PUBLIC IMPROVEMENT REQUEST FOR PROPOSAL

RFP# 24-04

2024 ANNUAL RESURFACING PROGRAM

City of Ann Arbor
Public Servies Area / Engineering

Due Date: February 22, 2024, by 11:00 a.m. (local time)

Issued By:

City of Ann Arbor
Procurement Unit
301 E. Huron Street
Ann Arbor, MI 48104

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SECTION I - GENERAL INFORMATION

A. OBJECTIVE

The purpose of this Request for Proposal (RFP) is to select a firm to provide construction services for the 2024 Annual Resurfacing Program.

B. BID SECURITY

Each bid must be accompanied by a certified check or Bid Bond by a surety licensed and authorized to do business within the State of Michigan, in the amount of 5% of the total of the bid price.

Proposals that fail to provide a bid security upon proposal opening will be deemed non-responsive and will not be considered for award.

C. QUESTIONS AND CLARIFICATIONS / DESIGNATED CITY CONTACTS

All questions regarding this Request for Proposal (RFP) shall be submitted via e-mail. Questions will be accepted and answered in accordance with the terms and conditions of this RFP.

All questions shall be submitted on or before February 6, 2024, at 1:00 p.m. (local time), and should be addressed as follows:

Scope of Work/Proposal Content questions shall be e-mailed to **Andrea Wright, Project Manager** - AWright@a2gov.org.

RFP Process and Compliance questions shall be e-mailed to Colin Spencer, Buyer - CSpencer@a2gov.org

Should any prospective bidder be in doubt as to the true meaning of any portion of this RFP, or should the prospective bidder find any ambiguity, inconsistency, or omission therein, the prospective bidder shall make a written request for an official interpretation or correction by the due date for questions above.

All interpretations, corrections, or additions to this RFP will be made only as an official addendum that will be posted to a2gov.org and MITN.info and it shall be the prospective bidder's responsibility to ensure they have received all addenda before submitting a proposal. Any addendum issued by the City shall become part of the RFP, and must be incorporated in the proposal where applicable.

D. PRE-PROPOSAL MEETING

A pre-proposal conference for this project will be held via Teams on January 31, 2024, at 2:00 p.m. Meeting link provided upon request. Email requests to Andrea Wright at AWright@a2gov.org by 12:00 p.m. January 31, 2024.

Attendance at this conference is highly recommended. Administrative and technical questions regarding this project will be answered at this time. The pre-proposal conference is for information only. Any answers furnished will not be official until verified in writing by the Financial Service Area, Procurement Unit. Answers that change or substantially clarify the proposal will be affirmed in an addendum.

E. PROPOSAL FORMAT

To be considered, each firm must submit a response to this RFP using the format provided in Section III. No other distribution of proposals is to be made by the prospective bidder. An official authorized to bind the bidder to its provisions must sign the proposal. Each proposal must remain valid for at least one hundred and twenty (120) days from the due date of this RFP.

Proposals should be prepared simply and economically providing a straightforward, concise description of the bidder's ability to meet the requirements of the RFP. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed in ink by the person signing the proposal.

F. SELECTION CRITERIA

Responses to this RFP will be evaluated using a point system as shown in Section III. A selection committee comprised primarily of staff from the City will complete the evaluation.

If interviews are desired by the City, the selected firms will be given the opportunity to discuss their proposal, qualifications, past experience, and their fee proposal in more detail. The City further reserves the right to interview the key personnel assigned by the selected bidder to this project.

All proposals submitted may be subject to clarifications and further negotiation. All agreements resulting from negotiations that differ from what is represented within the RFP or in the proposal response shall be documented and included as part of the final contract.

G. SEALED PROPOSAL SUBMISSION

All proposals are due and must be delivered to the City on or before February 22, 2024 by 11:00 a.m. (local time). Proposals submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each respondent should submit in a sealed envelope

- **one (1) original proposal**
- **two (2) additional proposal copy**
- **one USB/flash drive that contains:**
  - **one (1) digital copy of the proposal preferably as one file in PDF format**
  - **one (1) digital copy of E. Schedule of Pricing/Cost preferably as one file in Excel format**

Proposals submitted should be clearly marked: **"RFP No. 24-04 – 2024 Annual Resurfacing Program"** and list the bidder's name and address.

Proposals must be addressed and delivered to:
City of Ann Arbor
c/o Customer Service
301 East Huron Street
Ann Arbor, MI 48107

All proposals received on or before the due date will be publicly opened and recorded on the due date. No immediate decisions will be rendered.

Hand delivered proposals may be dropped off in the Purchasing drop box located in the Ann Street (north) vestibule/entrance of City Hall which is open to the public Monday through Friday from 8am to 5pm (except holidays). The City will not be liable to any prospective bidder for any unforeseen circumstances, delivery, or postal delays. Postmarking on the due date will not substitute for receipt of the proposal.

Bidders are responsible for submission of their proposal. Additional time will not be granted to a single prospective bidder. However, additional time may be granted to all prospective bidders at the discretion of the City.

A proposal may be disqualified if the following required forms are not included with the proposal:

- **Attachment D - Prevailing Wage Declaration of Compliance**
- **Attachment E - Living Wage Declaration of Compliance**
- **Attachment G - Vendor Conflict of Interest Disclosure Form**
- **Attachment H - Non-Discrimination Declaration of Compliance**

Proposals that fail to provide these forms listed above upon proposal opening may be deemed non-responsive and may not be considered for award.

H. DISCLOSURES

Under the Freedom of Information Act (Public Act 442), the City is obligated to permit review of its files, if requested by others. All information in a proposal is subject to disclosure under this provision. This act also provides for a complete disclosure of contracts and attachments thereto.

I. TYPE OF CONTRACT

A sample of the Construction Agreement is included as Attachment A. Those who wish to submit a proposal to the City are required to review this sample agreement carefully. **The City will not entertain changes to its Construction Agreement.**

For all construction work, the respondent must further adhere to the City of Ann Arbor General Conditions. The General Conditions are included herein. Retainage will be held as necessary based on individual tasks and not on the total contract value. The Contractor shall provide the required bonds included in the Contract Documents for the duration of the Contract.

The City reserves the right to award the total proposal, to reject any or all proposals in whole or in part, and to waive any informality or technical defects if, in the City's sole judgment, the best interests of the City will be so served.

This RFP and the selected bidder's response thereto, shall constitute the basis of the scope of services in the contract by reference.

J. NONDISCRIMINATION

All bidders proposing to do business with the City shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the Section 9:158 of the Ann Arbor City Code. Breach of the obligation not to discriminate as outlined in Attachment G shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor's Non-Discrimination Ordinance attached at all work locations where its employees provide services under a contract with the City.

K. WAGE REQUIREMENTS

The Attachments provided herein outline the requirements for payment of prevailing wages or of a "living wage" to employees providing service to the City under this contract. The successful bidder must comply with all applicable requirements and provide documentary proof of compliance when requested.

Pursuant to Resolution R-16-469 all public improvement contractors are subject to prevailing wage and will be required to provide to the City payroll records sufficient to demonstrate compliance with the prevailing wage requirements. Use of Michigan Department of Transportation Prevailing Wage Forms (sample attached hereto) or a City-approved equivalent will be required along with wage rate interviews.

For laborers whose wage level are subject to federal, state and/or local prevailing wage law the appropriate Davis-Bacon wage rate classification is identified based upon the work including within this contract. **The wage determination(s) current on the date 10 days before proposals are due shall apply to this contract.** The U.S. Department of Labor (DOL) has provided explanations to assist with classification in the following resource link: www.wdol.gov.

For the purposes of this RFP the Construction Type of Highway will apply.

L. CONFLICT OF INTEREST DISCLOSURE

The City of Ann Arbor Purchasing Policy requires that the consultant complete a Conflict of Interest Disclosure form. A contract may not be awarded to the selected bidder unless and until the Procurement Unit and the City Administrator have reviewed the Disclosure form and determined that no conflict exists under applicable federal, state, or local law or administrative regulation. Not every relationship or situation disclosed on the Disclosure Form may be a disqualifying conflict. Depending on applicable law and regulations, some contracts may awarded on the recommendation of the City Administrator after full disclosure, where such action is allowed by law, if demonstrated competitive pricing exists and/or it is determined the award is in the best interest of the City. A copy of the Conflict of Interest Disclosure Form is attached.

M. COST LIABILITY

The City of Ann Arbor assumes no responsibility or liability for costs incurred by the bidder prior to the execution of an Agreement. The liability of the City is limited to the terms and conditions outlined in the Agreement. By submitting a proposal, bidder agrees to bear all costs incurred or related to the preparation, submission, and selection process for the proposal.

N. DEBARMENT

Submission of a proposal in response to this RFP is certification that the Respondent is not currently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal departments or agency. Submission is also agreement that the City will be notified of any changes in this status.

O. PROPOSAL PROTEST

All proposal protests must be in writing and filed with the Purchasing Manager within five (5) business days of any notices of intent, including, but not exclusively, divisions on prequalification of bidders, shortlisting of bidders, or a notice of intent to award. Only bidders who responded to the solicitation may file a bid protest. The bidder must clearly state the reasons for the protest. If any bidder contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the bidder to the Purchasing Manager. The Purchasing Manager will provide the bidder with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee, whose decision shall be final.

Any inquiries or requests regarding this procurement should be only submitted in writing to the Designated City Contacts provided herein. Attempts by the bidder to initiate contact with anyone other than the Designated City Contacts provided herein that the bidder believes can influence the procurement decision, e.g., Elected Officials, City Administrator, Selection Committee Members, Appointed Committee Members, etc., may lead to immediate elimination from further consideration.

P. SCHEDULE

The following is the schedule for this RFP process.

Activity/Event	**Anticipated Date**
Pre-Proposal Conference (via Teams)	January 31, 2:00 p.m. (Local Time)
Written Question Deadline	February 6, 1:00 p.m. (Local Time)
Addenda Published (if needed)	Week of February 12, 2024
Proposal Due Date	February 22, 11:00 a.m. (Local Time)
Selection/Negotiations	Week of February 26
Expected City Council Authorizations	April 1, 2024

The above schedule is for information purposes only and is subject to change at the City's discretion.

Q. IRS FORM W-9

The selected bidder will be required to provide the City of Ann Arbor an IRS form W-9.

R. RESERVATION OF RIGHTS

1. The City reserves the right in its sole and absolute discretion to accept or reject any or all proposals, or alternative proposals, in whole or in part, with or without cause.

2. The City reserves the right to waive, or not waive, informalities or irregularities in terms or conditions of any proposal if determined by the City to be in its best interest.
3. The City reserves the right to request additional information from any or all bidders.
4. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested within RFP.
5. The City reserves the right to determine whether the scope of the project will be entirely as described in the RFP, a portion of the scope, or a revised scope be implemented.
6. The City reserves the right to select one or more contractors or service providers to perform services.
7. The City reserves the right to retain all proposals submitted and to use any ideas in a proposal regardless of whether that proposal is selected. Submission of a proposal indicates acceptance by the firm of the conditions contained in this RFP, unless clearly and specifically noted in the proposal submitted.
8. The City reserves the right to disqualify proposals that fail to respond to any requirements outlined in the RFP, or failure to enclose copies of the required documents outlined within the RFP.

S. IDLEFREE ORDINANCE

The City of Ann Arbor adopted an idling reduction Ordinance that went into effect July 1, 2017. The full text of the ordinance (including exemptions) can be found at: www.a2gov.org/idlefree.

Under the ordinance, No Operator of a Commercial Vehicle shall cause or permit the Commercial Vehicle to Idle:

(a) For any period of time while the Commercial Vehicle is unoccupied; or

(b) For more than 5 minutes in any 60-minute period while the Commercial Vehicle is occupied.

In addition, generators and other internal combustion engines are covered

(1) Excluding Motor Vehicle engines, no internal combustion engine shall be operated except when it is providing power or electrical energy to equipment or a tool that is actively in use.

T. ENVIRONMENTAL COMMITMENT

The City of Ann Arbor recognizes its responsibility to minimize negative impacts on human health and the environment while supporting a vibrant community and economy. The City further recognizes that the products and services the City buys have inherent environmental and economic impacts and that the City should make procurement decisions that embody, promote, and encourage the City's commitment to the environment.

The City encourages potential vendors to bring forward emerging and progressive products and services that are best suited to the City's environmental principles.

U. MAJOR SUBCONTRACTORS

The Bidder shall identify each major subcontractor it expects to engage for this Contract if the work to be subcontracted is 15% or more of the bid sum or over $50,000, whichever is less. The Bidder also shall identify the work to be subcontracted to each major subcontractor. The Bidder shall not change or replace a subcontractor without approval by the City.

N. LIQUIDATED DAMAGES

A liquidated damages clause, as given on page C-2, Article III of the Contract, provides that the Contractor shall pay the City as liquidated damages, and not as a penalty, a sum certain per day for each and every day that the Contractor may be in default of completion of the specified work, within the time(s) stated in the Contract, or written extensions.

Liquidated damages clauses, as given in the General Conditions, provide further that the City shall be entitled to impose and recover liquidated damages for breach of the obligations under Chapter 112 of the City Code.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

SECTION II - SCOPE OF WORK

The Annual Street Resurfacing Program involves the resurfacing or rehabilitation of numerous streets, segments of asphalt paths, concrete work relating to the replacement of curb, drive approaches, and/or sidewalk ramps and new sidewalk installations. Approximate miles completed in a season is between 5-7. The estimated material qty is 18,000 Tons of HMA, 53,000 Syd of aggregate base reshaping, 52 Ea Catch Basin Structure Replacements and about 33,000 Sft of new sidewalk.

Please reference the Detailed Specifications and Plan Set for more details.

SECTION III - MINIMUM INFORMATION REQUIRED

PROPOSAL FORMAT

The following describes the elements that should be included in each of the proposal sections and the weighted point system that will be used for evaluation of the proposals.

Bidders should organize Proposals into the following Sections:

A. Qualifications, Experience and Accountability
B. Workplace Safety
C. Workforce Development
D. Social Equity and Sustainability
E. Schedule of Pricing/Cost
F. Authorized Negotiator
G. Attachments

Bidders are strongly encouraged to provided details for all of the information requested below within initial proposals. Backup documentation may be requested at the sole discretion of the City to validate all of the responses provided herein by bidders. False statements by bidders to any of the criteria provided herein will result in the proposal being considered non-responsive and will not be considered for award.

Pursuant to Sec 1:325 of the City Code which sets forth requirements for evaluating public improvement bids, Bidders should submit the following:

A. Qualifications, Experience and Accountability - 20 Points

1. Qualifications and experience of the bidder and of key persons, management, and supervisory personnel to be assigned by the bidder.

2. References from individuals or entities the bidder has worked for within the last five (5) years including information regarding records of performance and job site cooperation.

3. Evidence of any quality control program used by the bidder and the results of any such program on the bidder's previous projects.

4. A statement from the bidder as to any major subcontractors it expects to engage including the name, work, and amount.

B. Workplace Safety – 20 Points

1. Provide a copy of the bidder's safety program, and evidence of a safety-training program for employees addressing potential hazards of the proposed job site. Bidder must identify a designated qualified safety representative responsible for bidder's safety program who serves as a contact for safety related matters.

2. Provide the bidder's Experience Modification Rating ("EMR") for the last three consecutive years. Preference within this criterion will be given to an EMR of 1.0 or less based on a three-year average.

3. Evidence that all craft labor that will be employed by the bidder for the project has, or will have prior to project commencement, completed at least an authorized 10-hour OSHA Construction Safety Course.

4. For the last three years provide a copy of any documented violations and the bidder's corrective actions as a result of inspections conducted by the Michigan Occupational Safety & Health Administration (MIOSHA), U.S. Department of Labor – Occupational Safety and Health Administration (OSHA), or any other applicable safety agency.

C. Workforce Development – 20 Points

1. Documentation as to bidder's pay rates, health insurance, pension or other retirement benefits, paid leave, or other fringe benefits to its employees.

2.. Documentation that the bidder participates in a Registered Apprenticeship Program that is registered with the United States Department of Labor Office of Apprenticeship or by a State Apprenticeship Agency recognized by the USDOL Office of Apprenticeship. USDOL apprenticeship agreements shall be disclosed to the City in the solicitation response.

3. Bidders shall disclose the number of non-craft employees who will work on the project on a 1099 basis, and the bidders shall be awarded points based on their relative reliance on 1099 work arrangements with more points assigned to companies with fewer 1099 arrangements. Bidders will acknowledge that the City may ask them to produce payroll records at points during the project to verify compliance with this section.

D. Social Equity and Sustainability – 20 Points

1. A statement from the bidder as to what percentage of its workforce resides in the City of Ann Arbor and in Washtenaw County, Michigan. The City will consider in

evaluating which bids best serve its interests, the extent to which responsible and qualified bidders employ individuals in Washtenaw County.

2. Evidence of Equal Employment Opportunity Programs for minorities, women, veterans, returning citizens, and small businesses.

3. Evidence that the bidder is an equal opportunity employer and does not discriminate on the basis of race, sex, pregnancy, age, religion, national origin, marital status, sexual orientation, gender identity or expression, height, weight, or disability.

4. The bidder's proposed use of sustainable products, technologies, or practices for the project, which reduce the impact on human health and the environment, including raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and waste management.

