

**Monroe County Intermediate School District  
1101 S. Raisinville Rd.  
Monroe, MI 48161**

**REQUEST FOR BID  
for  
2026 MCISD Bus Loop Asphalt Project**

SCHOOL YEAR: 2026-27

The Monroe County Intermediate School District (MCISD) is seeking bids for qualified contractors of the demo and replacement of the Monroe County Intermediate School Districts asphalt bus loop driveway project.

*Bids will be received according to the following instructions:*

**GENERAL CONDITIONS**

1. Physical bids must be in a sealed envelope and clearly marked “**2026 MCISD Bus Loop Asphalt Project Bid**” on the face of the envelope carrying said bid, and are to be addressed to:

Steve Foster  
Director of Buildings and Grounds  
Monroe County ISD  
1101 S. Raisinville Rd.  
Monroe, MI 48161  
(734) 625-0687  
[steve.foster@monroeisd.us](mailto:steve.foster@monroeisd.us)

**Any questions concerning the bid should be directed to Steve Foster (MCISD) at [steve.foster@monroeisd.us](mailto:steve.foster@monroeisd.us) AND Race Lamkin (CM) at [race@thelamkingroup.com](mailto:race@thelamkingroup.com)**

2. Bids submitted should comply with all aspects of the specifications. Any deviation from what is listed must be noted on your bid response form, or the bid may be considered rejected.
3. MCISD reserves the right to reject any or all proposals and bids, including that of the lowest bidder; or to accept bids either in whole or in part; to award contracts by individual items or by lump sum total; or to waive any informalities, defects or omissions in any bid, should it be deemed to be in the best interest of MCISD to do so.
4. Bids shall be binding for ninety (90) days from bid opening and prices will be binding for the length of the contract.
5. Awarding of the bid is pending final approval of purchase from the MCISD Board of Education.
6. Vendor shall include estimated delivery dates of equipment quoted at the time of your bid submission.
7. RFP Schedule

RFP Released	Apr 27, 2026
Pre-Bid Meeting/Site Walkthrough	May 05, 2026 @ 10:00 am (Mandatory)
Deadline for Questions	May 07, 2026 @ 3:00 pm
Proposals Due and Bid Opening	May 11, 2026 @ 2:00pm

*Bid opening is a public meeting at 1101 S. Raisinville Rd., Monroe, MI that vendors are welcome to attend.*

8. A mandatory vendor pre-bid meeting / site walkthrough on that date and time above.
9. The vendor is responsible for checking our website for any Addenda's that would be posted for this RFP no later than 3 days after the deadline for questions at <https://www.monroeisd.us/publications/biddingdocuments/>
10. Provide detailed itemized project cost (quantity, part numbers, item cost, labor, total cost). This is helpful to verify your bid includes all components and allows us to verify the components to meet the required specifications.
11. A minimum of 2 references for similar projects should be included.
12. Any required permits, licenses, inspections, approvals, and fees for the work shall be secured and paid for by the Contractor. All work shall conform to all applicable codes, rules, and regulations. Perform all tests required by state, city, county and/or other agencies having jurisdiction. Provide all materials, equipment, etc., and labor required for tests.
13. All installation, labor, parts, cabling, and necessary equipment must be included in the total cost on your bid.

## **1. Project Overview**

Scope of this section includes providing all labor and materials required to perform the scope of work described. The project consists of milling and resurfacing asphalt pavements, including a 2-inch mill and overlay, along with designated patching, crack filling, and sealing areas. Work shall be completed in accordance with MDOT specifications and project drawings.

## **2. Project Timeline**

- A. Project may be started after the bid is awarded by the Monroe County Intermediate School District Board of Education. Set dates for this project are June 19, 2026, to August 14, 2026. Any deviation from this time frame must be agreed upon by the construction company and the owner in writing.
- B. Project must be completed by 5:00pm Friday August 14, 2026.
- C. Contractor shall submit a detailed construction schedule upon award of contract.

## **3. Submittals**

All submittals must be submitted and approved by the CM prior to any work starting.

- A. Proposed HMA design mix.
- B. Review of subgrades with CM.
- C. Proposed seal coat product.
- D. Proposed concrete design mix.

## **4. Permits**

Any required permits, licenses, inspections, approvals and fees for the work shall be secured and paid for by the contractor. All work shall conform to all applicable codes, rules and regulations. Perform all tests required by the state, city, county, and/or other agencies having jurisdiction. Provide all material, equipment and labor required for tests.

## 5. Testing

All required third-party testing and inspection services shall be procured by the Owner. The Contractor shall coordinate and schedule such services as necessary to support the project schedule. The Contractor shall provide the Owner with advance notice and a detailed estimate of anticipated testing costs for approval prior to engagement. All associated invoices shall be submitted to the Owner for payment. Failure to properly coordinate testing shall not be grounds for delay claims.

## 6. Insurance Requirements

The contractor/Bidder, prior to commencement of the work, shall obtain and provide all necessary insurance coverage verification as required by law as well as for his subcontractors and shall provide copies or verification of such coverage to the MCISD. Coverage is to include Bodily Injury, Property Damage, Workman's Compensation, etc. as carried out by an insurer in the State of Michigan. The contractor/Bidder assumes responsibility for all loss of material and tools and destruction of equipment and other machinery and shall indemnify and save harmless the MCISD against all claims arising out of the performance of this contract. Insurance coverage shall remain in effect throughout the duration of the contractor/Bidder's work under this Agreement.

- A. Insurance limits shall be:
  - a. Worker's Compensation: As required by all applicable Federal, state, or other laws, including employer's liability shall be in compliance with the statutory limits.
  - b. Comprehensive General Liability, including property damage liability, professional liability, bodily injury liability, subcontractor's liability, contingent liability, contractual liability, products, and completed operations, all on the occurrence basis with personal injury coverage and broad form property damage. Limits shall be at least the following:
    - i. Each occurrence \$2,000,000
    - ii. General Aggregate \$2,000,000
  - c. Comprehensive Automobile Liability, including non-ownership and hired car coverage as well as MCISD's vehicles, with at least the following limits:
    - i. Combined single limit \$1,000,000
    - ii. Umbrella or excess liability coverage of \$5,000,000
- B. Each subcontractor shall provide proof of insurance to the contractor/Bidder prior to commencement of work. Insurance coverage shall remain in effect throughout the duration of the subcontractor's work. Should a subcontractor's coverage expire, the subcontractor shall notify the contractor/Bidder and the MCISD thirty (30) days prior to expiration. The MCISD or contractor/Bidder may ensure the work and deduct the costs from the subcontractor contract amount.
- C. Prior to any permit being issued, the above minimal insurance certificates must be presented to the MCISD with the MCISD as additional insured.

## 7. Project Limits & Quantities

All work is located on the grounds of the MCISD at 1101 S. Raisinville Rd, Monroe, MI 48161. All work areas are as indicated on the bid documents and drawings. Contractor to verify actual dimensions.

- A. Total Project Area: ~68,475 SF
  - a. Mill & Overlay Areas: ~44,275 SF
  - b. Patch / Crack Fill & Seal Areas: ~24,200 SF
  - c. Curb and Gutter Area: 800 LNF
  - d. Site Work Area: 1 ACRE

- B. Breakdown:
  - Entry Driveway #2: ~29,150 SF
  - Entry Driveway #3: ~15,125 SF
  - EC Bus Loop Driveway: ~15,125 SF
  - East Driveway (Patch/Crack Fill/Seal): ~24,200 SF

## 8. Site Safety

- A. Provide protective fencing and barriers at walks/parking to ensure safe passage on site.
- B. Provide and maintain traffic control in accordance with MDOT standards. Coordinate work with school operations to ensure safe access at all times.
- C. The contractor is fully responsible for job site safety, including work personnel as well as employees and attendees. Compliance with rules of OSHA, State of Michigan, MDOT, County of Monroe and any other authority having jurisdiction shall cover were applicable.
- D. **CALL “MISS DIG” BEFORE YOU DIG.** Contractor is responsible for ensuring that all underground utilities have been identified, located, and carefully marked so that services are not interrupted. If services need to be interrupted (only upon written permission from the owner) you must provide a minimum of 48-hour notice to the owner and receive written notice to proceed prior to interrupting services.
- E. Coordinate excavation with CM prior to the start of the project.

