

**ADDENDUM #1**

**February 7, 2020**

**TRANSMITTED VIA EMAIL: 33 pages**

**TO: ALL PLAN HOLDERS AND POTENTIAL BIDDERS**  
**FROM: TIFFANY McCANTS, PURCHASING OFFICER**  
**SUBJECT: TRACK AND FIELD REPLACEMENT AT NORTH BUNCOMBE HIGH SCHOOL**



**(RFP# 2-20)**

The following specifications and drawings are hereby made a part of the original documents. Bidders shall acknowledge receipt of this addendum by notation in the space provided on the Proposal Form.

**Addendum includes: Revised Proposal Form, Pre-Bid meeting minutes, new specifications with drawings and plans.**

**Addendum #1**

**RFP# 2-20**

**STATE OF NORTH CAROLINA/BUNCOMBE COUNTY SCHOOLS  
REQUEST FOR PROPOSAL** **RFP# 2-20**

**PROJECT: \*\*\*REVISED\*\*\* TRACK AND FIELD REPLACEMENT AT NORTH BUNCOMBE  
HIGH SCHOOL**

**PROJECT DESIGNER: Tim Fierle, Project Manager**

**ISSUING AGENCY: Buncombe County Schools**

**ISSUE DATE: February 7, 2020**

Sealed proposals subject to the conditions made a part hereof will be received until **2:00 pm EST on Thursday, February 13, 2020** for furnishing all labor, materials, equipment, and services incidental and implied, for completion of the project described herein.

*PRE-BID MEETING: Was held on Thursday, January 30, 2020 at 10:00 am EST at North Buncombe High School, 890 Clarks Chapel Road, Weaverville, NC 28787.*

SEND ALL PROPOSALS DIRECTLY TO THE ADDRESS AS SHOWN BELOW:

**Buncombe County Schools, Purchasing Division**

175 Bingham Road  
Asheville, NC 28806

FAX: (828) 251-1730 (fax is not guaranteed, call to confirm 828-255-5890)

NOTE: Indicate firm name and RFP number on the front of each sealed proposal envelope or package, along with the date for receipt of proposals specified above.

Direct inquiries concerning this RFP to: Tim Fierle, Director of Facilities Phone: (828) 255-5916  
Jason Pollard, Project Designer Phone: (518) 453-4529  
Tiffany McCants, Purchasing Officer Phone: (828) 255-5890

**THE PROCUREMENT PROCESS**

The following is a general description of the process by which a firm will be selected to provide services.

1. Request for Proposals (RFP) is issued to prospective contractors.
2. Proposals in one original will be received from each offeror in a sealed envelope or package. Each original shall be signed and dated by an official authorized to bind the firm. Unsigned proposals will not be considered.
3. All proposals must be received by the issuing agency no later than the date and time specified on the cover sheet of this RFP.
4. At that date and time the proposals from each responding firm will be opened. Interested parties are cautioned that these costs and their components are subject to further evaluation for completeness and correctness and therefore may not be an exact indicator of an offeror's pricing position. Proposals are confidential until such time that award has been made. Thereafter, the Purchasing Department will furnish a bid tab on the district's website.
5. Proposals will be evaluated according to completeness, content, experience with similar projects, ability of the offeror and its staff, and cost. Award of a contract to one offeror does not mean that the other proposals lacked merit, but that, all factors considered, the selected proposal was deemed most advantageous to Buncombe County Board of Education.
6. Offerors are cautioned that this is a request for offers, not a request to contract, and that Buncombe County Board of Education reserves the unqualified right to reject any and all offers when such rejection is deemed to be in its best interest.

(NOTE: THIS PAGE MUST BE FULLY EXECUTED AND RETURNED FOR CONSIDERATION OF PROPOSAL)  
**PROPOSAL FORM**

**\*\*\*REVISED\*\*\* TRACK AND FIELD REPLACEMENT AT NORTH BUNCOMBE HIGH SCHOOL  
RFP# 2-20**

**DUE DATE: Thursday, February 13, 2020 at 2:00 pm EST**

By submitting this proposal, the potential contractor certifies the following:

- \*\* This proposal is signed by an authorized representative of the firm.
- \*\* It can obtain and submit to the Owner insurance certificates as required within 5 calendar days after notice of award.
- \*\* The cost and availability of all equipment, materials, and supplies associated with performing the services described herein have been determined and included in the proposed cost.
- \*\* All labor costs, direct and indirect, have been determined and included in the proposed cost.
- \*\* All taxes have been determined and included in the proposed cost.
- \*\* The offeror has attended the conference (*if applicable*) or conducted a site visit and is aware of prevailing conditions associated with performing these services.
- \*\* The potential contractor has read and understands the conditions set forth in this RFP and agrees to them with no exceptions.

Therefore, in compliance with this Request for Proposals, and subject to all conditions herein, the undersigned offers and agrees, if this proposal is accepted within 60 days (normally less) from the date of the opening, to furnish the subject services for a cost not to exceed:

**BASE BID: Perform all work described on attached drawings and specifications “North Buncombe High School Track Replacement”.**

\$ \_\_\_\_\_ dollars and \_\_\_\_/100 (\$ \_\_\_\_\_).

**Alternate #1 (DEDUCT): Non-porous basemat structural spray track surfacing (black) in lieu of base bid sandwich system track surfacing (black).**

\$ \_\_\_\_\_ dollars and \_\_\_\_/100 (\$ \_\_\_\_\_).

**Alternate #2 (ADD): Add 209 LF of 3' 6" wide concrete sidewalk outside the track perimeter fence in the Northwest corner of the track, per plan.**

\$ \_\_\_\_\_ dollars and \_\_\_\_/100 (\$ \_\_\_\_\_).

**Alternate #3 (ADD): Add 126 LF of 3' 6" wide concrete sidewalk outside the track perimeter fence in the Northeast corner of the track.**

\$ \_\_\_\_\_ dollars and \_\_\_\_/100 (\$ \_\_\_\_\_).

**Unit Price #1: Provide a unit price per SF for additional concrete pavement per the contract details and specifications.**

\$ \_\_\_\_\_ dollars and \_\_\_\_/100 (\$ \_\_\_\_\_).

**Unit Price #2: Provide a unit price per LF for concrete curb replacement at the existing turf field perimeter.**

\$ \_\_\_\_\_ dollars and \_\_\_\_/100 (\$ \_\_\_\_\_).