5. The bidder's environmental record, including findings of violations and penalties imposed by government agencies.

E. Schedule of Pricing/Cost – 20 Points

Company: _____

Project: 2024 Annual Resurfacing Program
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Item No.	Description	Unit	Estimated Quantity	Unit Price	Total Price
01000.00	General Conditions, Max $ 300,000.00	LS	1	$	$
01000.01DS	Vacuum Type Cleaning, Max $ 25,000.00	LS	1	$	$
01001.00	Project Supervision, Max $ 50,000.00	LS	1	$	$
01021.00	Erosion Control, Inlet Protection, Fabric Drop	Ea	265	$	$
01022.00	Erosion Control, Silt Fence	Ft	75	$	$
01040.00	Minor Traffic Control, Max $ 140,000.00	LS	1	$	$
01041.00	Traffic Regulator Control, Max $ 25,000.00	LS	1	$	$
01050.00	Sign, Type B, Temp, Prismatic, Furn & Oper	Sft	1,099	$	$
01051.00	Sign, Type B, Temp, Prismatic, Special, Furn & Oper	Sft	345	$	$
01052.00	Temporary "No Parking" Sign	Ea	769	$	$
01062.00	Lighted Arrow, Type C, Furn & Oper	Ea	5	$	$
01070.00	Sign, Portable, Changeable Message, Furn & Oper	Ea	4	$	$
01080.00	Plastic Drum, High Intensity, Lighted, Furn & Oper	Ea	229	$	$
01081.00	Channelizer Cone, High Intensity, 42 In., Furn & Oper	Ea	1,260	$	$
01091.00	Barricade, Type III, High Intensity, Lighted, Furn & Oper	Ea	91	$	$
01100.00	Pedestrian Type II Barricade, Temp, Furn & Oper	Ea	76	$	$
01101.00	Pedestrian Channelizer Device, Furn & Oper	Ea	20	$	$
01103.00	Temporary Pedestrian Mat, Furn & Oper	Ft	2,740	$	$
02000.01	Tree, Rem, 6 in. - 12 in.	Ea	17	$	$
02000.02	Tree, Rem, 13 in.- 36 in.	Ea	4	$	$
02000.10DS	Tree Trimming, Allowance	Dlr	1	$ 15,000	$ 15,000
02020.00	HMA, Any Thickness, Rem	Syd	23,525	$	$
02022.00	HMA Patch, Rem	Syd	270	$	$
02023.00	Cold-Milling HMA Surface	Syd	65,000	$	$
02023.01DS	Cold Milling, Plunge Cut	Syd	3,300	$	$
02023.02DS	HMA Surface, Around Structure Cover, Rem	Ea	100	$	$
02023.03DS	Cold Milling for Concrete Curb and Gutter Reveal	Syd	3,490	$	$
02030.00	Curb, Gutter, and Curb and Gutter, Any Type, Rem	Ft	14,680	$	$
02040.00	Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	Sft	10,010	$	$
03001.02DS	Grading Roadway	Syd	53,350	$	$
03001.01DS	Grading, Sidewalk, Ramp & Driveway Approach	Sft	15,350	$	$
03021.01DS	Undercutting, Type IIA	Cyd	5,935	$	$
03021.02DS	Undercutting, Type IIC	Cyd	50	$	$
03030.01	Exploratory Excavation, (0-10' Deep), SD-TD-1	Ea	15	$	$

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(Also to be entered on Page 17)

Company:

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Item No.	Description	Unit	Estimated Quantity	Unit Price	Total Price
03030.03	Exploratory Excavation, (0-10' Deep), SD-TD-2	Ea	5	$	$
05100.01DS	Adjust Structure Cover	Ea	188	$	$
05100.02DS	Structure Frame	Ea	110	$	$
05100.03DS	Structure Covers	Ea	110	$	$
05100.04DS	Adjust Monument Box or Gate Valve Box	Ea	20	$	$
06000.01	12 In., CL IV RCP Storm Sewer, SD-TD-1	Ft	420	$	$
06003.04	12 In., PE Storm Sewer, SD-TD-2	Ft	308	$	$
06030.04	Storm Sewer Tap, 12 In. Dia	Ea	6	$	$
06060.03	Storm Inlet-Junction, 48 In., Dia., (0-8'deep)	Ea	8	$	$
06060.04	Storm Inlet-Junction, 48 In., Dia., Additional Depth	Ft	3	$	$
06070.01	Storm Single Inlet, 24 In. ,Dia., (0-8'deep)	Ea	52	$	$
06070.02	Storm Single Inlet, 24In. ,Dia., Additional Depth	Ft	12	$	$
06080.01	Storm High Capacity Intet, 48 In. Dia., (0-8'deep)	Ea	3	$	$
06120.02	Storm Sewer Pipe, 10 in. Dia., Rem	Ft	25	$	$
06120.03	Storm Sewer Pipe, 12 in. Dia., Rem	Ft	530	$	$
06140.00	Storm Sewer Structure, Rem	Ea	65	$	$
06160.01	Storm Structure Cover, Type K	Ea	75	$	$
06160.03	Storm Structure Adjust, Additional Depth	Ft	27	$	$
06180.02	Underdrain, Subgrade, 6 inch	Ft	560	$	$
06300.00DS	Dr Structure, Point	Ea	50	$	$
06300.01DS	Structure, Reconstruct	Ea	10	$	$
07121.00	Curb Box, Adjust	Ea	20	$	$
08010.06DS	Aggregate Base Course, 21AA, CIP	Ton	460	$	$
08050.01DS	Geotextile, Separator Fabric	Syd	3,250	$	$
08051.01DS	Geotextile, Stabilization Fabric	Syd	300	$	$
08052.01DS	Flowable Fill	Cyd	60	$	$
08060.00	Hand Patching	Ton	544	$	$
08070.18	HMA, 5EL	Ton	18,000	$	$
08070.19	HMA, 5EML	Ton	150	$	$
08070.30DS	HMA, Soil Erosion, Wedge	Ft	1,265	$	$
08070.31DS	HMA, Wedging	Ton	50	$	$
08100.10DS	Sidewalk Retaining Wall, Integral, 6 inch to 18 inch Height	Sft	55	$	$
08110.00	Conc, Curb or Curb & Gutter, All Types	Ft	9,950	$	$
08120.01	Conc, Driveway Opening, Type M	Ft	4,375	$	$
08130.01	Conc, Sidewalk, 4 in	Sft	28,500	$	$

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(Also to be entered on Page 17)

Company: _____

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Item No.	Description	Unit	Estimated Quantity	Unit Price	Total Price
08131.01	Conc, Sidewalk or Ramp, 6 inch	Sft	4,850	$	$
08134.01DS	Driveway, Nonreinf Conc, 6 inch, Modified	Sft	4,300	$	$
08134.02DS	Driveway, Nonreinf Conc, 8 inch, Modified	Sft	530	$	$
08140.00	Brick Pavers, Sidewalk, Rem and Reinstall	Sft	240	$	$
08140.01DS	Raised Intersection, Conc	Syd	662	$	$
08140.02DS	Speed Hump, Conc	Syd	756	$	$
08150.00	Detectable Warning Surface	Ft	540	$	$
08180.02	Pavt Mrkg, Ovly Cold Plastic, Bike, Small Sym	Ea	15	$	$
08180.04	Pavt Mrkg, Ovly Cold Plastic, Sharrow Sym	Ea	20	$	$
08200.07	Pavt Mrkg, Polyurea, 12 In., Crosswalk	Ft	20	$	$
08200.09	Pavt Mrkg, Polyurea, 24 In., Stop Bar	Ft	100	$	$
08200.12	Pavt Mrkg, Polyurea, 4 In., Yellow	Ft	100	$	$
08200.13	Pavt Mrkg, Polyurea, 6 In., White	Ft	100	$	$
08200.31	Pavt Mrkg, Polyurea, Speed Hump Chevron, White	Ea	96	$	$
08220.03	Pavt Mrkg, Thermopl, 12 In., Crosswalk	Ft	4,130	$	$
08220.06	Pavt Mrkg, Thermopl, 24 In., Stop Bar	Ft	640	$	$
08251.00	Recessing Pavt Mrkg, Longit	Ft	300	$	$
08263.00	Rem Curing Compound, for Spec Mrkg	Sft	1,570	$	$
10030.00	Fence, Rem	Ft	30	$	$
10051.01DS	Irrigation System, Protection and Maintenance, Allowance	Dlr	1	$ 15,000	$ 15,000
10060.00	Turf Restoration	Syd	7,250	$	$

TOTAL THIS PAGE 17 $ _____

TOTAL FROM PAGE 15 $ _____

TOTAL FROM PAGE 16 $ _____

TOTAL BASE BID $ _____

F. AUTHORIZED NEGOTIATOR / NEGOTIATIBLE ELEMENTS (ALTERNATES)

Include the name, phone number, and e-mail address of persons(s) in your organization authorized to negotiate the agreement with the City.

The proposal price shall include materials and equipment selected from the designated items and manufacturers listed in the bidding documents. This is done to establish uniformity in bidding and to establish standards of quality for the items named.

If the bidder wishes to quote alternate items for consideration by the City, it may do so under this Section. A complete description of the item and the proposed price differential must be provided. Unless approved at the time of award, substitutions where items are specifically named will be considered only as a negotiated change in Contract Sum.

If the Bidder takes exception to the time stipulated in Article III of the Contract, Time of Completion, page C-2, it is requested to stipulate its proposed time for performance of the work.

Consideration for any proposed alternative items or time may be negotiated at the discretion of the City.

G. ATTACHMENTS

General Declaration, Legal Status of Bidder, Conflict of Interest Form, Living Wage Compliance Form, Prevailing Wage Compliance Form and the Non-Discrimination Form should be completed and returned with the proposal. These elements should be included as attachments to the proposal submission.

PROPOSAL EVALUATION

1. The selection committee will evaluate each proposal by the above-described criteria and point system. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested for evaluation. A proposal with all the requested information does not guarantee the proposing firm to be a candidate for an interview if interviews are selected to be held by the City. The committee may contact references to verify material submitted by the bidder.

2. The committee then will schedule interviews with the selected firms if necessary. The selected firms will be given the opportunity to discuss in more detail their qualifications, past experience, proposed work plan (if applicable) and pricing.

3. The interview should include the project team members expected to work on the project, but no more than six members total. The interview shall consist of a presentation of up to thirty minutes (or the length provided by the committee) by the

bidder, including the person who will be the project manager on this contract, followed by approximately thirty minutes of questions and answers. Audiovisual aids may be used during the oral interviews. The committee may record the oral interviews.

4. The firms interviewed will then be re-evaluated by the above criteria and adjustments to scoring will be made as appropriate. After evaluation of the proposals, further negotiation with the selected firm may be pursued leading to the award of a contract by City Council, if suitable proposals are received.

The City reserves the right to waive the interview process and evaluate the bidder based on their proposal and pricing schedules alone.

The City will determine whether the final scope of the project to be negotiated will be entirely as described in this RFP, a portion of the scope, or a revised scope.

Work to be done under this contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents.

Any proposal that does not conform fully to these instructions may be rejected.

PREPARATION OF PROPOSALS

Proposals should have no plastic bindings but will not be rejected as non-responsive for being bound. Staples or binder clips are acceptable. Proposals should be printed double sided on recycled paper.

Each person signing the proposal certifies that they are a person in the bidder's firm/organization responsible for the decisions regarding the fees being offered in the Proposal and has not and will not participate in any action contrary to the terms of this provision.

ADDENDA

If it becomes necessary to revise any part of the RFP, notice of the addendum will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and/or the City of Ann Arbor web site www.A2gov.org for all parties to download.

Each bidder should acknowledge in its proposal all addenda it has received on the General Declarations form provided in the Attachments section herein. The failure of a bidder to receive or acknowledge receipt of any addenda shall not relieve the bidder of the responsibility for complying with the terms thereof. The City will not be bound by oral responses to inquiries or written responses other than official written addenda.

SECTION IV - ATTACHMENTS

Attachment A – Sample Standard Contract

Attachment B – General Declarations

Attachment C - Legal Status of Bidder

Attachment D – Prevailing Wage Declaration of Compliance Form

Attachment E – Living Wage Declaration of Compliance Form

Attachment F – Living Wage Ordinance Poster

Attachment G – Vendor Conflict of Interest Disclosure Form

Attachment H – Non-Discrimination Ordinance Declaration of Compliance Form

Attachment I – Non-Discrimination Ordinance Poster

Sample Certified Payroll Report Template

Detailed Specifications – DS-1 to DS-43

Appendix 1 Geotechnical Report – APDX 1 to APDX 92

Project Plans – Sheet 1 to 30

ATTACHMENT A
SAMPLE STANDARD CONTRACT

If a contract is awarded, the selected contractor will be required to adhere to a set of general contract provisions which will become a part of any formal agreement. These provisions are general principles which apply to all contractors of service to the City of Ann Arbor such as the following:

Administrative Use Only
Contract Date: _____

CONTRACT

THIS CONTRACT is between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 East Huron Street, Ann Arbor, Michigan 48104 ("City") and _____ _____("Contractor")

(An individual/partnership/corporation, include state of incorporation) (Address)

Based upon the mutual promises below, the Contractor and the City agree as follows:

ARTICLE I - Scope of Work

The Contractor agrees to furnish all of the materials, equipment and labor necessary; and to abide by all the duties and responsibilities applicable to it for the project titled **[Insert Title of Bid and Bid Number**] in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, all of which are incorporated as part of this Contract:

Non-discrimination and Living Wage Declaration of Compliance Forms (if applicable)
Vendor Conflict of Interest Form
Prevailing Wage Declaration of Compliance Form (if applicable)
Bid Forms
Contract and Exhibits
Bonds
General Conditions
Standard Specifications
Detailed Specifications
Plans
Addenda

ARTICLE II - Definitions

Administering Service Area/Unit means **[Insert Name of Administering Service Unit]**

Project means **[Insert Title of Bid and Bid Number]**

Supervising Professional means the person acting under the authorization of the manager of the Administering Service Area/Unit. At the time this Contract is executed,

the Supervising Professional is: [**Insert the person's name**] whose job title is [**Insert job title**]. If there is any question concerning who the Supervising Professional is, Contractor shall confirm with the manager of the Administering Service Area/Unit.

Contractor's Representative means _____ [**Insert name**] whose job title is [**Insert job title**].

ARTICLE III - Time of Completion

(A) The work to be completed under this Contract shall begin immediately on the date specified in the Notice to Proceed issued by the City.

(B) The entire work for this Contract shall be completed within _____ ( ) consecutive calendar days.

(C) Failure to complete all the work within the time specified above, including any extension granted in writing by the Supervising Professional, shall obligate the Contractor to pay the City, as liquidated damages and not as a penalty, an amount equal to $_____ for each calendar day of delay in the completion of all the work. If any liquidated damages are unpaid by the Contractor, the City shall be entitled to deduct these unpaid liquidated damages from the monies due the Contractor.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

ARTICLE IV - The Contract Sum

Choose one only.

(A) The City shall pay to the Contractor for the performance of the Contract, the lump sum price as given in the Bid Form in the amount of:

_____Dollars ($_____)

Or

(A) The City shall pay to the Contractor for the performance of the Contract, the unit prices as given in the Bid Form for the estimated bid total of:

_____Dollars ($_____)

(B) The amount paid shall be equitably adjusted to cover changes in the work ordered by the Supervising Professional but not required by the Contract Documents.

Increases or decreases shall be determined only by written agreement between the City and Contractor.

ARTICLE V - Assignment

This Contract may not be assigned or subcontracted any portion of any right or obligation under this contract without the written consent of the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under this contract unless specifically released from the requirement, in writing, by the City.

ARTICLE VI - Choice of Law

This Contract shall be construed, governed, and enforced in accordance with the laws of the State of Michigan. By executing this Contract, the Contractor and the City agree to venue in a court of appropriate jurisdiction sitting within Washtenaw County for purposes of any action arising under this Contract. The parties stipulate that the venue referenced in this Contract is for convenience and waive any claim of non-convenience.

Whenever possible, each provision of the Contract will be interpreted in a manner as to be effective and valid under applicable law. The prohibition or invalidity, under applicable law, of any provision will not invalidate the remainder of the Contract.

ARTICLE VII - Relationship of the Parties

The parties of the Contract agree that it is not a Contract of employment but is a Contract to accomplish a specific result. Contractor is an independent Contractor performing services for the City. Nothing contained in this Contract shall be deemed to constitute any other relationship between the City and the Contractor.

Contractor certifies that it has no personal or financial interest in the project other than the compensation it is to receive under the Contract. Contractor certifies that it is not, and shall not become, overdue or in default to the City for any Contract, debt, or any other obligation to the City including real or personal property taxes. City shall have the right to set off any such debt against compensation awarded for services under this Contract.

ARTICLE VIII - Notice

All notices given under this Contract shall be in writing, and shall be by personal delivery or by certified mail with return receipt requested to the parties at their respective addresses as specified in the Contract Documents or other address the Contractor may specify in writing. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; or (2) three days after mailing certified U.S. mail.

ARTICLE IX - Indemnification

To the fullest extent permitted by law, Contractor shall indemnify, defend and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result, in whole or in part, from any act or omission, which is in any way connected or associated with this Contract, by the Contractor or anyone acting on the Contractor's behalf under this Contract. Contractor shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City's sole negligence. The provisions of this Article shall survive the expiration or earlier termination of this contract for any reason.

ARTICLE X - Entire Agreement

This Contract represents the entire understanding between the City and the Contractor and it supersedes all prior representations, negotiations, agreements, or understandings whether written or oral. Neither party has relied on any prior representations in entering into this Contract. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Contract, regardless of the other party's failure to object to such form. This Contract shall be binding on and shall inure to the benefit of the parties to this Contract and their permitted successors and permitted assigns and nothing in this Contract, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Contract. This Contract may be altered, amended or modified only by written amendment signed by the City and the Contractor.

ARTICLE XI – Electronic Transactions

The City and Contractor agree that signatures on this Contract may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this Contract. This Contract may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

FOR CONTRACTOR

By_____

Its:_____

FOR THE CITY OF ANN ARBOR

By_____
Christopher Taylor, Mayor

By_____
Jacqueline Beaudry, City Clerk

Approved as to substance

By_____

City Administrator

By_____

Services Area Administrator

Approved as to form and content

_____

Atleen Kaur, City Attorney

PERFORMANCE BOND

(1) _____ of _____ (referred to as "Principal"), and _____, a corporation duly authorized to do business in the State of Michigan (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for $, the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.

(2) The Principal has entered a written Contract with the City entitled _____ _____, for RFP No. _____ and this bond is given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq.

(3) Whenever the Principal is declared by the City to be in default under the Contract, the Surety may promptly remedy the default or shall promptly:

(a) complete the Contract in accordance with its terms and conditions; or

(b) obtain a bid or bids for submission to the City for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, arrange for a Contract between such bidder and the City, and make available, as work progresses, sufficient funds to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth in paragraph 1.

(4) Surety shall have no obligation to the City if the Principal fully and promptly performs under the Contract.

(5) Surety agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder, or the specifications accompanying it shall in any way affect its obligations on this bond, and waives notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work, or to the specifications.

(6) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

SIGNED AND SEALED this _____ day of _____, 202_.

_____	_____
(Name of Surety Company)	(Name of Principal)
By _____	By _____
(Signature)	(Signature)
Its _____	Its _____
(Title of Office)	(Title of Office)
Approved as to form:	Name and address of agent:
_____	_____
Atleen Kaur, City Attorney	

LABOR AND MATERIAL BOND

(1) _____

of _____(referred to as "Principal"), and _____, a corporation duly authorized to do business in the State of Michigan, (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for the use and benefit of claimants as defined in Act 213 of Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq., in the amount of

$ _____, for the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.

(2) The Principal has entered a written Contract with the Cityentitled _____

_____

_____

____, for RFP No. _____; and this bond is given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of 1963 as amended;

(3) If the Principal fails to promptly and fully repay claimants for labor and material reasonably required under the Contract, the Surety shall pay those claimants.

(4) Surety's obligations shall not exceed the amount stated in paragraph 1, and Surety shall have no obligation if the Principal promptly and fully pays the claimants.

(5) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

SIGNED AND SEALED this _____ day of _____, 202_

_____	_____
(Name of Surety Company)	(Name of Principal)
By _____	By _____
(Signature)	(Signature)
Its _____	Its _____
(Title of Office)	(Title of Office)

Approved as to form:

Atleen Kaur, City Attorney

Name and address of agent:

GENERAL CONDITIONS

Section 1 - Execution, Correlation and Intent of Documents

The contract documents shall be signed in 2 copies by the City and the Contractor.

The contract documents are complementary and what is called for by any one shall be binding. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. Materials or work described in words which so applied have a well-known technical or trade meaning have the meaning of those recognized standards.

In case of a conflict among the contract documents listed below in any requirement(s), the requirement(s) of the document listed first shall prevail over any conflicting requirement(s) of a document listed later.

(1) Addenda in reverse chronological order; (2) Detailed Specifications; (3) Standard Specifications; (4) Plans; (5) General Conditions; (6) Contract; (7) Bid Forms; (8) Bond Forms; (9) Bid.

Section 2 - Order of Completion

The Contractor shall submit with each invoice, and at other times reasonably requested by the Supervising Professional, schedules showing the order in which the Contractor proposes to carry on the work. They shall include the dates at which the Contractor will start the several parts of the work, the estimated dates of completion of the several parts, and important milestones within the several parts.

Section 3 - Familiarity with Work

The Bidder or its representative shall make personal investigations of the site of the work and of existing structures and shall determine to its own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved, and all other factors affecting the work proposed under this Contract. The Bidder to whom this Contract is awarded will not be entitled to any additional compensation unless conditions are clearly different from those which could reasonably have been anticipated by a person making diligent and thorough investigation of the site.

The Bidder shall immediately notify the City upon discovery, and in every case prior to submitting its Bid, of every error or omission in the bidding documents that would be identified by a reasonably competent, diligent Bidder. In no case will a Bidder be allowed the benefit of extra compensation or time to complete the work under this Contract for extra expenses or time spent as a result of the error or omission.

Section 4 - Wage Requirements

Under this Contract, the Contractor shall conform to Chapter 14 of Title I of the Code of the City of Ann Arbor as amended; which in part states "...that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of

subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. At the request of the City, any contractor or subcontractor shall provide satisfactory proof of compliance with the contract provisions required by the Section.