## 9. Milling Operations

Mill existing asphalt pavement to a depth of 2 inches in designated areas. Provide smooth transitions at all tie-in locations including adjacent pavement, concrete, and structures. All millings shall be removed and disposed of off-site. Accurate saw cutting required at all transitions.

- A. Prior to milling, verify thickness of asphalt (see soils report). Do not assume the same consistency throughout.

## 10. Asphalt Materials & Placement

Asphalt paving materials and placement shall conform to MDOT Standard Specifications. Tack coat shall comply with MDOT SS-1H and Michigan Specification 501.03. A 2-inch asphalt overlay shall be placed and properly compacted to meet MDOT requirements.

- A. Preparation:
  - a. Apply tack coat to the milled surface to ensure proper bonding of the new asphalt.
    - i. Tack coat must meet MDOT requirements.
  - b. Verify elevations prior to placing asphalt. Coordinate all finish elevations with site drainage, concrete walks and existing paving.
  - c. Verify that drive and parking areas are graded to drain properly.
  - d. Finish course for drive to be compacted asphalt per State and local MDOT standards, per thickness and details noted on the contracted documents, to confirm to ASTM D 946.
  - e. DO NOT install asphalt when surfaces are wet, frozen or during inclement weather.
  - f. DO NOT install asphalt when ambient surface temperatures are below 40 degrees F.
  - g. Protect all items to be embedded in asphalt before starting work.
  - h. Compact large areas with a roller to achieve a smooth surface.
  - i. Compact small areas by hand.
  - j. Asphalt shall be installed to achieve a seamless finish.

## 11. Tolerances

- A. Compacted thickness to be within ¼” of design thickness.
- B. Variation from design elevation may be ½” if drainage is maintained and no pounding occurs.
- C. Paving to be flat and true to within ¼” in 10’ unless otherwise noted.
- D. Ponding is not permitted in finish surface.
- E. Contractor shall be responsible to fix ponded areas at no cost to the Owner.
- F. Ponding on asphalt shall be classified as any area where the depth of standing water exceeds ¼”.

## 12. Base Repairs

Perform full-depth repairs where required. Undercut unsuitable materials and replace with approved aggregate base as specified. All repair areas shall be compacted and restored to proper grade prior to paving.

- A. Provide unit pricing in bid documents.

## 13. Crack Filling & Sealing

Crack filling and sealing shall be performed in the designated East Driveway area (~22,000 SF). All cracks shall be cleaned and filled with MDOT-approved hot-pour sealant.

- A. Seal coat: stabilized rubber fortified, coal tar pitch emulsion meeting or exceed federal specification RP3550D; to conform to asphalt institute type MS-19.
- B. Minimum: Two (2) coats at 125 cu.ft./gal maximum.
- C. Crack seal all cold joints abutting existing pavement areas and other visible cracks or joints to prevent water infiltration.

## 14. Line Striping

- A. Traffic marking paint to be blue for handicapped parking, yellow for space striping and other markings as noted on Contract Documents.
- B. See Contract Documents for location and spacing.
- C. All markings should comply with ADA guidelines.

## 15. Utility Adjustments

Adjust all utility structures within project limits, including manholes, valve boxes, and catch basins, to match final pavement grade, if necessary.

## 16. Concrete Paving

Scope of this section includes providing all labor and material required to perform the scope of work described herein and/or as shown on the Contract Documents.

- A. Curbs:
  - a. Standards:
    - i. Work to conform to ACI 301 most current edition.
    - ii. All materials to conform to ASTM specification noted below.
    - iii. Construction Tolerance: 1/8” per 1’ -0” in 10’ for grade and alignment of top forms; ¼” in 10’ for vertical face on longitudinal axis.
    - iv. Cement to be ASTM Type I or sulfate resistant type, Portland cement, gray in color.
    - v. Fine and coarse aggregates to conform to ASTM C 33.
    - vi. Water for mixing concrete to be clean and potable.

- vii. Admixtures to conform to ASTM C 260.
- viii. Reinforcing Bars: Preformed steel bars, ASTM A 185.

## **17. Concrete Mix**

- A. Concrete mix shall contain not less than 564 pounds of dry cement per cubic yard of concrete (6 sacks of cement per cubic yard of concrete)
- B. Concrete strength: 3500psi. @ 28 days.
- C. Slump to be 5" maximum for handwork and 3" maximum for machined work.
- D. Air entrainment to be not less than 5%, nor more than 7% in all exterior concrete mixes.
- E. Maximum water cement ratio at point of placement = 0.50.
- F. Limit use of Fly Ash to 25% of cement content by weight.
- G. Mix design adjustments may be requested by contractor when characteristics of materials, project conditions, weather, test results or other circumstances warrant.
- H. Mix design adjustments must be approved by CM to use.
- I. Use of plasticizers must be approved by CM prior to concrete placement.
- J. Coarse aggregate for concrete may be either slag or natural aggregate. Both coarse aggregate and fine aggregate for concrete shall be capable of meeting applicable MDOT specifications, therefore.
- K. Concrete delivery tickets shall bear a certification from the producer that the concrete mix meets the requirements of this Section, and delivery tickets shall be made available to the CM upon request.
- L. Weather and temperature limitations for concrete placement are as set forth in 2020MDOT Standard Specifications for Construction, Section 602.03.T.

## **18. Concrete Preparation**

- A. Verify elevations of all subgrades prior to placing concrete.
- B. Coordinate all finish grading with site drainage. Verify that areas are graded to drain properly.
- C. Verify with CM that subgrades are properly compacted for the loads to be carried. Any areas that are soft or spongy need to be re-excavated, filled with granular fill, compacted and tested.
- D. DO NOT proceed with pours until subgrades, expansion joint layouts, and reinforcing have been reviewed by the CM and local code officials as required.
- E. Ensure that adequate protection materials are on hand if concrete is to be placed in inclement weather. Provide for protection of concrete from rain, snow, freezing, or hot weather over 90°F.

## **19. Concrete Reinforcement**

- A. Place slab reinforcement as per details on Contract Documents.
- B. Support all reinforcement on steel chairs. Tie reinforcing to chairs to prevent movement during pour.
- C. Stop reinforcement at expansion/contraction joints. Dowel slabs together at these joints with plain steel dowels, lubricating one end and the other bonded to the concrete.

## **20. Concrete Placement**

- A. Compact base and maintain grades and pitches as per Contract Documents.
- B. Prior to placing concrete, inspect formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work not less than 24 hours prior to pouring.
- C. Review layout of expansion joints and control joints before pouring concrete.
- D. Place concrete in accordance with ACI 301-96.
- E. Place concrete continuously between cold joints. Do not allow cold joints between predetermined joints.

- F. Concrete paving to receive a light broom finish with troweled control joints and edges per approved sample, broom finish to run perpendicular to the path of travel on walks or as noted.
- G. If concrete is to be poured in freezing weather, protect slabs from freezing for 48hours.