Addenda received: \_\_\_\_\_ (Yes/No)

OFFEROR: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY, STATE, ZIP: \_\_\_\_\_

TELEPHONE NUMBER: \_\_\_\_\_ FAX: \_\_\_\_\_

FED ID No: \_\_\_\_\_ Type & License #: \_\_\_\_\_

E-MAIL: \_\_\_\_\_ MBE Status: \_\_\_\_\_

Principal Place of Business if different from above (See General Information on Submitting Proposals, Item 18.):

\_\_\_\_\_

BY: (Signature) \_\_\_\_\_ TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_ (Typed or printed name) \_\_\_\_\_

***End of Proposal Form***

# Meeting Minutes

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## North Buncombe High School Track Renovation

### Pre-Bid Meeting

**Date:** Thursday January 30, 2020  
**Location:** North Buncombe High School Track Facility  
**Time:** 10:00 am

1. Sign-in Sheet
  - a. See attached pre-bid sign in sheet
  
2. Project Overview
  - a. Demolition of the existing track including existing asphalt and stone base to subgrade.
    - i. Protect existing inside perimeter concrete curb/turf nailer along straights
    - ii. Remove existing concrete curb turf nailer at each end
    - iii. Existing asphalt pavement may be milled and reused as lower portion of new stone base
    - iv. Existing stone base may also be reused as lower portion of new stone base
    - v. None of the existing exposed track surfacing will be permitted for reuse in the proposed base stone layer
  - b. Coordinate with Sprinturf on scope of peeling turf back at ends and laying turf back down at new concrete curb/nailer
  - c. Protecting and adjusting existing utilities/structures
  - d. Installation of a new inside perimeter channel drain system (slot drain around entire perimeter)
  - e. New geo fabric and 6" stone base, at least 3" of new pavement subbase stone on top
  - f. New asphalt
  - g. New synthetic track surfacing (black sandwich system)
  - h. New 42" high black perimeter fencing
  - i. New perimeter concrete pavement/walks
  - j. New shotput pad and landing area
  - k. Provide power supply to new & existing junction boxes within the track & existing turf limits. (Any electrical work must be performed by a state licensed electrical contractor - list of qualified contractors attached)
  - l. Contractor will be responsible for completing a permit application & paying for any review and permit fees
  - m. Construction access routes:
    - i. Two construction access routes are shown on the plans. Either access route may be utilized throughout construction, but shall be coordinated with the school.
    - ii. Contractor shall note that the entrance from the west passes through a municipal park and events may be taking place during the construction season on week nights and weekends.
    - iii. Contractor shall take precaution and secure the construction site regularly.
    - iv. Contactor shall photo document existing conditions of access routes and return to original condition



3. Alternates
  - a. **Deduct Alternate Number One:** Black Non-Porous basemat structural spray surfacing in lieu of the black base bid sandwich system track surfacing
  - b. **Add Alternate Number Two:** 209 LF of 4' wide concrete walk outside perimeter track fence in NW corner of track
  - c. **Add Alternate Number Three:** 126 LF of 4' wide concrete walk outside perimeter track fence in NE corner of track
4. Unit Prices
  - a. Provide a unit price per SF for additional concrete pavement per the contract details and specifications.
  - b. Provide a unit price per LF for additional concrete curb replacement at the existing turf field perimeter.
5. Instructions for Submittal of Bids
  - a. All bids must be submitted on the Bid Form supplied.
  - b. Acknowledge receipt of all addendums.
  - c. Provide bid bonds and MBE forms in separately sealed envelope from the proposal form.
  - d. Provide list of major subcontractors.
  - e. Understand the contractor qualification requirements per the track asphalt paving and track surfacing specs.
6. Information for Bidders
  - a. Bids due on **Thursday 2/13/20 at 2:00pm** at:  
**Buncombe County Schools Central Office**  
**175 Bingham Road**  
**Asheville, NC 28806**
  - b. Technical questions and inquiries must be submitted via email to Jason Pollard at [jpollard@chacompanies.com](mailto:jpollard@chacompanies.com) and copy Tim Fierle at [tim.fierle@bcsemail.org](mailto:tim.fierle@bcsemail.org).
  - c. Direct any general questions related to the project to Tim Fierle, Facilities and Planning Director
  - d. Direct any questions related to bid documents or the bid process to Tiffany McCants, Purchasing Officer at [tiffany.mccants@bcsemail.org](mailto:tiffany.mccants@bcsemail.org)
  - e. All questions are due by 10 AM on Thursday, February 6th.
  - f. Late bids will **NOT** be accepted.
7. Anticipated Construction Schedule
  - a. Bid award: March 20th after board approval
  - b. Construction Start: April 6, 2020
  - c. School Events: From April 6 to May 5, 2020 the school will have regularly scheduled women's soccer practice and games. From August 1, 2020 to End of year the school will have regularly scheduled football and men's soccer practices and games.
  - d. First Home Football Game (No Work): August 21 - August 23, 2020
  - e. Construction Resumes Post Football Game: August 24, 2020
  - f. Substantial Completion: September 11, 2020
  - g. Final Completion: September 25, 2020
  - h. Contractor shall coordinate events schedule with the school throughout the entirety of construction, but specifically during the above noted sensitive time periods.



8. Liquidated Damages: \$1000/Day
9. Substitution Requests:
  - a. CHA has reviewed the product substitution request for Plexitrac Accelerator to be considered as an accepted substitute for the track surfacing products listed in the specifications. The Plexitrac Accelerator is a latex/water-based track surfacing system and therefore shall not be considered an acceptable substitute to the specified polyurethane based surfacing products for this project.
10. Plan Revisions:
  - a. Replace sheets C-003, C-100, C-101, C-201, C-301, C-401 and C-601 in their entirety with the attached sheets.
11. Project Manual Revisions:
  - a. Replace the proposal form in its entirety with the attached updated form.
  - b. The geotechnical report for the site is attached to this addendum for reference.

**SIGN-IN SHEET**

**Buncombe County Schools  
North Buncombe High School  
Track Replacement**

**PRE-BID MEETING**

**Thursday January 30, 2019  
10:00 am**

NAME	COMPANY	PHONE NUMBER	EMAIL ADDRESS
1. DAVID CLAPP	BASILINE Sports	865 567 2822	david@baselinellc.com
2. Anthony James	Geo Surfaces	704-492-6903	<del>David</del> A. JAMES@GEOSURFACES.COM
3. BRYAN Conley	CAEO SURFACES	704-363-0274	B.Conley@GeoSURFACES.COM
4. Tiffany McClants	BCS	828-255-5890	tiffany.mccants@bcsemail.org
5. TIM FIERKE	BCS	828-255-5916	tim.fierke@bcsemail.org
6. Garrett Bare	AstroTurf/Rekortan	336-468-7229	gbare@astroturf.com
7. Samantha Sirey	NBHS		
8. David Bull	BCS	828-777-7465	david.bull@bcsemail.org
9.			
10.			
11.			
12.			
13.			





Electrical Contact Information:

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111 Coxe Ave.  
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828.225.5331 C  
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Ricky L. Coats Electric  
Mr. Ricky Coats  
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**BUNNELL  
LAMMONS  
ENGINEERING**

October 31, 2018

Mr. Timothy Fierle, AIA  
Director of Facilities and Planning  
Buncombe County Schools  
175 Bingham Road  
Asheville, North Carolina 28806

Subject: **Report of Hand Auger Boring Exploration**  
Track Replacement Project  
North Buncombe High School  
Weaverville, North Carolina  
BLE Project No. J18-10301-05  
BLE N.C. License No. C-1538

Dear Mr. Fierle:

Bunnell-Lammons Engineering, Incorporated (BLE) is pleased to present this report of hand auger boring investigation for the subject project. Our services were provided in general accordance with Bunnell-Lammons Engineering (BLE) Proposal No. P17-0922NB dated June 6, 2017 and authorized by Purchase Order # 621714449 dated May 25, 2018. The purpose of the exploration was to evaluate the existing pavement section and subgrade conditions, and to provide recommendations for subgrade preparation and pavement section for a new asphalt track. Project information was obtained from correspondence Mr. Tim Fierle, AIA with Buncombe County Schools, along with a geotechnical investigation and report scope of services narrative prepared by CHA – design/construction solutions (the owner’s designer and construction administrator). Additional project information was obtained during our field exploration.