Pursuant to Resolution R-16-469 all public improvement contractors are subject to prevailing wage and will be required to provide to the City payroll records sufficient to demonstrate compliance with the prevailing wage requirements. A sample Prevailing Wage Form is provided in the Appendix herein for reference as to what will be expected from contractors. Use of the Prevailing Wage Form provided in the Appendix section or a City-approved equivalent will be required along with wage rate interviews.

Where the Contract and the Ann Arbor City Ordinance are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used.

If the Contractor is a “covered employer” as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Contract a “living wage,” as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Contract are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

Contractor agrees that all subcontracts entered into by the Contractor shall contain similar wage provision covering subcontractor’s employees who perform work on this contract.

Section 5 - Non-Discrimination

The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 of Chapter 112 of Title IX of the Ann Arbor City Code, and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.

Section 6 - Materials, Appliances, Employees

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary or used for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new, and both workmanship and materials shall be of the highest quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among its employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned.

Adequate sanitary facilities shall be provided by the Contractor.

Section 7 - Qualifications for Employment

The Contractor shall employ competent laborers and mechanics for the work under this Contract. For work performed under this Contract, employment preference shall be given to qualified local residents.

Section 8 - Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringements of any patent rights and shall hold the City harmless from loss on account of infringement except that the City shall be responsible for all infringement loss when a particular process or the product of a particular manufacturer or manufacturers is specified, unless the City has notified the Contractor prior to the signing of the Contract that the particular process or product is patented or is believed to be patented.

Section 9 - Permits and Regulations

The Contractor must secure and pay for all permits, permit or plan review fees and licenses necessary for the prosecution of the work. These include but are not limited to City building permits, right-of-way permits, lane closure permits, right-of-way occupancy permits, and the like. The City shall secure and pay for easements shown on the plans unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the contract documents are at variance with those requirements, it shall promptly notify the Supervising Professional in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work.

Section 10 - Protection of the Public and of Work and Property

The Contractor is responsible for the means, methods, sequences, techniques and procedures of construction and safety programs associated with the work contemplated by this contract. The Contractor, its agents or sub-contractors, shall comply with the "General Rules and Regulations for the Construction Industry" as published by the Construction Safety Commission of the State of Michigan and to all other local, State and National laws, ordinances, rules and regulations pertaining to safety of persons and property.

The Contractor shall take all necessary and reasonable precautions to protect the safety of the public. It shall continuously maintain adequate protection of all work from damage, and shall take all necessary and reasonable precautions to adequately protect all public and private property from injury or loss arising in connection with this Contract. It shall make good any damage, injury or loss to its work and to public and private property resulting from lack of reasonable protective precautions, except as may be due to errors in the contract documents, or caused by agents or

employees of the City. The Contractor shall obtain and maintain sufficient insurance to cover damage to any City property at the site by any cause.

In an emergency affecting the safety of life, or the work, or of adjoining property, the Contractor is, without special instructions or authorization from the Supervising Professional, permitted to act at its discretion to prevent the threatened loss or injury. It shall also so act, without appeal, if authorized or instructed by the Supervising Professional.

Any compensation claimed by the Contractor for emergency work shall be determined by agreement or in accordance with the terms of Claims for Extra Cost - Section 15.

Section 11 - Inspection of Work

The City shall provide sufficient competent personnel for the inspection of the work.

The Supervising Professional shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for access and for inspection.

If the specifications, the Supervising Professional's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Supervising Professional timely notice of its readiness for inspection, and if the inspection is by an authority other than the Supervising Professional, of the date fixed for the inspection. Inspections by the Supervising Professional shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Supervising Professional, it must, if required by the Supervising Professional, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Supervising Professional, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to be in accordance with the contract documents, the City shall pay the cost of re-examination and replacement. If the work is not in accordance with the contract documents, the Contractor shall pay the cost.

Section 12 - Superintendence

The Contractor shall keep on the work site, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Supervising Professional. The superintendent will be responsible to perform all on-site project management for the Contractor. The superintendent shall be experienced in the work required for this Contract. The superintendent shall represent the Contractor and all direction given to the superintendent shall be binding as if given to the Contractor. Important directions shall immediately be confirmed in writing to the Contractor. Other directions will be confirmed on written request. The Contractor shall give efficient superintendence to the work, using its best skill and attention.

Section 13 - Changes in the Work

The City may make changes to the quantities of work within the general scope of the Contract at any time by a written order and without notice to the sureties. If the changes add to or deduct from the extent of the work, the Contract Sum shall be adjusted accordingly. All the changes shall be

executed under the conditions of the original Contract except that any claim for extension of time caused by the change shall be adjusted at the time of ordering the change.

In giving instructions, the Supervising Professional shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Supervising Professional, and no claim for an addition to the Contract Sum shall be valid unless the additional work was ordered in writing.

The Contractor shall proceed with the work as changed and the value of the work shall be determined as provided in Claims for Extra Cost - Section 15.

Section 14 - Extension of Time

Extension of time stipulated in the Contract for completion of the work will be made if and as the Supervising Professional may deem proper under any of the following circumstances:

(1) When work under an extra work order is added to the work under this Contract;

(2) When the work is suspended as provided in Section 20;

(3) When the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, and which were not the result of its fault or negligence;

(4) Delays in the progress of the work caused by any act or neglect of the City or of its employees or by other Contractors employed by the City;

(5) Delay due to an act of Government;

(6) Delay by the Supervising Professional in the furnishing of plans and necessary information;

(7) Other cause which in the opinion of the Supervising Professional entitles the Contractor to an extension of time.

The Contractor shall notify the Supervising Professional within 7 days of an occurrence or conditions which, in the Contractor's opinion, entitle it to an extension of time. The notice shall be in writing and submitted in ample time to permit full investigation and evaluation of the Contractor's claim. The Supervising Professional shall acknowledge receipt of the Contractor's notice within 7 days of its receipt. Failure to timely provide the written notice shall constitute a waiver by the Contractor of any claim.

In situations where an extension of time in contract completion is appropriate under this or any other section of the contract, the Contractor understands and agrees that the only available adjustment for events that cause any delays in contract completion shall be extension of the required time for contract completion and that there shall be no adjustments in the money due the Contractor on account of the delay.

Section 15 - Claims for Extra Cost

If the Contractor claims that any instructions by drawings or other media issued after the date of the Contract involved extra cost under this Contract, it shall give the Supervising Professional written notice within 7 days after the receipt of the instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property. The procedure shall then be as provided for Changes in the Work-Section l3. No claim shall be valid unless so made.

If the Supervising Professional orders, in writing, the performance of any work not covered by the contract documents, and for which no item of work is provided in the Contract, and for which no unit price or lump sum basis can be agreed upon, then the extra work shall be done on a Cost-Plus-Percentage basis of payment as follows:

(1) The Contractor shall be reimbursed for all reasonable costs incurred in doing the work, and shall receive an additional payment of 15% of all the reasonable costs to cover both its indirect overhead costs and profit;

(2) The term "Cost" shall cover all payroll charges for employees and supervision required under the specific order, together with all worker's compensation, Social Security, pension and retirement allowances and social insurance, or other regular payroll charges on same; the cost of all material and supplies required of either temporary or permanent character; rental of all power-driven equipment at agreed upon rates, together with cost of fuel and supply charges for the equipment; and any costs incurred by the Contractor as a direct result of executing the order, if approved by the Supervising Professional;

(3) If the extra is performed under subcontract, the subcontractor shall be allowed to compute its charges as described above. The Contractor shall be permitted to add an additional charge of 5% percent to that of the subcontractor for the Contractor's supervision and contractual responsibility;

(4) The quantities and items of work done each day shall be submitted to the Supervising Professional in a satisfactory form on the succeeding day, and shall be approved by the Supervising Professional and the Contractor or adjusted at once;

(5) Payments of all charges for work under this Section in any one month shall be made along with normal progress payments. Retainage shall be in accordance with Progress Payments-Section 16.

No additional compensation will be provided for additional equipment, materials, personnel, overtime or special charges required to perform the work within the time requirements of the Contract.

When extra work is required and no suitable price for machinery and equipment can be determined in accordance with this Section, the hourly rate paid shall be 1/40 of the basic weekly rate listed in the Rental Rate Blue Book published by Dataquest Incorporated and applicable to the time period the equipment was first used for the extra work. The hourly rate will be deemed to include all costs of operation such as bucket or blade, fuel, maintenance, "regional factors", insurance, taxes, and the like, but not the costs of the operator.

Section 16 - Progress Payments

The Contractor shall submit each month, or at longer intervals, if it so desires, an invoice covering work performed for which it believes payment, under the Contract terms, is due. The submission shall be to the City's Finance Department - Accounting Division. The Supervising Professional will, within 10 days following submission of the invoice, prepare a certificate for payment for the work in an amount to be determined by the Supervising Professional as fairly representing the acceptable work performed during the period covered by the Contractor's invoice. To insure the proper performance of this Contract, the City will retain a percentage of the estimate in accordance with Act 524, Public Acts of 1980. The City will then, following the receipt of the Supervising Professional's Certificate, make payment to the Contractor as soon as feasible, which is anticipated will be within 15 days.

An allowance may be made in progress payments if substantial quantities of permanent material have been delivered to the site but not incorporated in the completed work if the Contractor, in the opinion of the Supervising Professional, is diligently pursuing the work under this Contract. Such materials shall be properly stored and adequately protected. Allowance in the estimate shall be at the invoice price value of the items. Notwithstanding any payment of any allowance, all risk of loss due to vandalism or any damages to the stored materials remains with the Contractor.

In the case of Contracts which include only the Furnishing and Delivering of Equipment, the payments shall be; 60% of the Contract Sum upon the delivery of all equipment to be furnished, or in the case of delivery of a usable portion of the equipment in advance of the total equipment delivery, 60% of the estimated value of the portion of the equipment may be paid upon its delivery in advance of the time of the remainder of the equipment to be furnished; 30% of the Contract Sum upon completion of erection of all equipment furnished, but not later than 60 days after the date of delivery of all of the equipment to be furnished; and payment of the final 10% on final completion of erection, testing and acceptance of all the equipment to be furnished; but not later than l80 days after the date of delivery of all of the equipment to be furnished, unless testing has been completed and shows the equipment to be unacceptable.

With each invoice for periodic payment, the Contractor shall enclose a Contractor's Declaration - Section 43, and an updated project schedule per Order of Completion - Section 2.

Section 17 - Deductions for Uncorrected Work

If the Supervising Professional decides it is inexpedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price shall be made.

Section 18 - Correction of Work Before Final Payment

The Contractor shall promptly remove from the premises all materials condemned by the Supervising Professional as failing to meet Contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract and without expense to the City and shall bear the expense of making good all work of other contractors destroyed or damaged by the removal or replacement.

If the Contractor does not remove the condemned work and materials within l0 days after written notice, the City may remove them and, if the removed material has value, may store the material

at the expense of the Contractor. If the Contractor does not pay the expense of the removal within 10 days thereafter, the City may, upon 10 days written notice, sell the removed materials at auction or private sale and shall pay to the Contractor the net proceeds, after deducting all costs and expenses that should have been borne by the Contractor. If the removed material has no value, the Contractor must pay the City the expenses for disposal within 10 days of invoice for the disposal costs.

The inspection or lack of inspection of any material or work pertaining to this Contract shall not relieve the Contractor of its obligation to fulfill this Contract and defective work shall be made good. Unsuitable materials may be rejected by the Supervising Professional notwithstanding that the work and materials have been previously overlooked by the Supervising Professional and accepted or estimated for payment or paid for. If the work or any part shall be found defective at any time before the final acceptance of the whole work, the Contractor shall forthwith make good the defect in a manner satisfactory to the Supervising Professional. The judgment and the decision of the Supervising Professional as to whether the materials supplied and the work done under this Contract comply with the requirements of the Contract shall be conclusive and final.

Section 19 - Acceptance and Final Payment

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Supervising Professional will promptly make the inspection. When the Supervising Professional finds the work acceptable under the Contract and the Contract fully performed, the Supervising Professional will promptly sign and issue a final certificate stating that the work required by this Contract has been completed and is accepted by the City under the terms and conditions of the Contract. The entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor by the City within 30 days after the date of the final certificate.

Before issuance of final certificates, the Contractor shall file with the City:

(1) The consent of the surety to payment of the final estimate;
(2) The Contractor's Affidavit in the form required by Section 44.

In case the Affidavit or consent is not furnished, the City may retain out of any amount due the Contractor, sums sufficient to cover all lienable claims.

The making and acceptance of the final payment shall constitute a waiver of all claims by the City except those arising from:

(1) unsettled liens;
(2) faulty work appearing within 12 months after final payment;
(3) hidden defects in meeting the requirements of the plans and specifications;
(4) manufacturer's guarantees.

It shall also constitute a waiver of all claims by the Contractor, except those previously made and still unsettled.

Section 20 - Suspension of Work

The City may at any time suspend the work, or any part by giving 5 days notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the

written notice from the City to the Contractor to do so. The City shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of the suspension.

If the work, or any part, shall be stopped by the notice in writing, and if the City does not give notice in writing to the Contractor to resume work at a date within 90 days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work suspended and will be entitled to the estimates and payments for all work done on the portions abandoned, if any, plus 10% of the value of the work abandoned, to compensate for loss of overhead, plant expense, and anticipated profit.

Section 21 - Delays and the City's Right to Terminate Contract

If the Contractor refuses or fails to prosecute the work, or any separate part of it, with the diligence required to insure completion, ready for operation, within the allowable number of consecutive calendar days specified plus extensions, or fails to complete the work within the required time, the City may, by written notice to the Contractor, terminate its right to proceed with the work or any part of the work as to which there has been delay. After providing the notice the City may take over the work and prosecute it to completion, by contract or otherwise, and the Contractor and its sureties shall be liable to the City for any excess cost to the City. If the Contractor's right to proceed is terminated, the City may take possession of and utilize in completing the work, any materials, appliances and plant as may be on the site of the work and useful for completing the work. The right of the Contractor to proceed shall not be terminated or the Contractor charged with liquidated damages where an extension of time is granted under Extension of Time - Section 14.

If the Contractor is adjudged a bankrupt, or if it makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of its insolvency, or if it persistently or repeatedly refuses or fails except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if it fails to make prompt payments to subcontractors or for material or labor, or persistently disregards laws, ordinances or the instructions of the Supervising Professional, or otherwise is guilty of a substantial violation of any provision of the Contract, then the City, upon the certificate of the Supervising Professional that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor 3 days written notice, terminate this Contract. The City may then take possession of the premises and of all materials, tools and appliances thereon and without prejudice to any other remedy it may have, make good the deficiencies or finish the work by whatever method it may deem expedient, and deduct the cost from the payment due the Contractor. The Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of finishing the work, including compensation for additional managerial and administrative services exceeds the unpaid balance of the Contract Sum, the Contractor and its surety are liable to the City for any excess cost incurred. The expense incurred by the City, and the damage incurred through the Contractor's default, shall be certified by the Supervising Professional.

Section 22 - Contractor's Right to Terminate Contract

If the work should be stopped under an order of any court, or other public authority, for a period of 3 months, through no act or fault of the Contractor or of anyone employed by it, then the Contractor may, upon 7 days written notice to the City, terminate this Contract and recover from the City payment for all acceptable work executed plus reasonable profit.

Section 23 - City's Right To Do Work

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the City, 3 days after giving written notice to the Contractor and its surety may, without prejudice to any other remedy the City may have, make good the deficiencies and may deduct the cost from the payment due to the Contractor.

Section 24 - Removal of Equipment and Supplies

In case of termination of this Contract before completion, from any or no cause, the Contractor, if notified to do so by the City, shall promptly remove any part or all of its equipment and supplies from the property of the City, failing which the City shall have the right to remove the equipment and supplies at the expense of the Contractor.

The removed equipment and supplies may be stored by the City and, if all costs of removal and storage are not paid by the Contractor within 10 days of invoicing, the City upon 10 days written notice may sell the equipment and supplies at auction or private sale, and shall pay the Contractor the net proceeds after deducting all costs and expenses that should have been borne by the Contractor and after deducting all amounts claimed due by any lien holder of the equipment or supplies.

Section 25 - Responsibility for Work and Warranties

The Contractor assumes full responsibility for any and all materials and equipment used in the construction of the work and may not make claims against the City for damages to materials and equipment from any cause except negligence or willful act of the City. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the project (except for any part covered by Partial Completion and Acceptance - Section 26). The Contractor shall make good all work damaged or destroyed before acceptance. All risk of loss remains with the Contractor until final acceptance of the work (Section 19) or partial acceptance (Section 26). The Contractor is advised to investigate obtaining its own builders risk insurance.

The Contractor shall guarantee the quality of the work for a period of one year. The Contractor shall also unconditionally guarantee the quality of all equipment and materials that are furnished and installed under the contract for a period of one year. At the end of one year after the Contractor's receipt of final payment, the complete work, including equipment and materials furnished and installed under the contract, shall be inspected by the Contractor and the Supervising Professional. Any defects shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. Any defects that are identified prior to the end of one year shall also be inspected by the Contractor and the Supervising Professional and shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. The Contractor shall assign all manufacturer or material supplier warranties to the City prior to final payment. The assignment shall not relieve the Contractor of its obligations under this paragraph to correct defects.

Section 26 - Partial Completion and Acceptance

If at any time prior to the issuance of the final certificate referred to in Acceptance and Final Payment - Section 19, any portion of the permanent construction has been satisfactorily completed, and if the Supervising Professional determines that portion of the permanent construction is not required for the operations of the Contractor but is needed by the City, the Supervising Professional shall issue to the Contractor a certificate of partial completion, and immediately the City may take over and use the portion of the permanent construction described in the certificate, and exclude the Contractor from that portion.

The issuance of a certificate of partial completion shall not constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if the Contractor has failed to complete it in accordance with the terms of this Contract. The issuance of the certificate shall not release the Contractor or its sureties from any obligations under this Contract including bonds.

If prior use increases the cost of, or delays the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Supervising Professional may determine.

Section 27 - Payments Withheld Prior to Final Acceptance of Work

The City may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to the extent reasonably appropriate to protect the City from loss on account of:

(1) Defective work not remedied;

(2) Claims filed or reasonable evidence indicating probable filing of claims by other parties against the Contractor;

(3) Failure of the Contractor to make payments properly to subcontractors or for material or labor;

(4) Damage to another Contractor.

When the above grounds are removed or the Contractor provides a Surety Bond satisfactory to the City which will protect the City in the amount withheld, payment shall be made for amounts withheld under this section.

Section 28 - Contractor's Insurance

(1) The Contractor shall procure and maintain during the life of this Contract, including the guarantee period and during any warranty work, such insurance policies, including those set forth below, as will protect itself and the City from all claims for bodily injuries, death or property damage that may arise under this Contract; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor, any subcontractor, or anyone employed by them directly or indirectly. Prior to commencement of any work under this contract, Contractor shall provide to the City documentation satisfactory to the City, through City-approved means (currently myCOI), demonstrating it has obtained the required policies and endorsements. The certificates of insurance endorsements and/or copies of

policy language shall document that the Contractor satisfies the following minimum requirements. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractor(s) (if any).

Required insurance policies include:

(a) Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - $500,000 each accident
Bodily Injury by Disease - $500,000 each employee
Bodily Injury by Disease - $500,000 each policy limit

(b) Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 04 13 or current equivalent. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements specifically for the following coverages: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further there shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. The following minimum limits of liability are required:

$1,000,000	Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined.
$2,000,000	Per Project General Aggregate
$1,000,000	Personal and Advertising Injury
$2,000,000	Products and Completed Operations Aggregate, which, notwithstanding anything to the contrary herein, shall be maintained for three years from the date the Project is completed.