## 21. Site Seeding

- A. Ensure topsoil material is free of stones half inch (1/2") or larger, roots and other debris.
- B. Topsoil should be minimum four inch (4").
- C. Seed mix should be nature tolerant of local conditions.
- D. Seed mix should be raked in.
- E. Areas consisting of new seed should be covered with straw mats and secured.
- H. Progress Cleanup & Waste removal
- I. Contractors shall provide dumpsters as needed for waste removal of all site debris and any of the subcontractor's debris. Use of the Owner's existing dumpster is prohibited.
- J. Contractors shall always keep the site clean and free of debris.

## 22. Standards & Warranty

All work shall comply with MDOT Standard Specifications for Construction (latest edition) and ASTM D946. Contractor shall provide a written minimum one-year warranty on materials and workmanship.

## 23. Rejecting Defective Work

The Owner may disapprove or reject work which the owner believes to be defective, or that the owner believes will not produce a completed project that conforms to the contract documents or that will prejudice the integrity of the design concept of the completed project as a functioning whole as indicated by the contract documents. The owner may also bring in an outside authority to require special inspection or testing of any work, whether or not the work is fabricated, installed or completed.

## 24. PROJECT CLOSEOUT

- A. Remove any temporary measures and restore site to a finished condition.
- B. Remove all construction debris and construction dumpsters from site.
- C. Cleaning: Broom clean all hard surfaces as needed.
- A. Contractor shall submit to Owner the project manual containing the following:
  - a. Provide list of all subcontractors and their phone numbers.
  - b. Copies of warranties from all subcontractors and suppliers.
  - c. Copies of final lien waivers from all subcontractors.

## 25. PREVAILING WAGES

- A. Consistent with Michigan's Prevailing Wages on State Projects Act (Act), MCL 408.1101, et seq., any bidder who submits a bid in response to this RFP expressly represents that the wages and fringe benefits paid to "construction mechanics" (excluding those under the State Civil Service Commission), as the phrase is defined under MCL 408.1101(b), by the bidder/contractor and all subcontractors will not be less than the prevailing rates in the locality where the work is performed. The current rate sheets as of the date of this RFP for Monroe County, Michigan can be found [here](#).<sup>1</sup>

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<sup>1</sup> <https://www.michigan.gov/leo/-/media/Project/Websites/leo/Documents/PWRS-By-County/Monroe.pdf?rev=e86218b96c8548f797f38b9d98b517cc&hash=5221D74C36F25E83C1529D4D7682D7A4>

- B. Bidders further warrant they will assume the responsibility of ensuring any subcontractors pay the prevailing rates under the rate sheets identified above. The chosen bidder as well as any subcontractor(s) must post on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rate sheets as well as keep an accurate record showing the name and occupation of and the actual wages and benefits paid to each construction mechanic employed by it who is performing services under this RFP.
- C.
- D. MCISD expressly states that construction mechanics are intended beneficiaries of the prevailing wage, fringe benefit, and nondiscrimination nonretaliation requirements contained under the Act. The wages and fringe benefits paid to construction mechanics (excluding those under the State Civil Service Commission) by the contractor and all subcontractors must not be less than the prevailing rates in the locality where the work is performed. Any construction mechanic aggrieved by the failure of a contractor or subcontractor to pay prevailing wages or benefits as specified under a rate sheet identified above or MCL 408.1107, in addition to any other remedies provided in the Act or by law, may bring an action in a court of competent jurisdiction against the bidder/contractor or subcontractor for damages or injunctive relief and may be awarded reinstatement or other appropriate relief, and all damages sustained, together with actual costs and attorney fees at trial and on appeal.
- E. In addition, all bidders/contractors and subcontractors must hold a state project registration as required by MCL 408.1102. Bidders must submit a copy of their state project registration along with their bid for both themselves and each subcontractor that has been selected at the time the bid is submitted. By bidding on this RFP, bidders agree they will submit certified payroll records to the online certified payroll submission system identified by the Michigan Department of Labor & Economic Opportunity within the timeframes identified under the Act and will indemnify, defend, and hold MCISD harmless from any and all claims resulting from a bidder's failure to fulfill its obligations under the Act.
- F. MCISD expects – and bidders/contractors agree - that all bidders/contractors will follow all other requirements of the Act.

**26. EVALUATION**

The district's objective is to get the best overall value and features. Below is all evaluation rubric we will be using to award this bid.

<u>Criteria</u>	<u>Points</u>
Cost	40
Prior Work Experience with ISD	30
Vendor Capability (Experience, qualifications, references, team)	10
Site Visit and Design	10
Implementation Timeline	10

**Attachment A**

**CONTRACTOR INFORMATION AND BID**

CONTRACTOR'S NAME: \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_

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

CITY/STATE: \_\_\_\_\_

TELEPHONE NUMBER:

\_\_\_\_\_

\_\_\_\_\_

FAX NUMBER:

\_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_

**A. CONTRACTOR PRICING**

Monroe County Intermediate School District Total Bid Amount: \$ \_\_\_\_\_

**B. UNIT PRICING:**

The undersigned agrees that at the Owner's discretion, the Base Bid Sum may be altered as follows if the Unit Prices indicated and defined in the Unit Prices Section and elsewhere in the Bidding Documents are to be executed. Failure to bid upon requested Unit Prices shall indicate no change in the Base Bid Sum.

Base Repair (price per ton) \$ \_\_\_\_\_

The undersigned understands that the School District reserves the right to accept or reject in whole or in part any and all Proposals, to waive informalities and irregularities therein, and to award the Contract to other than the Contractor(s) submitting the best financial.

Proposal (low bidder) and to award the Contract to one (1) or more Contractors in the School District's sole and absolute discretion.

If award is made to our firm based upon our Proposal, we agree to enter into the attached form of Contract with the School District to furnish the Work in strict accordance with this Request for Proposal, the Contract, and our Proposal.

My signature certifies that the Proposal as submitted complies with all terms and conditions set forth in this Request for Proposal and the Contract, unless specifically enumerated as an exception as part of our Proposal.

I hereby certify that I am authorized to sign as a  
Representative for the firm. CONTRACTOR HEREBY  
SUBMITS THIS PROPOSAL PRICING FORM IN  
ACCORDANCE WITH THE TERMS AND CONDITIONS OF  
THE RFP.

Name of Contractor: \_\_\_\_\_

\_\_\_\_\_

(Signature/Principal)

\_\_\_\_\_

(Name Printed)

Date: \_\_\_\_\_

**MONROE COUNTY ISD BID FORM**  
**Acknowledgement of Authority to Bid**

My signature certifies that the proposal submitted complies with all Terms and Conditions set forth in this RFP. My signature also certifies that the accompanying proposal is not the result of, or affected by, any unlawful act of collusion with another person or company engaged in the same line of business or commerce or any act of fraud. Furthermore, I understand that fraud and unlawful collusion are crimes under Federal Law and can result in fines, prison sentences and civil damages awards.

I hereby certify that I am authorized to sign as a representative for the following firm:

Firm Name: \_\_\_\_\_

Firm Address: \_\_\_\_\_

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Business Phone: \_\_\_\_\_ Cellular Phone: \_\_\_\_\_

**THE AFFIDAVIT SET FORTH BELOW MUST BE EXECUTED ON BEHALF OF  
THE VENDOR AND FURNISHED WITH EVERY BID**

***The Board of Education will not accept this bid without this completed, signed and notarized form***

**AFFIDAVIT FAMILIAL RELATIONSHIP**

STATE OF: \_\_\_\_\_

COUNTY OF: \_\_\_\_\_

\_\_\_\_\_, *being sworn, says*  
(Affiant's printed name)

1. I am the \_\_\_\_\_ of \_\_\_\_\_  
(title) (vendor bidder)  
which has submitted, to **MONROE COUNTY INTERMEDIATE SCHOOL DISTRICT**,  
a proposal for the furniture and equipment.