### **Project Information and Site Conditions**

Buncombe County Schools is planning to renovate the existing running track at North Buncombe High School located at 890 Clark’s Chapel Road in Weaverville, North Carolina. The planned renovation will include replacing the existing asphalt pavement on the 8-lane 400-meter running track with new asphalt pavement and a latex or polyurethane-bound track surface. We understand that the existing asphalt pavement is planned to be removed and that the existing site grades will be relatively unchanged. We were not provided design loading information. However, based on the project information and our experience with similar projects, the track will be mainly utilized for athletic purposes and may occasionally be traversed by maintenance vehicles.

Based on our review of publicly available current and historical aerial photography and our recent site visits, the existing track surrounds a recently renovated synthetic turf athletic field with home bleacher seating on the northeast side and visitor bleacher seating on the southwest side. The existing asphalt pavement in the subject track is of unknown age (speculated to be approximately 10 to 15 years old), but appears to have generally reached the end of its service life.

The existing asphalt track is covered with a rubber type surfacing. The rubber type surfacing was observed to be cracking, peeling and complete wore through in a number of places around the track. Transverse and block cracking were observed through the existing rubber surface in numerous areas around the track. Both types of cracking are typically caused by shrinkage of the asphalt and daily temperature cycling. The occurrence of these types of cracks are a good indication that the asphalt has hardened significantly through aging. The cracks were observed to be approximately ¼ to ⅝ inch in width with slight spalling on some of the edges. Additional cracking may exist, but may have been concealed by the overlying rubber surface. We also observed evidence of ponded water along with the accumulation of silt in several areas around the track, particularly on the interior lane on the north side of the track. Not all conditions were observed, conditions differing from the above-described are plausible.

### Exploration

The existing asphalt was cored in six locations as shown on the attached Figure 1 - Hand Auger Boring Location Plan. The locations were spaced out across the track in locations selected by BLE with the intent of exploring a representative range of pavement distress and subgrade conditions. The pavement cores were extracted, visually observed and measured for thickness. Photographs of the obtained cores are presented in the Appendix. Beneath the pavement, the borings were extended through the aggregate base material and into the soil subgrade using a hand auger. Dynamic Cone Penetrometer tests were performed at approximate 1-foot depth intervals in the soil to provide a correlation to soil subgrade strength. Details for each core and hand auger boring are shown on the Hand Auger Boring Logs attached to this report.

### Exploration Findings

The rubber surfacing on the track was measured to be approximately ¼ inch in thickness at the six core locations. Beneath the rubber track surface, the existing asphalt thickness ranged from 1¾ to 2⅝ inches. Underlying the asphalt, another layer of rubber track surfacing was encountered. The second layer of rubber track surfacing was measured to be between ¼ to ⅝ inches in thickness. Below the second layer of rubber track surfacing, a second layer of asphalt was encountered and was measured to be between 1¾ to 3 inches in thickness. Aggregate base material was encountered at all six explored locations and ranged in thickness from 5 to 7 inches. The existing aggregate base appeared to consist of standard NCDOT aggregate base course stone (ABC). A summary of the existing rubber track surfacing, asphalt and aggregate base course thickness are shown in Table 1 below:

*Table 1 – Existing Pavement Thickness Measurements*

	HAB-1	HAB-2	HAB-3	HAB-4	HAB-5	HAB-6
<b>Rubber Track Surfacing Thickness (inches)</b>	1/4	1/4	1/4	1/4	1/4	1/4
<b>Asphalt Thickness (inches)</b>	2	1 3/4	2	2	2 1/8	1 1/2
<b>Rubber Track Surfacing Thickness(inches)</b>	3/8	1	3/8	5/8	1/4	7/8
<b>Asphalt Thickness (inches)</b>	2	2 1/4	1 3/4	3	2	1 3/4
<b>Aggregate Base Course Thickness (inches)</b>	6	7	6	6	6	5

The hand auger borings were advanced to explore the nature and consistency of the existing subgrade. The hand auger borings were performed to depths of 36 inches below the existing soil subgrade. The subsurface soils encountered were examined and classified by our field personnel. Upon completion of the field-testing, the borings were backfilled/patched using bag mix concrete and the rubber track surface repaired.

The subgrade soil immediately below the aggregate base course stone typically consisted of loose and firm reddish/tan silty sand and was interpreted to be fill soil. It is speculated that the fill soil was placed during original development of the site. No compaction testing data or field records of fill placement were available for our review. However, based on the penetrometer (DCP) resistance values that ranged from 6 to 11 blows per increment, the existing fill generally appears to have received some compactive effort during original placement. The fill soil encountered in our hand auger borings was generally free of organics and deleterious materials, but it should be noted that the content and quality of man-made fills can vary significantly.

Groundwater was not encountered by the hand auger borings at the time of drilling and before patching of the borings. Because the borings were located in an area accessible by the public, the borings were backfilled shortly after drilling thus precluding 24-hour ground water level measurements. Groundwater levels may fluctuate several feet with seasonal and rainfall variations. Normally, the highest ground water levels occur in late winter and spring and the lowest levels occur in late summer and fall. Ground water levels may also fluctuate due to construction activity.

### **Laboratory Testing**

Soil samples were collected from the borings and were combined to make a composite sample for the requested laboratory testing. The laboratory testing included particle-size distribution, Atterberg limits (Plasticity Index and Liquid Limit), moisture density relationship and California Bearing Ratio. The tests were performed in accordance with ASTM or other applicable testing standards. Detailed results and information for the individual tests are included on laboratory data sheets included in Appendix.

### **Conclusion**

BLE tested the pavement and underlying soil subgrade at six locations within the track area. The results of the DCP testing indicate that the soil subgrade has satisfactory strength to support a flexible pavement section. It is our opinion the distress in the existing pavement is due to several factors, as follows:

- **Intermixed Asphalt Layers** – The asphalt has exhibited an unusually excessive amount of cracking given the estimated age. This is primarily attributed to the existing section in which asphalt has been placed over an existing rubber track surface.
- **Asphalt Age** – aging asphalt “dries out over time”, which reduces its structural capacity and its ability to expand and contract with temperature cycles.
- **Drainage** – Some areas of the pavement appeared to have poor surface drainage, allowing water to pond on the surface and collecting in open cracks, which allows the infiltration of surface water causing the pavement and subgrade to become saturated and be more susceptible to the detrimental effects of freeze-thaw cycle. We recommend that your design/construction administrator or a civil engineer be consulted to determine if the existing ditch slopes and culverts are adequate to handle drainage in the track area.

**Pavement Recommendations**

Based on our visual observations and limited field-testing, and our understand that the existing asphalt pavement is planned to be removed and that the existing site grades will be relatively unchanged, the soil subgrade at the locations tested has adequate strength to support a flexible pavement section. Though not expected, it is possible that these widely spaced hand auger borings may not fully represent the conditions across the site. Since the site was previously developed, unexpected conditions, such as loose/soft soils can be present between the boring locations.

