

**CONSTRUCTION QUALITY ASSURANCE  
DOCUMENTATION FOR CDLF PHASE 2A**

**WCA of High Point (Permit #41-16)  
Guilford County, North Carolina**

Prepared for

**WCA of High Point**

5830 Riverdale Drive  
Jamestown, North Carolina 27282



**Original Issue April 2010**

**David Garrett, P.G., P.E.**

Engineering and Geology

5105 Harbour Towne Drive, Raleigh, NC 27604

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## **David Garrett & Associates**

*Engineering and Geology*



April 14, 2010

Mr. John Murray, PE  
Regional Engineer  
NC DENR Solid Waste Section  
Mooresville Regional Office  
610 East Center Avenue  
Mooresville, NC 28115

RE: Construction Quality Control Documentation  
WCA of High Point CDLF, Phase 2A  
Guilford County, North Carolina  
Solid Waste Permit #41-16

Dear Mr. Murray:

On behalf of WCA Waste Corporation (WCA), I am pleased to present this report documenting the completion of Phase 2A of the approved CDLF expansion. This work was completed in pursuit of the Permit to Construct issued by the Solid Waste Section (SWS) on February 20, 2009. Within this report, please find documentation on the construction of the first of two subphases – Phase 2A, covering approximately 4.3 acres in the northern portion of the approved footprint – including my certification of subgrade conditions and general adherence to the approved construction plan. No new ground water monitoring wells were installed for this construction. At this time WCA seeks the Section's approval of the construction and the issuance of a Permit to Operate for a five-year period. WCA understands that additional construction certification will be required prior to operating the remainder of Phase 2.

### **Report Organization**

This report is organized into the following sections:

1. CQA meeting minutes and notes
2. Soils laboratory testing reports
3. As-built construction drawings
4. Piezometer abandonment records
5. Photographic documentation

## Overview

This report is intended to satisfy the requirements of 15A NCAC 13B .0541 for documentation of a Construction Quality Assurance program for Phase 2A of the WCA of High Point CDLF, as outlined in Attachment 2 of the Permit to Construct document. Phase 2 is a contiguous footprint relative to the Phase 1 footprint and encompasses approximately 9.4 acres. Construction was divided into two subphases: Phase 2A located within the lower elevations to the north of Phase 1, which encompasses approximately 4.3 acres, and future Phase 2B located in the higher elevations to the east of Phase 1 (see **Sheet 1**). Major aspects of the new construction included:

1. Clearing and grubbing the formerly wooded site; installation of sedimentation and erosion control measures approved by the City of High Point Engineering Department.
2. Abandonment of two piezometers within the Phase 2A footprint.
3. Establish layout and grade control for construction using a third-party licensed surveyor; setting permanent marker posts at the perimeter of the waste footprint.
3. Excavation and grading approximately 3.5 acres with cuts varying up to 5 feet below the original ground surface.
4. Construction of new perimeter embankment with structural fill depths up to 18 feet and new area fill to approved grades (fill depths generally on the order of 1 to 6 feet) within the remainder of the Phase 2A footprint; all fill met the current NC DENR Solid Waste Section requirements for compaction and within the upper 24 inches of finished grades all fill must meet requirements for soil type (documented in this report) – all testing was conducted by a third-party soils laboratory.
5. Construction of an underdrain - embankment stabilization pad (no pipe was used) to control perched water in the deepest portions of the fill area (former drainage feature) using beneficial fill; conducted with prior notification and approval of the Solid Waste Section (see Interim Subgrade Inspection Report dated October 31, 2010).
6. Protection of exposed subgrade and earthwork embankments, including sedimentation and erosion control features, with vegetation and/or mulch.

## Responsibilities and Documentation

The Facility used a third-party contractor (C.A. Woods Construction), plus in-house staff and equipment, with contracted surveying support (Clint Osborn, RLS), field engineering support and CQA oversight (David Garrett & Associates, assisted by Geotechnics, Inc.), and a third-party soil laboratory (Geotechnics, Inc.). Documentation of the work consists of field notes and “as-built” construction plans, plus a series of photographs, presented in separate sections of this report. WCA’s site manager (John Walker) provided day-to-day contract administration.

Regular CQA meetings were conducted with the staff, in conjunction with site inspections, to outline the objectives of the work and to check progress and quality of workmanship. During these meetings, and in regular phone contact in between meetings, the staff described problems they encountered, e.g., saturated soils were encountered in the former drainage feature, and some early fill soil failed initial compaction testing and needed to be reworked with additional compaction effort. All soil work eventually passed the testing requirements.

During the course of the construction, wet weather became an issue, which necessitated the embankment stabilization pad and resulted in the need to import dry soil from a nearby quarry (overburden from the Martin Marietta Jamestown Quarry, which is similar in characteristic to the on-site soils). In addition, some of the “sandrock” encountered within the southern portion of the Phase 2A footprint (adjacent to the toe of the Phase 1 slope) was too dense to excavate with conventional earthwork equipment, however this material was ripped to the depth practical with the equipment on hand and the remainder left in place and padded over instead of blasting. The “as-built” drawing shows this area to be approximately 2 feet above the approved grades.

### **Certification**

By way of my signature and seal on this document, this is to certify that the construction of Phase 2A of the WCA of High Point CDLF was completed in accordance with (1) the CQA Plan, (2) the conditions of the Permit to Construct, (3) the Solid Waste Management Rules, and (4) acceptable engineering practices. This is to further certify that the grades and lines are accurately depicted on the “as-built” plans, prepared based on a topographic survey by a licensed surveyor, and that subgrade soil types meet the current regulatory requirements based on visual inspection and confirmatory lab tests. No ground water or detrimental soils were encountered at or above the approved subgrade elevations, except as documented in this report; site conditions are as anticipated based on the earlier permitting studies.

Please contact me if you have any questions or comments.

Cordially yours,



G. David Garrett, P.G., P.E.



4-14-2010 Original Submittal

cc: Nick Marotta, Regional Engineer - WCA  
John Walker, General Manager – WCA of High Point  
Ed Mussler, P.E. – SWS Permitting Branch

enclosure

## **David Garrett & Associates**

*Engineering and Geology*



October 31, 2009

Ms. Christine Ritter, Hydrogeologist  
NC DENR Division of Waste Management  
Solid Waste Section  
401 Oberlin Road  
Raleigh, North Carolina, 27611

RE: **Geologist's Subgrade Inspection Report**  
**WCA of High Point CDLF – Phase 2A**  
**Permit #41-16 (Guilford County)**

Dear Christine:

On behalf of WCA Waste Corporation (WCA), I am pleased to present this interim report pertaining to a subgrade inspection for the referenced landfill construction. This letter documents conditions I observed at the site during multiple visits made on or about September 22, September 28, October 21, October 26 and October 30, 2009. On these dates, I performed site inspections pursuant to the Construction Quality Assurance (CQA) program approved for the facility. The following documents activities conducted at the site during this time and special conditions noted during the construction, which we discussed by phone on October 26. Present during all of my site visits has been Mr. John Walker of WCA (General Manager of the Facility), and Mr. Chad Woods of C.A. Woods Grading. During the meeting of October 21 we were met by Mr. Brian Sullivan of the City of High Point, who has jurisdiction over the sediment and erosion control plan – most of the issues addressed during the early site visits pertain to S&EC.

Please refer to the attached drawings, **C1 and C2**. Phase 2 was approved for construction by the NC DENR Division of Waste Management based on site investigations and plan submittals prepared by others. My involvement with this phase began in mid-late 2009, during the early stages of construction, at which time WCA expressed a desire to build only the northern half of the approved phase, i.e., Phase 2A shown on **Drawing C1**. Phase 2B is undisturbed relative to the time of permitting, but partial clearing activities had occurred in association with construction of Phase 1, and a large soil stockpile has been placed in the Phase 2B footprint with appropriate S&EC measures. Phase 2A had been cleared of surface vegetation, and S&EC measures were under construction by early October 2009. S&EC measures required by the City of High Point at a location below the maintenance building and container storage area, and below a new soil stockpile placed further east of the maintenance building, were constructed in mid-October 2009. At present, all measures have been installed and the grading work is underway. Two relict piezometers in Phase 2B are scheduled to be abandoned in the coming few days.

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During the preparation for constructing the northwest perimeter embankment, shown on **Drawing C2**, soft and wet soils were encountered at the surface within an area that coincides with a natural drainage feature. The area had been undercut by the contractor to a depth of approximately 5 feet below existing ground prior to my initial observation of the area. I concur that the undercut was necessary to support the embankment, whereas I observed water to be “ponding” in the fine-grained soils in adjacent areas. The entire 4-acre construction site, which drains to this spot, had been cleared and grubbed, which exposed a relatively large area of soils with high field capacity – i.e., a tendency to hold water – to several inches of rainfall received during September and October. The soils are fine grained and are known to drain slowly based on past experience with this site and the adjacent MSWLF site. Free water was pooling in the bottom of the undercut excavation, but relatively dry soils were observed just a few feet away, outside the drainage feature.

The potentiometric surface used for permitting (see **Drawing C2**) shows that the undercut excavations are just above the design potentiometric contours. Please note that no unstable areas were detected prior to clearing the vegetation – the site was heavily wooded – and it appears that the recent rain, coupled with the lack of plant uptake due to clearing and relatively poor drainage (flat grades) within this portion of the drainage feature, resulted in the wet conditions. By my estimates, the pooled water exists at a depth of approximately 9 feet below the finished subgrade. I concluded that the water exposed in the excavation is “perched” and likely does not represent the uppermost aquifer. The undercut excavation is approximately 165 feet in length and varies from 12 to 40 feet wide (26 feet average) and up to 8 feet deep (6 feet average). No rock was exposed during the clearing and grubbing.

Nonetheless, in order to make a stable foundation for the embankment, which varies in height from 14 feet to 18 feet above original ground based on the grade stakes, I recommended a stabilization layer constructed of coarse reclaimed concrete aggregate (“beneficial fill”), which is to be placed in two interlocking lifts of 18 inches each. There should be no wood, metal, paper or plastic in the beneficial fill. The stabilization layer is to be underlain by a non-woven separator geotextile (material type subject to my approval), and the stabilization layer is to be “choked off” with a finer layer of processed concrete aggregate (equivalent to No. 57 stone). The base of the stabilization layer is to be sloped downhill at a minimum 2% slope, following the existing topography. No pipes will be installed, as this is not an underdrain, *per se*, but the granular nature of the stabilization layer will prevent the future buildup of pore pressure to promote the stability of the embankment.

The stabilization pad will measure approximately 160 feet in length by an average width of 15 feet by an average thickness of 4 feet (see **Drawing C2**). The stabilization pad shall tie into the stable soils adjacent to the undercut. Density testing of the stabilization pad is impractical and will not be performed, but the engineer shall evaluate the granular backfill for excess pumping under the weight of operating equipment, and photographic documentation shall be performed. Density testing shall be performed on the soil embankment placed above the stabilization layer at a frequency of one field density test per lift per 500 feet of embankment, i.e., one test per lift, using a nuclear gauge. A soils technician visited the site on October 30, 2009 to acquire a bulk soil sample for standard Proctor and soil classification testing. The technician is scheduled to visit the site daily to monitor progress of the embankment and fill section construction.

The permitted grading plan (see **Drawing C2**) shows approximately 4 feet of fill required to reach design grades over a one-half acre area. Density testing shall be performed during the construction of the area fill, which, along with observation by the engineer, shall constitute the documentation of the CQA for these areas of Phase 2A. The remainder of Phase 2A will be in cut, based on the approved grading plan. Based on my inspection of the soils in the cut sections, which constitute the borrow for fill construction, the soil types will meet the Solid Waste Section requirements for soil classification within the upper 24 inches of subgrade – the soils visually classify as SM, SC, ML and CL with CH – to be confirmed by laboratory testing.

One engineering issue to note that will pertain to future operation of Phase 2A: extending the waste fill northward from Phase 1 as originally planned will cut off an existing drainage path, now served by the ditches on either side of the current north access road, which would result in water impounding at the toe of the waste in both Phase 1 and 2. Consideration has been given to operating Phase 2A as a standalone cell until such time that WCA chooses to build Phase 2B, anticipated in two to three years henceforth. At that future time, planned S&EC measures will be installed at the south end of Phase 2B – which will require additional ground disturbance, unnecessary at this time – and the drainage will be rerouted. All drainage is – and will be – directed toward approved storm water measures, as discussed with the City of High Point. This activity in no way affects the ability to monitor the facility and, in fact, changing the fill sequence allows the Operator flexibility in staging waste placement activities during inclement weather and promotes an overall more efficient waste placement sequence in Phase 2A.

Based on my observations, I conclude that the subgrade conditions are consistent with those anticipated by the permitting studies, and no further modification of the Phase subgrade or monitoring plan is warranted. Future CQA activities will include ensuring the completion of all required monitoring wells and the initial round of baseline sampling, if needed, and monitoring of the embankment and area fill placement. Future documentation of the construction will be presented in the form of a CQA report, which will include the piezometer abandonment records, construction narrative, as-built plans and geotechnical (field and laboratory) testing, and relevant photographs. For the record, pre-construction meetings were held on September 22, 2008 and September 28, 2009, the latter of which was attended by John Murray and Hugh Jurnigan of the NC DENR Solid Waste Section.

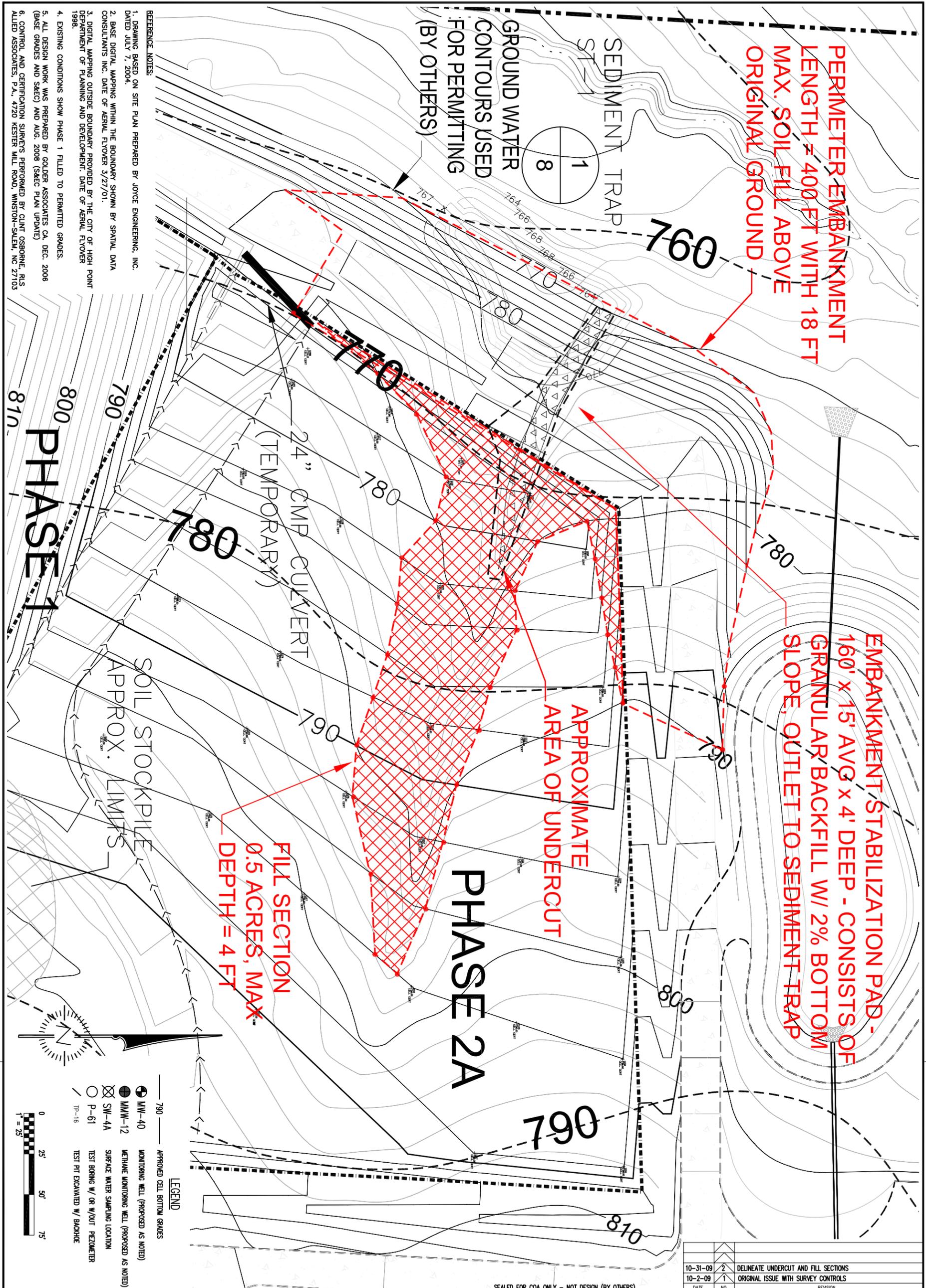
Please contact me if you have questions or if I can provide any additional information.

Sincerely,



G. David Garrett, P.G., P.E.  
Consulting Geologist and Engineer

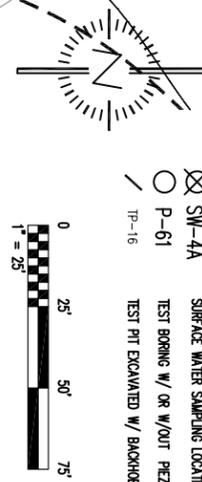
cc: Mr. Nick Marotta – Regional Engineer, WCA  
Mr. John Murray, P.E. – SWS Regional Engineer



**REFERENCE NOTES:**

1. DRAWING BASED ON SITE PLAN PREPARED BY JOYCE ENGINEERING, INC. DATED JULY 7, 2004.
2. BASE DIGITAL MAPPING WITHIN THE BOUNDARY SHOWN BY SPATIAL DATA CONSULTANTS INC. DATE OF AERIAL FLYOVER 3/27/01.
3. DIGITAL MAPPING OUTSIDE BOUNDARY PROVIDED BY THE CITY OF HIGH POINT DEPARTMENT OF PLANNING AND DEVELOPMENT. DATE OF AERIAL FLYOVER 1998.
4. EXISTING CONDITIONS SHOW PHASE 1 FILLED TO PERMITTED GRADES.
5. ALL DESIGN WORK WAS PREPARED BY GOLDER ASSOCIATES CA. DEC. 2006 (BASE GRADES AND S&EC) AND AUG. 2008 (S&EC PLAN UPDATE).
6. CONTROL AND CERTIFICATION SURVEYS PERFORMED BY CLINT OSBORNE, RLS ALLED ASSOCIATES, P.A., 4720 KESTER MILL ROAD, WINSTON-SALEM, NC 27103

- LEGEND**
- 790 — APPROVED CELL BOTTOM GRADES
  - MM-40 — MONITORING WELL (PROPOSED AS NOTED)
  - MMW-12 — METHANE MONITORING WELL (PROPOSED AS NOTED)
  - SW-4A — SURFACE WATER SAMPLING LOCATION
  - P-61 — TEST BORING W/ OR W/O/UT PRESSUREMETER
  - TP-16 — TEST PIT EXCAVATED W/ BACKHOE



DATE	NO.	REVISION
10-31-09	2	DELINEATE UNDERCUT AND FILL SECTIONS
10-2-09	1	ORIGINAL ISSUE WITH SURVEY CONTROLS

SEALED FOR CQA ONLY - NOT DESIGN (BY OTHERS)

<p><b>PROJECT TITLE:</b> WCA OF HIGH POINT MATERIAL RECOVERY FACILITY AND CDLF - PERMIT #41-16 GUILFORD COUNTY, NORTH CAROLINA</p>	<p><b>DRAWING TITLE:</b> PHASE 2 CQA - APPROVED BASE GRADES FOR PARTIAL CONSTRUCTION (PHASE 2A)</p>	<p><b>DESIGNED BY:</b> G.D.G. <b>CHECKED BY:</b> WCA-HP-2 <b>DATE:</b> OCTOBER 2009</p>	<p><b>SCALE:</b> AS SHOWN <b>FILE NAME:</b> WCA-HP-00A <b>SHEET NO.:</b> 2 <b>DRAWING NO.:</b> C2</p>
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**David Garrett & Associates**  
Engineering and Geology  
5105 Harbour Towne Drive, Raleigh, North Carolina 27604  
Email: david\_garrett\_pg@mindspring.com 919-231-1818 (Office and Fax) 919-418-4375 (mobile)

**David Garrett & Associates**

*Engineering and Geology*



November 2, 2009

Mr. John Murray, PE  
Regional Engineer  
NC DENR Solid Waste Section  
Mooresville Regional Office  
610 East Center Ave.  
Mooresville, NC 28115

RE: Transmittal of Construction Documents  
WCA of High Point CDLF, Phase 2A  
Guilford County, North Carolina  
Solid Waste Permit #41-16

Dear Mr. Murray:

Per your request I am pleased to present the following drawings (prepared by others) and amendments made to the plan to accommodate Sediment and Erosion Control requirements of the City of High Point. Also included is a map showing the approximate limits of an undercut I addressed in a separate document, dated October 31, 2009, as well as a hard copy of that letter.