(c) Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 10 13 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. Further, the limits of liability shall be $1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

(d) Umbrella/Excess Liability Insurance shall be provided to apply excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of $1,000,000.

(2) Insurance required under subsection (1)(b) and (1)(c) above shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute

with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City for any insurance listed herein.

(3) Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional and un-qualified 30-day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number(s); name of insurance company(s); name and address of the agent(s) or authorized representative(s); name(s), email address(es), and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which may be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) and all required endorsements to the City. If any of the above coverages expire by their terms during the term of this Contract, the Contractor shall deliver proof of renewal and/or new policies and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.

(4) Any Insurance provider of Contractor shall be authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-authorized insurance companies are not acceptable unless approved in writing by the City.

(5) City reserves the right to require additional coverage and/or coverage amounts as may be included from time to time in the Detailed Specifications for the Project.

(6) The provisions of General Condition 28 shall survive the expiration or earlier termination of this contract for any reason.

Section 29 - Surety Bonds

Bonds will be required from the successful bidder as follows:

(1) A Performance Bond to the City of Ann Arbor for the amount of the bid(s) accepted;
(2) A Labor and Material Bond to the City of Ann Arbor for the amount of the bid(s) accepted.

Bonds shall be executed on forms supplied by the City in a manner and by a Surety Company authorized to transact business in Michigan and satisfactory to the City Attorney.

Section 30 - Damage Claims

The Contractor shall be held responsible for all damages to property of the City or others, caused by or resulting from the negligence of the Contractor, its employees, or agents during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. The Contractor must restore all property injured including sidewalks, curbing, sodding, pipes, conduit, sewers or other public or private property to not less than its original condition with new work.

Section 31 - Refusal to Obey Instructions

If the Contractor refuses to obey the instructions of the Supervising Professional, the Supervising Professional shall withdraw inspection from the work, and no payments will be made for work performed thereafter nor may work be performed thereafter until the Supervising Professional shall have again authorized the work to proceed.

Section 32 - Assignment

Neither party to the Contract shall assign the Contract without the written consent of the other. The Contractor may assign any monies due to it to a third party acceptable to the City.

Section 33 - Rights of Various Interests

Whenever work being done by the City's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Supervising Professional, to secure the completion of the various portions of the work in general harmony.

The Contractor is responsible to coordinate all aspects of the work, including coordination of, and with, utility companies and other contractors whose work impacts this project.

Section 34 - Subcontracts

The Contractor shall not award any work to any subcontractor without prior written approval of the City. The approval will not be given until the Contractor submits to the City a written statement concerning the proposed award to the subcontractor. The statement shall contain all information the City may require.

The Contractor shall be as fully responsible to the City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and all other contract documents applicable to the work of the subcontractors and to give the Contractor the same power to terminate any subcontract that the City may exercise over the Contractor under any provision of the contract documents.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the City.

Section 35 - Supervising Professional's Status

The Supervising Professional has the right to inspect any or all work. The Supervising Professional has authority to stop the work whenever stoppage may be appropriate to insure the proper execution of the Contract. The Supervising Professional has the authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

The Supervising Professional shall make all measurements and determinations of quantities. Those measurements and determinations are final and conclusive between the parties.

Section 36 - Supervising Professional's Decisions

The Supervising Professional shall, within a reasonable time after their presentation to the Supervising Professional, make decisions in writing on all claims of the City or the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the contract documents.

Section 37 - Storing Materials and Supplies

Materials and supplies may be stored at the site of the work at locations agreeable to the City unless specific exception is listed elsewhere in these documents. Ample way for foot traffic and drainage must be provided, and gutters must, at all times, be kept free from obstruction. Traffic on streets shall be interfered with as little as possible. The Contractor may not enter or occupy with agents, employees, tools, or material any private property without first obtaining written permission from its owner. A copy of the permission shall be furnished to the Supervising Professional.

Section 38 - Lands for Work

The Contractor shall provide, at its own expense and without liability to the City, any additional land and access that may be required for temporary construction facilities or for storage of materials.

Section 39 - Cleaning Up

The Contractor shall, as directed by the Supervising Professional, remove at its own expense from the City's property and from all public and private property all temporary structures, rubbish and waste materials resulting from its operations unless otherwise specifically approved, in writing, by the Supervising Professional.

Section 40 - Salvage

The Supervising Professional may designate for salvage any materials from existing structures or underground services. Materials so designated remain City property and shall be transported or stored at a location as the Supervising Professional may direct.

Section 41 - Night, Saturday or Sunday Work

No night or Sunday work (without prior written City approval) will be permitted except in the case of an emergency and then only to the extent absolutely necessary. The City may allow night work which, in the opinion of the Supervising Professional, can be satisfactorily performed at night. Night work is any work between 8:00 p.m. and 7:00 a.m. No Saturday work will be permitted unless the Contractor gives the Supervising Professional at least 48 hours but not more than 5 days notice of the Contractor's intention to work the upcoming Saturday.

Section 42 - Sales Taxes

Under State law the City is exempt from the assessment of State Sales Tax on its direct purchases. Contractors who acquire materials, equipment, supplies, etc. for incorporation in City projects are not likewise exempt. State Law shall prevail. The Bidder shall familiarize itself with the State Law and prepare its Bid accordingly. No extra payment will be allowed under this Contract for failure of the Contractor to make proper allowance in this bid for taxes it must pay.

Section 43

CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period _____, 20___, to _____, 20 , performed any work, furnished any materials, sustained any loss, damage or delay, or otherwise done anything in addition to the regular items (or executed change orders) set forth in the Contract titled _____, for which I shall ask, demand, sue for, or claim compensation or extension of time from the City, except as I hereby make claim for additional compensation or extension of time as set forth on the attached itemized statement. I further declare that I have paid all payroll obligations related to this Contract that have become due during the above period and that all invoices related to this Contract received more than 30 days prior to this declaration have been paid in full except as listed below.

There is/is not (Contractor please circle one and strike one as appropriate) an itemized statement attached regarding a request for additional compensation or extension of time.

_____ _____
Contractor Date

By _____
(Signature)

Its _____
(Title of Office)

Past due invoices, if any, are listed below.

Section 44

CONTRACTOR'S AFFIDAVIT

The undersigned Contractor,_____, represents that on _____, 20___, it was awarded a contract by the City of Ann Arbor, Michigan to_____ under the terms and conditions of a Contract titled _____. The Contractor represents that all work has now been accomplished and the Contract is complete.

The Contractor warrants and certifies that all of its indebtedness arising by reason of the Contract has been fully paid or satisfactorily secured; and that all claims from subcontractors and others for labor and material used in accomplishing the project, as well as all other claims arising from the performance of the Contract, have been fully paid or satisfactorily settled. The Contractor agrees that, if any claim should hereafter arise, it shall assume responsibility for it immediately upon request to do so by the City of Ann Arbor.

The Contractor, for valuable consideration received, does further waive, release and relinquish any and all claims or right of lien which the Contractor now has or may acquire upon the subject premises for labor and material used in the project owned by the City of Ann Arbor.

This affidavit is freely and voluntarily given with full knowledge of the facts.

_____ _____
Contractor Date

By _____
(Signature)

Its _____
(Title of Office)

Subscribed and sworn to before me, on this _____ day of _____, 20__
_____ , _____ County, Michigan
Notary Public
_____ County, MI
My commission expires on:

STANDARD SPECIFICATIONS

All work under this contract shall be performed in accordance with the **2024 Public Services Department Standard Specifications**. All work under this Contract which is not included in these Standard Specifications, or which is performed using modifications to these Standard Specifications, shall be performed in accordance with the Detailed Specifications included in these contract documents.

Standard Specifications are available online:

https://www.a2gov.org/departments/engineering/pages/engineering-and-contractor-resources.aspx

ATTACHMENT B
GENERAL DECLARATIONS

City of Ann Arbor
Guy C. Larcom Municipal Building
Ann Arbor, Michigan 48107

Ladies and Gentlemen:

The undersigned, as Bidder, declares that this Bid is made in good faith, without fraud or collusion with any person or persons bidding on the same Contract; that this Bidder has carefully read and examined the bid documents, including City Nondiscrimination requirements and Declaration of Compliance Form, Living Wage requirements and Declaration of Compliance Form, Prevailing Wage requirements and Declaration of Compliance Form, Vendor Conflict of Interest Form, Notice of Pre-Bid Conference, General Information, Bid, Bid Forms, Contract, Bond Forms, General Conditions, Standard Specifications, Detailed Specifications, all Addenda, and the Plans (if applicable) and understands them. The Bidder declares that it conducted a full investigation at the site and of the work proposed and is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

The Bidder acknowledges that it has not received or relied upon any representations or warrants of any nature whatsoever from the City of Ann Arbor, its agents or employees, and that this Bid is based solely upon the Bidder's own independent business judgment.

The undersigned proposes to perform all work shown on the plans or described in the bid documents, including any addenda issued, and to furnish all necessary machinery, tools, apparatus, and other means of construction to do all the work, furnish all the materials, and complete the work in strict accordance with all terms of the Contract of which this Bid is one part.

In accordance with these bid documents, and Addenda numbered _____, the undersigned, as Bidder, proposes to perform at the sites in and/or around Ann Arbor, Michigan, all the work included herein for the amounts set forth in the Bid Forms.

The Bidder declares that it has become fully familiar with the liquidated damage clauses for completion times and for compliance with City Code Chapter 112, understands and agrees that the liquidated damages are for the non-quantifiable aspects of non-compliance and do not cover actual damages that may be shown and agrees that if awarded the Contract, all liquidated damage clauses form part of the Contract.

The Bidder declares that it has become fully familiar with the provisions of Chapter 14, Section 1:320 (Prevailing wages) and Chapter 23 (Living Wage) of the Code of the City of Ann Arbor and that it understands and agrees to comply, to the extent applicable to employees providing services to the City under this Contract, with the wage and reporting requirements stated in the City Code provisions cited. Bidder certifies that the statements contained in the City Prevailing Wage and Living Wage Declaration of Compliance Forms are true and correct. Bidder further agrees that the cited provisions of Chapter 14 and Chapter 23 form a part of this Contract.

The Bidder declares that it has become familiar with the City Conflict of Interest Disclosure Form and certifies that the statement contained therein is true and correct.

The Bidder encloses a certified check or Bid Bond in the amount of 5% of the total of the Bid Price. The Bidder agrees both to contract for the work and to furnish the necessary Bonds and insurance documentation within 10 days after being notified of the acceptance of the Bid.

If this Bid is accepted by the City and the Bidder fails to contract and furnish the required Bonds and insurance documentation within 10 days after being notified of the acceptance of this Bid, then the Bidder shall be considered to have abandoned the Contract and the certified check or Bid Bond accompanying this Bid shall become due and payable to the City.

If the Bidder enters into the Contract in accordance with this Bid, or if this Bid is rejected, then the accompanying check or Bid Bond shall be returned to the Bidder.

In submitting this Bid, it is understood that the right is reserved by the City to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

SIGNED THIS _____ DAY OF _____, 202_.

_____	_____
Bidder's Name	Authorized Signature of Bidder
_____	_____
Official Address	(Print Name of Signer Above)
_____	_____
Telephone Number	Email Address for Award Notice

ATTACHMENT C
LEGAL STATUS OF BIDDER

(The bidder shall fill out the appropriate form and strike out the other three.)

Bidder declares that it is:

* A corporation organized and doing business under the laws of the State of _____, for whom _____, bearing the office title of_____, whose signature is affixed to this Bid, is authorized to execute contracts.

NOTE: If not incorporated in Michigan, please attach the corporation's Certificate of Authority

• A limited liability company doing business under the laws of the State of _____, whom _____ bearing the title of _____ whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

* A partnership, organized under the laws of the state of _____ and filed in the county of _____, whose members are (list all members and the street and mailing address of each) (attach separate sheet if necessary):

_____

_____

_____

_____

_____

* An individual, whose signature with address, is affixed to this Bid: __ _____
(initial here)

Authorized Official

_____ **Date** _____**,** 202_

(Print) Name _____ Title _____

Company:

_____

Address:

_____

Contact Phone ( ) _____ Fax ( ) _____

Email _____

ATTACHMENT D
PREVAILING WAGE DECLARATION OF COMPLIANCE

The "wage and employment requirements" of Section 1:320 of Chapter 14 of Title I of the Ann Arbor City Code mandates that the city not enter any contract, understanding or other arrangement for a public improvement for or on behalf of the city unless the contract provides that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. Where the contract and the Ann Arbor City Code are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used. Further, to the extent that any employees of the contractor providing services under this contract are not part of the class of craftsmen, mechanics and laborers who receive a prevailing wage in conformance with section 1:320 of Chapter 14 of Title I of the Code of the City of Ann Arbor, employees shall be paid a prescribed minimum level of compensation (i.e. Living Wage) for the time those employees perform work on the contract in conformance with section 1:815 of Chapter 23 of Title I of the Code of the City of Ann Arbor.

At the request of the city, any contractor or subcontractor shall provide satisfactory proof of compliance with this provision.

The Contractor agrees:

(a) To pay each of its employees whose wage level is required to comply with federal, state or local prevailing wage law, for work covered or funded by this contract with the City,

(b) To require each subcontractor performing work covered or funded by this contract with the City to pay each of its employees the applicable prescribed wage level under the conditions stated in subsection (a) or (b) above.

(c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.

(d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the wage and employment provisions of the Chapter 14 of the Ann Arbor City Code. The undersigned certifies that he/she has read and is familiar with the terms of Section 1:320 of Chapter 14 of the Ann Arbor City Code and by executing this Declaration of Compliance obligates his/her employer and any subcontractor employed by it to perform work on the contract to the wage and employment requirements stated herein. The undersigned further acknowledges and agrees that if it is found to be in violation of the wage and employment requirements of Section 1:320 of the Chapter 14 of the Ann Arbor City Code it shall has be deemed a material breach of the terms of the contract and grounds for termination of same by the City.

_____
Company Name

_____
Signature of Authorized Representative Date

_____
Print Name and Title

_____
Address, City, State, Zip

_____
Phone/Email address

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500

ATTACHMENT E
LIVING WAGE ORDINANCE DECLARATION OF COMPLIANCE

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than $10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than $10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than $10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here [___] *No. of employees__*

The Contractor or Grantee agrees:

(a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as $15.90/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than $17.73/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

Check the applicable box below which applies to your workforce

[___] Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits

[___] Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits

(b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.

(c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.

(d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.

(e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

_____	_____
Company Name	Street Address
_____ _____	_____
Signature of Authorized Representative Date	City, State, Zip
_____	_____
Print Name and Title	Phone/Email address

Attachment F

CITY OF ANN ARBOR
LIVING WAGE ORDINANCE

RATE EFFECTIVE APRIL 30, 2023 - ENDING APRIL 29, 2024

$15.90 per hour
If the employer provides health care benefits*

$17.73 per hour
If the employer does **NOT** provide health care benefits*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than $10,000 in a twelve-month period of time must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.

V.

W. ENFORCEMENT

X. The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than $500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed $.50 an hour for an average work week; and the employer cost or contribution must equal no less than $1/hr for the average work week.

The Law Requires Employers to Display This Poster Where Employees Can Readily See It.

For Additional Information or to File a Complaint contact
Colin Spencer at 734/794-6500 or cspencer@a2gov.org

Revised 2/1/2023

ATTACHEMENT G

Vendor Conflict of Interest Disclosure Form

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor's conflict of interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

Conflict of Interest Disclosure*	
Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest.	( ) Relationship to employee _____ ( ) Interest in vendor's company ( ) Other (please describe in box below)

*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:		
Vendor Name	**Vendor Phone Number**	
Signature of Vendor Authorized Representative	**Date**	**Printed Name of Vendor Authorized Representative**

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500, procurement@a2gov.org

ATTACHMENT H

DECLARATION OF COMPLIANCE

Non-Discrimination Ordinance

The "non discrimination by city contractors" provision of the City of Ann Arbor Non-Discrimination Ordinance (Ann Arbor City Code Chapter 112, Section 9:158) requires all contractors proposing to do business with the City to treat employees in a manner which provides equal employment opportunity and does not discriminate against any of their employees, any City employee working with them, or any applicant for employment on the basis of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight. It also requires that the contractors include a similar provision in all subcontracts that they execute for City work or programs.

In addition the City Non-Discrimination Ordinance requires that all contractors proposing to do business with the City of Ann Arbor must satisfy the contract compliance administrative policy adopted by the City Administrator. A copy of that policy may be obtained from the Purchasing Manager

The Contractor agrees:

(a) To comply with the terms of the City of Ann Arbor's Non-Discrimination Ordinance and contract compliance administrative policy, including but not limited to an acceptable affirmative action program if applicable.

(b) To post the City of Ann Arbor's Non-Discrimination Ordinance Notice in every work place or other location in which employees or other persons are contracted to provide services under a contract with the City.

(c) To provide documentation within the specified time frame in connection with any workforce verification, compliance review or complaint investigation.

(d) To permit access to employees and work sites to City representatives for the purposes of monitoring compliance, or investigating complaints of non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the Ann Arbor Non-Discrimination Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Non-Discrimination Ordinance, obligates the Contractor to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract.

_____
Company Name

_____
Signature of Authorized Representative Date

_____
Print Name and Title

_____
Address, City, State, Zip

_____
Phone/Email Address

Questions about the Notice or the City Administrative Policy, Please contact:
Procurement Office of the City of Ann Arbor
(734) 794-6500

ATTACHMENT I

CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

Relevant provisions of Chapter 112, Nondiscrimination, of the Ann Arbor City Code are included below.
You can review the entire ordinance at www.a2gov.org/humanrights.

Intent: It is the intent of the city that no individual be denied equal protection of the laws; nor shall any individual be denied the enjoyment of his or her civil or political rights or be discriminated against because of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight.

Discriminatory Employment Practices: No person shall discriminate in the hire, employment, compensation, work classifications, conditions or terms, promotion or demotion, or termination of employment of any individual. No person shall discriminate in limiting membership, conditions of membership or termination of membership in any labor union or apprenticeship program.

Discriminatory Effects: No person shall adopt, enforce or employ any policy or requirement which has the effect of creating unequal opportunities according to actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight for an individual to obtain housing, employment or public accommodation, except for a bona fide business necessity. Such a necessity does not arise due to a mere inconvenience or because of suspected objection to such a person by neighbors, customers or other persons.

Nondiscrimination by City Contractors: All contractors proposing to do business with the City of Ann Arbor shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All city contractors shall ensure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon any classification protected by this chapter. All contractors shall agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of any applicable protected classification. All contractors shall be required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the city.

Complaint Procedure: If any individual believes there has been a violation of this chapter, he/she may file a complaint with the City's Human Rights Commission. The complaint must be filed within 180 calendar days from the date of the individual's knowledge of the allegedly discriminatory action or 180 calendar days from the date when the individual should have known of the allegedly discriminatory action. A complaint that is not filed within this timeframe cannot be considered by the Human Rights Commission. To file a complaint, first complete the complaint form, which is available at www.a2gov.org/humanrights. Then submit it to the Human Rights Commission by e-mail (hrc@a2gov.org), by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107), or in person (City Clerk's Office). For further information, please call the commission at 734-794-6141 or e-mail the commission at hrc@a2gov.org.

Private Actions For Damages or Injunctive Relief: To the extent allowed by law, an individual who is the victim of discriminatory action in violation of this chapter may bring a civil action for appropriate injunctive relief or damages or both against the person(s) who acted in violation of this chapter.

THIS IS AN OFFICIAL GOVERNMENT NOTICE AND
MUST BE DISPLAYED WHERE EMPLOYEES CAN READILY SEE IT.