2. I state that there is **NO** familial relationship between the owner or any employee of above  
Vendor-Bidder and any member of the Board of Education or the Superintendent of Monroe  
County ISD, said exceptions being as follows:

\_\_\_\_\_  
\_\_\_\_\_

Signed: \_\_\_\_\_ Printed: \_\_\_\_\_

SWORN TO and subscribed before me, a Notary Public, in and for the above-named state and county this  
\_\_\_\_\_ day of \_\_\_\_\_, 2026. My commission expires on  
\_\_\_\_\_.

Signature: \_\_\_\_\_, Notary Public

**CERTIFICATION OF COMPLIANCE – IRAN ECONOMIC SANCTIONS ACT  
Michigan Public Act No. 517 of 2012**

The undersigned, the owner, or authorized officer of the below-named company (the “Company”) hereby certifies, represents, and warrants that the Company (which includes its officers, directors and employees) is not an “Iran Linked Business” within the meaning of the Iran Economic Sanctions Act, Michigan Public Act No. 517 of 2012 (the “Act”), and that in the event the Company is awarded a contract by Monroe County ISD as a result of an RFP, the Company is not and will not become an “Iran Linked Business” at any time during the course of performing any services under the contract.

The Company further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than \$250,000.00 or two (2) times the amount of the contract or proposed contract for which the false certification was made, whichever is greater, the cost of Monroe County ISD’s investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on a request for proposal for three (3) years from the date that it is determined that the person has submitted the false certification.

\_\_\_\_\_  
Name of Company

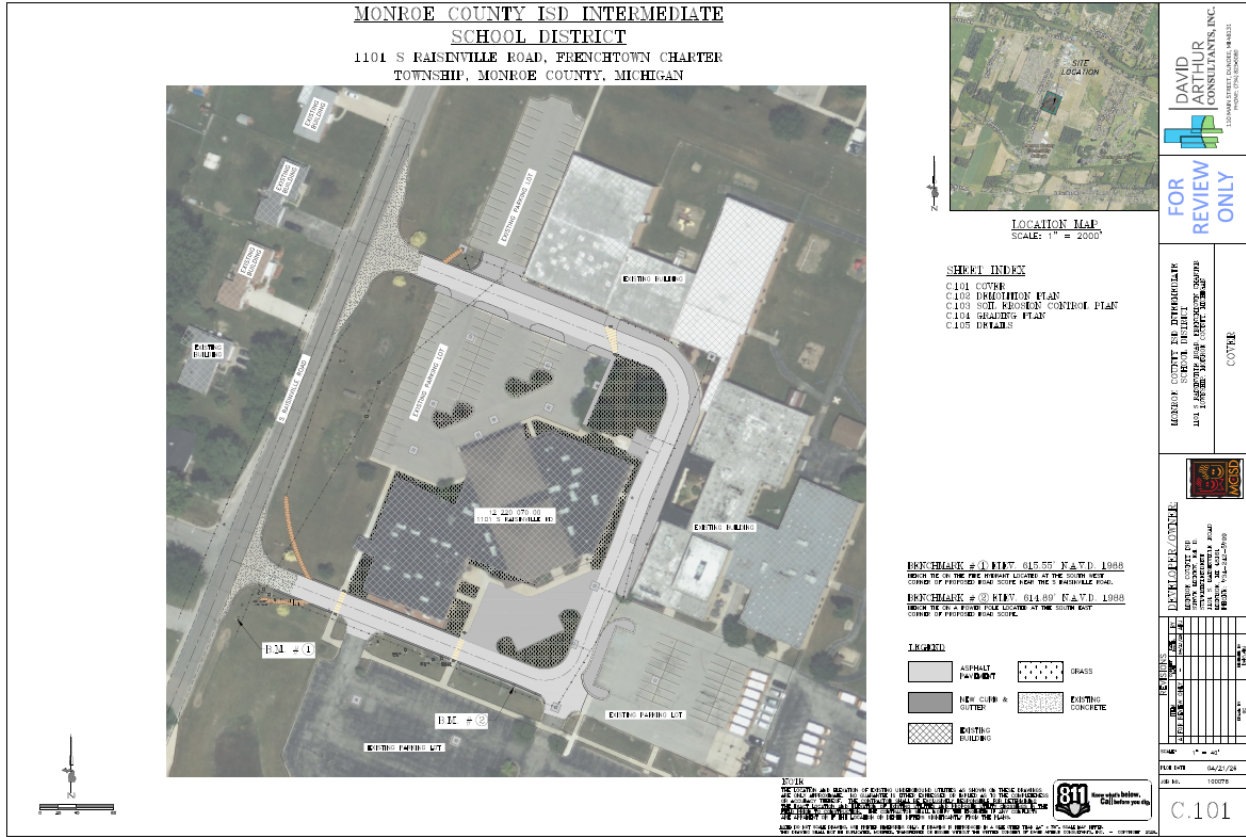
\_\_\_\_\_  
Name and Title of Authorized Representative

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

# EXHIBIT 1

## Campus Project Area Maps







**EXHIBIT 2**

**Soils Report**



**SUMMARY LETTER OF  
GEOTECHNICAL INVESTIGATION FOR  
MONROE COUNTY INTERMEDIATE SCHOOL DISTRICT**

**MONROE CHARTER TOWNSHIP  
MONROE COUNTY  
MICHIGAN**

**APRIL 3, 2026**

*David Arthur Consultants, Inc.  
110 West Main Street  
Dundee, Michigan, 48131*

*Project No. 26AA-500*



April 3, 2026

David Arthur Consultants, Inc.  
110 West Main Street  
Dundee, Michigan, 48131

Attention: Mr. Eric Hornback

Regarding: Monroe County Intermediate School District  
Monroe, Monroe County, Michigan  
Project No. 26AA-5Q0

Dear Mr. Hornback:

Soils & Structures is pleased to present this letter regarding the geotechnical investigation performed for the Monroe County Intermediate School District pavement replacement project located at 1101 South Raisinville Road in Monroe Charter Township, Monroe County, Michigan. The site consists of existing school building and pavement.

#### Investigation

The investigation included five (5) hand augers extended to depths of 2.0 to 6.3 feet. The hand augers are designated as Hand Auger One (HA-1) through Hand Auger Five (HA-5). The locations were determined by David Arthur Consultants, Inc. The locations were reviewed by Soils & Structures for accessibility and adjusted as necessary. The hand augers were conducted in accordance with ASTM D 1452 procedures. The ASTM D 1452 describes the procedures used to obtain soil samples using hand auger borings. In-situ Dynamic Cone Penetrometer (DCP) testing was performed in accordance with ASTM D 6951.

Prior to performing the hand augers, the soil strength was evaluated in-situ using a United States Army Corps of Engineers Dynamic Cone Penetrometer (USACE DCP) to a depth of three (3.0) feet. The DCP is a steel rod 5/8-inch in diameter with a pointed cone end that is driven into the subgrade using a sliding hammer. The weight of the hammer can be adjusted from 17.6 pounds to 10.1 pounds if weaker soils are encountered. This rate of penetration is used to estimate a California Bearing Ratio (CBR) value for the soil, which is used to interpret support conditions for the subgrade. Results of the DCP tests are included in the Appendix along with soil boring information. DCP testing was performed in accordance with ASTM D 6951.