Please refer contact me at your earliest convenience if you have questions or comments regarding this report, or if I may be of further assistance.

Cordially Yours,

A handwritten signature in black ink, appearing to read "G. David Garrett". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

G. David Garrett, P.G., P.E.  
Consulting Engineer

cc: Nick Marotta, Regional Engineer - WCA  
John Walker, General Manager – WCA of High Point

enclosure



November 18, 2009

MEMORANDUM

TO: John Walker – General Manager, WCA of High Point

CC: Nick Marotta – Regional Engineer, WCA Waste Corporation

RE: WCA of High Point Phase 2A Construction  
Site Inspection Visit of November 17, 2009

This memo documents the findings and recommendations of a site visit made with Nick Marotta and contractor Chad Woods of C.A. Woods Grading and Hauling on Tuesday. I observed soils in the lower elevations that were being air dried after scarification prior to recompaction into the perimeter embankment and cell subgrade. The granular stabilization layer was not visible. The soils appeared to be just slightly wet of optimum at the time but it was anticipated (by me) that the soils would be suitable to be recompacted and new fill placed above by Wednesday, which the contractor indicated was his intended schedule. I spoke with soil technician Jesse Patton of Geotechnics to update him on the contractor's schedule and other findings described below.

Nick and I observed that the contractor was digging into rocky soils near the old east perimeter road for Phase 1, using a medium duty track-mounted excavator. I estimated that a variable cut depth of 2 to 6 feet would be required to reach design grades along the roadway. The rocky soils were exposed in a drainage ditch at the toe of the Phase 1 slope. I determined that these soils were hard saprolite (partially weathered rock) based on the excavation characteristics – not bedrock – and the materials could be dug out (albeit slowly) resulting in particles varying up to 12 inches in diameter. I recommended to Nick that these materials be placed within the lowest available embankment fill sections by spreading the soils in a single lift approximately 12 inches thick – without density testing – this was conveyed by phone to Jesse after the site visit, who was to advise the contractor.

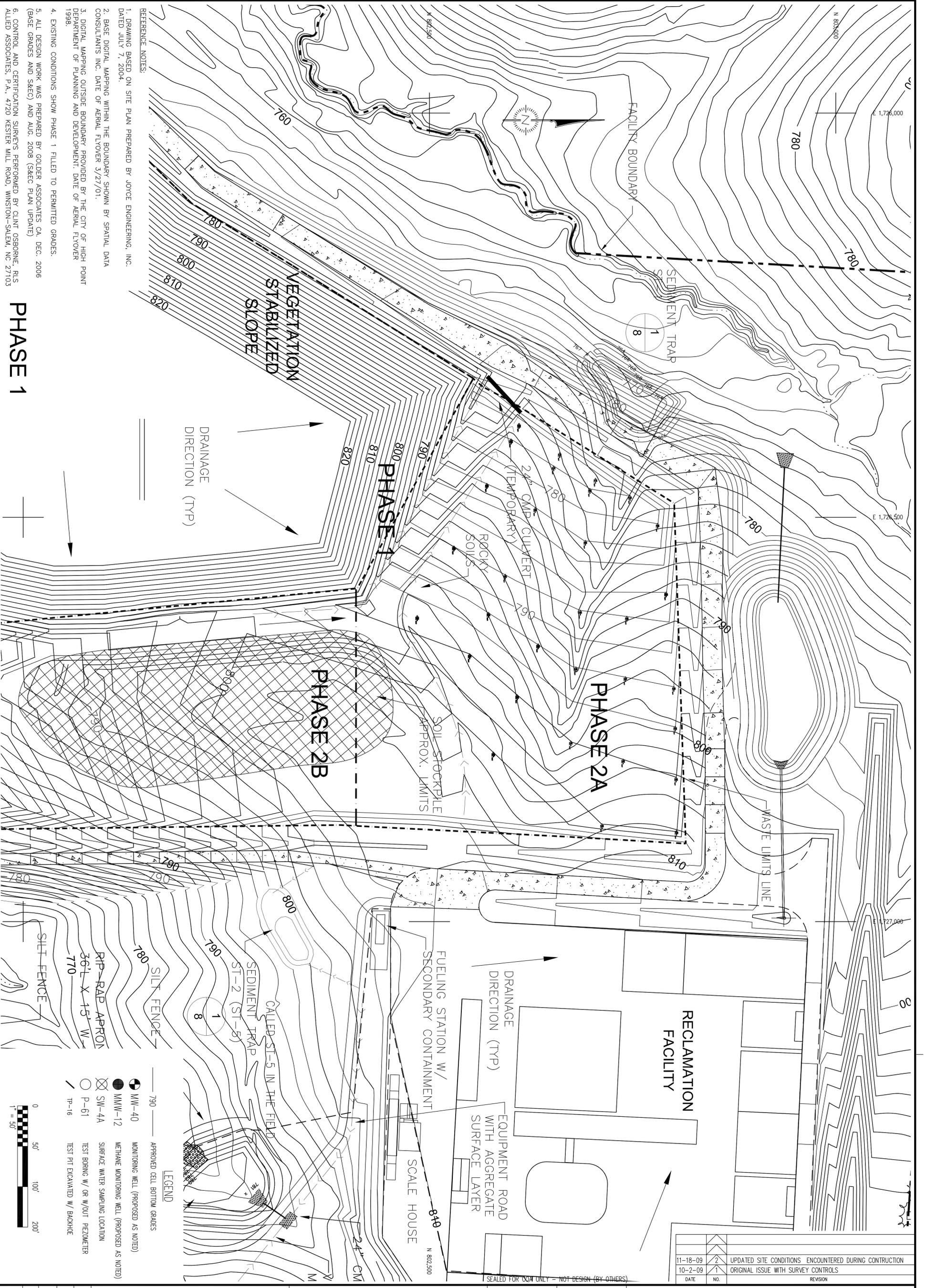
Nick and I determined that building the cell to the earlier prescribed limits of Phase 2A would simplify the certification process (see Drawing 2A), whereas the road would be excavated to the design grades and a portion of the temporary stockpile of red dirt south of Phase 1 would need to be moved, but the ditch at the toe of Phase 1 (south side of the old perimeter road) would remain in place. The contractor asked if he could use some of the red dirt pile, which needed to be moved anyway, in the construction of the embankment. Chad anticipated that he would run

short on excavated soil, plus the stockpiled red dirt was anticipated to be drier than the exposed soils in the grade cuts, which would expedite the construction – the weather recently had turned intermittently rainy and cool, which was hindering the use of the excavated soils from Phase 2A due to the need for drying them. I confirmed with Nick that some type of alternative final cover would be applied for, in lieu of a compacted soil cover, for which it had not been determined if the red soils were suitable. The contractor's request was approved and Jesse was instructed on Wednesday to pick up a bulk sample of the red dirt (the origin of which is unknown and for which we have no moisture-density data).

Plans for operating Phase 2A as a standalone unit for the first couple of years, discussed in the Geologist's Interim Subgrade Inspection Report, dated October 31, 2009, would remain as I had described in that document. Nick and I projected that the drainage pattern would need to be reversed in approximately 2 years along the east side of Phase 1 to prevent a temporary water impoundment in the future Phase 2B (where the temporary stockpile is now located). Once reversed, the drainage would be conveyed to an existing perimeter ditch along the south side of Phases 1 and 2 to the main sediment basin. The reason we do not change the drainage now is that the temporary access road to the top of Phase 1 would require disruption, which can be postponed until Phase 2A is operational. WCA can adjust the drainage pattern at their own convenience using in-house forces during the normal course of operations. This will give the Operator optimal latitude in his use of the remaining capacity in Phase 1, as well as avoiding unnecessary construction costs and disruption of operations.

Please contact me at your earliest convenience if you have questions or comments, or if I may be of further service.





REFERENCE NOTES:  
 1. DRAWING BASED ON SITE PLAN PREPARED BY JOYCE ENGINEERING, INC. DATED JULY 7, 2004.  
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**PHASE 1**

**LEGEND**

- 790 — APPROVED CELL BOTTOM GRADES
- MW-40 MONITORING WELL (PROPOSED AS NOTED)
- MMW-12 METHANE MONITORING WELL (PROPOSED AS NOTED)
- ⊗ SW-4A SURFACE WATER SAMPLING LOCATION
- P-61 TEST BORING W/ OR W/O/PI PIZOMETER
- ⊘ TP-16 TEST PIT EXCAVATED W/ BACKHOE

RIP RAP APPROX 36" X 15" W  
 SILT FENCE  
 SILT FENCE  
 SILT FENCE  
 SILT FENCE



DATE	NO.	REVISION
11-18-09	2	UPDATED SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION
10-2-09	1	ORIGINAL ISSUE WITH SURVEY CONTROLS

DRAWING TITLE:  
**PHASE 2 CDLF - CQA  
 BASE GRADE LAYOUT AND  
 TEMP. SEDIMENT BASIN #1**

PROJECT TITLE:  
**WCA OF HIGH POINT  
 MATERIAL RECOVERY FACILITY  
 AND CDLF - PERMIT #41-16  
 GUILFORD COUNTY, NORTH CAROLINA**

SEAL

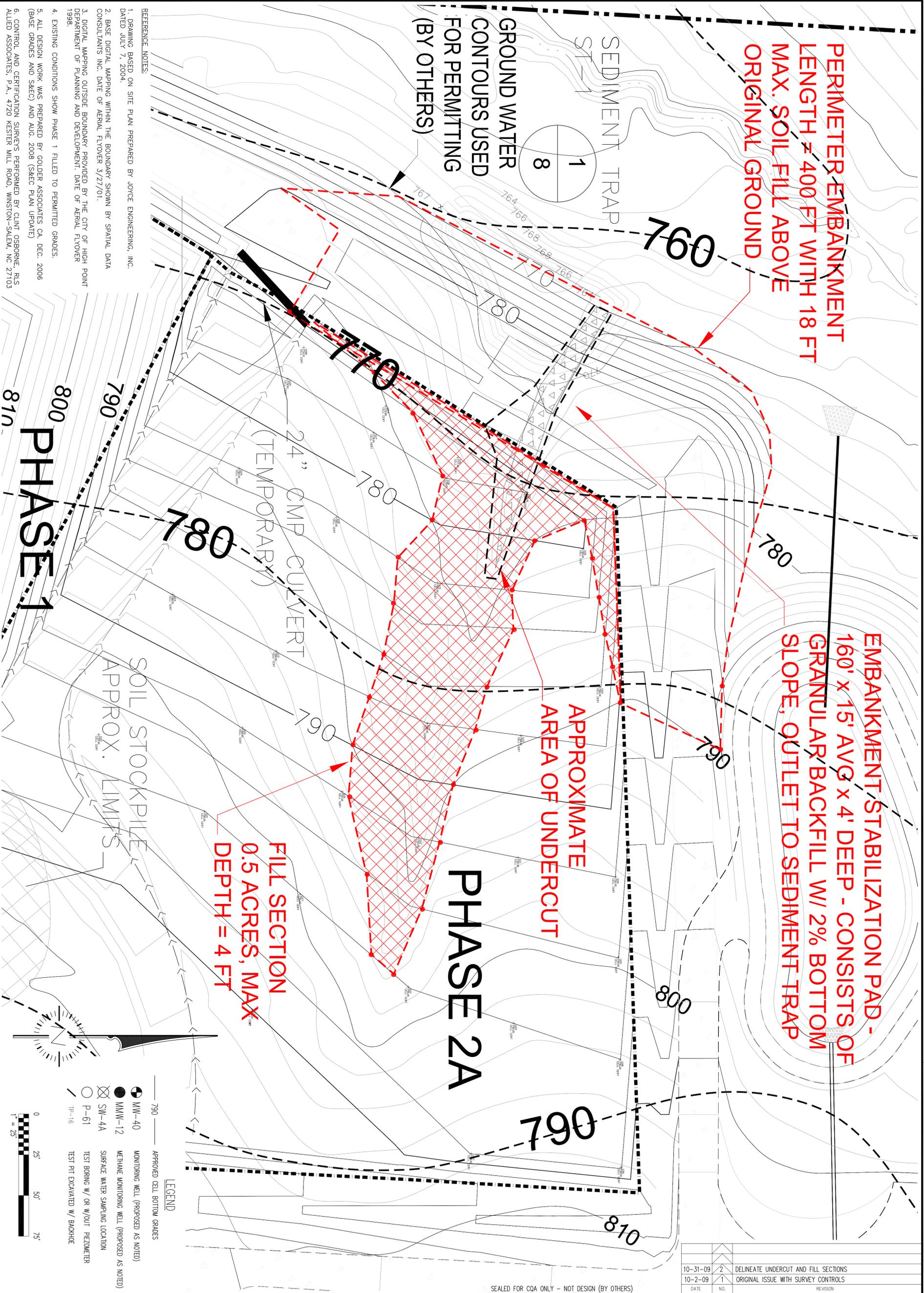
**NORTH CAROLINA PROFESSIONAL ENGINEER**  
 DAVID GARRETT  
 11-18-09

SEAL

**NORTH CAROLINA PROFESSIONAL ENGINEER**  
 DAVID GARRETT  
 11-18-09

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 Engineering and Geology  
 5105 Harbour Towne Drive, Raleigh, North Carolina 27604  
 Email: david\_garrett\_pg@mindspring.com 919-231-1818 (Office and Fax) 919-418-4375 (mobile)

FILE NAME: WCA-HP-INT-CQA  
 SHEET NO. 2A  
 DRAWING NO. C2A



**PERIMETER EMBANKMENT LENGTH = 400 FT WITH 18 FT MAX. SOIL FILL ABOVE ORIGINAL GROUND**

**EMBANKMENT STABILIZATION PAD - 160' x 15' AVG x 4' DEEP - CONSISTS OF GRANULAR BACKFILL W/ 2% BOTTOM SLOPE, OUTLET TO SEDIMENT TRAP**

**APPROXIMATE AREA OF UNDERCUT**

**FILL SECTION 0.5 ACRES, MAX DEPTH = 4 FT**

**PHASE 2A**

**GROUND WATER CONTOURS USED FOR PERMITTING (BY OTHERS)**

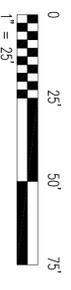
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**SOIL STOCKPILE APPROX. LIMITS**

**LEGEND**

— 790	APPROVED CELL BOTTOM GRADES
⊕	MW-40 MONITORING WELL (PROPOSED AS NOTED)
⊙	MMW-12 METHANE MONITORING WELL (PROPOSED AS NOTED)
⊗	SW-4/A SURFACE WATER SAMPLING LOCATION
○	P-61 TEST BORING W/ OR W/OUT PIEZOMETER
⚡	TP-16 TEST PIT EXCAVATED W/ BACKFILL



DATE	NO.	REVISION
10-31-09	2	DELINEATE UNDERCUT AND FILL SECTIONS
10-2-09	1	ORIGINAL ISSUE WITH SURVEY CONTROLS

SEALED FOR COA ONLY - NOT DESIGN (BY OTHERS)

**DRAWING TITLE:**  
 PHASE 2 CQA - APPROVED BASE GRADES FOR PARTIAL CONSTRUCTION (PHASE 2A)

**PROJECT TITLE:**  
 WCA OF HIGH POINT MATERIAL RECOVERY FACILITY AND CDLF - PERMIT #41-16 GUILFORD COUNTY, NORTH CAROLINA

**REGISTERED BY:** C.D.C.  
**PROJECT NO.:** WCA-HP-2  
**DATE:** OCTOBER 2009

**SCALE:** AS SHOWN

**SHEET NO.:** 2B  
**DRAWING NO.:** C2B

**SEAL**

**David Garrett & Associates**  
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 Email: david\_garrett\_pg@mindspring.com 919-231-1818 (Office and Fax) 919-418-4375 (mobile)



April 14, 2010

MEMORANDUM

TO: John Walker – General Manager, WCA of High Point

CC: Nick Marotta – Regional Engineer, WCA Waste Corporation

RE: WCA of High Point Phase 2A Construction  
Site Inspection Visits of December 6, 2009 through March 17, 2010

This memo documents the findings and recommendations of several site visits made with site manager John Walker and contractor Chad Woods of C.A. Woods Grading and Hauling, and on occasion Nick Marotta. The purpose of these visits was to check progress, observe subgrade conditions and soil placement, and to evaluate problems as they arose. During this period, the construction was hampered by wet weather and mechanical breakdowns. WCA supplemented fuel, equipment and manpower to keep the project moving. The main activities conducted during this time included excavation within the higher portions of the site (to the east) and embankment construction, followed by dressing the embankment and general fill. The fill placement was observed and tested by a third-party firm, Geotechnics of Raleigh, NC – refer to Mr. Patton’s notes regarding his observations and nuclear density testing. All structural fill, including the embankment and area fill within the phase, passed the compaction requirements.

It had become apparent that there was insufficient “sandrock” from the excavation to complete the perimeter embankment. The soil shortage was due, in part, to the unanticipated need for undercutting and stabilizing the embankment foundation, along with a portion of the lower elevations within the Phase 2A footprint (described in previous correspondence), and in part due to prolonged exposure to ambient moisture, which required further undercutting and replacement of “at-grade” and fill areas within the lower elevations to the east (described in this document). The stockpiled soils near Phase 1 (and partially stored in Phase 2) were evaluated and found to be too wet for adequate compaction. Please note that the original phase design had no outlet for surface water – the construction had been delayed in the dry season by additional requirements the City of High Point S&EC inspections, which resulted in the bulk of the grading work occurring during the worst of a wetter-than-usual winter season.

Only “sandrock” was allowed for embankment construction, although the stockpiled soils were approved for exterior slope dressing. Some areas within the area fill, higher in the soil profile

than the embankment stabilization layer, were too wet by February and March to place fill upon after months of absorbing rainfall – these soils were partially undercut or surged with beneficial fill to enhance their foundation support characteristics, then dry quarry overburden soil from the nearby Martin Marietta Jamestown quarry – with similar properties to the “sandrock” – were brought to replace the undercut and eastern portion of the phase. According to Mr. Walker, approximately 500 cubic yards of quarry soil was brought in. The upper 24 inches of subgrade was only built from imported “sandrock” or on-site soil meeting the Division of Waste Management rule requirements; no beneficial fill debris was used within the upper 24 inches of the subgrade. Most of this work was completed in the latter portion of March 2010 and observed and tested by Geotechnics.