Michigan Department
Of Transportation
CP-347 (04/10)

MICHIGAN DEPARTMENT OF TRANSPORTATION

CERTIFIED PAYROLL

COMPLETION OF CERTIFIED PAYROLL FORM FULFILLS THE MINIMUM MDOT PREVAILING WAGE REQUIREMENTS

(1) NAME OF CONTRACTOR / SUBCONTRACTOR (CIRCLE ONE) | (2) ADDRESS

(3) PAYROLL NO. | (4) FOR WEEK ENDING | (5) PROJECT AND LOCATION | (6) CONTRACT ID

(a) EMPLOYEE INFORMATION	(b) WORK CLASSIFICATION	(c) Hour Type	(d) DAY AND DATE / HOURS WORKED ON PROJECT							(e) TOTAL HOURS ON PROJECT	(f) PROJECT RATE OF PAY	(g) PROJECT RATE OF FRINGE PAY	(h) GROSS PROJECT EARNED / GROSS WEEKLY EARNED	(i) TOTAL WEEKLY HOURS WORKED ALL JOBS	(j) DEDUCTIONS: FICA	FEDERAL	STATE		OTHER	TOTAL DEDUCT	(k) TOTAL WEEKLY WAGES PAID FOR ALL JOBS
NAME:										0			$0.00							$0.00	$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0											
NAME:										0			$0.00							$0.00	$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0											
NAME:										0			$0.00							$0.00	$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0											
NAME:										0			$0.00							$0.00	$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0											
NAME:										0			$0.00							$0.00	$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0											
NAME:										0			$0.00							$0.00	$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0											
NAME:										0			$0.00							$0.00	$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0											
NAME:										0			$0.00							$0.00	$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0											

Date _____

I, _____ _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,
all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Start. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ – in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ – Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
CERTIFIED PAYROLL COMPLIANCE AND REPORTING

Description. This detailed specification covers payroll reporting procedures to be followed by Contractors performing work on City public improvements projects, and the applicable sections of the City of Ann Arbor Code of Ordinances regarding payment of prevailing wages and its Prevailing Wage Compliance policy.

General. The Contractor will comply with all applicable sections of Federal and State prevailing wage laws, stated regulations, the City of Ann Arbor Code of Ordinances, and its Prevailing Wage Compliance Policy as defined within the contract documents. The Contractor and all first tier subcontractors shall provide the required certified payrolls, city-required declarations, and reports requested weekly.

The Contractor shall provide corrected copies of any submitted documents found to contain errors, omissions, inconsistencies, or other deficiencies that render the report invalid. Provide corrected copies when requested by the Supervising Professional within the timeframes outlined.

The Contractor shall attend any required meetings as needed to fully discuss and ensure compliance with the contract requirements regarding prevailing wage compliance.

The Contractor shall require all employees engaged in on-site work to participate in wage rate interviews and provide the requested information to the extent feasible and cooperate in the interview process. The City of Ann Arbor will provide language interpreters, if necessary, in order to perform wage rate interviews or other field investigations as needed.

Certified payrolls are required to be submitted through the current system being utilized by the City in the format required by said system. If a specialized system, other than email, is being utilized by the City for payroll submittal it will be at no additional cost to the contractor and will be covered in the preconstruction meeting.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PROJECT SCHEDULE

AA:NSH/AMW/NJB 1 of 3 01/15/2024

Complete the entirety of work under this Contract in accordance with, and subject to, the scheduling requirements as outlined below, and all other requirements of the Contract Documents.

Organize, coordinate, and diligently execute the work at the locations shown on the Schedule of Streets included herein. The schedule details the requirements, if any, for the Start of Work (on or after dates specified), the Completion of Work (on or before dates specified), For the purpose of this Contract, the “Start of Work” definition is the date when the temporary “No-Parking” signs become effective, and all required temporary traffic control and SESC measures are in place and ready for use. The city will consider individual streets or phases to be open to traffic once pavement markings are in place or once all structures covers are raised to finished grade. Within 10 days of opening the street to traffic the Contractor shall complete all work, which includes, but is not limited to, minor slope restoration, clean-up, street cleaning, utility structure cleaning, the removal of all temporary traffic control and SESC devices and temporary “No Parking” signs, and other necessary work and as directed by the Engineer. Failure to complete work in a timely manner may result in the suspension of active project work or a delay in starting subsequently planned project work.

No work shall be performed during Holiday weekends as follows, unless approved in advance by the Engineer:

- Memorial Day, from 3:00 p.m. Friday May 24, 2024, through 7:00 a.m. Tuesday May 28, 2024
- Fourth of July, from 3:00 p.m. Wednesday July 3, 2024, through 7:00 a.m. Friday July 5, 2024
- Labor Day, from 3:00 p.m. Friday August 30, 2024 through 7:00 a.m. Tuesday September 3, 2024

No work shall be performed on Saturday on which University of Michigan home football games are scheduled (see following dates); unless approved in advance by the Engineer:

- August 31, 2024
- September 7, 2024
- September 14, 2024
- September 21, 2024
- September 28,2024
- October 26, 2024
- November 2, 2024
- November 23, 2024

The Engineer shall limit the Contractor's work operations to **no more than four (4) streets under construction** at a given time. This is to provide reasonable limits for proper and thorough inspection, and to limit traffic control and/or safety concerns. The Contractor shall not have more

than four (4) operations occurring simultaneously at all locations during any workday unless approved the Engineer.

The City expects to furnish the Contractor with two (2) copies of the Contract, for its execution, on or before **April 2, 2024**, The Contractor shall properly execute both copies of the Contract and return them, with the required Bonds and Insurance documentation, to the City. The Contractor shall not begin the work before the applicable date(s) as described herein without approval from the Project Engineer, and in no case before the receipt of the fully executed Contract and Notice to Proceed.

By no later than **April 15, 2024**, the Contractor shall submit a detailed schedule of work (progress schedule) for the Engineer's review and approval. The progress schedule must meet the scheduling windows for each phase contained on the **Schedule of Streets**. The Contractor shall then provide a detailed schedule clearly indicating, the start and the finish date of each work task on each street. The Contractor shall update the progress schedule each week detailing the work taking place on each of the streets over the next two-week period. Engineer shall have an opportunity to review and approve the schedule in terms of; deviations from the most current, approved schedule, prior to the weekly progress meeting.

The Contractor shall begin the work of this project on or after **April 22, 2024**, and only upon receipt of the fully executed Contract, Notice to Proceed and approved Progress Schedule.

Complete the entire project on or before **November 16, 2024**. Completion of the project means all locations shown on the Schedule of Streets are complete and ready for use in accordance with the “Completion of Work” as defined above.

Failure to open to traffic or complete all work as specified within the times specified, including time extensions granted thereto as determined by the Engineer, shall entitle the City to deduct dollar amounts specified in the Schedule of Streets as “Liquidated Damages” from the payments due the Contractor. Liquidated damages of **$2,000 per calendar day** will be assessed per street for any streets not completed on time.

Time is of the essence in the performance of the work of this contract. The Contractor is expected to mobilize sufficient personnel and equipment and work throughout all authorized hours to complete the project by the intermediate (location specific) and final completion dates. Should the Contractor demonstrate that they must work on some Sundays in order to maintain the project schedule, they may do so between the hours of 9:00 a.m. and 5:00 p.m. with prior approval from the City. There will be no additional compensation due to the Contractor for work performed on Sundays. Any requests to work Sundays must be made to the Engineer no later than the prior Thursday.

The Engineer may delay or stop the work due to threatening weather conditions. No compensation shall be due the Contractor for unused materials or downtime due to rain, or the threat of rain. The Contractor is solely responsible for repairing all damage to the work and to the site, including any City infrastructure, and any adjacent properties resulting from its decision to work in the rain.

The Contractor shall not work in the dark except as approved by the Engineer and shall provide lighting for night work as detailed elsewhere in this contract. The Engineer may stop the work or may require the Contractor to defer certain work to another day, if, in the Engineer's opinion, the Contractor cannot be complete the work within the remaining daylight hours, or if inadequate daylight is present to properly perform or inspect the work. No compensation shall be due to the

Contractor for unused materials or downtime, when the Engineer directs work stoppage for reasons due to darkness and/or inadequate remaining daylight. The Contractor is solely responsible for repairing all damages to the work and to the site, including any City infrastructure, and any adjacent properties, which result from working in the dark.

Assessment of Liquidated Damages will occur until the required work is complete in the current construction season. If, with the Engineer's approval, work on any individual street extends beyond seasonal limitations, the assessment of Liquidated Damages will discontinue until the work resumes in the following construction season.

If the construction contract is not complete within the specified period(s) including any extensions of time granted thereto, at the sole discretion of the City of Ann Arbor it may terminate the Contract. Should this occur no additional compensation will be due to the Contractor, and the Contractor may be forbidden to bid on future City of Ann Arbor projects for a period of at least three (3) years. If the Engineer elects to terminate the Contract, payment for contract items with a Lump Sum unit price will be up to a maximum amount equal to the percentage of the contract work that is complete at the time of termination.

The City's decision to delete streets, add streets, change the construction limits on streets, or, the City's contribution to a delay of the construction on any one street shall not entitle the Contractor to receive additional compensation for work on any other street(s) or phase(s), nor shall it relieve the Contractor of any responsibilities for completion of work on any other street(s) or phase(s).

Include any/all efforts to organize, coordinate, and schedule the project work in the contract unit price bid for the pay item **General Conditions, Max $___**.

2024 Resurfacing
Schedule of Streets

Phase	Duration	Neighbourhood / Type	Street	From	To
1	April 11- May 18	Pathway	Earhart	Glazier Way	Kipling
1	April 11- May 18	Pathway	Glazier Way	Earhart	Tremont
2	May 20 - June 1	Bond St	Northbrook	Ann Arbor Saline Dr	End
3	June 3- June 22	Lakewood	Andrea Ct.	Lakewood	Gralake
3	June 3- June 22	Lakewood	Highlake Part 1	300 ft S of Lakeview	End
3	June 3- June 22	Lakewood	Hilltop Dr	Highlake	to Bend past Gralake
3	June 3- June 22	Lakewood	Lake Park Ln	McCotter	End of Pavt
3	June 3- June 22	Lakewood	McCotter Dr	Park Lake	Lakewood
4	June 24- Aug 30	Lakewood	Dolph Dr/Central Ave	Sunnywood	Hazelwood
4	June 24- Aug 30	Lakewood	Gralake	Jackson	End
4	June 24- Aug 30	Lakewood	Highlake Part 2	Jackson	300 ft S of Lakeview
4	June 24- Aug 30	Lakewood	Lakeview Dr	Parklake	Highlake
4	June 24- Aug 30	Lakewood	Lakewood Dr	Park Lake	Gralake
4	June 24- Aug 30	Lakewood	Mason Ave	Jackson	End
4	June 24- Aug 30	Lakewood	Parklake Ave	Jackson	Lakeview
4	June 24- Aug 30	Lakewood	Sunnywood Dr	Dolph	Highlake
5	Sept 3-Sept 7	Major St	N. Ashley Street	Kingsly	Miller
6	Sept 9 - Sept 28	Bond St	Page Ave	Harpst	End
7	Sept 30- Oct 12	Bond St	Yost	Parkwood/Darrow	End
8	Oct 14- Nov 2	Burwood	Burwood Ave	Jackson	Liberty
9	Nov 4- Nov 16	Traffic Calming	Baldwin	Packard	Stadium
9	Nov 4- Nov 16	Traffic Calming	Fulmer	Miller	Foss
9	Nov 4- Nov 16	Traffic Calming	Grandview	Dexter	Jackson
9	Nov 4- Nov 16	Traffic Calming	Manchester	Needham	Buckingham

2024 Resurfacing Program

- May Ph 1 Pathways Earhart & Glazier Way
- May Ph 2 Northbrook Bond
- May Ph 3 Lkwd Sub, Highlake Pt 1, Hilltop and All 3 Alleys Andrea, Lake Park, McCotter
- Jun Aug Ph 4 Lkwd Sub, Mason, Gralake, Lkview, Lkwood, Sunnywd, Central/ Dolph, Park Lake
- Sep Ph 5 Ashley
- Sep Ph 6 Page Sidewalk & Bond
- Oct Ph 7 Yost Bond
- Oct Ph 8 Burwood
- Nov Ph 9 Fulmer/ Baldwin/ Manchester/ Grandview Traffic Calming Program

April 2024

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

May 2024

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

June 2024

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

July 2024

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

August 2024

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

September 2024

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

October 2024

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

November 2024

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

December 2024

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
VACUUM TYPE CLEANING

a. Description. This work includes furnishing and operating throughout the construction period, vacuum type street cleaning and utility structure cleaning equipment (Vac-All, Vactor, etc.) approved by the Engineer, as and when directed by the Engineer for dust control, for dirt/debris control, and for street cleaning immediately prior to paving, and for street and utility structure cleaning after any and all paving.

b. Materials. None specified.

c. Construction. The Contractor shall furnish and operate throughout the construction period, vacuum type street cleaning and utility structure cleaning equipment (Vac-All, Vactor, etc.) approved by the Engineer. When directed by the Engineer, the Contract shall use this equipment to control dust, dirt, and other debris within the project limits and beyond as required, to clean streets surfaces immediately prior to placing HMA pavement mixtures, and for street and utility structure cleaning after any and all paving. The cleaning equipment shall be of sufficient power to remove dust, dirt, and debris from the pavement and from utility structures in and adjacent to the construction area.

d. Measurement and Payment. Measurement and pay for this item of work, as described, at the contract unit price using the following pay item:

Pay Item	Pay Unit
Vacuum Type Cleaning…….….	Lump Sum

"**Vacuum Type Cleaning**" will be paid on a pro-rata basis at the time of each progress payment. Measurement will be based on the ratio between work completed during the payment period and the total contract amount. When all of the work of this Contract has been completed, the measurement of this item shall be 1.0 Lump Sum, minus any deductions incurred for inadequate performance as allowed by the contract. This amount will not be increased for any reason, including, but not limited to: extensions of time, agreed-upon extra costs, additional work added to the contract, adjustments to unit prices; and all similar additions to the contract.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) FACILITIES

DESCRIPTION

This work consists of furnishing, installing, maintaining, relocating, and removing temporary pedestrian ramps, mats, and channelizers as identified in the proposal or on the plans. Use TPAR facilities to facilitate pedestrian travel on accessible facilities over curbs or other uneven terrain features with a vertical difference of 1/2 inch or greater. Damaged pedestrian facilities will be replaced as directed by the Engineer.

MATERIALS

A. Temporary Pedestrian Ramp

Provide materials to construct a temporary pedestrian ramp in accordance with the *Americans with Disabilities Act (ADA)*, the standard specifications, and the following:

1. Ensure the material used to construct the temporary pedestrian ramp is firm, stable, skid resistant, and forms a continuous hard surface. Ensure the surface does not warp, buckle or otherwise become uneven, and materials support the weight of pedestrians as well as motorized scooters and wheelchairs. Suitable materials to construct the surface of the ramp include asphalt materials, Oriented Strand Board (OSB) or plywood, dimensional lumber, certain reclaimed or other materials as approved by the Engineer. Compacted soils, aggregate and sand are prohibited.

2. Provide a handrail on both sides of the ramp if the ramp is not exposed to vehicle traffic and has a total rise greater than 6 inches, and a length greater than 72 inches. Ensure the handrail is between 1.25 and 1.5 inches wide and configured to be a “graspable” cross-section. See construction subsection 2.A for additional details. When the ramp is exposed to traffic, in lieu of handrails, use a protective edge 2.5 inches minimum height above the ramp surface or 1:10 flare on both sides of the ramp.

3. Ensure the surface of the ramp is free draining; in addition provide features that allow drainage to move past the ramp installation (i.e. along the gutter pan underneath the ramp if the ramp is installed on a curb).

4. Provide materials to construct detectable edging along open sides of the ramp if required.

5. If asphalt materials are not used to construct the surface of the ramp, provide an antiskid coating or surface treatment approved by the Engineer.

B. Temporary Pedestrian Mat

Provide materials for a temporary pedestrian mat in accordance with the *Americans with Disabilities Act (ADA)*, the standard specifications, and the following:

1. Ensure the material used for the temporary pedestrian mat is firm, stable, skid resistant, and forms a continuous hard surface. Ensure the surface does not warp,

buckle or otherwise become uneven, and materials support the weight of pedestrians as well as motorized scooters and wheelchairs. Suitable materials will be determined by the Engineer after shop drawings or products information is provided.

2. Mats shall be at least 60 inches wide and not have traversable edges more than ½ inch high.

3. Ensure the surface of the mat is free draining.

C. Pedestrian Channelizing Device

Provide materials for a temporary pedestrian channelizing device in accordance with the *Americans with Disabilities Act (ADA)*, the standard specifications, and the following:

1. Upper surface shall be smooth, continuous for hand-trailing.
2. Detectible bottom edge shall be continuous, and space between the bottom and ground shall be less than 2 inches;
3. Ballast shall be located behind or internal to the device, and no support exceeding 0.5 inches in height shall protrude into the protected access route.
4. Devices shall interlock to ensure continuity of guidance.
5. Device shall be injection molded plastic orange with high visibility reflective decals along both faces

CONSTRUCTION METHOD

Construct the temporary pedestrian ramp in accordance with the manufacturer's recommendations (if applicable), *ADA*, the plans, and the following:

1. Ensure the useable surface of the ramp is 48 inches wide and does not deflect due to pedestrian traffic. Ensure an anti-skid surface treatment is applied to the useable area of the ramp if it is not made from asphalt materials. The maximum cross slope of the ramp is 2 percent. Ensure both ends of the ramp smoothly transitions to the adjacent surface, with 1/4 inch or less vertical difference.

   Construct the ramp to maintain a longitudinal slope from 1:10 to 1:12 where possible. Otherwise, a longitudinal slope from 1:8 to 1:10 may be used for a maximum rise of 3 inches. Temporary pedestrian ramps with longitudinal slopes greater than 1:8 are prohibited.

   A. Provide a handrail on both sides of the ramp if required as stated herein. Ensure the top of the handrail is between 34 and 38 inches above the surface of the ramp. Ensure a minimum width of 36 inches is maintained between the handrails, with a minimum clearance of 1.5 inches behind and 18 inches above.

      Construct the handrail such that the bending stress applied by a bending moment created by a 250 pound force is less than the allowable stress for the materials and the construction of the handrail. Construct the handrail to withstand the shear

stress induced by a 250 pound force. Ensure all fasteners, mounting devices and support structures are also able to withstand shear stress induced by a 250 pound force.

2. Construct a detectable edging anytime a handrail is required, and anytime the path changes direction. This includes a turn onto the ramp from the path. Detectable edging must begin a maximum of 2.5 inches above the ramp surface, and extend at least 6 inches above the ramp surface.

3. Ensure a clear space (minimum 48 inches by 48 inches) is provided above and below the ramp.

4. Avoid locating ramps in areas of drainage collection, ponding or running water, which can produce slippery or unsafe conditions. If the ramp is located over a gutter pan or other drainage structure, provide features to facilitate water movement around or under the ramp as approved by the Engineer.

5. Ensure all debris and construction material is cleared from the surface of the ramp throughout its use. Ensure snow and ice is removed; the use of an approved de-icing agent may be required. Repair or replace the ramp if it becomes uneven, unstable, or displaces due to weather events, construction activities, or other causes as directed by the Engineer.

MEASUREMENT AND PAYMENT

All TPAR facilities furnished by the Contractor shall remain the property of the Contractor. The City shall not be responsible for stolen or damaged ramps, mats, channelizers, or other TPAR items. The Contractor shall replace missing TPAR facilities immediately, at no additional cost to the City.

Mats, shall be paid for by center line foot of the maximum used project wide.

Channelizing Devices, shall be paid for by each (up to 5 ft wide unit), maximum used project wide.

Ramps that are fabricated and reusable, payment shall be for the maximum quantity used at any one time. Ramps that are constructed at each location with suitable material that cannot be relocated, such as HMA, shall be will be paid for at each location.