Track surface specifications were not available at the time this report was written. Therefore, based on the provided information, our experience on similar projects in this region and locally available materials, the pavement should consist of hot mix asphaltic (HMA) concrete and a base course of granular material. The recommended pavement section is presented in Table 2 below. The recommended flexible asphalt pavement section has been developed based on the provided project information and on the assumption that the subgrade will have a minimum CBR (California Bearing Ratio) value of 4 and assuming the track will have the appropriate surface tolerances, slope, grade and adequate drainage.

*Table 2 – Recommended Design Asphalt Pavement Section*

<b>Layer Type</b>	<b>Thickness (inches)</b>
HMA Surface Course S 9.5A or 9.5B Mix Type	2½ (2 layers)
Aggregate Base Course NCDOT Class 1 Aggregate	6 (minimum)

The asphaltic concrete surface course should consist of an S9.5A or S9.5B Mix Type. These mix types are defined by NCDOT’s Superpave specifications. The aggregate base course should consist of a Class 1 Aggregate (refer to North Carolina Department of Transportation *Standard Specifications for Roads and Structures*). The asphalt and base course should meet the material properties and be placed and compacted in accordance with the North Carolina DOT specifications and the project specifications.

Based on our limited observations during the field exploration, the existing in-place aggregate base course stone may be re-used provided it is not contaminated during removal of the overlying asphalt layers. However, this will need to be field evaluated by BLE prior to re-use. Typically, some loss of the in-place aggregate base course stone will occur during the removal operation, new aggregate base course stone will need to be added. However, the amount needed will need to be determined after the design elevation is determined and after the existing asphalt pavement is removed.

All the existing aggregate base course stone should be reconditioned and blended with new aggregate base course stone. The aggregate base course stone should be compacted to at least 100 percent of the maximum dry density, as determined by the modified Proctor compaction test (ASTM D 1557). To confirm that the base course has been uniformly compacted, in-place field density tests should be performed by BLE. We also recommended that the base course be methodically proofrolled by an experienced BLE engineering technician working under the direction of the geotechnical engineer prior to the placement of the asphalt pavement.

If the subgrades proofroll successfully, then the suggested pavement section can be placed. In areas where the subgrade is found to be unstable under the proofroll, remedial activities may be necessary. Such remedial activities may include partial undercutting and replacement, or stabilization with geosynthetics and crushed stone, or a combination of these methods. Appropriate recommendations may be provided at the time of construction by BLE, if unsatisfactory proofrolling conditions are encountered. Stabilization measures will vary with location, and will also be dependent on the weather conditions during construction.

Due to the assumption that the existing pavement section will be removed and that the surface grades will remain close to the existing site grades and that some areas may be possible raised slightly to assist with drainage. We recommend that aggregate base course stone be used as fill material for areas that need to be adjusted. The aggregate base course stone should be compacted to at least 100 percent of the maximum dry density, as determined by the modified Proctor compaction test (ASTM D 1557) and should be checked with a sufficient number of density tests to determine if adequate compaction is being achieved.

The surface of compacted subgrades can deteriorate and lose its support capabilities when exposed to environmental changes and construction activity. Deterioration can occur in the form of freezing, formation of erosion gullies, extreme drying, and exposure for a long period of time or rutting by construction traffic. We recommend that subgrade surfaces that have deteriorated or softened be recompacted prior to construction of the pavement. Recompaction of subgrade surfaces should be checked with a sufficient number of density tests to determine if adequate compaction is being achieved.

The performance of the flexible pavements will be influenced by a number of factors including the actual condition of subgrade at the time of pavement installation, installed thicknesses, compaction, and drainage. The subgrade should be reevaluated by thorough proofrolling immediately prior to paving, and any unstable areas should be repaired. This recommendation is very important to the long-term performance of the pavement. Areas adjacent to pavements (embankments, landscaped islands, etc.) which can drain water (rainwater) should be designed to help reduce water seepage below the pavements. This may require the use of subsurface trench drains or swales. In addition, sufficient tests and inspections should be performed during pavement installation to confirm that the required thickness, density and quality requirements of the specifications are followed.

### **Limitations of Report**

This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, express or implied, is made.

### **Basis of Recommendations**

It is recommended that Bunnell-Lammons Engineering be provided the opportunity to make a general review of any plans and specifications prepared from the recommendations presented in this report. We would then suggest any modifications so that our recommendations are properly interpreted and implemented. We also suggest a meeting be held with the designers, contractors and our firm to ascertain whether we have interpreted the design correctly and that our recommendations are understood.

**Closing**

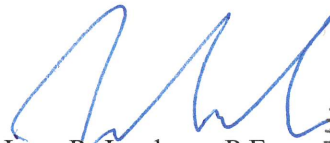
We appreciate the opportunity to provide our professional geotechnical services on this project. If you have any questions regarding this report please to not hesitate to call us. We also offer construction materials and technician field testing services. We hope that you will give BLE consideration to provide testing services as this project enters the construction phase.