Please contact me at your earliest convenience if you have questions or comments, or if I may be of further service.

A handwritten signature in black ink, appearing to read "Mark Smith". The signature is fluid and cursive, with the first name "Mark" being more prominent than the last name "Smith".



November 5, 2009

Project No. 2009-723-01

Mr. David Garrett, P.G., P.E.  
David Garrett & Associates  
5105 Harbour Towne Dr.  
Raleigh, NC 27604

**Transmittal**  
**Laboratory Test Results**  
**WCA Highpoint Phase 2A**

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was faxed to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,  
**Geotechnics, Inc.**

A handwritten signature in black ink, appearing to read 'Michael P. Smith', is written over a horizontal line.

Michael P. Smith  
Regional Manager

***We understand that you have a choice in your laboratory services  
and we thank you for choosing Geotechnics.***

## MOISTURE CONTENT

ASTM D 2216 (SOP-S1)

Client DAVID GARRETT  
Client Reference WCA HIGHPOINT PHASE 2A  
Project No. 2009-723-01

Lab ID .001  
Boring No. NA  
Depth (ft) NA  
Sample No. SAMPLE 1

Tare Number 203  
Wt. of Tare & WS (gm) 645.07  
Wt. of Tare & DS (gm) 568.34  
Wt. of Tare (gm) 171.07  
Wt. of Water (gm) 76.73  
Wt. of DS (gm) 397.27

**Water Content (%) 19.3**

Notes : NA

Tested By SD

Date

11/3/2009

Checked By

GEM

Date 11-5-09

### ATTERBERG LIMITS

ASTM D 4318-05 / AASHTO T89 (SOP - S4A)

Client	DAVID GARRETT	Boring No.	NA
Client Reference	WCA HIGHPOINT PHASE 2A	Depth (ft)	NA
Project No.	2009-723-01	Sample No.	SAMPLE 1
Lab ID	2009-723-01-01	Soil Description	<b>LIGHT BROWN LEAN CLAY</b>

*Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description.*

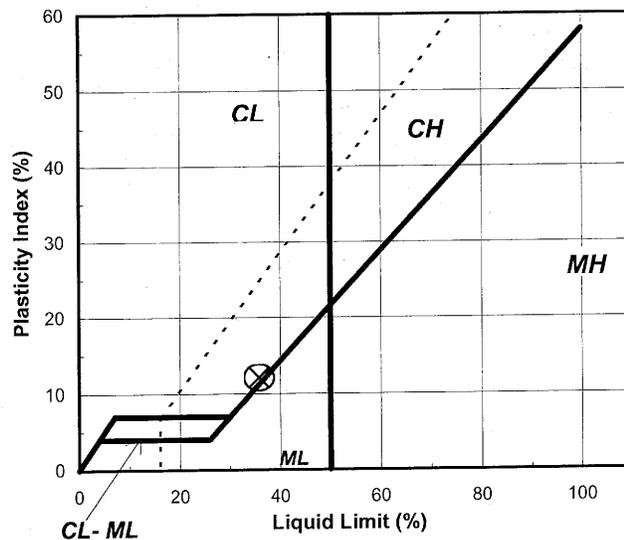
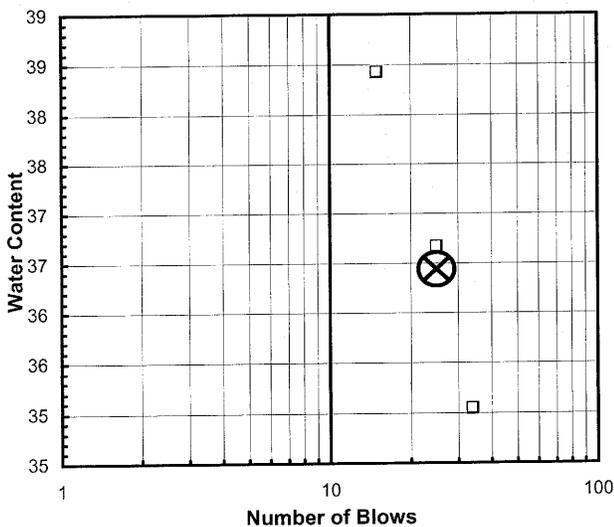
Liquid Limit Test	1	2	3	
Tare Number	T	I	U	M U L T I P O I N T
Wt. of Tare & WS (gm)	27.15	28.75	27.00	
Wt. of Tare & DS (gm)	23.83	25.12	23.93	
Wt. of Tare (gm)	15.19	15.22	15.17	
Wt. of Water (gm)	3.3	3.6	3.1	
Wt. of DS (gm)	8.6	9.9	8.8	
<b>Moisture Content (%)</b>	<b>38.4</b>	<b>36.7</b>	<b>35.0</b>	
<b>Number of Blows</b>	<b>15</b>	<b>25</b>	<b>34</b>	

Plastic Limit Test	1	2	Range	Test Results
Tare Number	O	B		<b>Liquid Limit (%)</b> 36
Wt. of Tare & WS (gm)	21.82	22.01		<b>Plastic Limit (%)</b> 24
Wt. of Tare & DS (gm)	20.53	20.71		<b>Plasticity Index (%)</b> 12
Wt. of Tare (gm)	15.19	15.18		<b>USCS Symbol</b> CL
Wt. of Water (gm)	1.3	1.3		
Wt. of DS (gm)	5.3	5.5		
<b>Moisture Content (%)</b>	<b>24.2</b>	<b>23.5</b>	<b>0.6</b>	

*Note: The acceptable range of the two Moisture contents is  $\pm 2.6$*

Flow Curve

Plasticity Chart



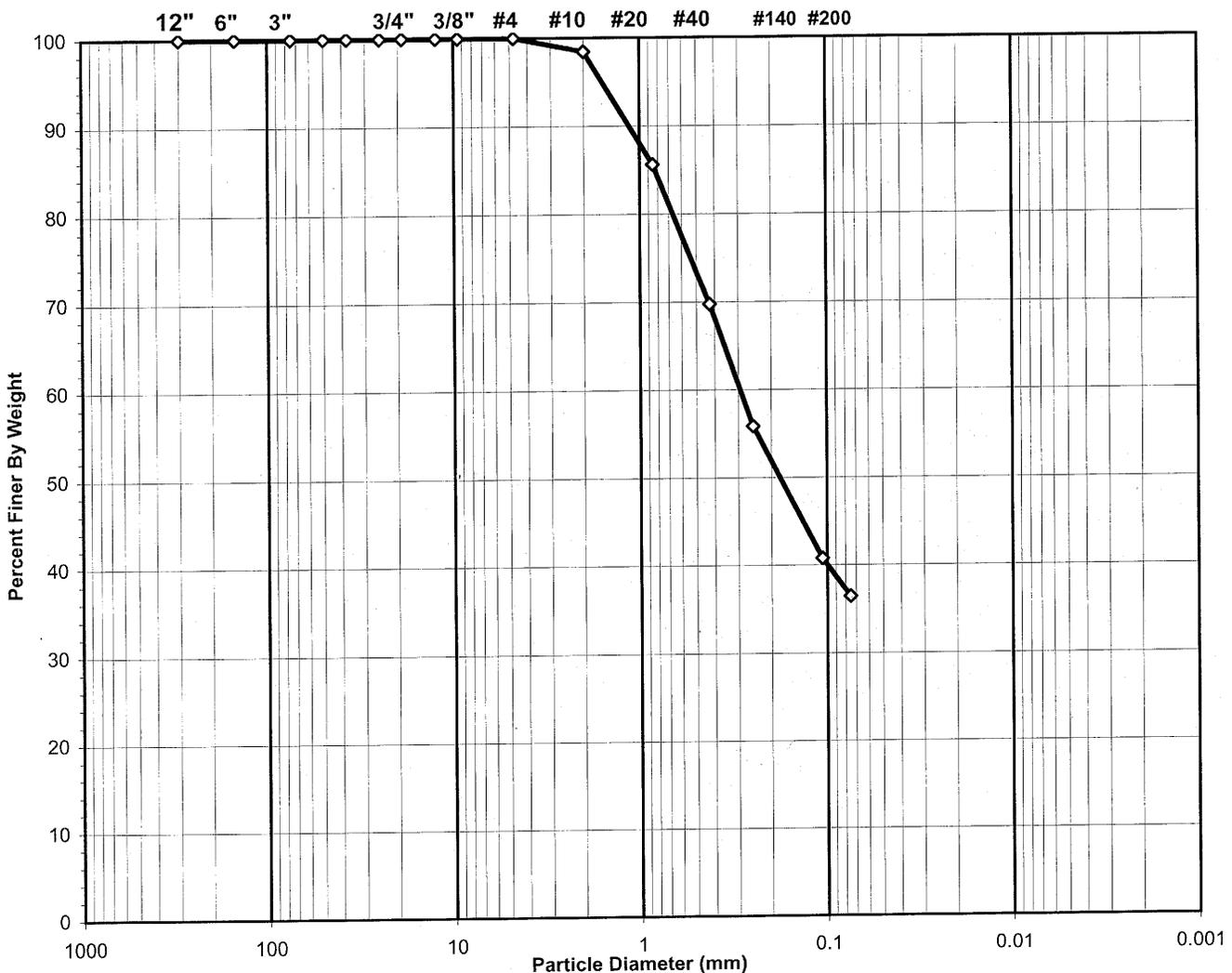
Tested By SD Date 11/3/2009 Checked By GEM Date 11-5-09

page 1 of 1 DCN: CT-S4B DATE: 10/8/2001 REVISION: 2

**SIEVE ANALYSIS**  
ASTM D 422-63 (SOP-S3)

Client	DAVID GARRETT	Boring No.	NA
Client Reference	WCA HIGHPOINT PHASE 2A	Depth (ft)	NA
Project No.	2009-723-01	Sample No.	SAMPLE 1
Lab ID	2009-723-01-01	Soil Color	<b>LIGHT BROWN</b>

<b>USCS</b>	<b>SIEVE ANALYSIS</b>		<b>HYDROMETER</b>
	gravel	sand	silt and clay



**USCS Symbol**      **SC, TESTED**

**USCS Classification**      **CLAYEY SAND**

Tested By    SD      Date    11/4/2009    Checked By    *GAM*      Date    11-5-09

### WASH SIEVE ANALYSIS

ASTM D 422-63 (SOP-S3)

Client	DAVID GARRETT	Boring No.	NA
Client Reference	WCA HIGHPOINT PHASE 2A	Depth (ft)	NA
Project No.	2009-723-01	Sample No.	SAMPLE 1
Lab ID	2009-723-01-01	Soil Color	<b>LIGHT BROWN</b>

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	203	Tare No.	NA
Wgt. Tare + Wet Specimen (gm)	645.07	Wgt. Tare + Wet Specimen (gm)	NA
Wgt. Tare + Dry Specimen (gm)	568.34	Wgt. Tare + Dry Specimen (gm)	NA
Weight of Tare (gm)	171.07	Weight of Tare (gm)	NA
Weight of Water (gm)	76.73	Weight of Water (gm)	NA
Weight of Dry Soil (gm)	397.27	Weight of Dry Soil (gm)	NA
<b>Moisture Content (%)</b>	<b>19.3</b>	<b>Moisture Content (%)</b>	<b>NA</b>

Wet Weight -3/4" Sample (gm)	NA	Weight of the Dry Specimen (gm)	397.27
Dry Weight - 3/4" Sample (gm)	252.7	Weight of minus #200 material (gm)	144.61
Wet Weight +3/4" Sample (gm)	NA	Weight of plus #200 material (gm)	252.66
Dry Weight + 3/4" Sample (gm)	0.00		
Total Dry Weight Sample (gm)	NA		

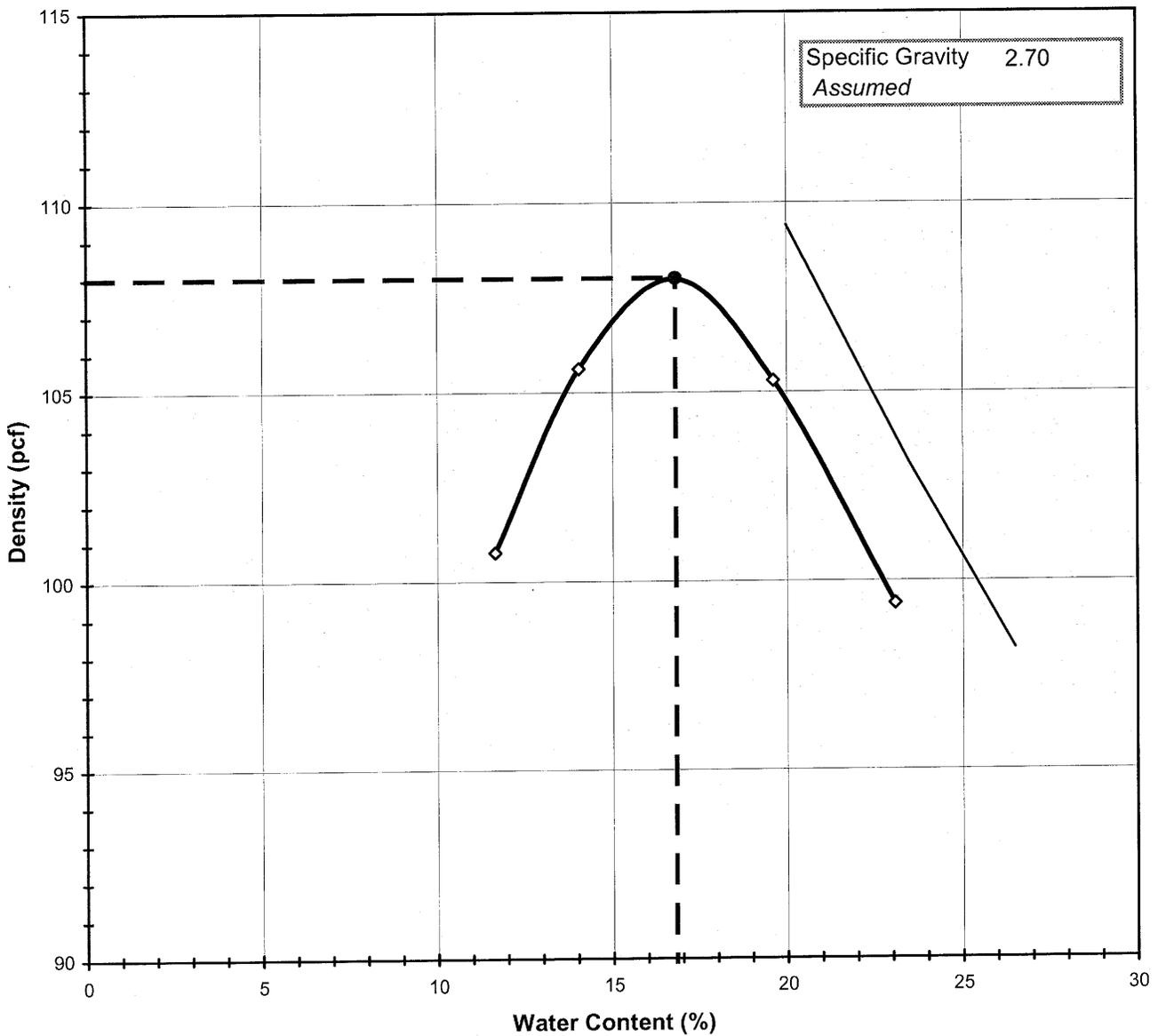
Sieve Size	Sieve Opening (mm)	Wgt. of Soil Retained (gm)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.0	0.0	100.0	100.0
6"	150	0.00	0.0	0.0	100.0	100.0
3"	75	0.00	0.0	0.0	100.0	100.0
2"	50	0.00	0.0	0.0	100.0	100.0
1 1/2"	37.5	0.00	0.0	0.0	100.0	100.0
1"	25.0	0.00	0.0	0.0	100.0	100.0
3/4"	19.0	0.00	0.0	0.0	100.0	100.0
1/2"	12.50	0.00	0.0	0.0	100.0	100.0
3/8"	9.50	0.00	0.0	0.0	100.0	100.0
#4	4.75	0.00	0.0	0.0	100.0	100.0
#10	2.00	6.08	1.5	1.5	98.5	98.5
#20	0.850	51.16	12.9	14.4	85.6	85.6
#40	0.425	62.96	15.8	30.3	69.7	69.7
#60	0.250	55.30	13.9	44.2	55.8	55.8
#140	0.106	59.99	15.1	59.3	40.7	40.7
#200	0.075	17.17	4.3	63.6	36.4	36.4
Pan	-	144.61	36.4	100.0	-	-

Tested By **SD** Date **11/4/2009** Checked By **GAM** Date **11-5-09**

**MOISTURE DENSITY RELATIONSHIP**  
ASTM D698-91 SOP-S12

Client	DAVID GARRETT	Boring No.	NA
Client Reference	WCA HIGHPOINT PHASE 2A	Depth (ft)	NA
Project No.	2009-723-01	Sample No.	SAMPLE 1
Lab ID	2009-723-01-01	Test Method	<b>STANDARD</b>
Visual Description	LIGHT BROWN CLAYEY SAND		

**Optimum Water Content**                      **16.8**  
**Maximum Dry Density**                              **108.0**



Tested By SD      Date 11/3/2009      Checked By GM      Date 11-5-09

## MOISTURE - DENSITY RELATIONSHIP

ASTM D698-91 SOP-S12

Client	DAVID GARRETT	Boring No.	NA
Client Reference	WCA HIGHPOINT PHASE 2A	Depth (ft)	NA
Project No.	2009-723-01	Sample No.	SAMPLE 1
Lab ID	2009-723-01-01		

Visual Description      LIGHT BROWN CLAYEY SAND

Total Weight of the Sample (gm)	22808
As Received Water Content(%)	NA
Assumed Specific Gravity	2.70
Percent Retained on 3/4"	NA
Percent Retained on 3/8"	NA
Percent Retained on #4	NA
Oversize Material	Not included
Procedure Used	A

TestType	<b>STANDARD</b>	
Rammer Weight (lbs)		5.5
Rammer Drop (in)		12
Rammer Type	MECHANICAL	
Machine ID	R	174
Mold ID	R	172
Mold diameter		4"
Weight of the Mold		4313
Volume of the Mold(cc)		942

### Mold / Specimen

Point No.	1	2	3	4	5
Wt. of Mold & WS (gm)	6012	6132	6217	6214	6160
Wt. of Mold (gm)	4313	4313	4313	4313	4313
Wt. of WS	1699	1819	1904	1901	1847
Mold Volume (cc)	942	942	942	942	942

### Moisture Content / Density

Tare Number	310	312	305	315	K-7
Wt. of Tare & WS (gm)	441.50	507.00	509.05	528.70	584.20
Wt. of Tare & DS (gm)	406.92	454.91	447.99	460.08	495.40
Wt. of Tare (gm)	110.30	84.30	84.70	110.30	110.70
Wt. of Water (gm)	34.58	52.09	61.06	68.62	88.80
Wt. of DS (gm)	296.62	370.61	363.29	349.78	384.70

Wet Density (gm/cc)	1.80	1.93	2.02	2.02	1.96
Wet Density (pcf)	112.5	120.5	126.1	125.9	122.3
<b>Moisture Content (%)</b>	<b>11.7</b>	<b>14.1</b>	<b>16.8</b>	<b>19.6</b>	<b>23.1</b>
<b>Dry Density (pcf)</b>	<b>100.8</b>	<b>105.6</b>	<b>108.0</b>	<b>105.3</b>	<b>99.4</b>

### Zero Air Voids

<b>Moisture Content (%)</b>	20.0	23.5	26.5
<b>Dry Unit Weight (pcf)</b>	109.4	103.1	98.2