The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	**Pay Unit**
Temporary Pedestrian Ramp, Furn and Oper	Each
Temporary Pedestrian Mat, Furn and Oper	Feet
Pedestrian Channelizer Device, Furn and Oper	Each

TPAR Facilities unit prices include all labor, equipment, and materials to furnish, install and remove temporary pedestrian ramps and mats at the locations shown on the plans, as well as all costs for maintaining, clearing debris, deicing, reconfiguring, and relocating the temporary pedestrian ramps and mats throughout the life of the contract.

Costs for transporting ramps, mats, and channelizers shall be included in the bid prices for the individual items of work.

Additional re-installation of each device, operation of these items, shall be to be included in “Minor Traffic Control, Max $____”.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
TREE TRIMMING

AA: AMW 1 of 1 01/15/2024

a. **Description.** The work shall consist of trimming trees to remove limbs and branches in accordance with section 201 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, the City of Ann Arbor Standard Specifications and/or as directed by the Engineer.

b. **Materials.** None specified.

c. **Construction.** Trees identified to be trimmed will be communicated with the Contractor by the Engineer. Any damage to the trees or to adjacent trees by the Contractor's operations will be addressed at the Contractor's expense, as directed by the Engineer.

   Oak trees shall be trimmed between the months of November 1 and March 15. If oak trees are pruned or damaged outside of those months, immediately cover all wounds and pruning cuts with sealant as directed on the container and contact City Forestry.

   Provide tree trimmers, aerial tower truck, chipper, chain saws, and other equipment necessary to do the required work. Remove cut limbs from the site.

d. **Measurement and Payment.** The completed work, as described, will be measured, and paid for at the contract unit price using the following pay item:

Pay Item	**Pay Unit**
Tree Trimming	Dollars

Tree Trimming will be paid when invoices and necessary documentation are submitted; and will include all labor, materials, and equipment necessary to complete the trimming, removal and disposal as directed by the Engineer.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
COLD MILLING FOR CONCRETE CURB AND GUTTER REVEAL

AA:NJB 1 of 1 1/18/2024

a. Description. This work consists of cold milling existing concrete curb and gutter areas overlaid with HMA material to reveal the edge-of-metal of the curb and gutter in advance of the rest of the roads cold milling. The idea being it will allow for a condition inspection in advance of the curb repair effort. Work to be done in accordance with section 501 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, as directed by the Engineer, and as described herein.

b. Materials. None specified.

c. Construction. Perform localized cold milling along the concrete gutter pan overlaid with HMA to reveal the edge-of-metal of the existing concrete curb and gutter. Perform this work in accordance with subsection 501.03 of the MDOT 2020 Standard Specifications for Construction, and as directed by the Engineer at the location designated by the Engineer. Perform subsequent handwork and/or necessary machine work to remove HMA overlay material from the gutter pan, and dispose of this material properly.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price using the following pay item:

Pay Item	**Pay Unit**
Cold Milling for Concrete Curb and Gutter Reveal	Syd

Measure **Cold Milling for Concrete Curb and Gutter Reveal** by square yards of gutter pan revealed, unit price includes the cost for all labor, equipment and materials required to remove, load, haul, and dispose of the cold milled material, and sweeping of the cold milled surface.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
HMA PAVEMENT REPAIR

AA:NJB 1 of 1 1/18/2024

a. Description. This work consists of repairing areas of failed asphalt pavement in partial depth, cold milling removal of existing pavement and placing new hot mix asphalt (HMA) material as directed by the Engineer. 2024 Standard Specifications Article 10 (Construction Specifications), III (Street Construction and Repair), D (Pavement Removal), accept as specified herein.

b. Materials. None

c. Construction. Remove additional area of HMA by running a second pass of the Cold Milling equipment over the identified area and to a depth as required by the Engineer on site.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the respective contract unit prices using the following respective pay items:

Pay Item	**Pay Unit**
Cold Milling, Plunge Cut	Square Yard

Measure **Cold Milling, Plunge Cut** area by the unit square yard based on average width and length of the repair area and pay for it at the contract unit price, which price includes the cost for all labor, equipment and materials required to remove, load, haul, and dispose of the cold milled material, and cleaning the cold milled edges and bottom of milling surface if applicable.

Measure Hand Patching, by weight in tons of the material used to perform the work and pay for it at the contract unit price, which prices includes the cost for all labor, equipment and materials to complete the placement of small areas of restoration HMA work including providing, placing by hand or other methods, and compacting the HMA mixture in areas were Cold Milling, Plunge Cut HMA was removal.

CITY OF ANN ARBOR
DETIALED SPECIFICATION
FOR
REMOVING HOT MIX ASPHALT AROUND STRUCTURE COVERS

AA:DAD 1 of 1 02/25/18

a. Description. This work consists of removing hot mix asphalt (HMA) from around existing (not lowered) structure covers during the cold milling operations, as required and as herein provided, whether structures are shown or not shown on the plans. Covers include those used for storm, sanitary, and water structures, gate and monument boxes, and other private utility structures.

This item does not apply to locations (streets) where structures have been temporary lowered in advance of the cold milling operations.

b. Materials. None specified.

c. Construction. Remove HMA surface adjacent to structure covers to the same depth as the cold milled surface without the removal of the aggregate or concrete base. Complete work in accordance with subsections 204.03 and 501.03 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, and as directed by the Engineer.

Remove HMA surface, any thickness, from around existing structure covers using a milling machine, and/or hand tools, or other means as approved by the Engineer. Repair or replacement of any structure covers damaged during this operation is the sole responsibility of the Contractor.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price for the following pay item:

Pay Item	**Pay Unit**
HMA Surface, Around Structure Cover, Rem	Each

Measure **HMA Surface, Around Structure Cover, Rem** individually in place by the unit each and pay for it at the contract unit price, which price includes all cost for labor, equipment and materials necessary to complete the work.

The number of castings within the milling limits shall constitute the final amount. Measurement shall take place with both the Engineer and the Contractor (or their agents) present.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
GRADING SIDEWALKS, SIDEWALK RAMPS, AND DRIVEWAYS

AA:DAD/AMW 1 of 1 12/07/2023

a. Description. Remove miscellaneous structures and materials, and complete all earthwork required to construct new and replacement sidewalks, sidewalk ramps and driveway approaches to the lines and grades shown on the plans and/or as directed by the Engineer. Complete this work according to the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, this detailed specification, and as directed by the Engineer.

b. Materials. Provide materials in accordance with subsection 205.02 of the MDOT 2020 Standard Specifications for Construction as necessary to achieve the required cross section(s). The Contractor may use excavated material, if suitable, as embankment with approval by the Engineer.

c. Construction. Complete this work, as applicable, according to subsection 205.03 of the MDOT 2020 Standard Specifications for Construction. Grading for sidewalks, sidewalk ramps and driveway approaches includes, but is not limited to, the following work:

1. Stripping and stockpiling topsoil for use in turf establishment as approved.
2. Removing rocks or boulders less than 0.5 cubic yards in volume.
3. Excavating material to a depth necessary for construction.
4. Disposing of excess and unsuitable material according to section 205 of the MDOT 2020 Standards Specifications for Construction.
5. Shaping, grading, and compacting the subgrade to proposed grades to prepare it for embankment, subbase or aggregate base bedding materials or for an aggregate surface course.
6. Furnishing and placing embankment material to the grades necessary for construction.
7. Shaping, grading, and compacting embankment to proposed grades to prepare it for subbase or aggregate base bedding materials or for an aggregate surface course.
8. Matching new sidewalk, sidewalk ramp, and driveway approach grades with existing grades as required.
9. Removal of shrubs, brush, and trees less than 6” diameter (DBH) as shown on the plan sheets or as directed by Engineer;

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price using the following pay item:

Pay Item	**Pay Unit**
Grading, Sidewalk, Ramp & Driveway Approach	Square Foot

Measure **Grading, Sidewalk**, **Ramp & Driveway Approach** areas in place by the unit square foot and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials necessary to complete the work.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
GRADING ROADWAY

AA:NJB 1 of 2 1/23/24

a. Description. The pay item “Grading Roadway” shall be used to for effort in motor grading and compact the aggregate base in preparation for placing HMA base material. Effort shall be in accordance with 2024 Standard Specification Article 10 (Construction Specifications) Section III (Street Construction and Repair). G (Subgrade, Subbase and Base Construction) except as specified herein.

Areas that are deemed by the Engineer to require subgrade undercutting with engineered backfill to provide a stable subgrade shall be paid for as “**Undercutting, Type II _, Cyd**”.

Areas where more HMA is removed than the new proposed cross section shall be built up and paid for as “**Aggregate Base Course, 21AA, CIP, Ton”.**

b. Materials. No Materials

c. Construction Method. The Contractor shall hone the grade edge of metal to edge of metal where curb and gutter exist or 12 inches past proposed edge of pavement. Working with existing aggregate materials to develop the typical and/or detailed cross-section(s) as shown on the Plans, as detailed in the Specifications, and as directed by the Engineer. This shall include, but not be limited to, the excavation of miscellaneous concrete and miscellaneous HMA pavement, soil, rocks of any size, and bricks; the removal and proper disposal off-site of surplus excavated material; the scarifying, of existing aggregate base, the trimming, grading, compaction and proof-rolling of the prepared subgrade; the full depth saw-cutting of pavement at the removal limits. Road subbase and base materials imported shall be paid for separately.

The Contractor shall add to, re-shape, re-grade, and re-compact the existing roadbed materials, and shall construct the roadway to the cross-section(s) as indicated on the Plans, as detailed in the Specifications, and as directed by the Engineer. The Contractor shall use blade graders, vibratory rollers, and/or other equipment as necessary and as directed by the Engineer, for this work. Use of each specific piece of equipment is subject to the approval of the Engineer.

The Contractor shall remove, dispose, all bricks, if present, as directed by the Engineer.

Signs in the grading limits shall be salvaged and provided to City as directed by the Engineer.

The Contractor shall move exiting or imported materials longitudinally and/or transversely where necessary, and as directed by Engineer.

The Contractor shall keep the work well graded and drained at all times.

The Contractor is solely responsible for the maintenance and protection of the subgrade. Further, any damage to the subgrade which, in the opinion of the Engineer, is caused as a result of the Contractor's operation(s), or its subcontractors' or suppliers' operation(s), shall be repaired by the Contractor at the Contractor's expense. This includes any additional earthwork and/or maintenance materials as directed by the Engineer, for the purposes of the Contractor's maintenance and protection of the subgrade. The Contractor shall not be entitled to any additional compensation for the implementation of these procedures.

The Contractor shall proof roll all graded and compacted surfaces in the presence of the Engineer as detailed in the Specifications. The Engineer will monitor the proof rolling operation to locate deleterious and/or uncompacted materials and will direct undercuts, as necessary.

The Contractor shall coordinate with the City Forester prior to the removal of any tree roots 2-inch or larger in size.

d. Measurement and Payment. Measurement for payment for the item "**Grading Roadway**" shall be measured as the area between edge of metal to edge of metal in curb and gutter section, or 12 inches beyond proposed edge of pavement only of the area worked.

The completed work as measured for this item of work will be paid for at the Contract unit price for the following Contract (Pay) Item:

Contract Item (Pay Item)	**Pay Unit**
Grading Roadway	Square Yard

The pay item **Grading Roadway** shall be measured in square yards for all the work specified herein, the complete the fine grading of the aggregate prior to the placement of HMA.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
SUBGRADE UNDERCUTTING

a. Description. This work includes removal of unsuitable subgrade material(s) in the areas and limits identified by the Engineer. It also includes installing geotextile and/or geogrid as necessary and backfilling to replace these material(s) and remedy the unstable soil conditions in accordance with the 2020 MDOT Standard Specifications for Construction, and the City of Ann Arbor Public Services Department Standard Specifications, except as modified herein.

b. Materials. Provide Granular Material Class II or 21AA dense-graded aggregate materials in accordance with those specified in section 902 of the MDOT 2020 Standard Specifications for Construction.

Provide Coarse Aggregate 3x1 in accordance with sections 902 and 916 the MDOT 2020 Standard Specifications for Construction, except as modified herein. Coarse crushed aggregate must consist of a well graded crushed natural aggregate ranging from one (1) inch to three (3) inch inches in size with no more than 7 percent by weight passing the No. 200 sieve. Coarse aggregate crushed content must be at least 95%.

Provide woven stabilization geotextile in accordance with section 910 of the MDOT 2020 Standard Specifications for Construction.

Provide road grade biaxial geogrid materials in accordance with section 910 of the MDOT 2020 Standard Specifications for Construction.

c. Construction. Use construction methods as described in subsection 205.03.E of the MDOT 2020 Standard Specifications for Construction, and as directed by the Engineer.

After either removing the pavement, performing rough/finish grading, and/or at the time of proof rolling, the Engineer will inspect the grade to determine the need for, and the limits of, undercuts. Excavate to the required depth, trim, shape, and re-compact the undercut areas as directed by the Engineer. Properly dispose of all excess materials.

Backfill areas of Undercutting, Type IIA with class 21AA dense-graded aggregate, areas of Undercutting, Type IIB with Granular Material Class II, and areas Undercutting, Type IIC with Coarse Aggregate 3x1 unless directed otherwise by the Engineer.

Place stabilization geotextile and/or structural geogrid as directed by the Engineer in areas where subgrade soils require added stability over a roughly level surface. Where the width of the role allows geosythetics shall be placed in the middle of the trench and extra width allowed to be placed vertically along the trench wall. Place stabilization geotextile as directed by the Engineer in areas where is the potential of intermixing of dissimilar materials.

Place and compact the aggregate fill in maximum lifts of not more than 12 inches thick. At the discretion of the Engineer, aggregate fill lifts of up to 24 inches may be allowed based on the assessment of subgrade soil conditions.

Compact undercutting backfill material (>12 inches below the finish base grade) to not less than 95% of its maximum unit weight. Compact undercutting backfill material (≤12 inches below the

finish base grade) to not less than 98% of its maximum unit weight. Determine the maximum unit weight of backfill materials using the AASHTO T-180 test.

The Engineer may elect to use one or more types of undercutting to address poor soil conditions identified in a specific area of the project.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit prices using the following pay items:

Pay Item	**Pay Unit**
Undercutting, Type IIA	Cubic Yard
Undercutting, Type IIB	Cubic Yard
Undercutting, Type IIC	Cubic Yard
Geotextile, ____ Fabric	Square Yard
Geogrid	Square Yard

Measure **Subgrade Undercutting, Type IIA**, **Subgrade Undercutting, Type IIB**, and **Subgrade Undercutting, Type IIC** volumes in place by the unit cubic yard and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials necessary to complete the work.

When one or more than types of undercutting are used to address poor soil conditions identified in a specific area of the project, each type will be measured and paid for separately.

Measure **Geotextile, ____ Fabric** and **Geogrid** in the field by length and width of material installed. Material going up the sides of the trench will be included.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
STRUCTURE COVER ADJUSTMENTS

a. Description. This work shall consist of adjusting structures covers including handholes, water valve boxes, and monument boxes within the full depth pavement surface. This references the 2024 Standard Specifications, except as modified herein.

b. Materials. Use of Concrete MDOT P-NC grade, concrete rings outside diameter matching the outside diameter of the manhole, and mortar.

c. Construction. Contractor shall follow the Standard Specification Article 10 (Construction Specifications), II U (Structure Adjustment). Breakdown the existing cover and corbel masonry so that the steel plate is set 12-inch below the existing surface. The existing frame and cover if in sound condition shall be cleaned up, concrete removed if necessary by hand chipper, and set aside for re-use. Backfill plate and hole with sufficient 21 AA aggregate.

After the wearing course has been placed the Contractor shall use a skid-steer with attached hydraulically mechanical circular core saw system to saw pavement full depth and adjust the casting. HMA surface will be cored with the structure cover centered in the collar. The diameter of the collar shall be 4 feet for 24-inch diameter cover and a 2 ft diameter core for water boxes and monument boxes.

After coring remove the material down to the steel plate, remove the plate and build up the corbel with concrete rings set in mortal, to support the frame to match the finish grade and cross slope. Backfill area between the core face and frame with concrete.

If the existing casting frame is in sound condition, it shall be re-used, if agreed upon by the Engineer that the frame cannot be reused a new frame shall be set and paid for separately under “Structure Frame”.

Concrete surface shall be broom finished and four joints tooled in at a cross pattern. Care shall be taken to keep the HMA surface clean by placing plastic sheeting down at the work area.

Frames and Covers which cannot be reused shall be delivered to the City Utilities Department yard at 4251 Stone School Road (Wheeler Center) at the Contractor’s expense.

Materials shall be stored by the Contractor at locations arranged by the Contractor, subject to the approval of the Engineer. The Contractor shall not store materials or equipment, including metal castings and steel plates, on any lawn area.

Hidden, or unknown utility structures may be encountered during the work. It is the Contractor's responsibility to inform the respective utility owner(s) of such findings. In such instances, the City may direct the Contractor to adjust the structure(s) to grade. This work will be paid as “Adjust Structure Cover”. Contractor shall be responsible for marking 2 witness points, which they can used to determine the center point after wearing course placement.

The pointing of structures below the limits required for “Adjust Structure Cover” shall be paid for separately as “Dr Structure, Point”.

A thermoplastic concrete form may be used for a cast-in-place concrete structure riser/collar, as approved by the Engineer. The thermoplastic shall be of sufficient thickness to support the casting frame and cover through the placement of the supporting concrete.

This item includes the final adjustment of castings of any type to their respective finished elevations, up or down. All materials required to make the adjustments shall be included in this item of work. All underground structure covers shall be adjusted such that their finished surface elevation is within ¼-inch of the finished surface sections, grades, slopes, and elevations, as shown on the Plans, and as directed by the Engineer. The work shall be verified by the use of a 10-foot straight-edge placed parallel with the pavement centerline. Structures not meeting the ¼-inch tolerance shall be readjusted as directed by the Engineer, at the Contractor's expense.

This also includes the replacement of the top half of the water valve boxes and monument boxes where required and shall be included in this item of work. Gate valve box tops and covers shall be reused, except when broken or directed by the Engineer. New tops and covers for water valve boxes and monument boxes will be provided by the City. The Contractor shall collect and transport new valve boxes and covers to the site from the City Utilities Department yard at 4251 Stone School Road (Wheeler Center).

d. Measurement and Payment. The completed work, as described, will be measured, and paid for at the approved price for the following pay item:

Contract Item (Pay Item)	Pay Unit
Adjust Structure Cover	Each
Structure Frame	Each
Adjust Monument Box or Gate Valve Box	Each

Measure **Adjust Structure Cover** by unit each for each structure, item shall include all labor, material, and equipment costs required to breakdown the structure remove the cover and frame and remove corbel to depth, clean the frame if re-usable, supply and place steel plate, backfill with gravel, collect and handle frame and covers; after wearing course placed, core 4 ft diameter hole and excavate down to the steel plate, remove plate, rebuild corbel, set frame, supply and place concrete collar, finish and clean up.

Measure **Structure Frame** by unit each for each casting structure cover furnished and placed, item shall include all labor, materials and equipment to transport and set at a structure. Effort to set frame in mortar and adjust corbel shall be part of the "Adjust Structure Cover" pay item.

Measure **Adjust Monument Box and Gate Valve Box** by unit each by unit each for each box, item shall include all labor, material, and equipment costs required to breakdown the structure remove the cover and frame and lower box, supply and place steel plate, backfill with gravel, collect replacement box and cover if needed from PW yard or collect and handle box and covers; after wearing course placed, core 2 ft diameter hole and excavate down to the steel plate, remove plate, adjust box to height, supply and place concrete collar, finish and clean up.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
STRUCTURE COVERS

a. **Description.** This work shall consist of replacing and furnishing frames and covers for utility (storm, sanitary, and water) structures as shown on the plans and as directed by the Engineer, in accordance with Section 403 of the 2020 MDOT Standard Specifications for Construction and the City of Ann Arbor Public Services Department Standard Specifications, except as modified herein.

b. **Materials.** Provide materials meeting the requirements of subsection 403.02 and section 908 of the MDOT 2020 Standard Specifications. Provide frames and covers conforming to the model(s) shown in the table below, or equivalent approved by the Engineer.

