●	10
774.0	18.0	Medium Dense, Gray, Silty fine to medium SAND (SM)	3-8-9		●	17
			5-9-9		●	18
765.0	27.0	PARTIALLY WEATHERED ROCK: Sampled as Gray, Silty fine to medium SAND (SM)	50/3		●	100
			50/4		●	100
756.0	36.0	Auger Refusal at 36 feet				
		Groundwater: Time of Drilling - Caved at 9 feet After 1 day - Not Encountered				

BL_STD 05081.GPJ PSI_CORP.GDT 9/28/00

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

PSI No.: **472-05081**

Client: **CH2M HILL**

Project: **WB Casey Water Reclamation Facility - Clayton County, GA**

Boring No.: **WB-1 (1 of 1)** | Total Depth **27.0'** | Elev: **802 ±** | Location: **See Boring Location Plan**

Type of Boring: **Hollow Stem Auger** | Started: **9/14/00** | Completed: **9/14/00** | Driller: **GABLE**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows / REC/RQD	Sample Depth (Feet)	N VALUE (bpf) PL %MC LL (10 20 30 40 50 60 70 80 90)	N
801.9	0.1	TOPSOIL - 1 inch FILL: Brown, Silty fine to medium SAND (SM) with burnt wood fragments	3-3-3			6
797.5	4.5	RESIDUUM: Very Stiff, Tan, Brown, Sandy SILT (ML)	2-7-11			18
			3-7-9			16
794.0	8.0	Medium Dense, Tan, Silty Fine to medium SAND (SM)	6-9-10			19
			6-8-11			19
783.0	19.0	PARTIALLY WEATHERED ROCK: Sampled as Gray, Slightly Micaceous, Silty fine to medium SAND (SM)	27-50/3			100
			50/3			100
775.0	27.0	Auger Refusal at 27 feet Groundwater: Time of Drilling - 14 feet After 1 day - Not Encountered				

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.