Tested By    SD      Date    11/3/2009      Checked By    *GER*      Date    11-5-09

## MOISTURE CONTENT

ASTM D 2216 (SOP-S1)

Client                    DAVID GARRETT  
Client Reference        WCA HIGHPOINT PHASE 2A  
Project No.              2009-723-02

Lab ID                    .001  
Boring No.                NA  
Depth (ft)                NA  
Sample No.                2

Tare Number              216  
Wt. of Tare & WS (gm)    589.46  
Wt. of Tare & DS (gm)    465.00  
Wt. of Tare (gm)         170.72  
Wt. of Water (gm)        124.46  
Wt. of DS (gm)            294.28

**Water Content (%)            42.3**

Notes :    NA

Tested By    SD                    Date            11/20/2009    Checked By

*GEM*                    Date    11-20-09

### ATTERBERG LIMITS

ASTM D 4318-05 / AASHTO T89 (SOP - S4A)

Client	DAVID GARRETT	Boring No.	NA
Client Reference	WCA HIGHPOINT PHASE 2A	Depth (ft)	NA
Project No.	2009-723-02	Sample No.	2
Lab ID	2009-723-02-01	Soil Description	<b>RED BROWN ELASTIC SILT</b>

(Minus No. 40 sieve material, Airdried)

**Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description.**

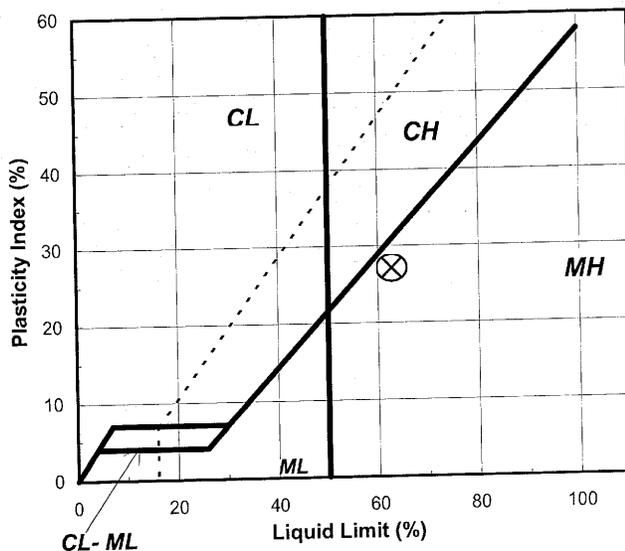
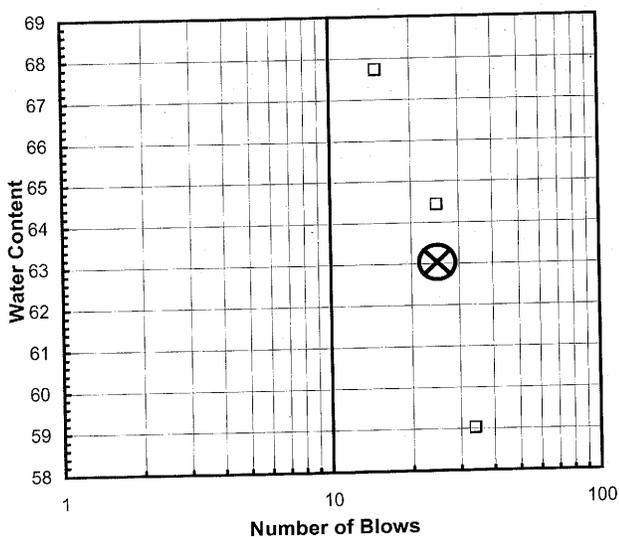
Liquid Limit Test	1	2	3	MULTIPOINT
Tare Number	Y	E	A	
Wt. of Tare & WS (gm)	28.30	28.76	28.57	
Wt. of Tare & DS (gm)	23.16	23.49	23.63	
Wt. of Tare (gm)	15.57	15.31	15.26	
Wt. of Water (gm)	5.1	5.3	4.9	
Wt. of DS (gm)	7.6	8.2	8.4	
<b>Moisture Content (%)</b>	<b>67.7</b>	<b>64.4</b>	<b>59.0</b>	
<b>Number of Blows</b>	<b>15</b>	<b>25</b>	<b>34</b>	

Plastic Limit Test	1	2	Range	Test Results	
Tare Number	A-L	A-H		Liquid Limit (%)	63
Wt. of Tare & WS (gm)	22.00	22.18		Plastic Limit (%)	36
Wt. of Tare & DS (gm)	20.29	20.42		Plasticity Index (%)	27
Wt. of Tare (gm)	15.51	15.55		USCS Symbol	MH
Wt. of Water (gm)	1.7	1.8			
Wt. of DS (gm)	4.8	4.9			
<b>Moisture Content (%)</b>	<b>35.8</b>	<b>36.1</b>	<b>-0.4</b>		

*Note: The acceptable range of the two Moisture contents is  $\pm 2.6$*

Flow Curve

Plasticity Chart



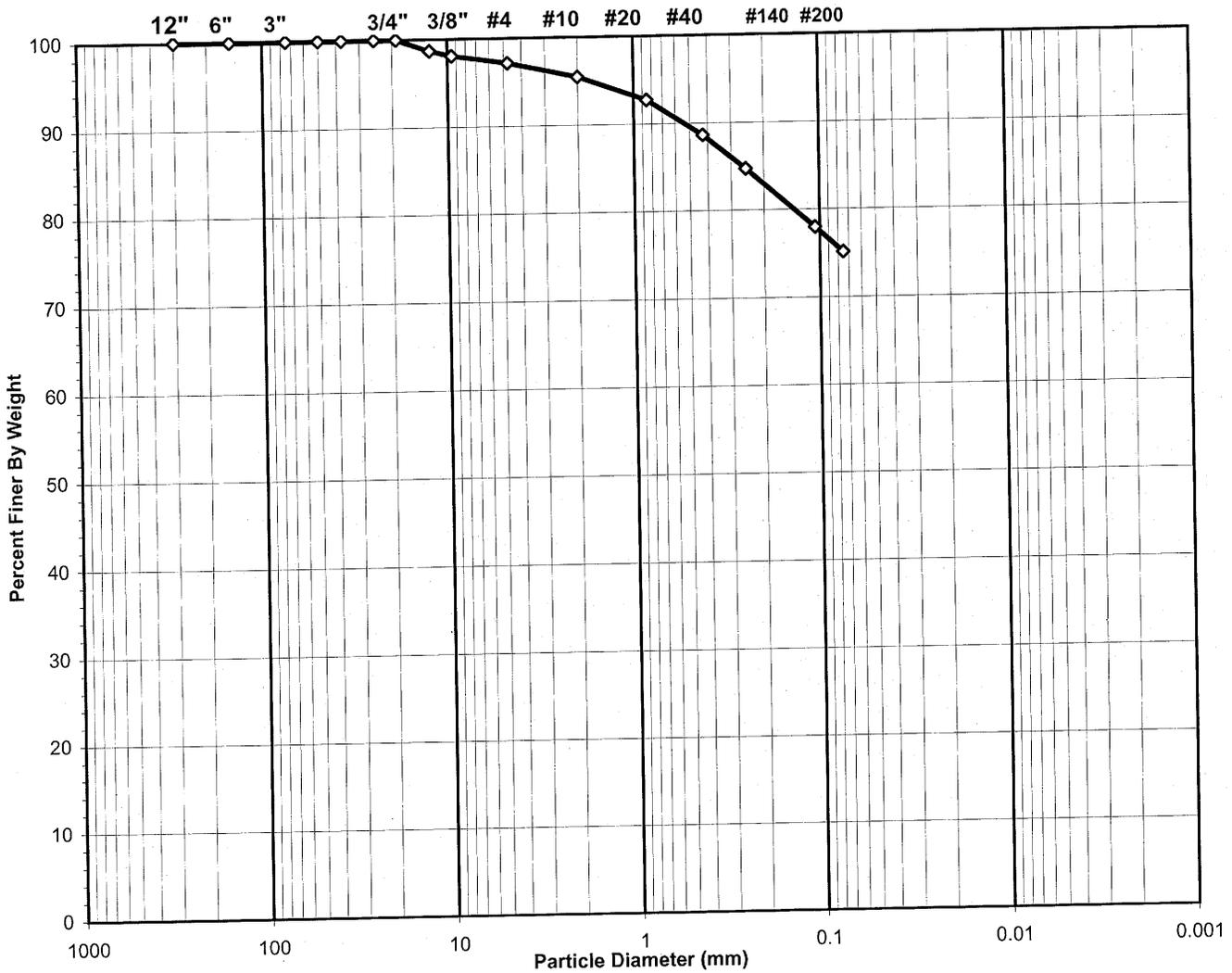
Tested By JBD Date 11/19/2009 Checked By GEM Date 11-23-09

**SIEVE ANALYSIS**  
ASTM D 422-63 (SOP-S3)

Client DAVID GARRETT  
 Client Reference WCA HIGHPOINT PHASE 2A  
 Project No. 2009-723-02  
 Lab ID 2009-723-02-01

Boring No. NA  
 Depth (ft) NA  
 Sample No. 2  
 Soil Color RED BROWN

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol **MH, TESTED**

USCS Classification **ELASTIC SILT WITH SAND**

Tested By SD Date 11/20/2009 Checked By *GAM* Date 11-23-09



## WASH SIEVE ANALYSIS

ASTM D 422-63 (SOP-S3)

Client	DAVID GARRETT	Boring No.	NA
Client Reference	WCA HIGHPOINT PHASE 2A	Depth (ft)	NA
Project No.	2009-723-02	Sample No.	2
Lab ID	2009-723-02-01	Soil Color	RED BROWN

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	216	Tare No.	NA
Wgt. Tare + Wet Specimen (gm)	589.46	Wgt. Tare + Wet Specimen (gm)	NA
Wgt. Tare + Dry Specimen (gm)	465.00	Wgt. Tare + Dry Specimen (gm)	NA
Weight of Tare (gm)	170.72	Weight of Tare (gm)	NA
Weight of Water (gm)	124.46	Weight of Water (gm)	NA
Weight of Dry Soil (gm)	294.28	Weight of Dry Soil (gm)	NA
<b>Moisture Content (%)</b>	<b>42.3</b>	<b>Moisture Content (%)</b>	<b>NA</b>

Wet Weight - 3/4" Sample (gm)	NA	Weight of the Dry Specimen (gm)	294.28
Dry Weight - 3/4" Sample (gm)	73.3	Weight of minus #200 material (gm)	220.96
Wet Weight + 3/4" Sample (gm)	NA	Weight of plus #200 material (gm)	73.32
Dry Weight + 3/4" Sample (gm)	0.00		
Total Dry Weight Sample (gm)	NA		

Sieve Size	Sieve Opening (mm)	Wgt. of Soil Retained (gm)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.0	0.0	100.0	100.0
6"	150	0.00	0.0	0.0	100.0	100.0
3"	75	0.00	0.0	0.0	100.0	100.0
2"	50	0.00	0.0	0.0	100.0	100.0
1 1/2"	37.5	0.00	0.0	0.0	100.0	100.0
1"	25.0	0.00	0.0	0.0	100.0	100.0
3/4"	19.0	0.00	0.0	0.0	100.0	100.0
1/2"	12.50	3.85	1.3	1.3	98.7	98.7
3/8"	9.50	1.80	0.6	1.9	98.1	98.1
#4	4.75	2.63	0.9	2.8	97.2	97.2
#10	2.00	5.03	1.7	4.5	95.5	95.5
#20	0.850	8.14	2.8	7.3	92.7	92.7
#40	0.425	12.07	4.1	11.4	88.6	88.6
#60	0.250	11.46	3.9	15.3	84.7	84.7
#140	0.106	19.87	6.8	22.0	78.0	78.0
#200	0.075	8.47	2.9	24.9	75.1	75.1
Pan	-	220.96	75.1	100.0	-	-

Tested By SD Date 11/20/2009 Checked By *CGM* Date *11-23-09*

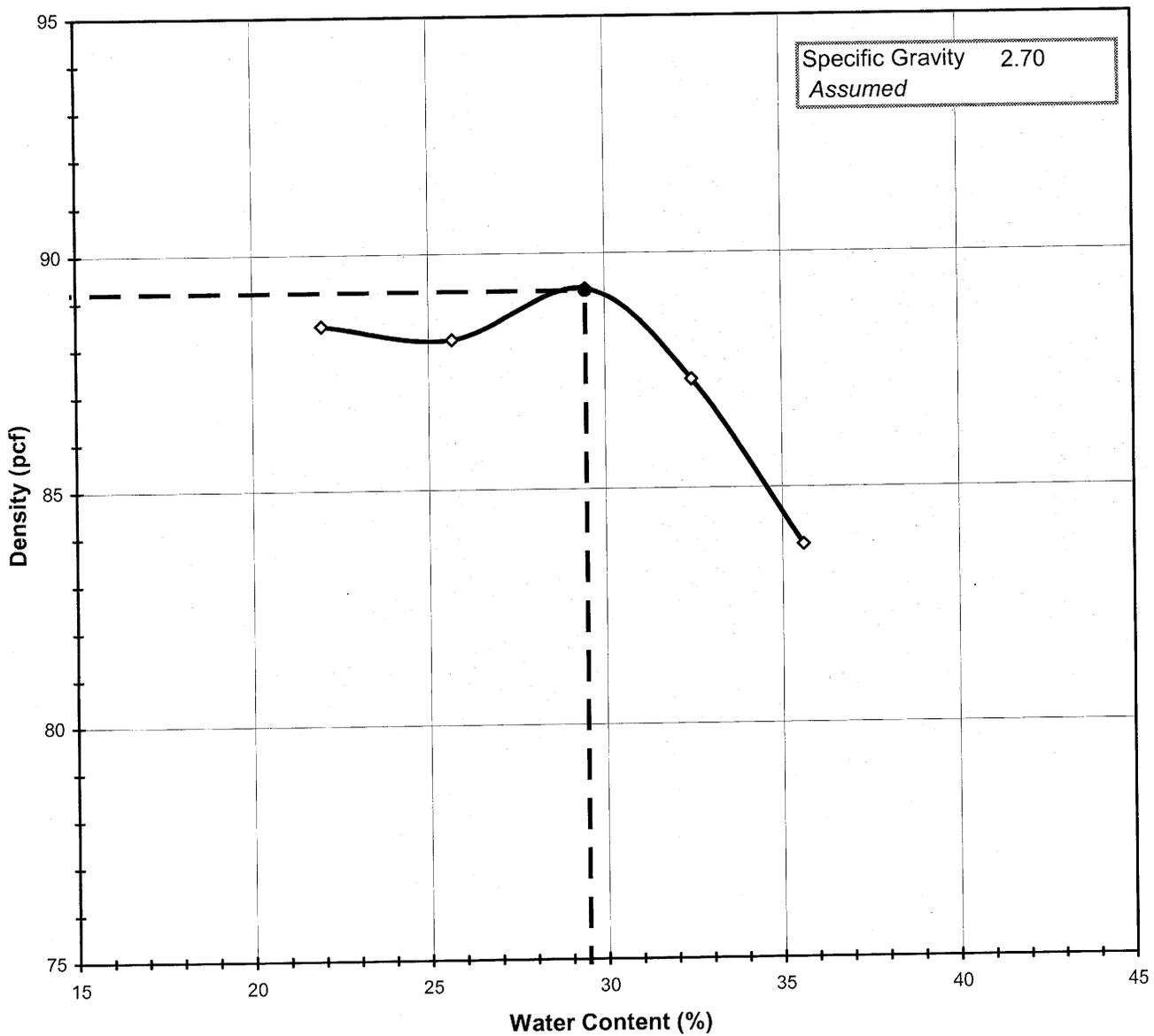


# MOISTURE DENSITY RELATIONSHIP

ASTM D698-91 SOP-S12

Client	DAVID GARRETT	Boring No.	NA
Client Reference	WCA HIGHPOINT PHASE 2A	Depth (ft)	NA
Project No.	2009-723-02	Sample No.	2
Lab ID	2009-723-02-01	Test Method	STANDARD
Visual Description	RED BROWN ELASTIC SILT WITH SAND		

**Optimum Water Content** 29.5  
**Maximum Dry Density** 89.2



Tested By SD Date 11/20/2009 Checked By GEM Date 11-23-09

## MOISTURE - DENSITY RELATIONSHIP

ASTM D698-91 SOP-S12

Client	DAVID GARRETT	Boring No.	NA
Client Reference	WCA HIGHPOINT PHASE 2A	Depth (ft)	NA
Project No.	2009-723-02	Sample No.	2
Lab ID	2009-723-02-01		

Visual Description      RED BROWN ELASTIC SILT WITH SAND

Total Weight of the Sample (gm)	18344
As Received Water Content(%)	NA
Assumed Specific Gravity	2.70
Percent Retained on 3/4"	4
Percent Retained on 3/8"	6
Percent Retained on #4	NA
Oversize Material	Not included
Procedure Used	B

TestType	<b>STANDARD</b>	
Rammer Weight (lbs)	5.5	
Rammer Drop (in)	12	
Rammer Type	MECHANICAL	
Machine ID	R	174
Mold ID	R	172
Mold diameter	4"	
Weight of the Mold	4313	
Volume of the Mold(cc)	942	

### Mold / Specimen

Point No.	1	2	3	4	5
Wt. of Mold & WS (gm)	5942	5986	6057	6059	6028
Wt. of Mold (gm)	4313	4313	4313	4313	4313
Wt. of WS	1629	1673	1744	1746	1715
Mold Volume (cc)	942	942	942	942	942

### Moisture Content / Density

Tare Number	309	398	306	318	300
Wt. of Tare & WS (gm)	516.10	377.70	458.80	422.30	500.70
Wt. of Tare & DS (gm)	442.95	317.77	374.50	340.08	398.38
Wt. of Tare (gm)	109.90	84.30	88.30	86.70	111.00
Wt. of Water (gm)	73.15	59.93	84.30	82.22	102.32
Wt. of DS (gm)	333.05	233.47	286.20	253.38	287.38

Wet Density (gm/cc)	1.73	1.78	1.85	1.85	1.82
Wet Density (pcf)	107.9	110.8	115.5	115.6	113.6
<b>Moisture Content (%)</b>	<b>22.0</b>	<b>25.7</b>	<b>29.5</b>	<b>32.4</b>	<b>35.6</b>
<b>Dry Density (pcf)</b>	<b>88.5</b>	<b>88.2</b>	<b>89.2</b>	<b>87.3</b>	<b>83.8</b>

### Zero Air Voids

Moisture Content (%)	19.0	23.5	27.0
Dry Unit Weight (pcf)	111.4	103.1	97.4

Tested By    SD      Date    11/20/2009    Checked By    *eam*      Date    11-23-09