Type of Casting	Use	EJ No.
Frame and Cover	Sanitary	1040AGS
Manhole Frame and Cover	Storm and Water	1040 w/ Type A Cover Type M1
Curb Inlet/Catch Basin Frame and Cover	Barrier curb & gutter	7045Z w/ 7045M1 Sinusoidal Grate
Curb Inlet/ Double Catch Basin Frame and Cover	Low point Barrier curb and gutter	7034Z w/7030 M2 Cubic Grate
Curb Inlet/Catch Basin Frame and Cover	Mountable curb & gutter	7065 w/ 7045M1 Sinusoidal Grate
Flat Inlet Frame and Cover	Driveway	5000 w/ Type M2 Sinusoidal Grate
Inlet/Catch Basin Frame and Cover	Beehive	1040Z O2 6” Tall, Black coated
Valve Box and Cover	Water Valve	8560 Screw Type 3 Piece Valve Box Set D

Frames and covers shall have machined bearing surfaces and City of Ann Arbor custom logo. Each cover shall have the word "SANITARY", “STORM”, “WATER”.

c. **Construction.** All work shall be performed in accordance with subsection 403.03 of the MDOT 2020 Standard Specifications.

The Contractor shall store materials on site and/or at locations arranged by the Contractor, subject to the approval of the Engineer. The Contractor shall not store materials or equipment, including metal castings and steel plates, on any lawn areas.

d. Measurement and Payment. The completed work as measured shall be paid at the Contract unit price for the following Contract items (pay items):

Contract Item (Pay Item)	Pay Unit
Structure Covers	Each

Measurement for **Structure Covers** shall be units of each, for each structure casting cover provided, item of work shall include all labor, materials and equipment needed to furnish and install cover.

Payment for the frame when they can not be reused shall be paid for under “Structure Frame”.

Payment for a gate-valve box includes the cover and is included in “Adjust Monument Box or Gate Valve Box”.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
DRAINAGE AND UTILITY STRUCTURE RECONSTRUCTION

a. Description. This work consists of reconstructing drainage and utility structures in accordance with section 403 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, as shown on the plans, as directed by the Engineer, and as specified herein.

b. Materials. Provide materials in accordance with subsection 403.02 of the MDOT 2020 Standard Specifications for Construction except as specified herein.

Construct drainage structures of precast or cast in place reinforced concrete sections, or concrete masonry units. Construct all sanitary sewer manholes and gate wells (water main valve manholes) of precast reinforced concrete sections.

Use precast reinforced concrete bases, bottom sections, manhole risers, grade adjustment rings, concentric cones, eccentric cones, and flat slab tops conforming to the requirements of ASTM C 478. Joints on precast manholes used on all sanitary sewers will meet ASTM C 443, rubber O-ring gasket.

Use concrete masonry units conforming to the requirements for concrete masonry units for catch basins and manholes, ASTM C 139.

Use concrete brick conforming to the requirements for concrete building brick, ASTM C 55, Grade N-1.

Plastic coated manhole steps will be injection molded of copolymer, polypropylene, encapsulating a ½-inch grade 60 steel reinforcing bar. Plastic-coated manhole steps will meet the performance test described in ASTM C-478, Paragraph ll, and have an impact resistance of 300 ft-lbs, with only minor deflection and no cracking or breaking. The steps will resist pull out forces of 1500 lbs.

c. Construction. Use construction methods for reconstructing drainage structures, where directed by the Engineer, conforming to subsection 403.03 of the MDOT 2020 Standard Specifications for Construction except as specified herein.

Excavate to the depth and width required to permit the construction of the required base. The excavation width will be greater than the base. Trim the bottom of the excavation to a uniform horizontal bed and completely dewater before placing any structure components.

Use concrete block construction only for storm sewer manholes and inlets and construct these structures to the size and dimensions shown on the plans. Use clean masonry block units, place them in a full bed of mortar, and thoroughly bond them together in place by completely filling the vertical end grooves with mortar to interlock them with the adjacent blocks. The mortar beds and joints will not exceed 3/4 inch thickness. Completely fill vertical joints and fill joints on the inside face of the structure by rubbing them full of mortar and striking them smooth as construction proceeds vertically. Place and strike smooth a 1/2" thick mortar coat on the entire outside face of the structure. Heat all masonry materials, sand, and water to over 50^{o} F during freezing weather and cover and protect the completed work from damage by freezing.

Construct circular precast manhole sections in accordance with the details as shown on the plans. Construct manhole stack units on level poured-in-place bases, precast concrete bases, or precast concrete bottom sections.

Construct precast cone sections in accordance with the details as shown on the plans. These units will be eccentric for all manholes, precast or block. Top all structures with a minimum of one and a maximum of three adjustment courses. Adjustment courses will be 2 inches in height and constructed using bricks or precast adjustment rings.

Construct manholes, inlets, gate wells, and other structures within 2-1/2 inches of plumb.

Frames and cover castings will be set in full mortar beds and pointed on the structure interior to a smooth, brushed finish. The covers will be set flush with sidewalk, roadway pavement, or ground surfaces. Notify the Engineer prior to the final paving to allow inspection of the final casting adjustments for all utility structures. In gravel streets, set covers six to eight inches below finished gravel surface.

Extend sewer pipes into structures a minimum of 1/2 inch and a maximum of 3 inches.

Finish flow channels for sewer structures in accordance with the details as shown on the plans. Screed and float all flow channels to a smooth, uniform surface and troweled to a hard surface finish.

Furnish and place stubs for future sewer connections as shown on the plans and as directed by the Engineer. Properly support and brace connections when they are not resting on original ground so that any settlement will not disturb the connection. Stubs will consist of one length of sewer pipe, of the size indicated on the plans, with a watertight plug.

Keep the excavation in a dry condition.

Sealing Manhole Cone/Chimney Interface Area:

Place an epoxy or urethane sealing product at the junction of the drainage structure cone/chimney interface as detailed on the plans or as directed by the Engineer. Use only products approved by the Engineer and manufactured by one of the suppliers listed below:

NPR-3501 Neopoxy (epoxy) manufactured by NeoPoxy International, 27057 Industrial Boulevard, Hayward, CA 94545, Phone 510.782.1290, Fax 510.782.1292 (www.NeoPoxy.us)

EasySeal SG (urethane) manufactured by Cretex Specialty Products, N16 W23390 Stone Ridge Drive, Suite A, Waukesha WI 53188, Phone 800 345 3764, Fax 262.542.0301 (www.cretexseals.com)

Flex-Seal (urethane) manufactured by Sealing Systems, Inc, 9350 County Road 19, Loretto, MN 55357, Phone 800-478-2054, Fax 763-478-8868
(www.ssisealingsystems.com)

For the purposes of this work, the definition of the manhole chimney is the masonry units sitting atop the pre-cast concrete or manhole block corbel or cone sections and extending up to the bottom of the drainage structure cover. Apply sealant to the entire chimney section. Thoroughly

clean the chimney section as detailed in the installation instructions of the sealant manufacturer. Apply all products in strict accordance with the recommendations and installation requirements of the manufacturer. The Engineer will approve the chosen sealing product prior to commencement of the work.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price for the following pay item:

Pay Item	**Pay Unit**
Structure, Reconstruct	Each

Measure **Structure, Reconstruct** in place by unit each and pay for it at the contract unit price, which price includes all costs for labor, equipment and materials to complete the work. It also includes any/all costs necessary for dewatering and adjustments required to accommodate field conditions encountered during construction.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
DRAINAGE AND UTILITY STRUCTURES

a. Description. This work consists of cleaning, pointing, and temporary lowering drainage and utility (storm, sanitary, water, private) structures whether shown or not on the plans, as directed by the Engineer, and as herein provided. Temporarily lower drainage and utility structures per the details shown on the plans.

b. Materials. Provide materials in accordance with subsection 403.02 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, unless otherwise directed by the Engineer.

c. Construction. Clean, point, and temporary lower drainage and utility structures in accordance with subsection 403.03 of the MDOT 2020 Standard Specifications for Construction, and as directed by the Engineer.

Reconstruct drainage and utility structures from the base using precast reinforced concrete units or concrete block masonry.

Point structures by removing loose and damaged mortar, filling joints between concrete and masonry units with new mortar, and striking joints so the exposed surface is smooth and free of voids.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the respective contract unit prices using the following respective pay items:

Pay Item	**Pay Unit**
Dr Structure, Cleaning, Modified	Each
Dr Structure, Point	Each
Dr Structure, Temp Lowering, Modified	Each

Measure **Dr Structure, Cleaning, Modified**; **Dr Structure, Point**; and **Dr Structure, Temp Lowering, Modified** individually in place by their respective units each and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials necessary to complete the work.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
AGGREGATE BASE

AA:DAD/AMW 1 of 1 01/17/2024

a. Description. This work consists of constructing an aggregate base course on a surface approved by the Engineer using only crushed limestone. The aggregate base shall be in accordance with City Standards and section 302 of the 2020 Michigan Department of Transportation (MDOT) Standard Specifications for Construction, except as herein modified:

b. Material. Provide aggregate material meeting the requirements for Class 21AA dense-graded aggregate in accordance with City Standards and specified in section 902 of the MDOT 2020 Standard Specifications for Construction. The ONLY permitted material shall be crushed limestone unless otherwise approved by the Engineer.

c. Construction. Construct aggregate base course in accordance with City Standards and subsection 302.03 of the 2020 MDOT Standard Specifications for Construction. Deliver Class 21AA dense-graded aggregate to the job site in a thoroughly blended condition and handle in such a manner that there will be no mixing of underlying soil with the base aggregate.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price using the following pay item:

Pay Item	**Pay Unit**
Aggregate Base Course, 21AA, CIP	Ton

Measure **Aggregate Base Course, 21AA, CIP** weight by the unit ton and pay for it at contract unit price, which price includes costs for all labor, equipment, and materials necessary to complete the work. Load weight tickets from a certified scale and accepted at the job site by the City's agent will the basis for measurement.

Weigh any/all unused/waste material on a certified scale to determine quantity(s) unless the Engineer approves an alternate method to arrive at these amount(s). Provide load weight tickets to the City's agent for any/all unused/waste material.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
CONCRETE DRIVEWAY APPROACH

AA:NJB 1 of 1 01/17/24

a. Description. This work consists of constructing concrete driveway approaches of the types as indicated on the plans in accordance with 2024 AA Standard Details. All work shall be in accordance with Article 6 Drive Approaches, Active Transportation Facilities, & Lawn Extensions, except as modified herein.

b. Materials. Provided materials meeting the requirements specified in 2024 AA Standard Specifications Article 6 (Drive Approaches…) 1, B (Materials)

Use Concrete MDOT Grade 3500 for most cases, and MDOT P-NC Concrete for High Early
Use MDOT 21 AA Dense-graded aggregate for 6-inch base material.

The Contractor is solely responsibility for providing specific concrete mix designs and submitting them to the Engineer for approval 5 day prior to the placement of the concrete.

c. Construction Methods.

Place concrete on a minimum of 6 inches of 21AA Aggregate base compacted to 95% of its maximum dry density unless otherwise directed by the Engineer.

Preparing the subbase grade; excavation or fill shall be paid for separately under “Machine Grading, Sidewalk, Ramp & Driveway Approach”

Prior to placing any concrete clean existing concrete with compressed air and coarse brush to remove any friable material on the abutting concrete.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the respective contract unit prices using the following respective pay items:

Pay Item	**Pay Unit**
Driveway, Nonreinf Conc, 6 inch, Modified	Square Yard
Driveway, Nonreinf Conc, 8 inch, Modified	Square Yard
Driveway, Nonreinf Conc, 8 inch, High Early Modified	Square Yard

Measure **Driveway, Nonreinf Conc, _ inch, Modified** areas in place by the unit square yard and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment, aggregate base, concrete, curing compound, forms and materials to complete the work.

Saw cutting is not a separate contract pay item, and payment for this work will be included in the appropriate item of work for which it applies. The Contractor shall include any/all costs for saw cutting to place concrete driveways, sidewalk and sidewalk ramps in the respective contract unit price.

CITY OF ANN ARBOR
DETIALED SPECIFICATION
FOR
FLOWABLE FILL

AA:NJB 1 of 1 01/17/2024

a. Description. This work consists of furnishing and placing flowable fill material as backfill between new and/or replacement curb and gutter and the existing pavement and at other miscellaneous locations as shown on the plans, and as directed by the Engineer.

b. Materials. Provide flowable fill material, as directed by the Engineer, meeting one the following mixes:

1. Portland cement, granular material, fly ash, and water. Per the flowable fill mix design number two included in the 2024 AA Standard Specifications Article 5 (Streets), Section II.P. (Flowable Fill).

c. Construction. Furnish and place flowable fill material as directed by the Engineer.

The Contractor shall provide all necessary materials and appurtenances to ensure proper placement of flowable fill. All flowable fill, after setting, should be capable of removal by conventional mechanical excavation methods.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price for the following pay item:

Pay Item	**Pay Unit**
Flowable Fill	Cubic Yard

Measure **Flowable Fill** volume in place by the unit cubic yard and pay for it at the contract unit price, which price includes the cost for all labor, equipment and materials necessary to complete the work.

The Engineer will not pay for any flowable fill used at the Contractor's option.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
HOT MIX ASPHALT (HMA) PAVING

a. Description. This work consists of constructing hot mix asphalt (HMA) pavement base, leveling, and top courses in accordance with section 501 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, except as modified herein, and as directed by the Engineer.

b. Materials. None specified.

c. Construction.

1. Equipment: All equipment shall conform to subsection 501.03.A of the MDOT 2020 Standard Specifications for Construction, except as modified herein.

The Contractor shall have a 10-foot long straight edge, rubber-tired backhoe (Case 580 type, or equivalent), air-compressor with the ability to develop a minimum pressure of 100 pounds per square inch and continuous rated capacity of 150 cubic feet per minute of airflow, and jackhammer available during all paving operations. The Contractor shall be required to perform any miscellaneous cleaning, trimming, material removal, and other tasks as required by the Engineer in order to ensure the proper and orderly placement of all HMA materials on this project.

The Contractor shall provide sufficient rollers to achieve the specified asphalt densities.

At various times throughout the work, the Engineer may direct the Contractor to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas; including hauling units. The Contractor shall not be entitled to any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

2. Cleaning and Bond Coat Application: Cleaning and bond coat application shall be performed in accordance with subsections 501.03.C and 501.03.D of the MDOT 2020 Standard Specifications for Construction, except as modified herein, and as directed by the Engineer.

The Contractor shall furnish and operate throughout the construction period, vacuum-type street cleaning and utility structure cleaning equipment (Vac-All, Vactor, etc.) approved by the Engineer, and when directed by the Engineer, for street cleaning immediately prior to, and for street and utility structure cleaning after any and all paving. The cleaning equipment shall be of sufficient power to remove dust, dirt, and debris from the pavement and from utility structures in and adjacent to the construction area. The Engineer shall approve the vac-all or similar equipment prior to beginning the work. The equipment used shall have an effective means for preventing any dust resulting from the operation from escaping into the air.

Apply bond coat at a rate of 0.10 gallons per square yard. Before placing the bond coat, the thoroughly clean the existing pavement surface. The Contractor shall also thoroughly clean all joints, cracks, and edges to a minimum depth of one inch with compressed air, vac-all

type equipment, or other approved mechanical or hand methods, to remove all dirt, debris, and all foreign material.

3. HMA Placement: Placement shall conform to subsection 501.03.F of the MDOT 2020 Standard Specifications for Construction, except as modified herein, and as directed by the Engineer.

HMA placement shall not commence until a “Permit to Place” (no additional costs are required to obtain this permit) has been issued in writing by the Engineer. The Engineer will issue a Permit to Place after approving the aggregate base course or the adjacent, underlying layer of pavement section.

The Engineer must approve the final structure adjustments prior to the issuance of the “Permit to Place” for the top course.

Place the top course with a ¼” lip along the edge of the curb and gutter/edge of metal.

All HMA thickness dimensions are compacted-in-place.

4. Paving Operation Scheduling: The Contractor shall schedule the paving operation to avoid leaving longitudinal cold joints “open” overnight.

In all cases, the Contractor shall pave the primary road’s through-traffic lanes (“main line”) first, from point-of-beginning to the point-of-ending. All other paving including, but not limited to; acceleration and deceleration lanes, intersection approaches, and center left-turn lanes shall be paved following completion of main line paving, unless authorized by the Engineer prior to the placement of any pavement.

5. Rate of Paver Operation: Maintain a paving machine rate of travel so that HMA placement and paving operation is continuous; resulting in no transverse cold joints. The rate of travel; however, shall never exceed 50 feet per minute.

The Contractor shall furnish and operate enough material, equipment, and hauling units to keep the paving machine(s) moving continuously at all times. Failure to do so shall be cause for the suspension of paving operations until the Contractor can demonstrate to the satisfaction of the Engineer that it has dedicated sufficient resources to perform the work in accordance with the project specifications.

6. Longitudinal and Transverse Joints: These joints shall conform to subsection 502.03.F of the MDOT 2020 Standard Specifications for Construction, and as specified herein.

For mainline HMA paving, the width of the mat for each pass of the paver shall be not less than 10.5 feet, or greater than 15 feet, except as noted in the plans and as directed by the Engineer. The Engineer will direct the layout of all HMA longitudinal joints during construction.

7. Feather Joints – shall be constructed so as to vary the thickness of the HMA from zero inches to the required paving thickness at the rate of approximately 1.5” over a distance of 10 feet, or as directed by the Engineer. The Contractor shall rake the larger pieces of aggregate out of feather joints prior to compaction.

8. Butt Joints: Construction of butt joints, where directed by the Engineer, shall conform to subsections 501.03.C.3 and 501.03.C.4 of the MDOT 2020 Standard Specifications for Construction, except as modified herein.

When the Engineer specifies or directs placement of a butt joint, remove the existing HMA surface to the thickness of the proposed overlay, or full-depth, as directed by the Engineer, for the full width or length of the joint. The HMA material shall be saw cut to the directed depth along the pavement edge or removal line to prevent tearing of the pavement surface. Cut joints that will be exposed in the completed surface must be cut with a saw or a cold-milling machine or other methods approved by the Engineer. Joints that will be covered by HMA must be cut with a saw, a cold-milling machine, or other methods approved by the Engineer.

9. Rakers: The Contractor shall provide a minimum of two asphalt rakers during the placement of all wearing and leveling courses.

10. Faulty Mixtures: The Contractor and Engineer shall carefully observe the paving operation for signs of faulty mixtures. The Contractor, at its sole expense, shall remove or correct points of weakness in the surface prior to paving subsequent lifts of HMA material. Such corrective action may include the removal and replacement of thin or contaminated sections of pavement, segregated HMA, and any sections that are weak or unstable. Once the Contractor or his representative is notified by the Engineer that the material being placed is out of allowable tolerances, or that there is a problem with the paving operation, the Contractor shall stop the paving operation at once, and shall not be permitted to continue placing HMA material until again authorized by the Engineer. The Engineer will not pay for separately any costs associated with meeting the above requirements, and will include them in the HMA work item(s) the Contractor was performing at the time of discovery of the faulty mixture.

d. Measurement and Payment. The contract includes no separate pay items for measurement and payment of the costs associated with meeting the requirements of this detailed specification. The Contractor shall include these costs in the unit prices bid for the HMA items in the contract.

The Contractor shall return any/all trucks to the plant with unused HMA remaining after the work is complete, and these trucks shall be re-weighed and the corrected weight slip provided to the Engineer. There will no payment any unused HMA material. All weight slips must include the type of mixture (codes are not acceptable), as well as vehicle number, gross weight, tare weight and net weight.