Sincerely,

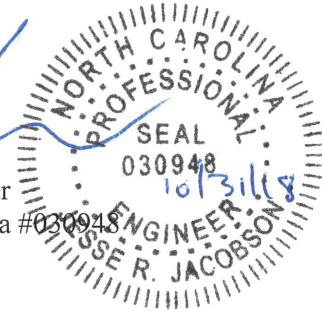
**BUNNELL-LAMMONS ENGINEERING, INC.**



Sam C. Interlicchia  
Project Manager

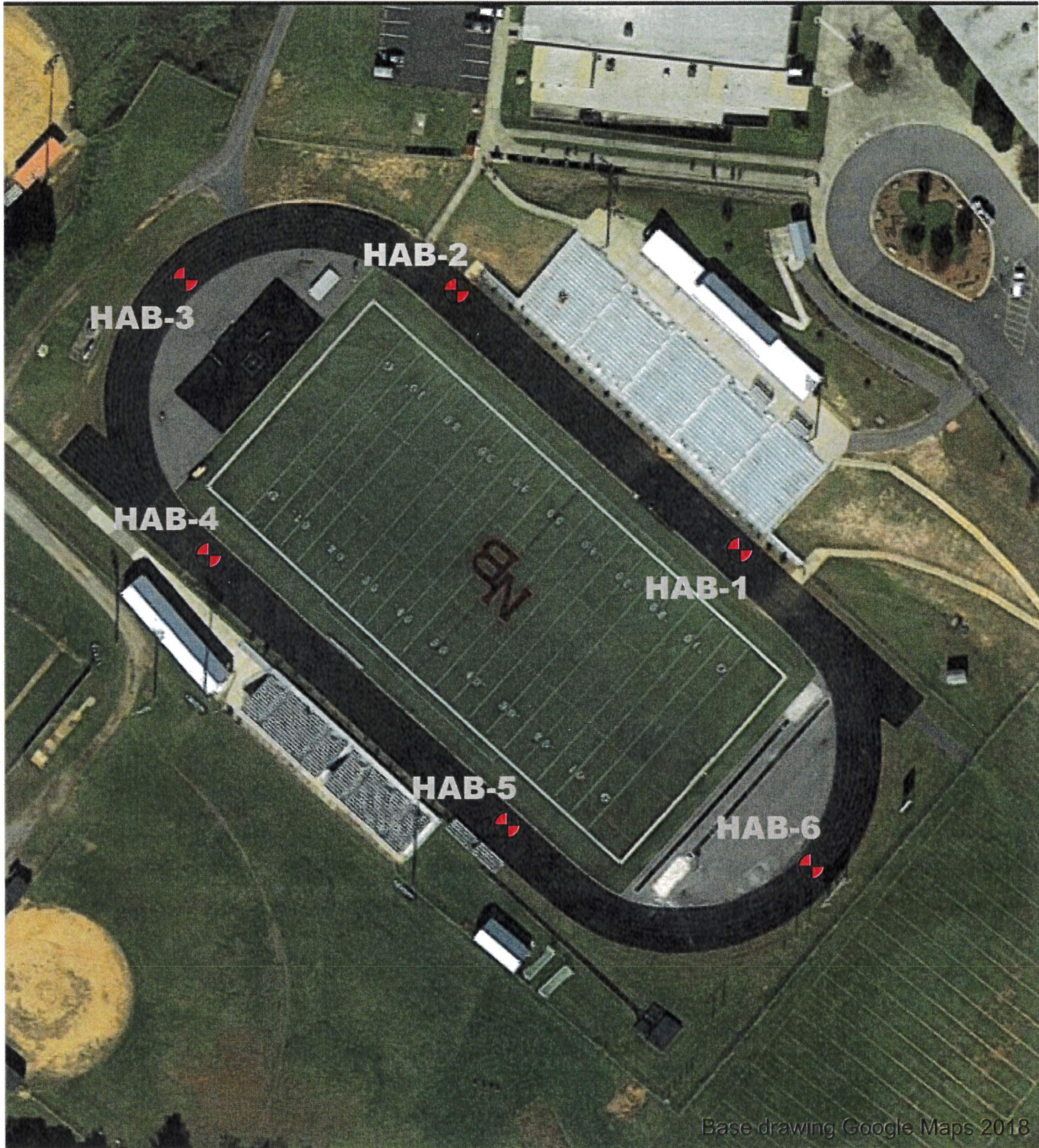


Jesse R. Jacobson, P.E.  
Asheville Branch Manager  
Registered, North Carolina #030948



Attachments:           Hand Auger Boring Location Plan  
                                  Hand Auger Boring Records  
                                  Photographs  
                                  Laboratory Test Data Sheet





 Approximate Hand Auger Boring Location



**BUNNELL  
LAMMONS  
ENGINEERING**

**Hand Auger Boring Location Plan**  
North Buncombe High School / Track Replacement  
Weaverville, North Carolina  
BLE Project No. J16-10301-05

Date:  
Oct 2018  
Figure No.  
1



### Hand Auger Boring Log

<b>Job Name:</b> North Buncombe HS Track		<b>Hand Auger Boring Number:</b> HAB-1	
<b>Job Number:</b> J18-10301-05		<b>Date Logged:</b> October 2018	
<b>Approximate Surface Elevation:</b>		<b>Logged By:</b> Sam Interlicchia	
Depth		Stratum Description	Dynamic Cone Penetrometer blows/increment ( 1 <sup>st</sup> - 2 <sup>nd</sup> - 3 <sup>rd</sup> )
From	To		
0	¼"	Rubber track surface (¼")	---
¼"	2¼"	Asphalt (2")	---
2¼"	2 <sup>5</sup> / <sub>8</sub> "	Rubber track surface ( <sup>3</sup> / <sub>8</sub> ")	---
2 <sup>5</sup> / <sub>8</sub> "	4 <sup>5</sup> / <sub>8</sub> "	Asphalt (2")	---
4 <sup>5</sup> / <sub>8</sub> "	10 <sup>5</sup> / <sub>8</sub> "	Aggregate base course stone (6 inches)	---
10 <sup>5</sup> / <sub>8</sub> "	36"	Fill – Reddish/tan silty fine-medium SAND	5-6-5 6-7-7 7-6-7
Hand auger boring terminated at 36 inches			
<b>Remarks and Notes:</b> Groundwater not observed at time of excavation. Bore hole backfilled with soil cuttings and patched with concrete.			





### Hand Auger Boring Log

<b>Job Name:</b> North Buncombe HS Track		<b>Hand Auger Boring Number:</b> HAB-2	
<b>Job Number:</b> J18-10301-05		<b>Date Logged:</b> October 2018	
<b>Approximate Surface Elevation:</b>		<b>Logged By:</b> Sam Interlicchia	
Depth		Stratum Description	Dynamic Cone Penetrometer blows/increment ( 1 <sup>st</sup> - 2 <sup>nd</sup> - 3 <sup>rd</sup> )
From	To		
0	¼"	Rubber track surface (¼")	---
¼"	2"	Asphalt (1¾")	---
2"	3"	Rubber track surface (1")	---
3"	5¼"	Asphalt (2¼")	---
5¼"	12¼"	Aggregate base course stone (7 inches)	---
12¼"	36"	Fill – Reddish/tan silty fine-medium SAND	5-7-9 5-7-7 5-6-8
Hand auger boring terminated at 36 inches			
<b>Remarks and Notes:</b> Groundwater not observed at time of excavation. Bore hole backfilled with soil cuttings and patched with concrete.			





### Hand Auger Boring Log

<b>Job Name:</b> North Buncombe HS Track		<b>Hand Auger Boring Number:</b> HAB-3	
<b>Job Number:</b> J18-10301-05		<b>Date Logged:</b> October 2018	
<b>Approximate Surface Elevation:</b>		<b>Logged By:</b> Sam Interlicchia	
Depth		Stratum Description	Dynamic Cone Penetrometer blows/increment ( 1 <sup>st</sup> - 2 <sup>nd</sup> - 3 <sup>rd</sup> )
From	To		
0	¼"	Rubber track surface (¼")	---
¼"	2¼"	Asphalt (2")	---
2¼"	2 <sup>5</sup> / <sub>8</sub> "	Rubber track surface (¾")	---
2 <sup>5</sup> / <sub>8</sub> "	4 <sup>3</sup> / <sub>8</sub> "	Asphalt (1¾")	---
4 <sup>3</sup> / <sub>8</sub> "	10 <sup>3</sup> / <sub>8</sub> "	Aggregate base course stone (6 inches)	---
10 <sup>3</sup> / <sub>8</sub> "	36"	Fill – Reddish/brown silty fine-medium SAND	6-7-9 10-11-12 9-11-10
Hand auger boring terminated at 36 inches			
<b>Remarks and Notes:</b> Groundwater not observed at time of excavation. Bore hole backfilled with soil cuttings and patched with concrete.			



### Hand Auger Boring Log

<b>Job Name:</b> North Buncombe HS Track		<b>Hand Auger Boring Number:</b> HAB-4	
<b>Job Number:</b> J18-10301-05		<b>Date Logged:</b> October 2018	
<b>Approximate Surface Elevation:</b>		<b>Logged By:</b> Sam Interlicchia	
Depth		Stratum Description	Dynamic Cone Penetrometer blows/increment ( 1 <sup>st</sup> - 2 <sup>nd</sup> - 3 <sup>rd</sup> )
From	To		
0	¼"	Rubber track surface (¼")	---
¼"	2¼"	Asphalt (2")	---
2¼"	2⅞"	Rubber track surface (⅝")	---
2⅞"	5⅞"	Asphalt (3")	---
5⅞"	11⅞"	Aggregate base course stone (6 inches)	---
10⅝"	36"	Fill – Reddish/tan silty fine-medium SAND	8-7-8 9-8-8 7-8-8
Hand auger boring terminated at 36 inches			
<b>Remarks and Notes:</b> Groundwater not observed at time of excavation. Bore hole backfilled with soil cuttings and patched with concrete.			