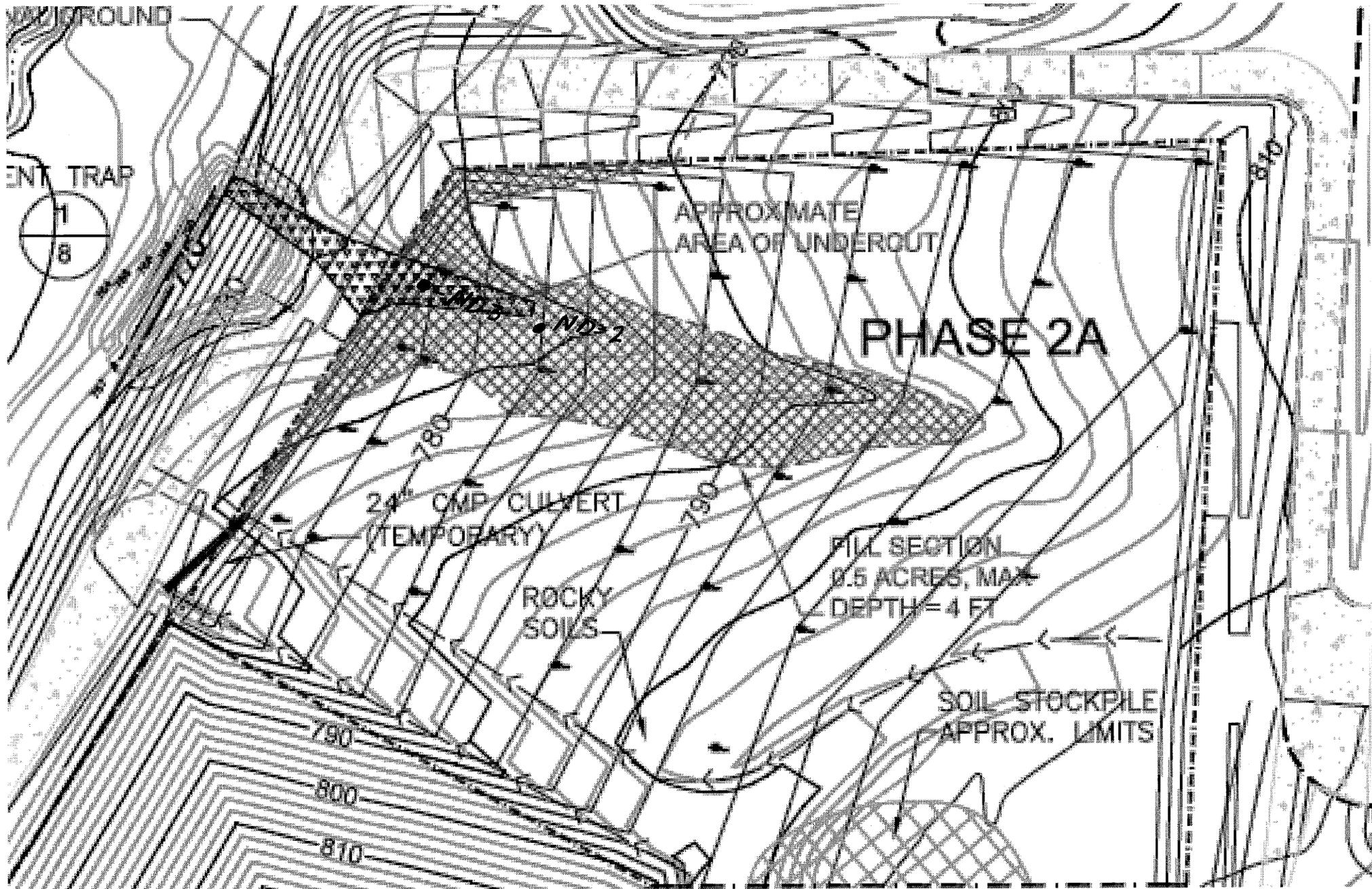
Day: Tuesday  
 Date: 12/1/09  
 Log No.: 07  
 Page: 1



## Daily Field Activity Log

<b>Project Name:</b> David Garrett-WCA Highpoint C&D		<b>Project No.:</b> 2009-723	
<b>Client Name:</b> David Garrett		<b>Client Contact:</b> David Garrett	
<b>Site Location:</b> Highpoint		<b>Time on Site:</b> Arrived: 10:30am Departed: 1:00pm	
<b>General Contractor:</b> Chad Woods Grading		<b>Superintendent:</b> Chad Woods	
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b> Sunny		<b>Temperature:</b> 50	
<b>Contractor's Equipment:</b> D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller			
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractor had placed and compacted one lift of fill in the half acre area and were working on placing the next lift. Lifts were approximately 12 inch loose lifts. Lifts were continually compacted by the tractor and sheepsfoot roller as the lift was spread out.</li> <li>▪ J. Patton performed two nuclear density test on the 1/2 acre area of fill; densities met the minimum compaction.</li> <li>▪ J. Patton departed site at approximately 1pm.</li> </ul>			
<b>Prepared By:</b> JP	<b>Date:</b> 12/1/2009	<b>Checked By:</b> JRB	<b>Date:</b> 4.7.10





Day: Monday  
 Date: 12/7/10  
 Log No.: 08  
 Page: 1



### Daily Field Activity Log

<b>Project Name:</b>	David Garrett-WCA Highpoint C&D	<b>Project No.:</b>	2009-723
<b>Client Name:</b>	David Garrett	<b>Client Contact:</b>	David Garrett
<b>Site Location:</b>	Highpoint, NC	<b>Time on Site:</b>	<b>Arrived:</b> 1:00pm <b>Departed:</b> 3:00pm
<b>General Contractor:</b>	Chad Woods Grading	<b>Superintendent:</b>	Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b>	Cloudy	<b>Temperature:</b>	40
<b>Contractor's Equipment:</b>	D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller		
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors had placed and compacted one lift of embankment and were placing the second lift of embankment. Lifts were continually compacted by the tractor and sheepsfoot roller as the lift was spread out.</li> <li>▪ J. Patton performed CQA Moisture / Density testing on the placed embankment. (Refer to FDR - 03 for results)</li> <li>▪ J. Patton departed site approximately 3:00pm.</li> </ul>			
<b>Prepared By:</b>	JP	<b>Date:</b>	12/7/2010
<b>Checked By:</b>	JRB	<b>Date:</b>	4.8.10

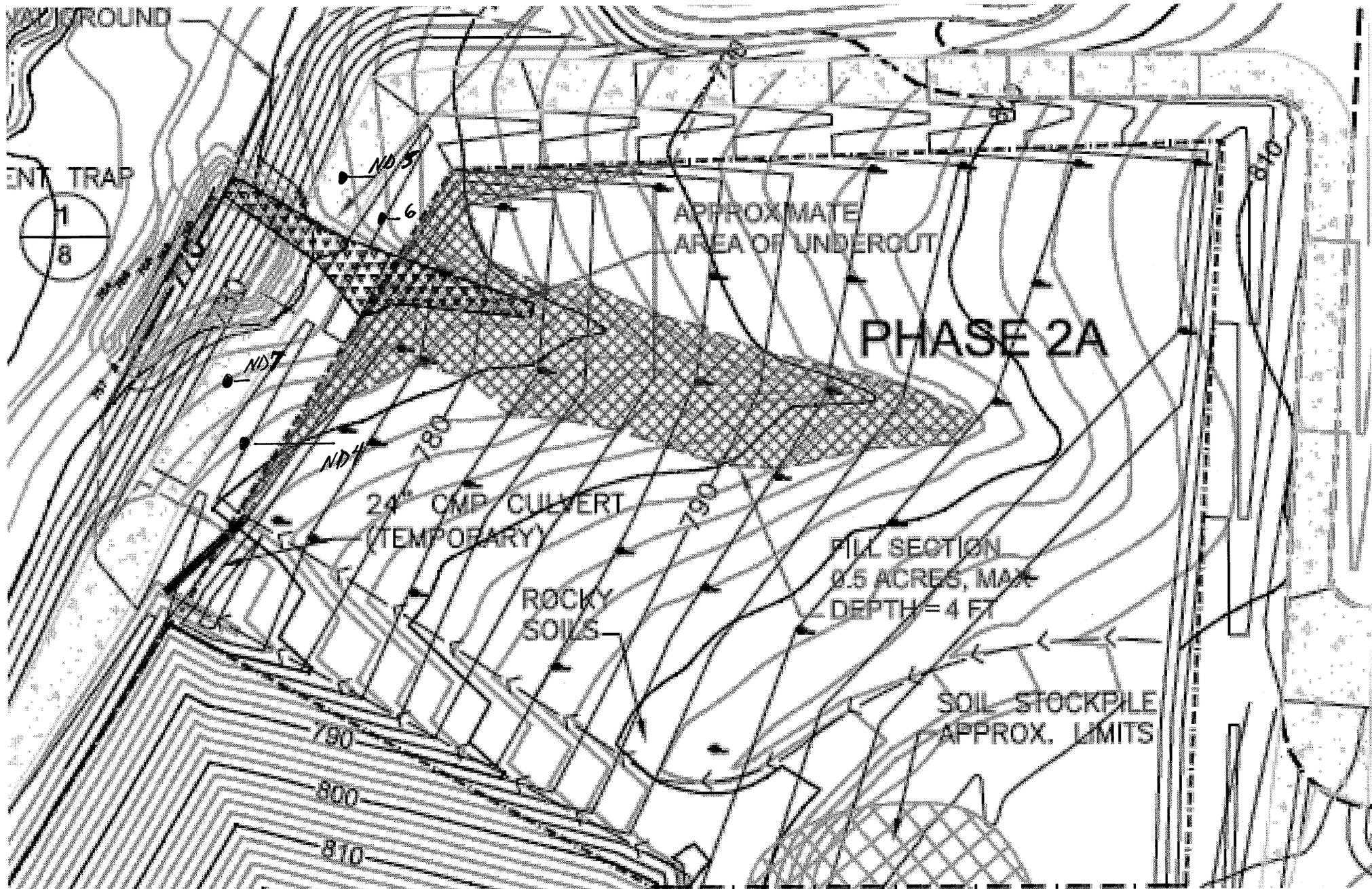
Day: Friday  
 Date: 12/11/10  
 Log No.: 09  
 Page: 1



### Daily Field Activity Log

<b>Project Name:</b>	David Garrett-WCA Highpoint C&D	<b>Project No.:</b>	2009-723
<b>Client Name:</b>	David Garrett	<b>Client Contact:</b>	David Garrett
<b>Site Location:</b>	Highpoint, NC	<b>Time on Site:</b>	<b>Arrived:</b> 11:30am <b>Departed:</b> 3:30pm
<b>General Contractor:</b>	Chad Woods Grading	<b>Superintendent:</b>	Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b>	Cloudy	<b>Temperature:</b>	40
<b>Contractor's Equipment:</b>	D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller		
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors had placed and compacted lift 3 of embankment and were placing the lift 4 of embankment. Lifts were continually compacted by the tractor and sheepsfoot roller as the lift was spread out.</li> <li>▪ J. Patton performed CQA Moisture / Density testing on the placed embankment. (Refer to FDR - 03 for results)</li> <li>▪ Contractors began placing material on the slopes of the embankment.</li> <li>▪ J. Patton departed site approximately 3:30pm.</li> </ul>			
<b>Prepared By:</b>	JP	<b>Date:</b>	12/11/2010
<b>Checked By:</b>	JRB	<b>Date:</b>	4.8.10





12/7/09 - 12/11/09 DFR-08-09 FDR-03

Day: Wed.  
 Date: 1/13/10  
 Log No.: 10  
 Page: 1



## Daily Field Activity Log

<b>Project Name:</b> David Garrett-WCA Highpoint C&D		<b>Project No.:</b> 2009-723	
<b>Client Name:</b> David Garrett		<b>Client Contact:</b> David Garrett	
<b>Site Location:</b> Highpoint, NC		<b>Time on Site:</b> Arrived: 1:30pm Departed: 2:30pm	
<b>General Contractor:</b> Chad Woods Grading		<b>Superintendent:</b> Chad Woods	
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b> Cloudy		<b>Temperature:</b> 40	
<b>Contractor's Equipment:</b> D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller			
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors had placed and compacted lift 4 of embankment and were placing lift 5 of embankment. Lifts were continually compacted by the tractor and sheepsfoot roller as the lift was spread out.</li> <li>▪ J. Patton performed CQA Moisture / Density testing on the placed embankment. (Refer to FDR - 04 for results)</li> <li>▪ J. Patton departed site at approximately 3:00pm.</li> </ul>			
<b>Prepared By:</b> JP		<b>Date:</b> 1/13/2010	
		<b>Checked By:</b> JRB	
		<b>Date:</b> 4.8.10	

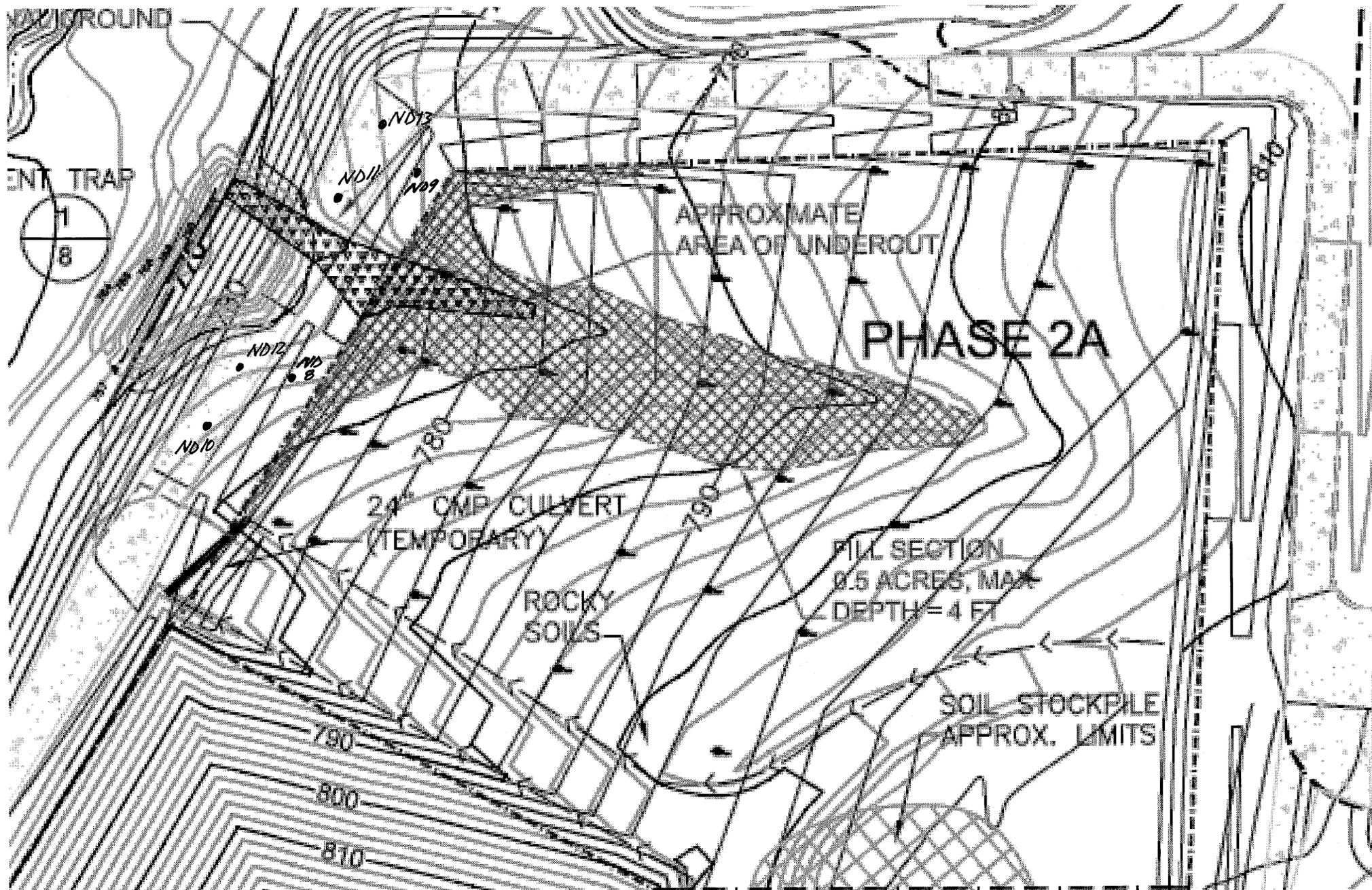
Day: Thursday  
 Date: 1/14/10  
 Log No.: 11  
 Page: 1



### Daily Field Activity Log

<b>Project Name:</b>	David Garrett-WCA Highpoint C&D	<b>Project No.:</b>	2009-723
<b>Client Name:</b>	David Garrett	<b>Client Contact:</b>	David Garrett
<b>Site Location:</b>	Highpoint, NC	<b>Time on Site:</b>	<b>Arrived:</b> 12:00PM <b>Departed:</b> 1:00PM
<b>General Contractor:</b>	Chad Woods Grading	<b>Superintendent:</b>	Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b>	Sunny	<b>Temperature:</b>	50
<b>Contractor's Equipment:</b>	D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller		
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of lift 6 of embankment. Embankment was compacted by the tractor and sheepsfoot roller as the lift was being placed.</li> <li>▪ J. Patton performed CQA Moisture / Density testing on the placed embankment. (Refer to FDR - 04 for results)</li> <li>▪ J. Patton departed site at approximately 1:00pm.</li> </ul>			
<b>Prepared By:</b>	JP	<b>Date:</b>	1/14/2010
<b>Checked By:</b>	JRB	<b>Date:</b>	4.8.10





1/13/2010 - 1/14/2010 DFR 10-11 FDR-09

Day: Friday  
 Date: 2/12/10  
 Log No.: 12  
 Page: 1



### Daily Field Activity Log

<b>Project Name:</b>	David Garrett-WCA Highpoint C&D	<b>Project No.:</b>	2009-723
<b>Client Name:</b>	David Garrett	<b>Client Contact:</b>	David Garrett
<b>Site Location:</b>	Highpoint, NC	<b>Time on Site:</b>	<b>Arrived:</b> 1:30pm <b>Departed:</b> 2:30pm
<b>General Contractor:</b>	Chad Woods Grading	<b>Superintendent:</b>	Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b>	Cloudy	<b>Temperature:</b>	40
<b>Contractor's Equipment:</b>	D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller		
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of lift 7 of embankment. Embankment was compacted by the tractor and sheepsfoot roller as the lift was being placed.</li> <li>▪ J. Patton performed CQA Moisture / Density testing on the placed embankment. (Refer to FDR - 05 for results)</li> <li>▪ J. Patton departed site approximately 2:00pm.</li> </ul>			
<b>Prepared By:</b>	JP	<b>Date:</b>	2/12/2010
<b>Checked By:</b>	JRB	<b>Date:</b>	4.8.10

Day: Thursday  
 Date: 2/18/10  
 Log No.: 13  
 Page: 1



### Daily Field Activity Log

<b>Project Name:</b>	David Garrett-WCA Highpoint C&D	<b>Project No.:</b>	2009-723
<b>Client Name:</b>	David Garrett	<b>Client Contact:</b>	David Garrett
<b>Site Location:</b>	Highpoint, NC	<b>Time on Site:</b>	<b>Arrived:</b> 12:00PM <b>Departed:</b> 1:00PM
<b>General Contractor:</b>	Chad Woods Grading	<b>Superintendent:</b>	Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b>	Sunny	<b>Temperature:</b>	50
<b>Contractor's Equipment:</b>	D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller		
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of lift 8 of embankment. Embankment was compacted by the tractor and sheepsfoot roller as the lift was being placed.</li> <li>▪ J. Patton performed CQA Moisture / Density testing on the placed embankment. (Refer to FDR - 05 for results)</li> <li>▪ J. Patton departed site approximately 1:00pm.</li> </ul>			
<b>Prepared By:</b>	JP	<b>Date:</b>	2/18/2010
<b>Checked By:</b>	JRB	<b>Date:</b>	4.8.10