The surface elevations at the hand auger locations and additional points of reference were obtained with a Global Navigation Satellite System (GNSS) Receiver. The receiver was connected to the local MDOT CORS base station. Through this system, vertical measurements are obtained and referenced to the North American Vertical Datum (NAVD88). Horizontal measurements are also obtained at the hand auger locations which are referenced to the Michigan State Plane Coordinate System. Both the vertical and horizontal measurements typically have an accuracy of approximately 0.5 inches. The measured hand auger location and surface elevation are represented in Table 1.

**Table 1: Measured Hand Auger Locations and Surface Elevations**

Hand Auger / Location	Elevation (feet)	Northing (feet)	Easting (feet)	Surface Cover
HA-1	615.9	156049.4	13368126.2	Asphalt
HA-2	615.7	155917.4	13368341.5	Asphalt
HA-3	616.1	155782.9	13368292.0	Asphalt
HA-4	615.2	155636.6	13368234.2	Asphalt
HA-5	616.3	155697.0	13368007.8	Asphalt
Base Setup 1	617.9	246263.9	13428392.8	-
Base Setup 2	614.2	81768.8	13352784.5	-

Soil samples were classified according to the Unified Soil Classification System. This method is a standardized system for classifying soil according to its engineering properties. Please refer to the appendix of this report for the Unified Classification System Chart. The classification is shown in the “Material Description” column of the hand auger logs.

General Conditions & Reliance

This letter was prepared in accordance with generally accepted practices of the geotechnical engineering profession. The scope of work did not include recommendations, an environmental study, or wetland determination.

The hand augers represent point information and may not have encountered all the soil types and materials present on this site. This letter does not constitute a guarantee of the soil or groundwater conditions or that the hand augers are an exact representation of the soil or groundwater conditions at all points on this site.

The hand augers should not be used independently of the letter. If soil conditions are encountered, which are significantly different from the hand augers, Soils & Structures should be consulted for additional recommendations.



This letter and hand augers may be relied upon by David Arthur Consultants, Inc for the design, construction, permitting, and financing associated with the Monroe County Intermediate School District pavement replacement project located at David Arthur Consultants, Inc in Monroe Charter Township, Monroe County, Michigan. The use of this letter and hand augers by third parties not associated with this project or for other sites has not been agreed upon by Soils & Structures. Soils & Structures does not recommend or consent to third party use or reliance of the letter or hand augers unless allowed to review the proposed use of these materials. Unless obtained in writing, consent to third party use should not be assumed. Third parties using the letter or hand auger logs do so at their own risk and are offered no guarantee or promise of indemnity.

We appreciate the opportunity to provide engineering services to David Arthur Consultants, Inc. If you have any questions regarding this letter or if we can be of any further assistance, please contact our office.

Sincerely,  
Soils & Structures, Inc.

A handwritten signature in black ink that reads "Nadia Fuller".

Nadia Fuller  
Staff Geologist

Reviewed by:

A handwritten signature in black ink that reads "Vincent O. Oderah".

Vincent O. Oderah, P.E.  
Senior Geotechnical Engineer

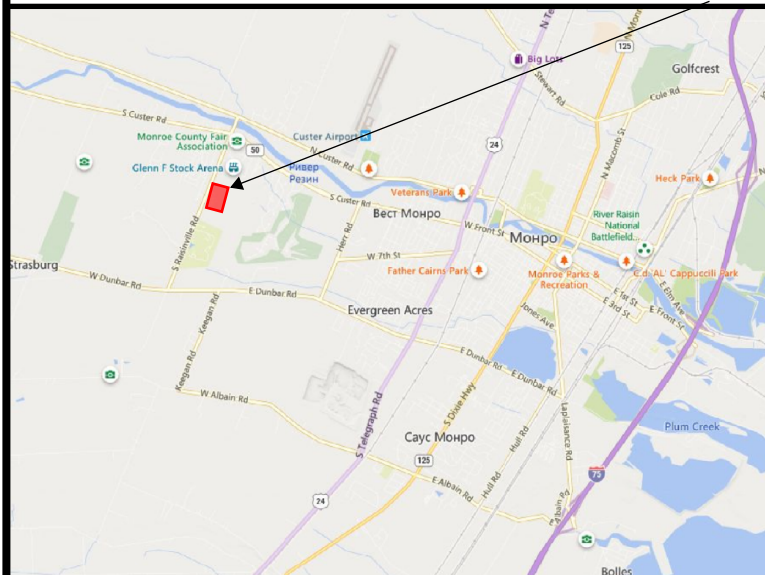
Appendix

Hand Auger Location Plans  
Hand Auger Logs  
General Soil Information



VICINITY MAP (NTS)

SITE



**TEST BORING LOCATION PLAN**  
NTS



Note: The background of the test boring plan is a portion of an aerial photograph from Google Earth.

Monroe County Intermediate School District Soil Borings

Monroe, Monroe County, Michigan

Soils & Structures, Inc.  
6480 Grand Haven Road  
Muskegon, Michigan 49441

JOB NO.: 26AA-5GQ

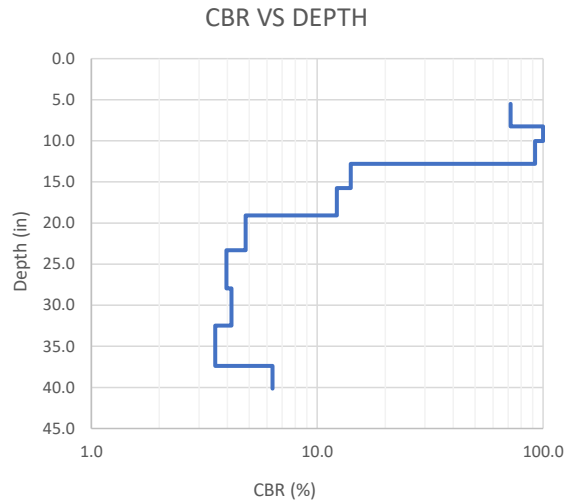
DATE: 04-03-2026



Boring ID HA-1  
 DCP Starting Depth (in) 5.5

Project Name Monroe County Intermediate School District  
 Project Number 26AA-5QO  
 Date 3/31/2026  
 Client David Arthur Consultants, Inc.  
 Boring Type Hand Auger  
 Location See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %	Cumulative Penetration (inch)
0	165	1	GP		5.5
20	235	1	GP	71.8	8.3
25	280	1	GP	100.0	10.0
25	350	1	GP	92.2	12.8
5	425	1	CL	14.1	15.7
5	510	1	CL	12.2	19.1
4	617	1	CL	4.8	23.3
4	735	1	CL	4.0	27.9
4	850	1	CL	4.2	32.5
4	975	1	CL	3.5	37.4
3	1045	1	CL	6.3	40.1



From	To	Thickness	Description	Classification
0	5.5	5.5	ASPHALT - Intact	
5.5	14	8.5	AGGREGATE BASE - Fine-to-Coarse GRAVEL, brown sandy	GP
14	20	6	CLAY - black sandy with a trace of organics	CL
20	32	12	CLAY - gray with a trace of sand	CL
32	48	16	CLAY - gray mottled brown	CL
48	62	14	CLAY - brown mottled gray	CL

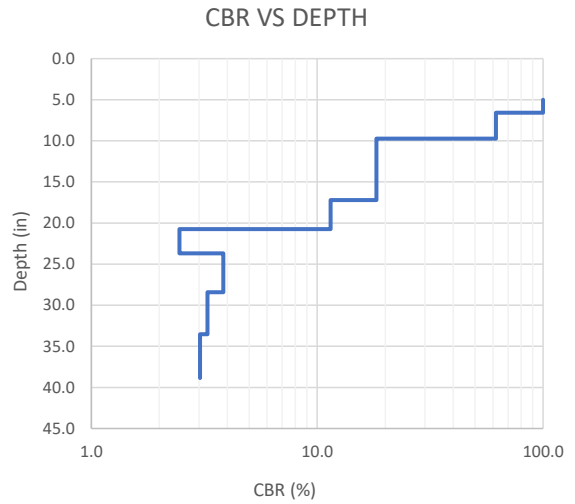
Comments: Groundwater encountered at 60 in.