### Hand Auger Boring Log

<b>Job Name:</b> North Buncombe HS Track		<b>Hand Auger Boring Number:</b> HAB-5	
<b>Job Number:</b> J18-10301-05		<b>Date Logged:</b> October 2018	
<b>Approximate Surface Elevation:</b>		<b>Logged By:</b> Sam Interlicchia	
Depth		Stratum Description	Dynamic Cone Penetrometer blows/increment ( 1 <sup>st</sup> - 2 <sup>nd</sup> - 3 <sup>rd</sup> )
From	To		
0	¼"	Rubber track surface (¼")	---
¼"	2 <sup>3</sup> / <sub>8</sub> "	Asphalt (2 <sup>1</sup> / <sub>8</sub> ")	---
2 <sup>3</sup> / <sub>8</sub> "	2 <sup>5</sup> / <sub>8</sub> "	Rubber track surface (¼")	---
2 <sup>5</sup> / <sub>8</sub> "	4 <sup>5</sup> / <sub>8</sub> "	Asphalt (2")	---
4 <sup>5</sup> / <sub>8</sub> "	10 <sup>5</sup> / <sub>8</sub> "	Aggregate base course stone (6 inches)	---
10 <sup>5</sup> / <sub>8</sub> "	36"	Fill – Reddish/brown silty fine-medium SAND	4-7-9 6-6-7 6-7-7
Hand auger boring terminated at 36 inches			
<b>Remarks and Notes:</b> Groundwater not observed at time of excavation. Bore hole backfilled with soil cuttings and patched with concrete.			





### Hand Auger Boring Log

<b>Job Name:</b> North Buncombe HS Track		<b>Hand Auger Boring Number:</b> HAB-6	
<b>Job Number:</b> J18-10301-05		<b>Date Logged:</b> October 2018	
<b>Approximate Surface Elevation:</b>		<b>Logged By:</b> Sam Interlicchia	
Depth		Stratum Description	Dynamic Cone Penetrometer blows/increment ( 1 <sup>st</sup> - 2 <sup>nd</sup> - 3 <sup>rd</sup> )
From	To		
0	¼"	Rubber track surface (¼")	---
¼"	1¾"	Asphalt (1½")	---
1¾"	2 <sup>5</sup> / <sub>8</sub> "	Rubber track surface (7/8")	---
2 <sup>5</sup> / <sub>8</sub> "	4 <sup>3</sup> / <sub>8</sub> "	Asphalt (1¾")	---
4 <sup>3</sup> / <sub>8</sub> "	9 <sup>3</sup> / <sub>8</sub> "	Aggregate base course stone (5 inches)	---
9 <sup>3</sup> / <sub>8</sub> "	36"	Fill – Reddish/tan silty fine-medium SAND	4-5-7 6-7-8 6-8-9
Hand auger boring terminated at 36 inches			
<b>Remarks and Notes:</b> Groundwater not observed at time of excavation. Bore hole backfilled with soil cuttings and patched with concrete.			



<b>1</b>	Location / Orientation	Core #1	Date: Oct 2018
	Remarks		



<b>2</b>	Location / Orientation	Core #2	Date: Oct 2018
	Remarks		






<b>3</b>	Location / Orientation	Core #3	Date: Oct 2018
	Remarks		



Photographer: S. Interlicchia

<b>4</b>	Location / Orientation	Core #4	Date: Oct 2018
	Remarks		




Photographer: S. Interlicchia

<b>5</b>	Location / Orientation	Core #5	Date: Oct 2018
	Remarks		



Photographer: S. Interlicchia

<b>6</b>	Location / Orientation	Core #6	Date: Oct 2018
	Remarks		



Photographer: S. Interlicchia

<b>7</b>	<b>Location / Orientation</b>	Asphalt Track	Date: Oct 2018  Photographer: S. Interlicchia
	<b>Remarks</b>	Note: typical transverse cracking	

<b>8</b>	<b>Location / Orientation</b>	Asphalt Track	Date: Oct 2018  Photographer: S. Interlicchia
	<b>Remarks</b>	Note: typical transverse	

<b>7</b>	<b>Location / Orientation</b>	Asphalt Track	Date: Oct 2018  Photographer: S. Interlicchia
	<b>Remarks</b>	Note: Typical wearing of the rubberized track surface wearing	

<b>8</b>	<b>Location / Orientation</b>	Asphalt Track	Date: Oct 2018  Photographer: S. Interlicchia
	<b>Remarks</b>	Note: Typical wearing of the rubberized track surface	

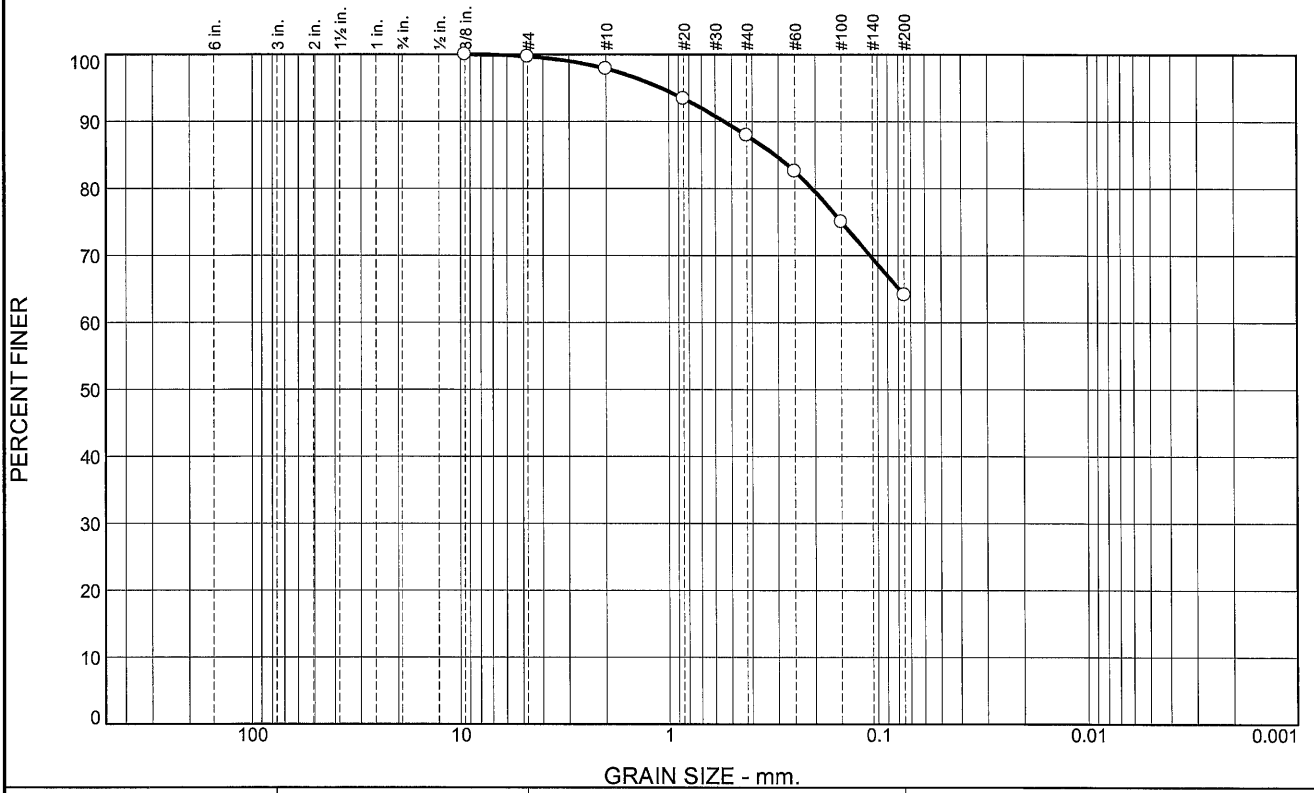
<b>7</b>	<b>Location / Orientation</b>	Asphalt Track	Date: Oct 2018  Photographer: S. Interlicchia
	<b>Remarks</b>	Note: typical cracking along the edge with spalling at edges	