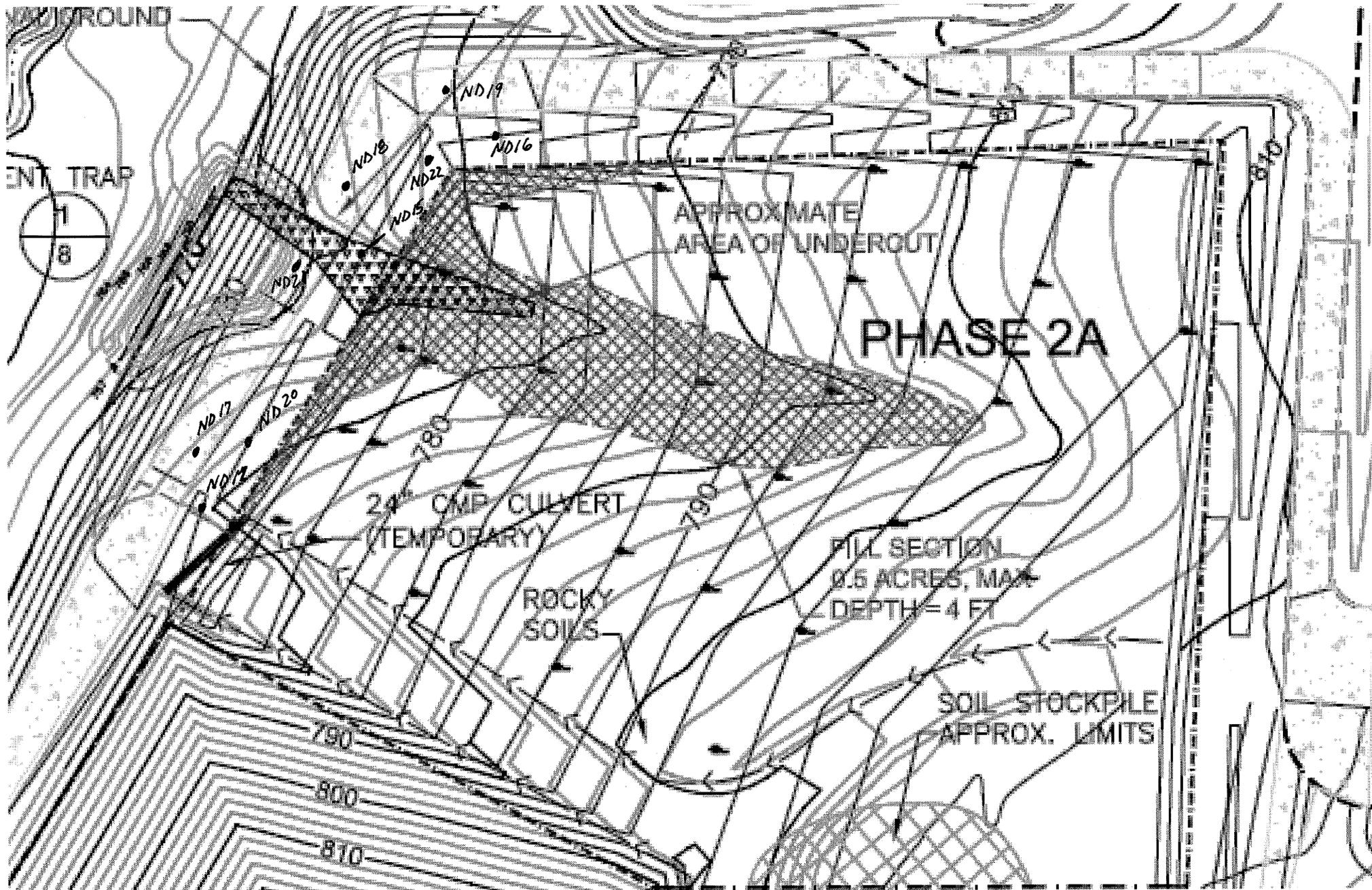
Day: Friday  
 Date: 2/19/10  
 Log No.: 14  
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### Daily Field Activity Log

<b>Project Name:</b>	David Garrett-WCA Highpoint C&D	<b>Project No.:</b>	2009-723
<b>Client Name:</b>	David Garrett	<b>Client Contact:</b>	David Garrett
<b>Site Location:</b>	Highpoint, NC	<b>Time on Site:</b>	<b>Arrived:</b> 3:00PM <b>Departed:</b> 4:00PM
<b>General Contractor:</b>	Chad Woods Grading	<b>Superintendent:</b>	Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b>	Sunny	<b>Temperature:</b>	50
<b>Contractor's Equipment:</b>	D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller		
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of lift 9 of embankment. Embankment was compacted by the tractor and sheepsfoot roller as the lift was being placed.</li> <li>▪ J. Patton performed CQA Moisture / Density testing on the placed embankment. (Refer to FDR - 05 for results)</li> <li>▪ J. Patton departed site approximately 4:00pm.</li> </ul>			
<b>Prepared By:</b>	JP	<b>Date:</b>	2/19/2010
<b>Checked By:</b>	JRB	<b>Date:</b>	4.8.10





2/12/2010 - 2/19/2010 DFR 12-19 FDR-05

Day: Friday  
 Date: 2/26/10  
 Log No.: 15  
 Page: 1



### Daily Field Activity Log

<b>Project Name:</b>	David Garrett-WCA Highpoint C&D	<b>Project No.:</b>	2009-723
<b>Client Name:</b>	David Garrett	<b>Client Contact:</b>	David Garrett
<b>Site Location:</b>	Highpoint, NC	<b>Time on Site:</b>	<b>Arrived:</b> 11:00am <b>Departed:</b> 1:00pm
<b>General Contractor:</b>	Chad Woods Grading	<b>Superintendent:</b>	Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b>	Sunny/Windy	<b>Temperature:</b>	40's
<b>Contractor's Equipment:</b>	D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller		
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of the final lift of embankment. Embankment was compacted by the tractor and sheepsfoot roller as the lift was being placed.</li> <li>▪ J. Patton performed CQA Moisture / Density testing on the placed embankment. (Refer to FDR - 06 for results)</li> <li>▪ Contractors had placed structural fill across the acre of fill within the cell limits. Placed fill was found to be too wet to be compacted and tested. Contractors agreed to continue discing the material over the weekend to facilitate drying and re-compact on Monday.</li> <li>▪ J. Patton departed the site.</li> </ul>			
<b>Prepared By:</b>	JP	<b>Date:</b>	2/26/2010
<b>Checked By:</b>	JRB	<b>Date:</b>	4.8.10

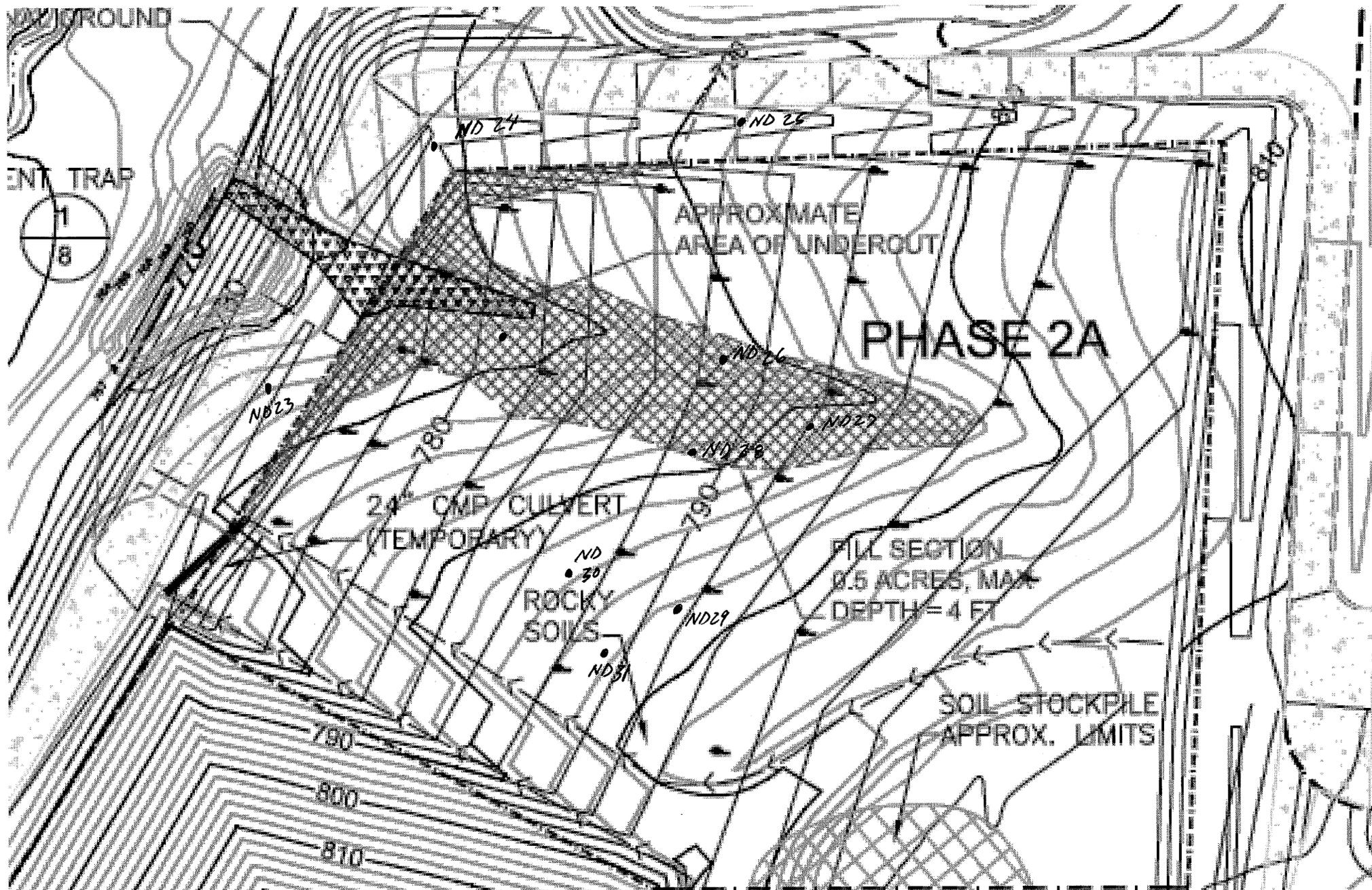
Day: Monday  
 Date: 3/1/10  
 Log No.: 16  
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### Daily Field Activity Log

<b>Project Name:</b>	David Garrett-WCA Highpoint C&D	<b>Project No.:</b>	2009-723
<b>Client Name:</b>	David Garrett	<b>Client Contact:</b>	David Garrett
<b>Site Location:</b>	Highpoint, NC	<b>Time on Site:</b>	<b>Arrived:</b> 8:30AM <b>Departed:</b> 12:00PM
<b>General Contractor:</b>	Chad Woods Grading	<b>Superintendent:</b>	Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b>	Sunny	<b>Temperature:</b>	50
<b>Contractor's Equipment:</b>	D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller		
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of the acre of fill within the cell limits and backfilling the borrow area.</li> <li>▪ J. Patton performed CQA Moisture / Density testing on the placed embankment. (Refer to FDR - 06 for results)</li> <li>▪ J. Patton departed site approximately 12:00pm.</li> </ul>			
<b>Prepared By:</b>	JP	<b>Date:</b>	3/1/2010
<b>Checked By:</b>	JRB	<b>Date:</b>	4.8.10





2/26/2010 - 3/1/2010 DFR 15-16 FDR-06

Day: Monday  
 Date: 3/8/10  
 Log No.: 17  
 Page: 1



### Daily Field Activity Log

<b>Project Name:</b>	David Garrett-WCA Highpoint C&D	<b>Project No.:</b>	2009-723
<b>Client Name:</b>	David Garrett	<b>Client Contact:</b>	David Garrett
<b>Site Location:</b>	Highpoint, NC	<b>Time on Site:</b>	<b>Arrived:</b> 12:00pm <b>Departed:</b> 1:00pm
<b>General Contractor:</b>	Chad Woods Grading	<b>Superintendent:</b>	Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b>	Sunny	<b>Temperature:</b>	50's
<b>Contractor's Equipment:</b>	D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller		
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of the acre of fill within the cell limits and backfilling the borrow area.</li> <li>▪ J. Patton performed CQA Moisture / Density testing on the placed embankment. (Refer to FDR - 07 for results)</li> <li>▪ J. Patton observed a change in material coming from the new off site borrow source. The soil was similar and visually classified as a light brown clayey sand. The material was observed to be heavier than the original borrow material and did not relate appropriately to the lab testing data. At the request of David Garrett, Geotechnics representative was requested to perform subjective visual qualification of compacted fill.</li> <li>▪ Compacted fill was observed during placement and compaction. The compactive effort was equal to that of the effort used in the duration of the project. After the lift was complete proofrolling was performed by the Cat 826 land fill compactor. No observable deflection was detected over the acre of fill and the lift was subjectively passed.</li> <li>▪ J. Patton departed site approximately 1:00pm.</li> </ul>			
<b>Prepared By:</b>	JP	<b>Date:</b>	3/8/2010
<b>Checked By:</b>	JRB	<b>Date:</b>	4.8.10

Day: Tuesday  
 Date: 3/9/10  
 Log No.: 18  
 Page: 1



## Daily Field Activity Log

<b>Project Name:</b> David Garrett-WCA Highpoint C&D		<b>Project No.:</b> 2009-723	
<b>Client Name:</b> David Garrett		<b>Client Contact:</b> David Garrett	
<b>Site Location:</b> Highpoint, NC		<b>Time on Site:</b> Arrived: 12:00PM Departed: 1:00PM	
<b>General Contractor:</b> Chad Woods Grading		<b>Superintendent:</b> Chad Woods	
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b> Sunny		<b>Temperature:</b> 60	
<b>Contractor's Equipment:</b> D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller			
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of the acre of fill within the cell limits and backfilling the borrow area.</li> <li>▪ Due to the difference in material only subjective evaluation of lifts were performed. Lift 3 of the borrow area within the cell was proofrolled with no observable deflection and subjectively passed.</li> <li>▪ J. Patton departed site approximately 1:00pm.</li> </ul>			
<b>Prepared By:</b> JP		<b>Date:</b> 3/9/2010	
<b>Checked By:</b> JRB		<b>Date:</b> 4.8.10	

Day: Wed.  
 Date: 3/10/10  
 Log No.: 19  
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## Daily Field Activity Log

<b>Project Name:</b> David Garrett-WCA Highpoint C&D		<b>Project No.:</b> 2009-723	
<b>Client Name:</b> David Garrett		<b>Client Contact:</b> David Garrett	
<b>Site Location:</b> Highpoint, NC		<b>Time on Site:</b> <b>Arrived:</b> 12:00PM <b>Departed:</b> 1:00PM	
<b>General Contractor:</b> Chad Woods Grading		<b>Superintendent:</b> Chad Woods	
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b> Sunny		<b>Temperature:</b> 70	
<b>Contractor's Equipment:</b> D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller			
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of the acre of fill within the cell limits and backfilling the borrow area.</li> <li>▪ Due to the difference in material only subjective evaluation of lifts were performed. Lift 2 of the Acre of fill within the cell was proofrolled with no observable deflection and subjectively passed.</li> <li>▪ J. Patton departed site approximately 1:00pm.</li> </ul>			
<b>Prepared By:</b> JP	<b>Date:</b> 3/10/2010	<b>Checked By:</b> JRB	<b>Date:</b> 4.8.10

Day: Friday  
 Date: 3/19/10  
 Log No.: 20  
 Page: 1



### Daily Field Activity Log

<b>Project Name:</b>	David Garrett-WCA Highpoint C&D	<b>Project No.:</b>	2009-723
<b>Client Name:</b>	David Garrett	<b>Client Contact:</b>	David Garrett
<b>Site Location:</b>	Highpoint, NC	<b>Time on Site:</b>	<b>Arrived:</b> 12:00PM <b>Departed:</b> 1:00PM
<b>General Contractor:</b>	Chad Woods Grading	<b>Superintendent:</b>	Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>			
<u>Firm / Sub-Contractor</u>		<u>Representative's Name and Title</u>	
<b>Weather Conditions:</b>	Sunny	<b>Temperature:</b>	70
<b>Contractor's Equipment:</b>	D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller		
<b>Contractor's Personnel:</b>			
<b>Description of Daily Activities &amp; Events</b>			
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of the acre of fill within the cell limits and backfilling the borrow area.</li> <li>▪ Due to the difference in material only subjective evaluation of lifts were performed. Lift 3 of the Acre of fill within the cell was proofrolled with no observable deflection and subjectively passed.</li> <li>▪ J. Patton departed site approximately 1:00pm.</li> </ul>			
<b>Prepared By:</b>	JP	<b>Date:</b>	3/19/2010
<b>Checked By:</b>	JRB	<b>Date:</b>	4.8.10

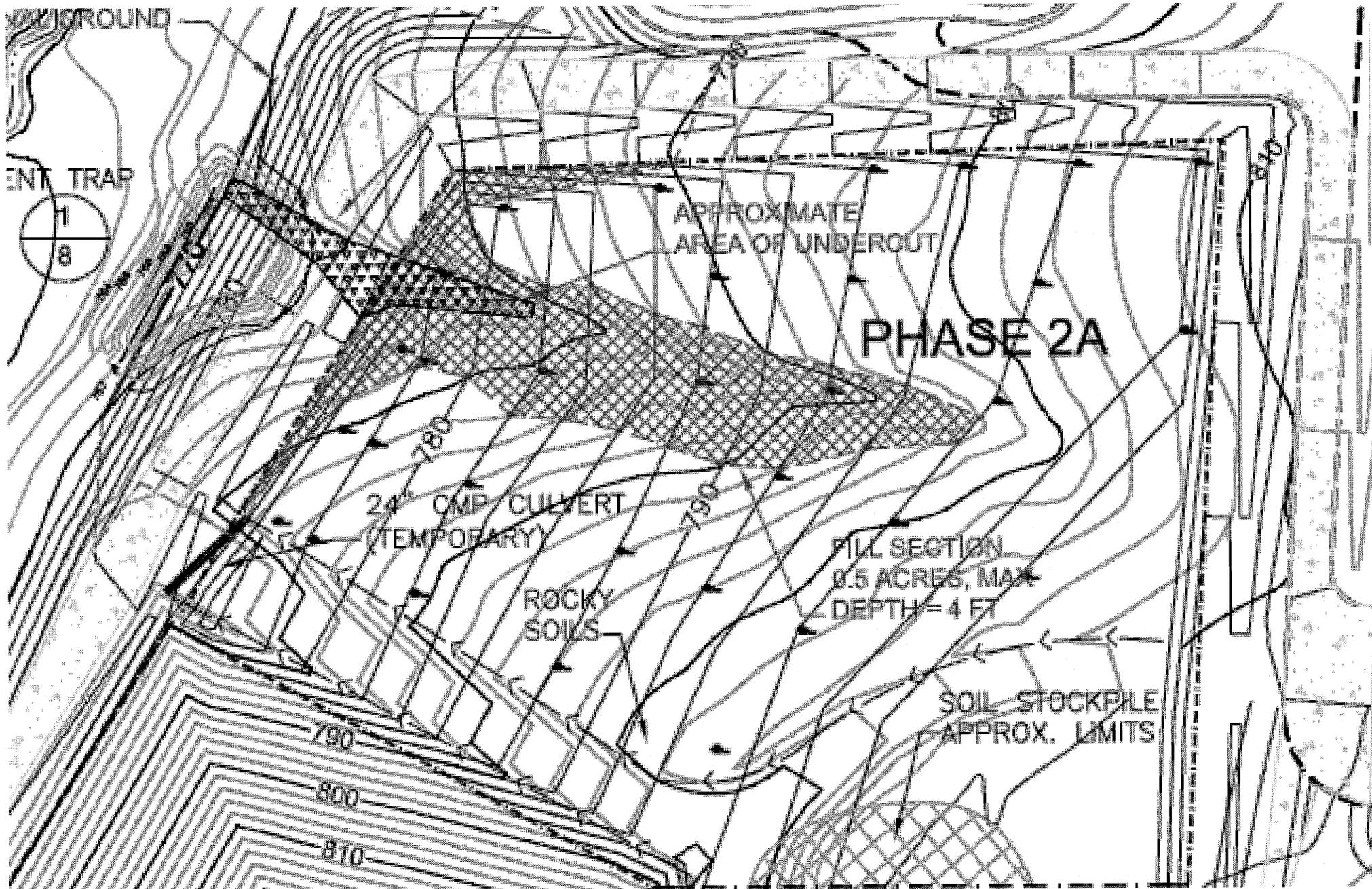
Day: Monday  
 Date: 3/22/10  
 Log No.: 21  
 Page: 1