Boring ID HA-2  
 DCP Starting Depth (in) 5.0

Project Name Monroe County Intermediate School District  
 Project Number 26AA-5QO  
 Date 3/31/2026  
 Client David Arthur Consultants, Inc.  
 Boring Type Hand Auger  
 Location See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %	Cumulative Penetration (inch)
0	140	1	GP		5.0
20	180	1	GP	100.0	6.6
20	260	1	GP	61.8	9.7
8	355	1	CL	18.3	13.5
8	450	1	CL	18.3	17.2
5	540	1	CL	11.5	20.7
2	615	1	CL	2.5	23.7
4	735	1	CL	3.8	28.4
4	865	1	CL	3.3	33.5
4	1000	1	CL	3.0	38.9



From	To	Thickness	Description	Classification
0	5	5	ASPHALT - Intact	
2.5	10	7.5	AGGREGATE BASE - Fine-to-Coarse GRAVEL, brown sandy	GP
10	28.5	18.5	CLAY - black sandy with a trace of organics	CL
28.5	36	7.5	CLAY - bluish gray	CL
36	67	31	CLAY - gray mottled brown	CL

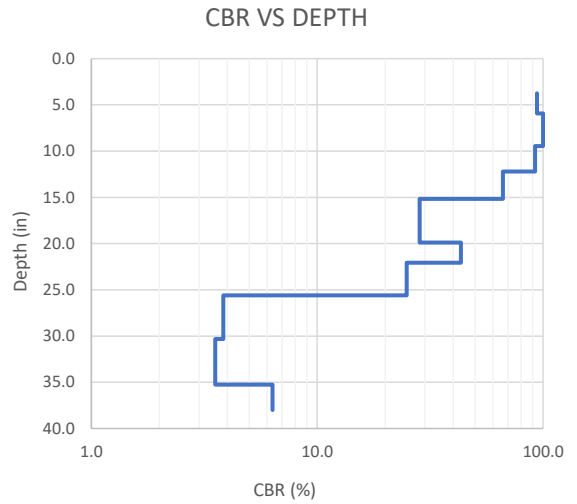
Comments: Groundwater encountered at 47 in.



Boring ID HA-3  
 DCP Starting Depth (in) 3.75

Project Name Monroe County Intermediate School District  
 Project Number 26AA-5QO  
 Date 3/31/2026  
 Client David Arthur Consultants, Inc.  
 Boring Type Hand Auger  
 Location See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %	Cumulative Penetration (inch)
0	145	1	GP		3.8
20	200	1	GP	94.0	5.9
35	240	1	GP	100.0	7.5
25	290	1	GP	100.0	9.5
25	360	1	GP	92.2	12.2
20	435	1	GP	66.4	15.2
15	555	1	SP	28.4	19.9
10	610	1	SP	43.3	22.1
10	700	1	SP	24.9	25.6
4	820	1	CL	3.8	30.3
4	945	1	CL	3.5	35.2
3	1015	1	CL	6.3	38.0



No photo

From	To	Thickness	Description	Classification
0	3.75	1.95	ASPHALT - delaminated	
1.8	16	14.2	AGGREGATE BASE - Fine-to-Coarse GRAVEL, brown sandy	GP
16	18	2	CLAY - dark gray with a trace of organics	CL
18	30	12	SAND - brown fine to medium grained	SP
30	44	14	CLAY - gray mottled brown	CL
44	73	29	CLAY - brown mottled gray	CL
73	76	3	CLAY - brown	CL

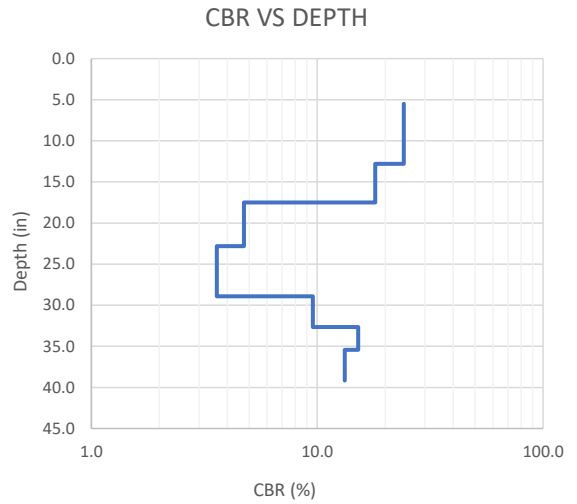
Comments: Groundwater encountered at 73 in.



Boring ID HA-4  
 DCP Starting Depth (in) 5.5

Project Name Monroe County Intermediate School District  
 Project Number 26AA-5QO  
 Date 3/31/2026  
 Client David Arthur Consultants, Inc.  
 Boring Type Hand Auger  
 Location See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %	Cumulative Penetration (inch)
0	145	1	GP		5.5
20	330	1	GP	24.2	12.8
10	450	1	GP	18.1	17.5
5	585	1	CL	4.7	22.8
5	740	1	CL	3.6	28.9
5	835	1	CL	9.6	32.7
5	905	1	CL	15.2	35.4
6	1000	1	CL	13.2	39.2



From	To	Thickness	Description	Classification
0	5.5	5.5	ASPHALT - Intact	
5.5	8.5	3	AGGREGATE BASE - Fine-to-Coarse GRAVEL, black sandy	GP
8.5	18	9.5	AGGREGATE BASE - Fine-to-Coarse GRAVEL, brown sandy	GP
18	29	11	CLAY - dark gray	CL
29	41.5	12.5	CLAY -gray mottled brown	CL
41.5	62	20.5	CLAY - brown mottled gray	CL

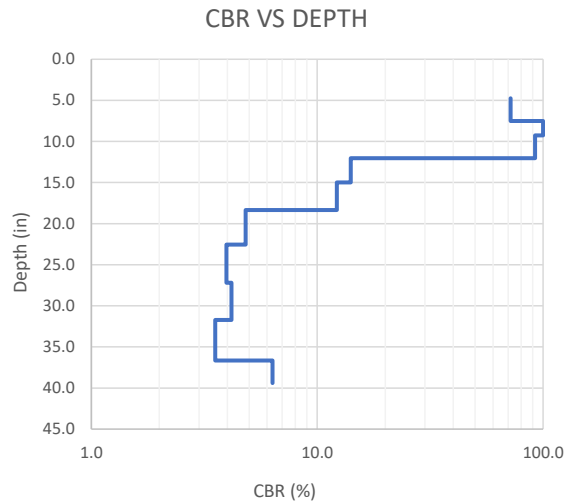
Comments: Groundwater encountered at 5.5 in. Aggregate base saturated due to cracks in pavement. Saturation ends at 18 in.



Boring ID HA-5  
 DCP Starting Depth (in) 4.75

Project Name Monroe County Intermediate School District  
 Project Number 26AA-5QO  
 Date 3/31/2026  
 Client David Arthur Consultants, Inc.  
 Boring Type Hand Auger  
 Location See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %	Cumulative Penetration (inch)
0	165	1	GP		4.8
20	235	1	GP	71.8	7.5
25	280	1	GP	100.0	9.3
25	350	1	SP	92.2	12.0
5	425	1	SP	14.1	15.0
5	510	1	SP	12.2	18.3
4	617	1	CL	4.8	22.5
4	735	1	CL	4.0	27.2
4	850	1	CL	4.2	31.7
4	975	1	CL	3.5	36.6
3	1045	1	CL	6.3	39.4

































From	To	Thickness	Description	Classification
0	4.75	4.75	ASPHALT - Intact	
4.75	10	5.25	AGGREGATE BASE - Fine-to-Coarse GRAVEL, brown sandy	GP
10	20	10	SAND - dark gray fine to medium grained clayey with a trace of organics and lenses of clay	SP
20	24	4	CLAY - brown mottled gray	CL

Comments: Groundwater encountered at 4.75 in. Aggregate base saturated due to cracks in pavement. Saturation ends at 10 in.