<b>8</b>	<b>Location / Orientation</b>	Asphalt Track	Date: Oct 2018  Photographer: S. Interlicchia
	<b>Remarks</b>	Note: typical cracking in end zone areas	



# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	1.8	10.0	23.8	64.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	99.7		
#10	97.9		
#20	93.4		
#40	87.9		
#60	82.6		
#100	75.0		
#200	64.1		

**Material Description**

Brown fi. sandy SILT

**Atterberg Limits**  
 PL= 35      LL= 56      PI= 21

**Coefficients**  
 D<sub>90</sub>= 0.5431      D<sub>85</sub>= 0.3099      D<sub>60</sub>=  
 D<sub>50</sub>=              D<sub>30</sub>=              D<sub>15</sub>=  
 D<sub>10</sub>=              C<sub>u</sub>=              C<sub>c</sub>=

**Classification**  
 USCS= MH      AASHTO= A-7-5(14)

**Remarks**

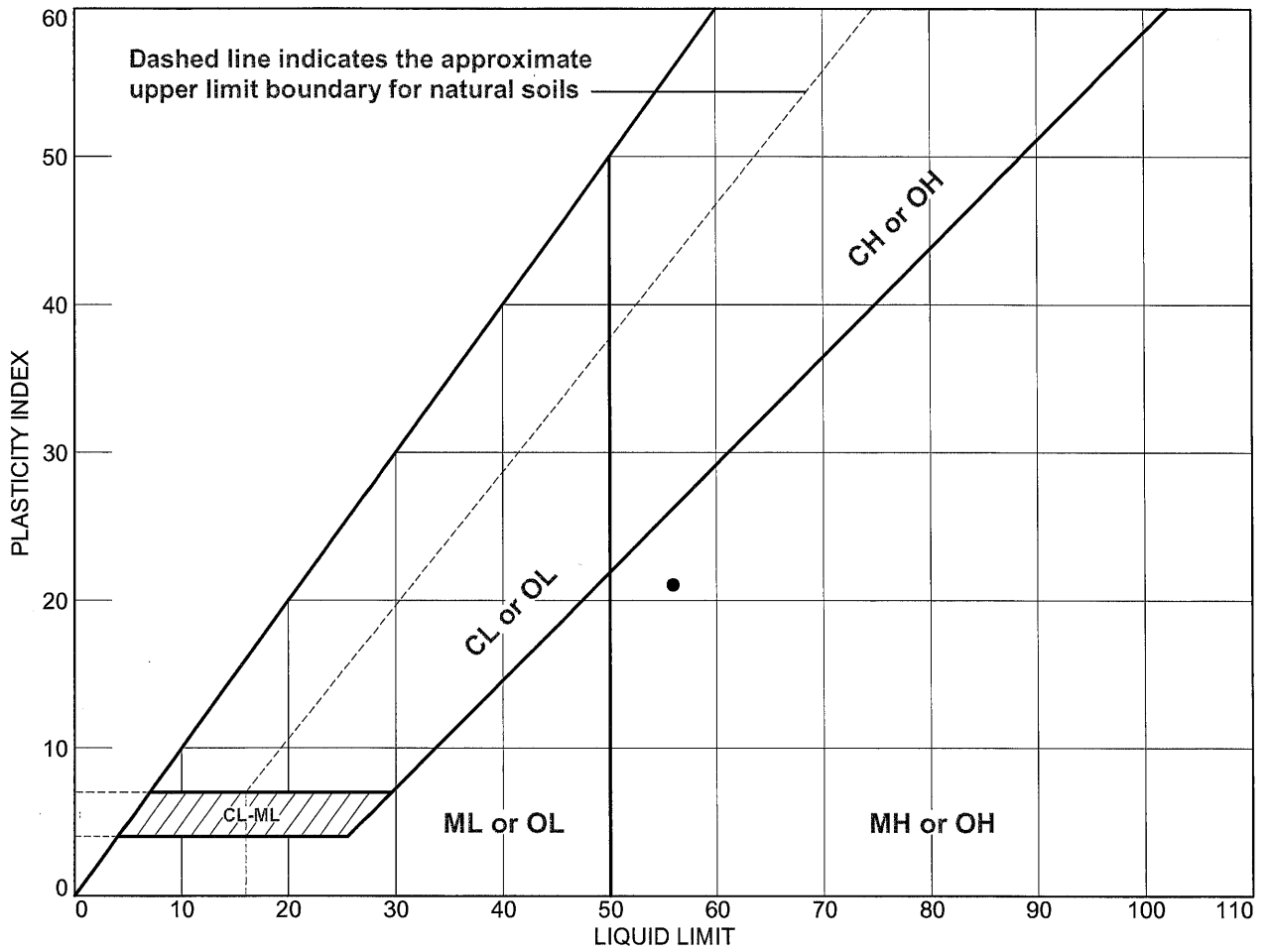
\* (no specification provided)

Sample Number: NB-S1

Date:

<b>Bunnell Lammons Engineering, Inc.</b>  Greenville, SC	<b>Client:</b> Buncombe County Public Schools <b>Project:</b> N. Buncombe HS Track Replacement  <b>Project No:</b> 10301-05
<b>Figure</b>	

# LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●		NB-S1		26.6	35	56	21	MH

**Bunnell Lammons Engineering, Inc.**

**Greenville, SC**

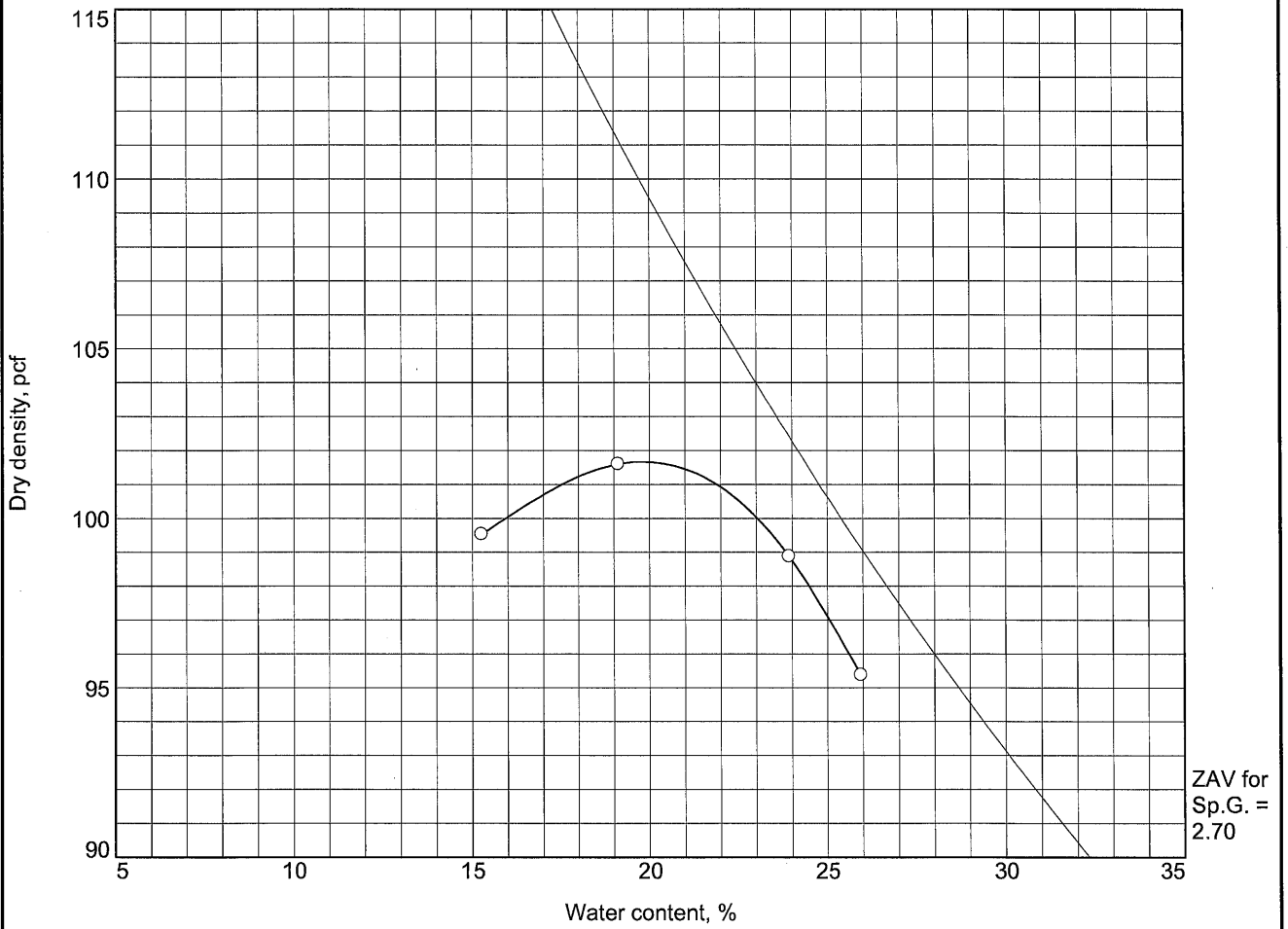
**Client:** Buncombe County Public Schools

**Project:** N. Buncombe HS Track Replacement

**Project No.:** 10301-05

**Figure**

# MOISTURE DENSITY RELATIONSHIP



Test specification: ASTM D 698-07 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	MH	A-7-5(14)	26.6		56	21	0.3	64.1

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 101.7 pcf Optimum moisture = 19.8 %	Brown fi. sandy SILT
<b>Project No.</b> 10301-05 <b>Client:</b> Buncombe County Public Schools <b>Project:</b> N. Buncombe HS Track Replacement  ○ <b>Sample Number:</b> NB-S1	<b>Remarks:</b>
<b>Bunnell Lammons Engineering, Inc.</b>  <b>Greenville, SC</b>	

Figure

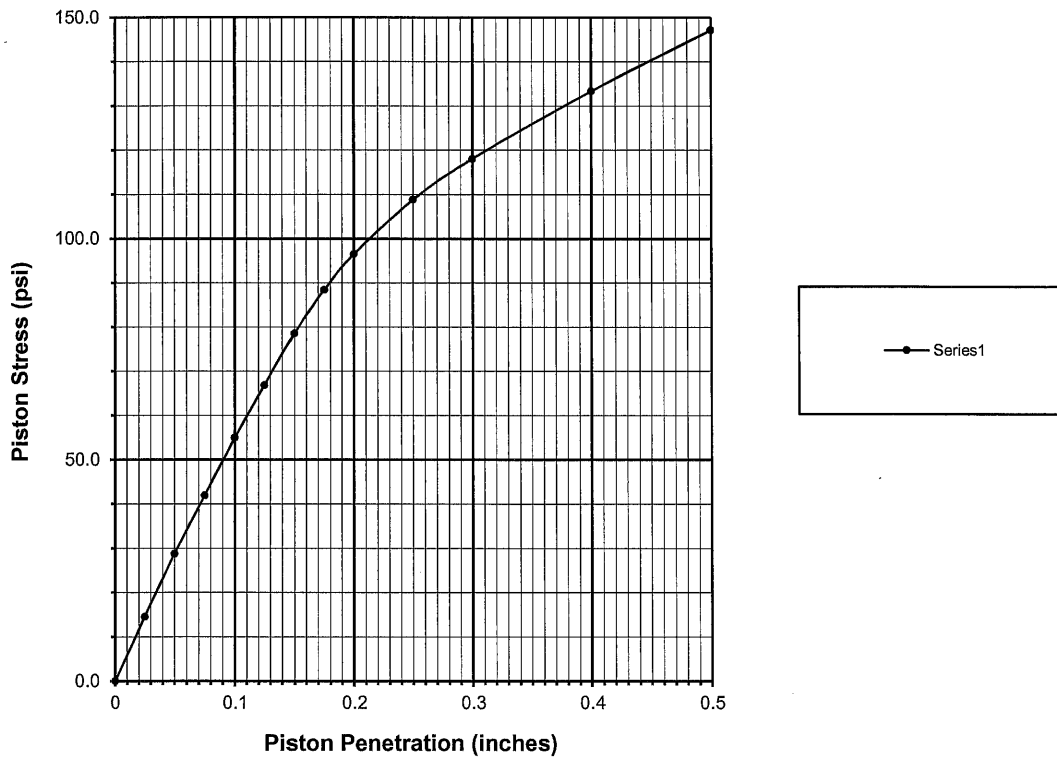




## CALIFORNIA BEARING RATIO TEST REPORT (ASTM D-1883)

Date: 10/29/2018  
 Project Name: N. Buncombe HS Track  
 Project No.: J18-10301-05  
 Reviewed By: Paul Yarber IV

Sample ID: NB-S1  
 Sample Class.: Brown fi. sandy SILT  
 Depth/Elev.: \_\_\_\_\_  
 Sample Type: Remolded  
 Compaction Method: D-698A



Curve Series No. Specimen ID	Surcharge (psf)	Corrected CBR		Soil Index Properties				
		0.1 inch	0.2 inch	LL	PL	PI	G <sub>s</sub>	% FINES
1	10	6	6					
2								
3								
4								

CBR SPECIMEN NO.	Initial Properties				Soaked Properties			
	1	2	3	4	1	2	3	4
COMPACTION (%)	95.0							
DRY DENSITY (pcf)	96.6				97.2			
MOISTURE CONTENT (%)	19.8				27.9			
SWELL (%)					4.6			