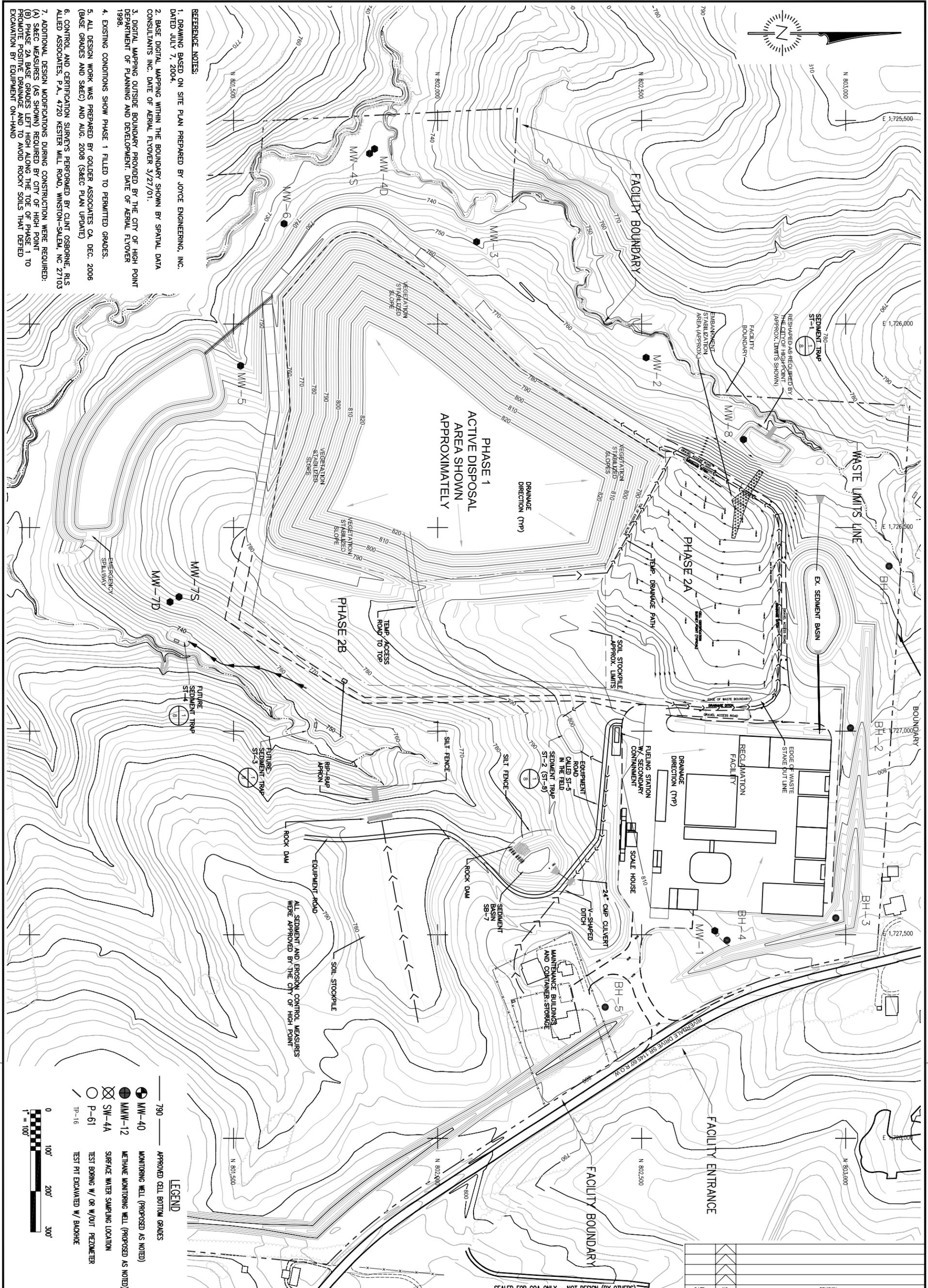
## Daily Field Activity Log

<b>Project Name:</b> David Garrett-WCA Highpoint C&D	<b>Project No.:</b> 2009-723
<b>Client Name:</b> David Garrett	<b>Client Contact:</b> David Garrett
<b>Site Location:</b> Highpoint, NC	<b>Time on Site:</b> Arrived: 12:00PM Departed: 1:00PM
<b>General Contractor:</b> Chad Woods Grading	<b>Superintendent:</b> Chad Woods
<b>Other Firms / Sub-Contractor Represented On Site</b>	
<u>Firm / Sub-Contractor</u>	<u>Representative's Name and Title</u>
<b>Weather Conditions:</b> Sunny	<b>Temperature:</b> 50
<b>Contractor's Equipment:</b> D6 Dozer, Elevating Wheel Tractor-Scraper, Cat 315 Excavator, Towed Sheepsfoot roller	
<b>Contractor's Personnel:</b>	
<b>Description of Daily Activities &amp; Events</b>	
<ul style="list-style-type: none"> <li>▪ J. Patton arrived on site.</li> <li>▪ J. Patton met with Chad Woods to discuss site progress. Contractors continued placement and compaction of the acre of fill within the cell limits and backfilling the borrow area.</li> <li>▪ Due to the difference in material only subjective evaluation of lifts were performed. The final lift in the Acre of fill within the cell was proofrolled with no observable deflection and subjectively passed.</li> <li>▪ J. Patton departed site approximately 1:00pm.</li> </ul>	
<b>Prepared By:</b> JP	<b>Date:</b> 3/22/2010
<b>Checked By:</b> JRB	<b>Date:</b> 4.8.10





3/8/2010 - 3/22/2010 DFR-17-21 FDR-07



**REFERENCE NOTES:**

1. DRAWING BASED ON SITE PLAN PREPARED BY JOYCE ENGINEERING, INC. DATED JULY 7, 2004.
2. BASE DIGITAL MAPPING WITHIN THE BOUNDARY SHOWN BY SPATIAL DATA CONSULTANTS INC. DATE OF AERIAL FLYOVER 3/27/01.
3. DIGITAL MAPPING OUTSIDE BOUNDARY PROVIDED BY THE CITY OF HIGH POINT DEPARTMENT OF PLANNING AND DEVELOPMENT. DATE OF AERIAL FLYOVER 1998.
4. EXISTING CONDITIONS SHOW PHASE 1 FILLED TO PERMITTED GRADES.
5. ALL DESIGN WORK WAS PREPARED BY GOLDER ASSOCIATES CA. DEC. 2006 (BASE GRADES AND S&EC) AND AUG. 2008 (S&EC PLAN UPDATE)
6. CONTROL AND CERTIFICATION SURVEYS PERFORMED BY CLINT OSBORNE, RISK ALLED ASSOCIATES, P.A., 4720 KESTER MILL ROAD, WINSTON-SALEM, NC 27103
7. ADDITIONAL DESIGN MODIFICATIONS DURING CONSTRUCTION WERE REQUIRED:
  - (A) S&EC MEASURES (AS SHOWN) REQUIRED BY CITY OF HIGH POINT
  - (B) PHASE 2A BASE GRADES LEFT HIGH ALONG THE TOE OF PHASE 1 TO PROMOTE POSITIVE DRAINAGE AND TO AVOID ROCKY SOILS THAT DEFIED EXCAVATION BY EQUIPMENT ON-HAND

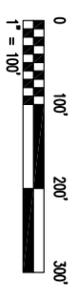
PHASE 1  
ACTIVE DISPOSAL  
AREA SHOWN  
APPROXIMATELY

PHASE 2A

PHASE 2B

**LEGEND**

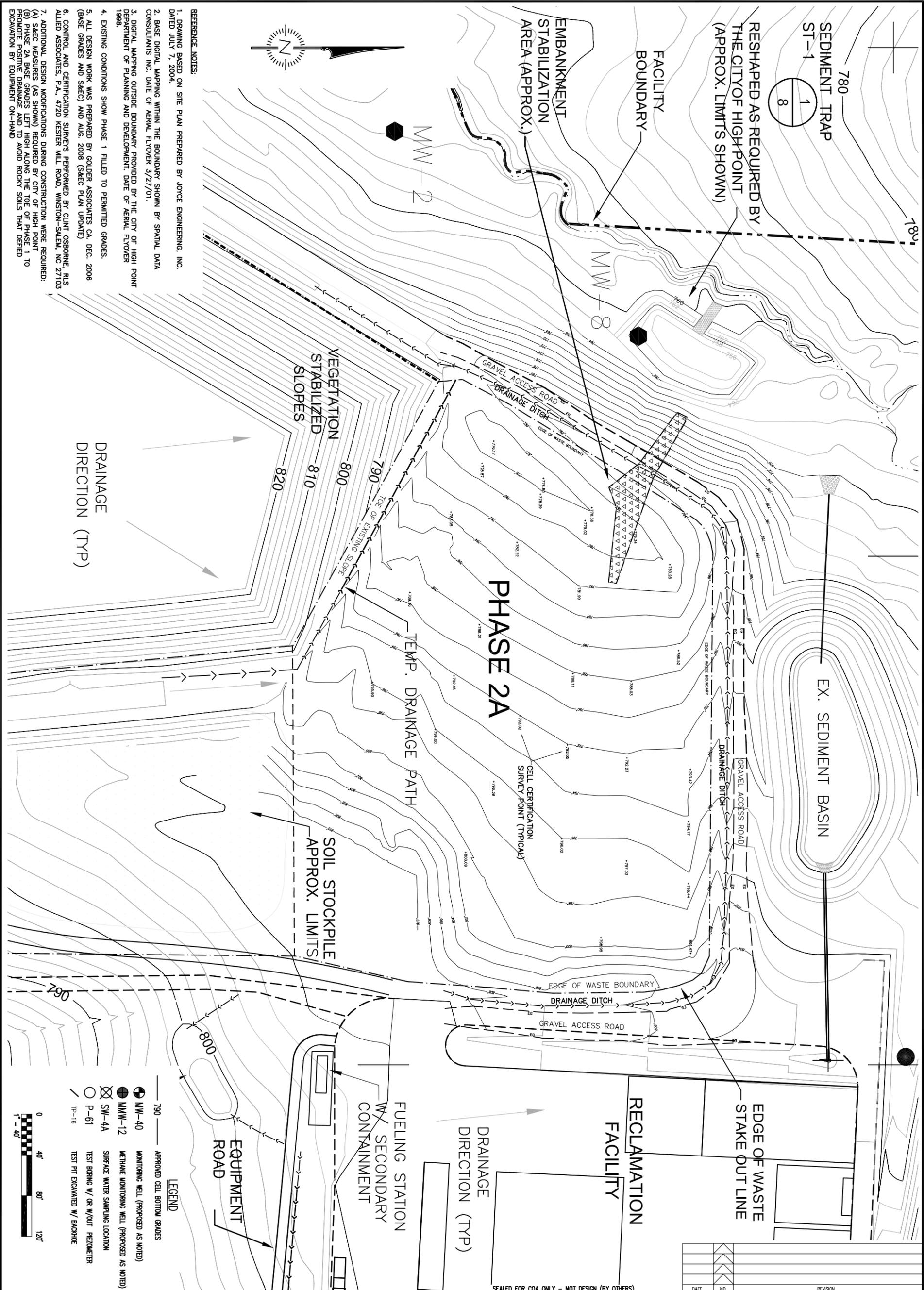
- 790 ——— APPROVED CELL BOTTOM GRADES
- MW-40 MONITORING WELL (PROPOSED AS NOTED)
- MW-12 METHANE MONITORING WELL (PROPOSED AS NOTED)
- ⊗ SW-4A SURFACE WATER SAMPLING LOCATION
- P-61 TEST BORING W/ OR W/O/T PRESSUREMETER
- TP-16 TEST PIT EXCAVATED W/ BACKHOE



NO.	DATE	REVISION

SEALED FOR CQA ONLY - NOT DESIGN (BY OTHERS)

<p>DRAWING TITLE: <b>PHASE 2 CDLF CQA DOCUMENTATION AS-BUILT DRAWING</b></p>	<p>PROJECT TITLE: <b>WCA OF HIGH POINT MATERIAL RECOVERY FACILITY AND CDLF - PERMIT #41-16 GUILFORD COUNTY, NORTH CAROLINA</b></p>	<p>DESIGNED BY: G.D.G. CHECKED BY: G.D.G. SCALE: AS SHOWN DATE: APRIL 2010 SHEET NO. 1 DRAWING NO. AB1</p>	<p>DESIGNED BY: G.D.G. CHECKED BY: G.D.G. SCALE: AS SHOWN DATE: APRIL 2010 SHEET NO. 1 DRAWING NO. AB1</p>	<p>SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER DAVID GARRETT 4-13-2010</p> <p>SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER DAVID GARRETT 4-13-2010</p>	<p><b>David Garrett &amp; Associates</b> Engineering and Geology 5105 Harbour Towne Drive, Raleigh, North Carolina 27604 Email: david_garrett_pg@mindspring.com 919-231-1818 (Office and Fax) 919-418-4375 (mobile)</p>
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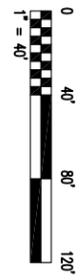


**REFERENCE NOTES:**

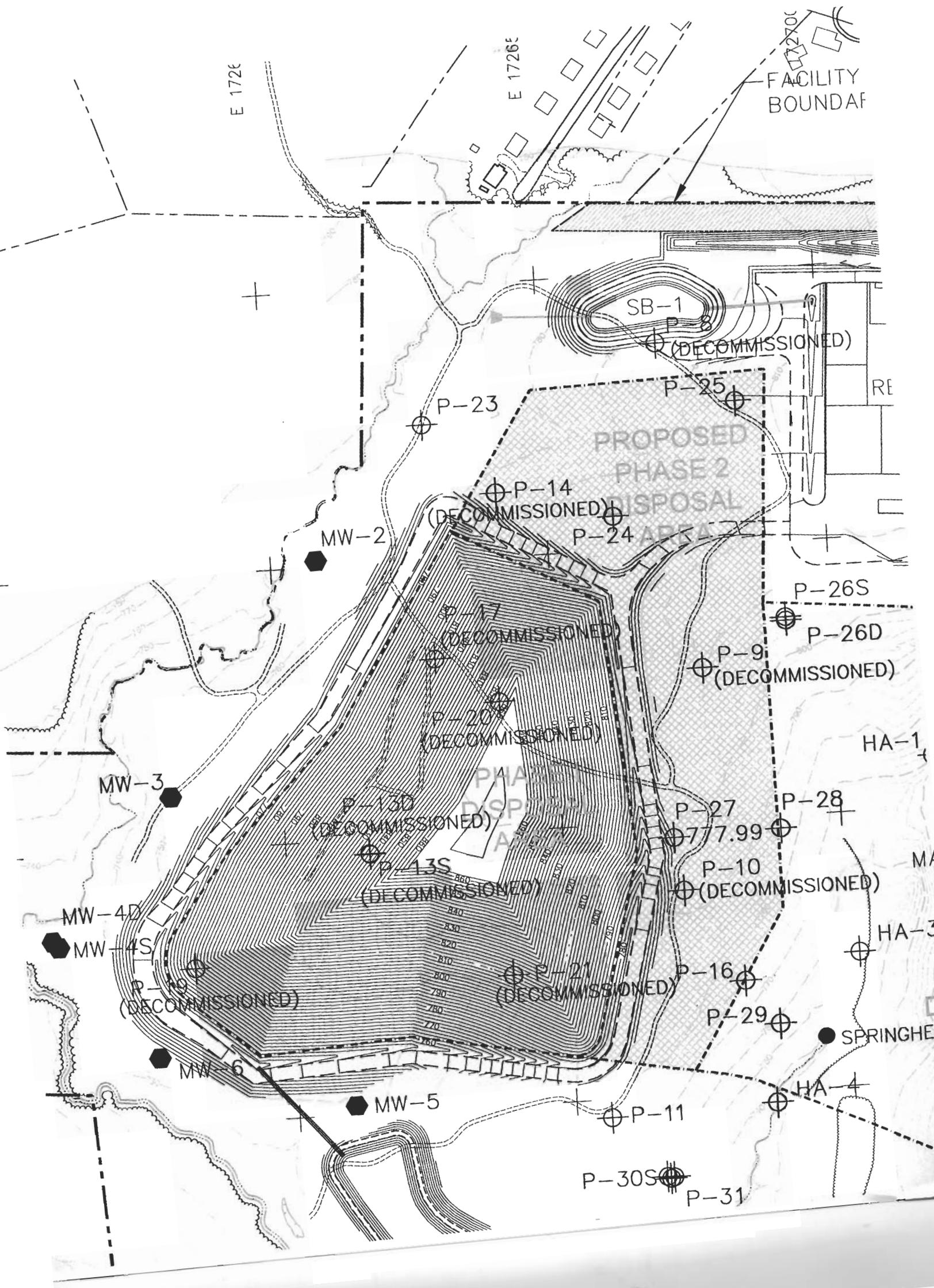
1. DRAWING BASED ON SITE PLAN PREPARED BY JOYCE ENGINEERING, INC. DATED JULY 7, 2004.
2. BASE DIGITAL MAPPING WITHIN THE BOUNDARY SHOWN BY SPATIAL DATA CONSULTANTS INC. DATE OF AERIAL FLYOVER 3/27/01.
3. DIGITAL MAPPING OUTSIDE BOUNDARY PROVIDED BY THE CITY OF HIGH POINT DEPARTMENT OF PLANNING AND DEVELOPMENT. DATE OF AERIAL FLYOVER 1998.
4. EXISTING CONDITIONS SHOW PHASE 1 FILLED TO PERMITTED GRADES.
5. ALL DESIGN WORK WAS PREPARED BY GOLDER ASSOCIATES CA. DEC. 2006 (BASE GRADES AND SEED) AND AUG. 2008 (SPEC PLAN UPDATE)
6. CONTROL AND CERTIFICATION SURVEYS PERFORMED BY CLINT OSBORNE, RLS ALLED ASSOCIATES, P.A., 4720 KESTER MILL ROAD, WINSTON-SALEM, NC 27103
7. ADDITIONAL DESIGN MODIFICATIONS DURING CONSTRUCTION WERE REQUIRED:
  - (A) SPEC MEASURES (AS SHOWN) REQUIRED BY CITY OF HIGH POINT
  - (B) PHASE 2A BASE GRADES LEFT HIGH ALONG THE TOE OF HIGH POINT PROMOTE POSITIVE DRAINAGE AND TO AVOID ROCKY SOILS THAT DEFIED EXCAVATION BY EQUIPMENT ON-HAND

**LEGEND**

- 790 — APPROVED CELL BOTTOM GRADES
- ⊕ MW-40 MONITORING WELL (PROPOSED AS NOTED)
- ⊕ MMW-12 METHANE MONITORING WELL (PROPOSED AS NOTED)
- ⊗ SW-44 SURFACE WATER SAMPLING LOCATION
- P-61 TEST BORING W/ OR W/OUT PNEUMETER
- TP-16 TEST PIT EXCAVATED W/ BACKHOE