**Project Name:** Monroe County Intermediate School District Soil Borings **Project Number:** 26AA-5Q0  
**Project Location:** Monroe, Michigan **Logged By:** N Fuller **Reviewed By:** N Fuller  
**Client:** David Arthur Consultants, Inc **Survey Datum:** NAD 1983 StatePlane Michigan South **Hole Depth:** 5.20  
**Date Started:** Mar 31 2026 **Completed:** Mar 31 2026 **Northing:** 156049.4 **Easting:** 13368126.2 **Elevation:** 615.90  
**Drilling Method:** Hand Auger **Frost Depth** \_\_\_\_\_


**Notes:**
**Ground Water Levels**









 At Time of Drilling 5.00' on Mar 31 2026

Depth	Graphic	Material Description	Moisture Content	Hand Penetrometer	Blow Counts	DCP										USCS				
						5	10	15	20	25	30	35	40	45						
0.0 - 0.5		ASPHALT - (5.5")																		
0.5 - 1.0		AGGREGATE BASE - fine to coarse brown sandy (8.5")																		
1.0 - 1.5		CLAY - black sandy with a trace of organics																		
1.5 - 2.0		CLAY - gray with a trace of sand																		
2.0 - 2.5		CLAY - gray mottled brown																		
2.5 - 3.0		CLAY - gray mottled brown																		
3.0 - 3.5		CLAY - gray mottled brown																		
3.5 - 4.0		CLAY - gray mottled brown																		
4.0 - 4.5		CLAY - brown mottled gray																		
4.5 - 5.0		CLAY - brown mottled gray																		
5.0 - 5.5		CLAY - brown mottled gray																		
5.5 - 6.0		CLAY - brown mottled gray																		
6.0 - 6.5		CLAY - brown mottled gray																		
6.5 - 7.0		CLAY - brown mottled gray																		
7.0 - 7.5		CLAY - brown mottled gray																		
7.5 - 8.0		CLAY - brown mottled gray																		
8.0 - 8.5		CLAY - brown mottled gray																		
8.5 - 9.0		CLAY - brown mottled gray																		
9.0 - 9.5		CLAY - brown mottled gray																		
9.5 - 10.0		CLAY - brown mottled gray																		
10.0 - 10.5		CLAY - brown mottled gray																		
10.5 - 11.0		CLAY - brown mottled gray																		
11.0 - 11.5		CLAY - brown mottled gray																		
11.5 - 12.0		CLAY - brown mottled gray																		
12.0 - 12.5		CLAY - brown mottled gray																		
12.5 - 13.0		CLAY - brown mottled gray																		
13.0 - 13.5		CLAY - brown mottled gray																		
13.5 - 14.0		CLAY - brown mottled gray																		
14.0 - 14.5		CLAY - brown mottled gray																		
14.5 - 15.0		CLAY - brown mottled gray																		

**Project Name:** Monroe County Intermediate School District Soil Borings **Project Number:** 26AA-5QO  
**Project Location:** Monroe, Michigan **Logged By:** E Nanko **Reviewed By:** N Fuller  
**Client:** David Arthur Consultants, Inc **Survey Datum:** NAD 1983 StatePlane Michigan South **Hole Depth:** 5.60  
**Date Started:** Mar 31 2026 **Completed:** Mar 31 2026 **Northing:** 155917.4 **Easting:** 13368341.5 **Elevation:** 615.74  
**Drilling Method:** Hand Auger **Frost Depth** \_\_\_\_\_


**Notes:**
**Ground Water Levels**





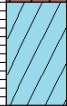
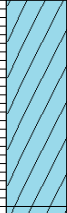
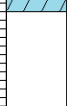
 At Time of Drilling 3.90' on Mar 31 2026

Depth	Graphic	Material Description	Moisture Content	Hand Penetrometer	Blow Counts	DCP										USCS				
						5	10	15	20	25	30	35	40	45						
0.0 - 0.5		ASPHALT - (5.0")																		
0.5 - 0.75		AGGREGATE BASE - fine to coarse grained brown sandy (7.5")																		
0.75 - 1.0		CLAY - black sandy with a trace of organics																		
1.0 - 2.0		CLAY - black sandy with a trace of organics																		
2.0 - 3.0		CLAY - bluish gray																		
3.0 - 4.0		CLAY - gray mottled brown																		
4.0 - 5.6	 	CLAY - gray mottled brown																		
5.6 - 6.0																				
6.0 - 7.0																				
7.0 - 8.0																				
8.0 - 9.0																				
9.0 - 10.0																				
10.0 - 11.0																				
11.0 - 12.0																				
12.0 - 13.0																				
13.0 - 14.0																				
14.0 - 15.0																				

**Project Name:** Monroe County Intermediate School District Soil Borings **Project Number:** 26AA-5QO  
**Project Location:** Monroe, Michigan **Logged By:** N Fuller **Reviewed By:** N Fuller  
**Client:** David Arthur Consultants, Inc **Survey Datum:** NAD 1983 StatePlane Michigan South **Hole Depth:** 6.30  
**Date Started:** Mar 31 2026 **Completed:** Mar 31 2026 **Northing:** 155782.9 **Easting:** 13368292.0 **Elevation:** 616.06  
**Drilling Method:** Hand Auger **Frost Depth** \_\_\_\_\_

**Notes:**
**Ground Water Levels**


 At Time of Drilling 6.08' on Mar 31 2026




Depth	Graphic	Material Description	Moisture Content	Hand Penetrometer	Blow Counts	DCP										USCS				
						5	10	15	20	25	30	35	40	45						
0.00 - 0.38		ASPHALT - (3.75")																		
0.38 - 1.42		AGGREGATE BASE - fine to coarse grained brown sandy (14.2")																		
1.42 - 1.75		CLAY - dark gray clay with a trace of organics																		
1.75 - 2.00		SAND - brown fine to medium grained																		
2.00 - 2.75		CLAY - gray mottled brown																		
2.75 - 4.00		CLAY - brown mottled gray																		
4.00 - 6.08		CLAY - brown																		
6.08 - 6.30																				
6.30 - 7.00																				
7.00 - 8.00																				
8.00 - 9.00																				
9.00 - 10.00																				
10.00 - 11.00																				
11.00 - 12.00																				
12.00 - 13.00																				
13.00 - 14.00																				
14.00 - 15.00																				

**Project Name:** Monroe County Intermediate School District Soil Borings **Project Number:** 26AA-5Q0  
**Project Location:** Monroe, Michigan **Logged By:** N Fuller **Reviewed By:** N Fuller  
**Client:** David Arthur Consultants, Inc **Survey Datum:** NAD 1983 StatePlane Michigan South **Hole Depth:** 5.20  
**Date Started:** Mar 31 2026 **Completed:** Mar 31 2026 **Northing:** 155636.6 **Easting:** 13368234.2 **Elevation:** 615.23  
**Drilling Method:** Hand Auger **Frost Depth:**