<p>DRAWING TITLE: <b>PHASE 2A CDFL CQA DOCUMENTATION AS-BUILT DRAWING</b></p>	<p>PROJECT TITLE: <b>WCA OF HIGH POINT MATERIAL RECOVERY FACILITY AND CDFL - PERMIT #41-16 GUILFORD COUNTY, NORTH CAROLINA</b></p>	<p>DESIGNED BY: [Signature] C.D.C. AS-BUILT DRAWING</p> <p>DRAWN BY: [Signature] PROJECT NO.: WCA-HP-2</p> <p>SCALE: AS SHOWN DATE: APRIL 2010</p> <p>SHEET NO.: 2 DRAWING NO.: AB2</p>	<p>SEAL FOR CQA ONLY - NOT DESIGN (BY OTHERS)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>SEAL</p> </div> <div style="text-align: center;"> <p>SEAL</p> </div> </div>	<p style="text-align: center;"><b>David Garrett &amp; Associates</b> Engineering and Geology</p> <p>5105 Harbour Towne Drive, Raleigh, North Carolina 27604 Email: david_garrett_pg@mindspring.com 919-231-1818 (Office and Fax) 919-418-4375 (mobile)</p>
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# Well Abandonment Record

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 3404-A

**1. WELL CONTRACTOR:**

Wesley W. Herman  
 Well Contractor (Individual) Name  
 American Environmental Drilling, Inc.  
 Well Contractor Company Name  
 STREET ADDRESS 324 Fields Drive, Suite C  
 Aberdeen NC 28315  
 City or Town State Zip Code  
 (910) - 944-3140  
 Area code- Phone number

**2. WELL INFORMATION:**

SITE WELL ID # (if applicable) P-25  
 STATE WELL PERMIT # (if applicable) \_\_\_\_\_  
 COUNTY WELL PERMIT # if applicable \_\_\_\_\_  
 DWQ or OTHER PERMIT # (if applicable) \_\_\_\_\_  
 WELL USE (Check Applicable Box) Monitoring  Residential   
 Municipal/Public  Industrial/Commercial  Agricultural   
 Recovery  Injection  Irrigation   
 Other (list use) \_\_\_\_\_

**3. WELL LOCATION:**

COUNTY: GUILFORD QUADRANGLE NAME \_\_\_\_\_  
 NEAREST TOWN: HIGH POINT  
5830 RIVERDALE DR  
 (Street/Road Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)  
 TOPOGRAPHIC / LAND SETTING:  
 Slope  Valley  Flat  Ridge  Other \_\_\_\_\_  
 (check appropriate box)

LATITUDE 3 5 59.167  
 LONGITUDE 07 9 58.268  
 May be in degrees, minutes, seconds or in a decimal format

Latitude/longitude source:  GPS  Topographic map  
 (Location of well must be shown on a USGS topo map and attached to this form if not using GPS)

**4a. FACILITY-** The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a, complete 4b well owner information only)

FACILITY ID # (if applicable) \_\_\_\_\_  
 NAME OF FACILITY WCA OF HIGH POINT  
 STREET ADDRESS 5830 RIVERDALE DR.  
 JAMESTOWN NC 27282  
 City or Town State Zip Code

**4b. CONTACT PERSON/WELL OWNER:**

NAME JOHN WALKER  
 STREET ADDRESS 5830 RIVERDALE DR.  
 JAMESTOWN NC 27282  
 City or Town State Zip Code  
 (336) - 886-3560  
 Area Code - Phone number

**5. WELL DETAILS:**

a. Total Depth 37.5 ft. Diameter: 2 in.  
 b. Water Level (Below Measuring Point): \_\_\_\_\_ ft.  
 Measuring point is \_\_\_\_\_ ft. above land surface.

**6. CASING:** Length Diameter

a. Casing Depth (if known): \_\_\_\_\_ ft. \_\_\_\_\_ in.  
 b. Casing Removed: ALL ft. 2 in.

**7. DISINFECTON: CHLORINE**

(Amount of 65% - 75% calcium hypochlorite used)

**8. SEALING MATERIAL:**

<b>Neat Cement</b>	<b>Sand Cement</b>
Cement _____ lb.	Cement _____ lb.
Water _____ gal.	Water _____ gal.
<b>Bentonite</b>	
Cement _____ lb.	
Type: Slurry <input type="checkbox"/> Pellets <input type="checkbox"/>	
Water _____ gal.	

**Other**  
 Type material CEMENT/BENTONITE 5%  
 Amount 47 GAL

**9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:**

OVER REAMED TOP 15'  
PUSHED BOTTOM CAP OFF THEN FILLED WITH GROUT MIX  
THEN PULLED PIPE OUT OF GROUND AND TOPPED OFF

**10. WELL DIAGRAM:** Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill material used.

**11. DATE WELL ABANDONED 11-5-09**

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS. AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Wesley W. Herman 11-5-09  
 SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

SIGNATURE OF PRIVATE WELLOWNER ABANDONING THE WELL \_\_\_\_\_ DATE \_\_\_\_\_  
 (The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113.)

Wesley W. Herman  
 PRINTED NAME OF PERSON CONSTRUCTING THE WELL



# Well Abandonment Record

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 3404-A

**1. WELL CONTRACTOR:**

Wesley W. Herman  
 Well Contractor (Individual) Name  
 American Environmental Drilling, Inc.  
 Well Contractor Company Name  
 STREET ADDRESS 324 Fields Drive, Suite C  
 Aberdeen NC 28315  
 City or Town State Zip Code  
 ( 910 )- 944-3140  
 Area code- Phone number

**2. WELL INFORMATION:**

SITE WELL ID # (if applicable) P-24  
 STATE WELL PERMIT # (if applicable) \_\_\_\_\_  
 COUNTY WELL PERMIT # if applicable) \_\_\_\_\_  
 DWQ or OTHER PERMIT # (if applicable) \_\_\_\_\_  
 WELL USE (Check Applicable Box) Monitoring  Residential   
 Municipal/Public  Industrial/Commercial  Agricultural   
 Recovery  Injection  Irrigation   
 Other (list use) \_\_\_\_\_

**3. WELL LOCATION:**

COUNTY: GUILFORD QUADRANGLE NAME \_\_\_\_\_  
 NEAREST TOWN: HIGH POINT  
5830 RIVERDALE DR  
 (Street/Road Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)  
 TOPOGRAPHIC / LAND SETTING:  
 Slope  Valley  Flat  Ridge  Other \_\_\_\_\_  
 (check appropriate box)

LATITUDE 35 59.138 May be in degrees, minutes, seconds or in a decimal format  
 LONGITUDE 079 58.012

Latitude/longitude source:  GPS  Topographic map  
 (Location of well must be shown on a USGS topo map and attached to this form if not using GPS)

**4a. FACILITY-** The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a; complete 4b well owner information only)

FACILITY ID # (if applicable) \_\_\_\_\_  
 NAME OF FACILITY WCA OF HIGH POINT  
 STREET ADDRESS 5830 RIVERDALE DR.  
 JAMESTOWN NC 27282  
 City or Town State Zip Code

**4b. CONTACT PERSON/WELL OWNER:**

NAME JOHN WALKER  
 STREET ADDRESS 5830 RIVERDALE DR.  
 JAMESTOWN NC 27282  
 City or Town State Zip Code  
 ( 336 )- 886-3560  
 Area Code - Phone number

**5. WELL DETAILS:**

a. Total Depth 33 ft. Diameter: 2 in.  
 b. Water Level (Below Measuring Point): \_\_\_\_\_ ft.  
 Measuring point is \_\_\_\_\_ ft. above land surface.

**6. CASING:** Length Diameter

a. Casing Depth (if known): \_\_\_\_\_ ft. \_\_\_\_\_ in.  
 b. Casing Removed: ALL ft. 2 in.

**7. DISINFECTON:** \_\_\_\_\_

(Amount of 65% - 75% calcium hypochlorite used)

**8. SEALING MATERIAL:**

<b>Neat Cement</b>	<b>Sand Cement</b>
Cement _____ lb.	Cement _____ lb.
Water _____ gal.	Water _____ gal.
<b>Bentonite</b>	
Cement _____ lb.	
Type: Slurry <input type="checkbox"/> Pellets <input type="checkbox"/>	
Water _____ gal.	

**Other**  
 Type material CEMENT/BENTONITE 5%  
 Amount 46 GAL

**9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:**

OVER REAMED TOP 15'  
PUSHED BOTTOM CAP OFF THEN FILLED WITH GROUT MIX  
THEN PULLED PIPE OUT OF GROUND AND TOPPED OFF

**10. WELL DIAGRAM:** Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill material used.

**11. DATE WELL ABANDONED** 11-5-09

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS. AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Wesley W. Herman 11-5-09  
 SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

SIGNATURE OF PRIVATE WELLOWNER ABANDONING THE WELL \_\_\_\_\_ DATE \_\_\_\_\_  
 (The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113.)

Wesley W. Herman  
 PRINTED NAME OF PERSON CONSTRUCTING THE WELL

# RECORD OF BOREHOLE P-24

SHEET 1 of 1

PROJECT: WCA of High Point, LLC  
 PROJECT NUMBER: 0636526.100  
 DRILLED DEPTH: 33.0 ft  
 LOCATION: Jamestown, NC

DRILL RIG: Gus Pech GP-1100B  
 DATE STARTED: 6/30/06  
 DATE COMPLETED: 6/30/06

NORTHING: 802,562.7  
 EASTING: 1,726,620.0  
 GS ELEVATION: 797.4 ft  
 TOC ELEVATION: 799.3 ft

DEPTH W.L.: 17.2 ft  
 ELEVATION W.L.: 782.1 ft  
 DATE W.L.: 7/3/06  
 TIME W.L.: 9:28 am

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES					MONITORING WELL/PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	NUMBER	TYPE	BLOWS per 6 in 140 lb hammer 30 inch drop	N		
0	799.5	0.0 - 5.3 SILTY SAND - Tan medium grained silty sand, moist Changes to orange medium grained silty sand at 0.75 ft, moist at 1 ft	SM	[Stippled Pattern]	792.2		SPT	2-2-3-8	5	100.0 2.0	<p>WELL CASING Interval: -2.05-18 ft Material: PVC Diameter: 2-inch Joint Type: Threaded</p> <p>WELL SCREEN Interval: 18-33 ft Material: PVC Diameter: 2-inch Slot Size: 0.010 End Cap: Threaded</p> <p>FILTER PACK Interval: 16-33 ft Type: #2 Sand</p> <p>FILTER PACK SEAL Interval: 14-16 ft Type: 3/8 Bentonite Chip</p> <p>ANNULUS SEAL Interval: 0-14 ft Type: Portland/Bentonite Mix</p> <p>WELL COMPLETION Pad: None Protective Casing: None</p> <p>DRILLING METHODS Soil Drill: 6.25-inch ID Hollow Stem Augers Rock Drill: 6-inch Downhole Hammer</p>
5	790.0	5.3 - 9.0 PARTIALLY WEATHERED ROCK - orange and white mottled coarse grained silty sand	SM	[Stippled Pattern]	5.3		SPT	25-50/4	50/4	40.0 2.0	
9	788.4	Auger refusal at 9 ft			788.4						
10	785.0	9.0 - 33.0 BEDROCK - very weathered, tan medium grained to pebble size cuttings, granitic		[Cross-hatched Pattern]	9.0						
15	780.0	More competent at 14 ft, tan medium grained sand size cuttings consisting mainly of quartz		[Cross-hatched Pattern]							
20	775.0	Apparent large fracture from 20.75 to 23 ft based on drilling response		[Cross-hatched Pattern]							
25	770.0	White and tan coarse sand size cuttings consisting of mainly quartz with some biotite at 25 ft Apparent small fracture from 26.5 to 26.75 ft based on drilling response		[Cross-hatched Pattern]							
30	765.0	Apparent fracture from 29 to 29.5 ft based on drilling response. Coarse sand to small pebble size cuttings with some iron staining Less competent material from 31.5 to 32 ft		[Cross-hatched Pattern]							
33	764.4	Boring completed at 33.0 ft		[Cross-hatched Pattern]	764.4						

BOREHOLE RECORD 0636526.100.GPJ PIEDMONT.GDT 12/5/06

LOG SCALE: 1 in = 5 ft  
 DRILLING COMPANY: SAEDACCO  
 DRILLER: Robert Miller

GA INSPECTOR: David Reedy, P.G.  
 CHECKED BY: Rachel P. Kirkman, P.G.  
 DATE: 12/1/06



# RECORD OF BOREHOLE P-25

SHEET 1 of 1

PROJECT: WCA of High Point, LLC  
 PROJECT NUMBER: 0636526.100  
 DRILLED DEPTH: 37.5 ft  
 LOCATION: Jamestown, NC

DRILL RIG: Gus Pech GP-1100B  
 DATE STARTED: 6/29/06  
 DATE COMPLETED: 6/29/06

NORTHING: 802,762.7  
 EASTING: 1,726,810.0  
 GS ELEVATION: 802.5 ft  
 TOC ELEVATION: 805.2 ft

DEPTH W.L.: 21.1 ft  
 ELEVATION W.L.: 784.2 ft  
 DATE W.L.: 6/30/06  
 TIME W.L.: 9:27 am

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES				MONITORING WELL/PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS	
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	NUMBER	TYPE	BLOWS per 6 in 140 lb hammer 30 inch drop			N
0	800	0.0 - 6.0 SILTY SAND - orange fine to medium grained silty sand, moist	SM		796.5		SPT	6-5-5-7	10	100.0 2.0	<p><b>WELL CASING</b> Interval: -2.75-27.5 ft Material: PVC Diameter: 2-inch Joint Type: Threaded</p> <p><b>WELL SCREEN</b> Interval: 27.5-37.5 ft Material: PVC Diameter: 2-inch Slot Size: 0.010 End Cap: Threaded</p> <p><b>FILTER PACK</b> Interval: 26-37.5 ft Type: #2 Sand</p> <p><b>FILTER PACK SEAL</b> Interval: 24-26 ft Type: 3/8 Bentonite Chip</p> <p><b>ANNULUS SEAL</b> Interval: 0-24 ft Type: Portland/Bentonite Mix</p> <p><b>WELL COMPLETION</b> Pad: None Protective Casing: None</p> <p><b>DRILLING METHODS</b> Soil Drill: 6.25-inch ID Hollow Stem Augers Rock Drill: 6-inch Downhole Hammer</p>
5		Gray and orange medium to coarse grained silty sand at 5 ft, dry			6.0		SPT	4-6-50	>50	70.0 2.0	
7.5	795	6.0 - 13.5 PARTIALLY WEATHERED ROCK - white weathered quartz sand with large quartz gravel	SWG				SPT	50/5	50/5	10.0 2.0	
13.5	790	Auger refusal at 13.5 ft			13.5						
15	785	13.5 - 37.5 BEDROCK - coarse sand to pebble size granitic cuttings consisting of mainly quartz and biolite									
20	780	Fine to medium grained sand size cuttings by 18 ft									
25	775	Small fracture at 30 ft based on drilling response									
30	770	Fracture from 31.5 to 32 ft based on drilling response. Granitic cuttings with some gravel size mafic rock cuttings that show some iron staining									
35	765	Pebble size granitic cuttings with some mafic rock cuttings at 33 ft Medium sand size granitic cuttings at 34 ft  Weathered cuttings at 36 ft									
37.5	765	Boring completed at 37.5 ft									

BOREHOLE RECORD 0636526.100.GPJ PIEDMONT.GDT 12/5/06

LOG SCALE: 1 in = 5 ft  
 DRILLING COMPANY: SAEDACCO  
 DRILLER: Robert Miller

GA INSPECTOR: David Reedy, P.G.  
 CHECKED BY: Rachel P. Kirkman, P.G.  
 DATE: 12/1/06



## David Garrett

---

**From:** Reedy, David [David\_Reedy@golder.com]  
**Sent:** Tuesday, April 13, 2010 10:48 AM  
**To:** david@davidgarrettpe.com  
**Cc:** Kirkman, Rachel  
**Subject:** FW: WCA High Point Question

David,

All of the wells and piezometers shown on the map have been installed. PZ-23 and PZ-30S&D were renamed MW-8 and MW-7S&D, respectively, in the water quality monitoring plan and are to become compliance monitoring wells and have been sampled for background concentrations. Let me or Rachel know if you need any additional information.

Dusty

---

**David "Dusty" Y. Reedy II, P.G.** | Senior Project Hydrogeologist | **Golder Associates NC, Inc.**  
The Wingate Building, 4900 Koger Boulevard, Suite 140, Greensboro, North Carolina, USA 27407-2710  
**T:** +1 (336) 852-4903 | **F:** +1 (336) 852-4904 | **C:** +1 (336) 465-0826 | **E:** [dreedy@golder.com](mailto:dreedy@golder.com) |  
[www.golder.com](http://www.golder.com)

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**Please consider the environment before printing this email.**

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**From:** David Garrett [mailto:david@davidgarrettpe.com]  
**Sent:** Monday, April 12, 2010 4:05 PM  
**To:** Kirkman, Rachel  
**Subject:** WCA High Point Question

Do you know if the wells shown on the attached map have already been installed? Thanks.

**David Garrett, P.G., P.E.**  
David Garrett & Associates  
5105 Harbour Towne Drive  
Raleigh, NC 27604

Tel. 919-418-4375 (mobile)



1 S&EC for new soil stockpile area, eastern side of facility, looking north



2 S&EC measures for new sediment basin SB-7 below maintenance facility



1 New sediment basin SB-2 located below fueling station, looking west



2 New sediment basin SB-7 below maintenance facility, looking southeast



3 Rock dam for sediment basin SB-7, taken the day after a 2-inch rainfall



4 Looking north across SB-7 toward scale house, new access road in between



5 New sediment basin SB-1 located west of Phase 2A, looking west



6 New embankment foundation, west side of Phase 2A, looking south to Phase 1



7 Unstable area encountered along natural drainage feature, looking north



8 Close up view of unstable area, perched water influx, looking north



9 Beneficial fill typical of that used for stabilizing the embankment foundation



10 View of unstable area (already partially undercut) looking southwest toward SB-1



11 View from unstable area up drainage feature, looking southeast; soil stockpile visible beyond vehicles is within the Phase 2A footprint



12 View looking northeast toward existing sediment basin (in grassy mound)



1 New sediment basin SB-1 located below embankment subgrade stabilization



2 Embankment stabilization area, partially undercut, following overnight rain



- 3 Excavation of embankment stabilization area, looking east from SB-1; frequent rainfall was a factor throughout the construction of the phase



4 Cleaning out SB-1, which was required frequently during construction



5 Deployment of geotextile underlay for beneficial fill, looking west toward SB-1



6 Progression of geotextile underlay deployment



7 Deploying geotextile overlay for beneficial fill, looking west



8 Another view of the geotextile overlay deployment, looking west



9 Beneficial fill wrapped in geotextile and secured with soil



10 Embankment construction above stabilization, looking west toward SB-1



11 Piezometer abandonment within the Phase 2A footprint



12 Piezometer abandonment within the Phase 2A footprint



1 Recycling facility located north of scale house (no construction here)



2 Beneficial fill stabilization of lower elevations, next to perimeter embankment (note, the phase was designed without positive drainage), late undercut required



3 North perimeter embankment and road, old sediment basin to the left, looking east



4 South side of phase, repair of wet soils – via undercut, surge, and replacement with dry soils – in progress, grade stakes shown, looking east (Phase 1 to right)



5 Perimeter ditch tie-in has a slight offset (shown on plans), looking south



6 West perimeter embankment road on grade, aggregate surface layer going in



7 SB-1 stable and functioning; looking west with construction of City of High Point Kersey Valley Phase 4 MSWLF beyond the trees



8 West perimeter embankment (on grade) slope dressing in progress, looking north



9 Stony soils encountered along south side of Phase 2A; grade left 2 feet high



10 Close up view of stony soils, could have been ripped with D-8 (not available)



10 View of south side of Phase 2A along toe of Phase 1, temporary culvert to be removed; Kersey Valley MSWLF Phase 2 mound visible in the distance



12 Northern and eastern portions of Phase 2A on grade (looking north)