**Notes:** Cracks in asphalt - only aggregate base saturated

**Ground Water Levels**


 At Time of Drilling 0.50' on Mar 31 2026 - Perched water encountered





Depth	Graphic	Material Description	Moisture Content	Hand Penetrometer	Blow Counts	DCP										USCS				
						5	10	15	20	25	30	35	40	45						
0.5		ASPHALT (5.5")																		
1.0		AGGREGATE BASE - fine to coarse grained black sandy (3.0")																		
1.5		AGGREGATE BASE - fine to coarse grained brown sandy (9.5")																		
2.0		CLAY - dark gray																		
3.0		CLAY - gray mottled brown																		
4.0		CLAY - brown mottled gray																		
5.0		Rejection due to rocks in material																		
6.0																				
7.0																				
8.0																				
9.0																				
10.0																				
11.0																				
12.0																				
13.0																				
14.0																				
15.0																				

**Project Name:** Monroe County Intermediate School District Soil Borings **Project Number:** 26AA-5Q0  
**Project Location:** Monroe, Michigan **Logged By:** N Fuller **Reviewed By:** N Fuller  
**Client:** David Arthur Consultants, Inc **Survey Datum:** NAD 1983 StatePlane Michigan South **Hole Depth:** 2.00  
**Date Started:** Mar 31 2026 **Completed:** Mar 31 2026 **Northing:** 155697.0 **Easting:** 13368007.7 **Elevation:** 616.28  
**Drilling Method:** Hand Auger **Frost Depth** \_\_\_\_\_

**Notes:** Cracks in asphalt - only aggregate base saturated

**Ground Water Levels**

 At Time of Drilling 0.40' on Mar 31 2026 - Perched water encountered

Depth	Graphic	Material Description	Moisture Content	Hand Penetrometer	Blow Counts	DCP										USCS			
						5	10	15	20	25	30	35	40	45					
		ASPHALT - (4.75")																	
		AGGREGATE BASE - fine to coarse grained brown sandy (5.25")																	
1		SAND - dark gray clayey fine to medium grained with a trace of organics and lenses of clay																	
2		CLAY - bluish gray with lenses of sand																	
		Refusal due to underground conduit																	
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

### **General Information for Method of Field Investigation**

The soil investigation was performed in accordance with the American Society of Testing and Materials method ASTM D 1586, which is the "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils". Samples of compressible clays or organic soils are obtained in accordance with ASTM D 1587, which is the "Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes." Rock may be cored in conjunction with the above methods as specified in ASTM D 2113 which is the "Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation."

#### **Field Testing**

Standard Penetration Tests (SPT) in accordance with ASTM D 1586 were generally performed at depths of 2.0', 4.5', 7.0', 9.5' and 5.0' intervals thereafter.

#### **Laboratory Testing**

Samples obtained from the Standard Penetration Test, ASTM D 1586 or thin walled tube method, ASTM D 1587, were tested in the laboratory for the moisture content and density and/or particle size, where applicable. When soils sampled possessed sufficient cohesive properties, it was tested for its compressive strength in the unconfined state.

Natural Percent Moisture content (N.P.M.) of the soil is the percentage by weight of water contained in the soil sample compared to the dry weight of the solids of which the soil is composed. The NPM of select samples is determined in accordance with ASTM D 2216.

Natural Density (N.D.) of soil as reported on the appended boring logs is the natural wet density of the soils expressed in pounds per cubic foot.

The unconfined compressive strength of cohesive soils is determined in the laboratory on "undisturbed" select samples in accordance with ASTM D 2166. This test determines the maximum load required at a specified rate to deform the cohesive soil specimen length twenty (20%) percent. The primary purpose of the unconfined compression test is to obtain approximate quantitative values of the compressive strength of soils possessing sufficient coherence to permit testing in the unconfined state. The shear strength of the cohesive soil can be calculated from the results of the unconfined compressive strength test.

#### **Color**

When the color of the soils is uniform throughout, the color recorded will be such as brown, gray, and black and may be modified by adjectives such as light and dark. If the soils predominant color is shaded by secondary color, the secondary color precedes the primary color, such as gray-brown, or yellow-brown. If two major and distinct colors are swirled throughout the soil, the colors will be modified by the term mottled; such as mottled brown and gray.

#### **Water Observations**

Depth of water recorded in the test boring is measured from the ground surface to the water surface. Initial depth indicates water level during boring, completing depth indicates water level immediately after boring, and depth after "X" number of hours indicates water level after allowing the groundwater rise or fall over a period of time. Water observations in pervious soils are considered reliable groundwater levels for accurate groundwater measurements at the time the test borings were performed unless records are made over several days' time. Factors such as weather, soils porosity, etc., will cause the groundwater level to fluctuate for both pervious and impervious soils.

### Sample Type

If not otherwise indicated, the sample is a split-barrel liner sample ASTM D 1586.

"S.T." – Shelby tube sample, ASTM D 1587
"A" – disturbed augered sample
"C" – rock core sampled ASTM D 2113
N.P.M. – Natural Percent Moisture of in-situ soils sample
N.D. – Natural Density of in-situ soils sample in pcf.
S.S. – Shear Strength of cohesive soils samples as determined by the Unconfined Compression tests in ksf.

Classification Data – Laboratory data to assist in classification of soils and classification of soils characteristics; i.e., plastic limit or liquid limit

### Test Boring Logs

Particle Size	Visual
Boulders	Larger than 12" (300 mm)
Cobbles	12" to 3" (300 to 75 mm)
Gravel - Coarse	3" to ¾" (75 to 19 mm)
Gravel - Fine	19.0 to 4.75 mm
Sand- Coarse	4.75 to 2.0 mm
Sand - Medium	2.0 to 0.425 mm
Sand - Fine	0.425 to 0.075 mm
Silt	0.075 to 0.002 mm
Clay	0.002 mm and smaller

### Soils Components

Major Component	Minor Component
Gravel	Trace (1 - 10%)
Sand	Some (11 - 35%)
Silt/Clay	And (36 - 50%)

### Condition of Soil Relative to Compactness

Granular Material	"N" Value
Loose	0 - 4
Slightly Compact	5 - 7
Compact	8 - 20
Very Compact	21 - 50
Extremely Compact	51 and above

Cohesive Material	"N" Value
Soft	0 - 4
Firm	5 - 7
Stiff	8 - 20
Very Stiff	21 - 50
Extremely Stiff	51 and above

"N" values in clay soils are not to be used as a measure of shear strength. However, they may be used as a general indication of strength.

## Unified Soil Classification System Chart

Major Divisions			Letter Symbol	Typical Descriptions	
Coarse Grained Soils	Gravel – Gravelly Soils	Clean gravels (little or no fines)	GW	Well-Graded gravels, gravel-sand mixtures, little or no fines	
			GP	Poorly-Graded gravels, gravel-sand mixtures, little or no fines	
	more than 50% of coarse fraction retained on No. 4 sieve	Gravel with Fines (appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures	
			GC	Clayey gravels, gravel-sand-clay mixtures	
	Sand and Sandy Soils	Clean Sand (little or no fines)	SW	Well-Graded sands, gravelly sands, little or no fines	
			SP	Poorly-Graded sands, gravelly sands, little or no fines	
		More than 50% of coarse fraction passing No. 4 sieve	Sand with Fines (appreciable amount of fines)	SM	Silty sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
Fine Grained Soils	Silts and Clays	Liquid limit less than 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	
			CL	Inorganic clays or low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
			OL	Organic silts and organic silty clays or low plasticity	
	Silts and Clays	Liquid limit greater than 50	MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils	
			CH	Inorganic clays of high plasticity, fat clays	
			OH	Organic clays or medium to high plasticity, organic silts	
	Highly organic soils		PT	Peat, humus, swamp soils with high organic contents	

For Laboratory Classification of Fine Grained Soil  
Plasticity Chart