CITY OF ANN ARBOR
DETIALED SPECIFICATION
FOR
HMA, SOIL EROSION WEDGE

AA:NJB 1 of 1 01/17/2024

a. Description. This work consists of constructing hot mix asphalt (HMA) wedge placed longitudinally along the edge of pavement to mitigate soil erosions at other location(s) as directed by the Engineer, and as described herein.

b. Materials. Provide materials in accordance with section 501 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction. Use the same MDOT mixture being placed for the wearing course.

c. Construction. The HMA wedge can be placed by the paver by adjusting the wing and guards or by hand while the wearing course is still hot. The wedge shall have an approximate dimension of 12-inch width and be tapered 0 to 3-inch in height. The highest point being at the edge of pavement. The HMA soil erosion wedge shall tapper down to match existing driveway elevations. Hand compacting effort and small tools shall be used to consolidate the HMA without deforming the wedge.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price for the following pay item:

Pay Item	**Pay Unit**
HMA, Soil Erosion Wedging	Foot

Measure **HMA, Soil Erosion Wedging** by linear foot installed, for each foot being installed. The weight of the HMA tons used will be paid for separately under the HMA 5EL Tonnage pay item. This unit price includes compensation for all labor and equipment cost necessary to complete the work including placement and hand compaction.

CITY OF ANN ARBOR
DETIALED SPECIFICATION
FOR
HMA, WEDGING

AA:DAD/AMW 1 of 1 01/15/2024

a. Description. This work consists of constructing hot mix asphalt (HMA) finish wedges at drive approaches, sidewalk ramps, and any other location(s) directed by the Engineer, and as described herein.

b. Materials. Provide materials in accordance with section 501 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction. Use MDOT mixture approved by the Engineer.

c. Construction. Perform work in accordance with section 501 of the MDOT 2020 Standard Specifications for Construction, and as directed by the Engineer.

Complete all finish wedging within two days of placing the top course pavement.

Have a 10-foot long straight-edge, backhoe, air-compressor, and jackhammer available during all paving operations.

Use finish wedges to provide good vertical and horizontal transitions between old and new construction, to eliminate areas of standing water in the top coarse surface and to provide for positive drainage.

Construct joints by feathering the edges of all finish wedges (including the raking out of all large pieces of aggregate) to provide a high quality, smooth riding surface.

Clean the existing surface with compressed air and/or vacuum type street cleaning equipment prior to placement of wedging material.

Apply MDOT SS-1h bond coat on all asphalt and concrete surfaces within the wedging area at a rate between 0.05 and 0.10 gallons/square yard using a power distributor hand sprayer.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price for the following pay item:

Pay Item	Pay Unit
HMA, Wedging	Ton

Measure **HMA, Wedging** by weight in tons of the material used to perform the work and pay for it at the contract unit price, which price includes all cost for labor, equipment and materials necessary to complete the work including providing, placing and compacting the HMA mixture.

Return any/all trucks to the plant with unused HMA remaining after the work is complete. Re-weigh these trucks and provide a weight slip for this material to the Engineer. There will be no payment for any unused HMA material. All weight slips must include the type of mixture (codes are not acceptable), as well as vehicle number, gross weight, tare weight and net weight.

CITY OF ANN ARBOR

DETIALED SPECIFICATION
FOR
SIDEWALK RETAINING WALLS

a. Description. This work consists of constructing concrete retaining walls adjacent to sidewalks in accordance with the requirements and special details included herein, and as directed by the Engineer.

b. Materials. Provide concrete Grade P-NC, unless otherwise directed by the Engineer, meeting the requirements of subsection 602.03 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction.

c. Construction. Construct retaining walls in accordance with special details includes herein. Curb face exposure shall be 6 inches to 36 inches.

The Contractor shall excavate, cut, remove stumps, remove brush, remove pavement, grade, and trim as needed and as directed, and shall furnish, place, grade, and compact any materials needed to perform the work.

Complete all subgrade work prior to placing concrete items, unless directed or approved by the Engineer.

At locations where the subgrade, subbase or base becomes either disturbed, saturated or otherwise damaged, and where directed by the Engineer, the Contractor shall remove a minimum 6-inch thick layer of the subgrade, subbase or base, and replace it with approved 21AA Aggregate material, compacted in place.

The Contractor shall coordinate with the City Forester prior to the removal of any tree roots 2 inches in diameter or greater.

The Contractor shall maintain on-site at all times, a sufficient quantity of adequate materials to protect concrete items. The Engineer may suspend or defer concrete placement if rain protection is not available. The Contractor shall not be entitled to any additional compensation due to work suspension or deferral resulting from a lack of adequate rain protection.

The Contractor is responsible for any damage to concrete items, including but not limited to vandalism; vehicular, pedestrian and/or miscellaneous structural damage; surface texture damage; and rain damage.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price using the following pay items:

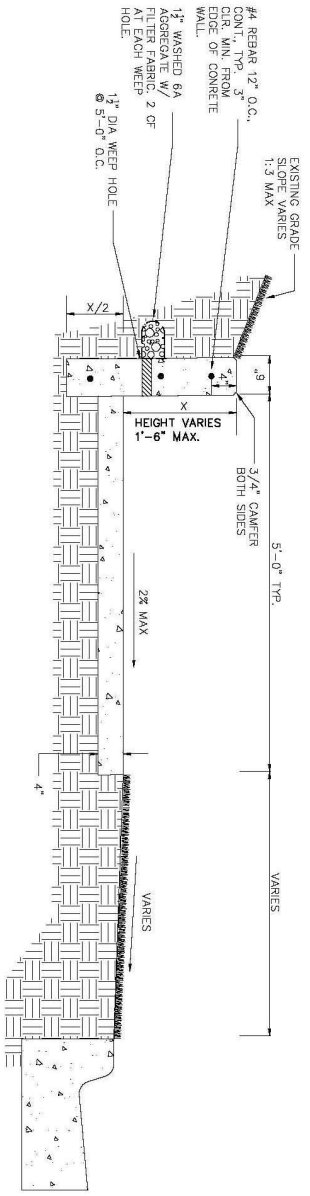
Pay Item	**Pay Unit**
Sidewalk Retaining Wall, Integral, 6 inch to 18 inch Height	Square Foot
Sidewalk Retaining Wall, Integral, 18 inch to 30 inch Height	Square Foot

Measure **Sidewalk Retaining Wall, Integral, __ inch to __ inch Height** exposed vertical face

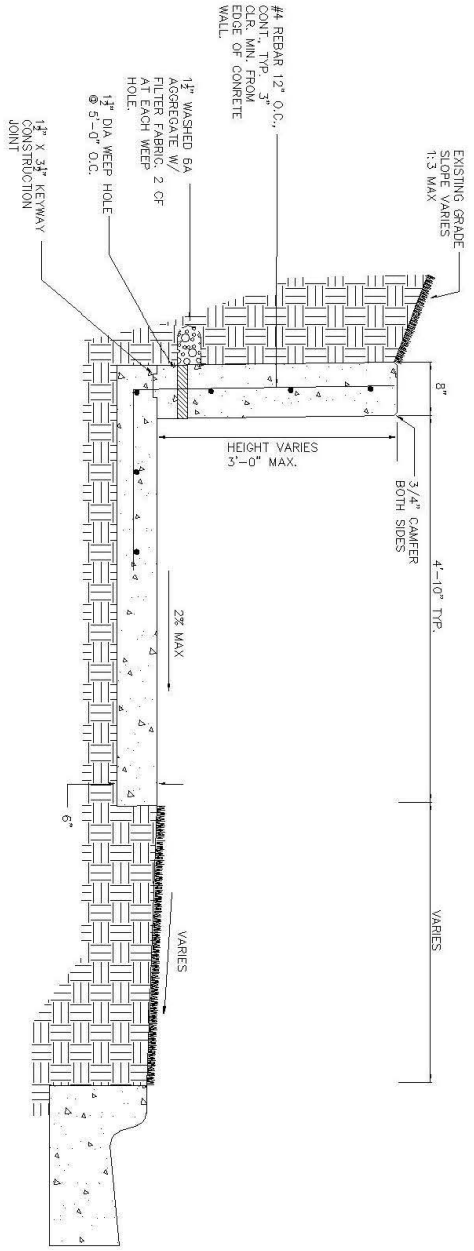
areas in place by the unit square foot and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials necessary to complete the work.

The Engineer will pay for separately all sidewalk work performed adjacent to any retaining wall.

INTEGRAL SIDEWALK RETAINING WALL (6" – 18") DETAIL



INTEGRAL SIDEWALK RETAINING WALL (18”-36”) DETAIL



a. Description. This work shall consist of all labor, materials, and equipment necessary to investigate, locate, save and protect from damage, ensure continued and proper operation during the performance of the project work, re-establish operation as necessary, and, upon completion of all project work, ensure that all existing sprinkler systems located within the project limits, or those affected by the project, are functioning in a satisfactory manner as determined by the Engineer.

b. Materials. None specified.

c. Construction. The Contractor shall be aware that properties located within the project limits have underground sprinkler systems that irrigate both private property and portions of the public right-of-way. The irrigation systems have been installed by a variety of private installers and may utilize several different materials and/or suppliers of the various components. Portions of the existing irrigation systems have been installed under paved areas, extend into landscaped islands, or may be required to be located within such areas at the conclusion of the project's construction.

The Contractor shall perform the necessary investigations to determine the precise location of the irrigation systems and all affected components prior to the commencement of construction operations. The Contractor shall determine all impacts to the systems that will result pursuant to the project's construction and take all necessary actions to ensure that the sprinkler systems will remain functional during the project's construction. The Contractor shall re-establish the sprinkler systems in such a manner at appropriate intermediate and final project milestones that the original functionality of the system is maintained to the greatest extent possible.

The Contractor shall contact all property owners prior to the commencement of the work to determine the impacts to their irrigation systems and coordinate with them to ensure satisfactory operation of the irrigation systems during construction.

All work shall be approved by the Engineer and the affected property owner(s) at the conclusion of the project's work.

This is an allowance type item. This allowance is not for solving problems caused by the Contractor's neglect, errors, omissions, or other deeds of the Contractor's own fault. Protecting existing irrigation systems where it is not necessary to remove it to complete the work is included in the contract unit price for the pay item General Conditions, Max $_____.

The Contractor is required to present a detailed scope of work and detailed costs for any work contemplated under the irrigation system allowance to the Engineer. No work is to begin until scope and costs have been finalized and approved by the Engineer in writing.

Thereafter, if the approved price for this work is more or less than the allowance amount in the Contract, the Contract Price shall be adjusted accordingly by Change Order. The payment shall be made on the basis of the actual approved amount without additional charge or markups for overhead, insurances, bonds, or any other incidental expenses. The Contractor shall be responsible for all coordination involved and for the timely completion of the work to

fit their schedule.

d. Measurement and Payment. The completed work, as described, will be measured, and paid for at the approved price for the following pay item:

Pay Item	Pay Unit
Irrigation System, Protection and Maintenance, Allowance	Dollar

The approved price for this item shall include all labor, material, and equipment costs required to complete the work.

MATERIALS TESTING CONSULTANTS

GEOTECHNICAL DATA PACKAGE

ANN ARBOR 2023 SOIL BORING BUNDLE 1 – 2024 ROAD RESURFACING

ANN ARBOR, MICHIGAN

Prepared For:

CITY OF ANN ARBOR

Ann Arbor, Michigan

Prepared By:

MATERIALS TESTING CONSULTANTS, INC.

November 2023

MTC Project No. 231532

November 10, 2023
Project No. 231532

City of Ann Arbor
Guy C. Larcom City Hall
301 E. Huron, 4th Floor
Ann Arbor, Michigan 48107

Attention: Andrea Wright

Reference: Geotechnical Data Package
Ann Arbor 2023 Soil Boring Bundle 1 – 2024 Road Resurfacing
Ann Arbor, Michigan

Dear Ms. Wright:

We have completed a geotechnical investigation for the above-referenced project. The purpose of this investigation has been to identify the general subsurface soil conditions in the vicinity of the proposed construction. This work has been performed as described in our proposal dated August 8, 2023, and in accordance with our active City of Ann Arbor contract for 2021 Geotechnical and Environmental Services.

Presented herein are descriptions of our understanding of the design considerations, the geotechnical investigation, encountered conditions and engineering recommendations. The Appendix contains the report limitations and data collected during this investigation.

AVAILABLE INFORMATION

We have been provided the following documents and information for use in this investigation:

- A set of maps with associated requested boring locations, received from Ms. Andrea Wright of the City of Ann Arbor on July 27, 2023.
- Telephone and email conversations with Ms. Andrea Wright, Ms. Tracy Anderson, P.E. and Jake Dykman of the City of Ann Arbor regarding the type of construction, design loads and elevations.

The areas of investigation are shown in Figure Nos. 1 to 7. The investigation was located along 24 streets within the City of Ann Arbor, and a full list of explored locations is provided in the data table in the Appendix. We understand the investigated roads are candidates for resurfacing in the 2024 season.

INVESTIGATION METHODOLOGY

Hand auger borings and sampling along with field engineering reconnaissance were used to investigate the subsurface conditions. Boring locations are shown on Figure Nos. 1 to 7. Boring elevations were approximated from the Geographic Information System (GIS) provided by Washtenaw County. Investigation procedures, soil classification information and boring logs are provided in the Appendix.

Number of Borings	67
Boring Depth Range, ft.	1.2 - 7.2

Borings were drilled and other sampling was conducted solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.

Laboratory

Soil samples were reviewed by one of our engineers and technically classified according to the methods of ASTM D2488 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)". Calibrated penetrometer tests were performed on cohesive samples to obtain an indication of unconfined compressive strength values. Select cohesive soil samples were subjected to moisture content testing in accordance with ASTM D2216 "Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass".

A summary table of the soil conditions, laboratory moisture results and the estimated resilient modulus for each soil type is contained in the Appendix.

The estimated values for resilient modulus, Mr, have been provided based on the visual classification of the soil and Table 12-2 in the Michigan DOT User Guide for Mechanistic Empirical Pavement Design, Interim Edition dated March 2015. Other data including results from FWD testing, local knowledge, or from past ME pavement performance on similar subgrade materials may also be of use in estimating resilient modulus if they are available. Typically, recommendations based on visual classification are given as a range of values for various assumptions regarding compaction, moisture content and roadway type. Generally, more conservative values of resilient modulus should be used on high traffic roads with a higher cost to early failure, in areas of high soil moisture/high water table and in areas of variable soil, utility trenches, etc. Conversely, less conservative (higher range) values are typically used on lower traffic roads with drier and more uniform soils.

INVESTIGATION RESULTS

Listed below are summaries of the encountered subsurface conditions within the area of investigation. The boring logs located in the Appendix should be reviewed for detailed soil descriptions. Some variation between boring locations is to be expected.

Groundwater was generally not encountered, except where noted below at Yost Boulevard. Groundwater levels may fluctuate due to seasonal variations such as precipitation, snowmelt, nearby river or lake levels and other factors that may not be evident at the time of measurement. Groundwater levels may be different at the time of construction.

Subsurface Conditions

Andrea Court from Lakewood Drive to Gralake Avenue – Borings SB2023-001 and SB2023-002

The investigation generally encountered 3 3/4 to 4 1/4 inches of HMA at the surface. Boring SB2023-002 encountered 17 inches of aggregate base beneath the HMA. Subgrade soil generally consisted of fill, consisting of poorly graded sand with clay and gravel (SP-SC), and native lean clay (CL) and clayey sand (SC) to explored depths of 5 ft.

Burwood Avenue from West Liberty Street to Jackson Avenue – Borings SB2023-003 to SB2023-007

The investigation generally encountered 1 3/4 to 5 1/2 inches of HMA at the surface. Boring SB2023-003 encountered 5 1/2 inches of concrete beneath the HMA. Subgrade soil generally consisted of fill, consisting of poorly graded sand with clay and gravel (SP-SC), and native lean clay (CL) to the explored depths of 2.5 to 5 ft.

Carolina Avenue from Winewood Avenue to Thaler Avenue – Boring SB2023-008

Boring SB2023-008 encountered 3 3/4 inches of HMA and 10 inches of natural aggregate base at the surface. The boring encountered subgrade soil consisting of poorly graded sand with clay (SP-SC) and lean clay (CL) to the explored depth of 5 ft.

Charlton Avenue East of Burwood Avenue – Borings SB2023-009 and SB2023-010

The investigation generally encountered 4 1/2 to 6 1/4 inches of HMA at the surface. Subgrade soil generally consisted of poorly graded sand with varying amounts of clay (SP, SP-SC) and lean clay (CL) to the explored depths of 5 ft. Subgrade soil generally consisted of fill, consisting of poorly graded sand with varying amounts of clayey fines (SP, SP-SC), and native lean clay (CL) to the explored depths of 5 ft.

Collingwood Drive from Jackson Avenue to West Stadium Boulevard – Borings SB2023-011 to SB2023-013

The investigation generally encountered 4 1/4 to 6 1/4 inches of HMA at the surface. Subgrade soil generally consisted of poorly graded sand with varying amounts of clay (SC, SP-SC) and lean clay (CL) to the explored depths of 5 ft.

Dolph Drive from Sunnywood Drive to Hazelwood Avenue – Borings SB2023-014 and SB2023-015

The investigation generally encountered 2 to 4 inches of HMA at the surface. Subgrade soil generally consisted of fill, consisting of poorly graded sand with clay and gravel (SP-SC), and native lean clay (CL) and clayey sand (SC) to the explored depths of 5 ft.

Fair Street East of Burwood Avenue – Boring SB2023-016

Boring SB2023-016 encountered 3 3/4 inches of HMA at the surface. The boring encountered fill, consisting of poorly graded sand with clay and gravel (SP-SC), to a depth of 1 ft and native clayey sand (SC) to the explored depth of 5 ft.

Thaler Avenue from West Stadium Boulevard to Burwood Avenue – Boring SB2023-017

Boring SB2023-017 encountered 5 inches of HMA at the surface. The boring encountered fill, consisting of poorly graded sand with clay and gravel (SP-SC), to a depth of 1.4 ft and native lean clay (CL) and clayey sand (SC) to the explored depth of 5 ft.

Thaler Avenue from Burwood Avenue to Garden Circle – Boring SB2023-047

Boring SB2023-047 encountered 6 1/4 inches of HMA and 12 inches of aggregate base at the surface. The boring encountered fill, consisting of poorly graded sand with clay and gravel (SP-SC), to a depth of 2.1 ft and native clayey sand (SC) to the explored depth of 2.5 ft.

Garden Circle East of Thaler Avenue – Boring SB2023-018

Boring SB2023-018 encountered 5 3/4 inches of HMA at the surface. The boring encountered fill, consisting of poorly graded sand with clay and gravel (SP-SC), to a depth of 1.5 ft and native poorly graded sand (SP) to the explored depth of 2.9 ft.

Gralake Avenue from Hilltop Street to Central Street – Borings SB2023-019 to SB2023-022

The investigation generally encountered 5 to 7 inches of HMA and 10 to 15 inches of natural aggregate at the surface, with the exception of Boring SB2023-022 which did not encounter aggregate base. Subgrade soils generally consisted of fill, consisting of poorly graded sand

with clay and gravel (SP-SC), and native lean clay (CL) to the explored depths ranging from 2.2 to 4.2 ft.

Highlake Avenue from Lakeview Drive to Sunnywood Drive – Borings SB2023-023 to SB2023-025

The investigation generally encountered 3 to 6 inches of HMA at the surface. Boring SB2023-025 encountered 12 inches of aggregate base beneath the HMA. Subgrade soils generally consisted of fill, consisting of poorly graded sand with varying amounts of clay and gravel (SP, SP-SC), and native lean clay (CL) and clayey sand (SC) to the explored depths of 5 ft.

Hilltop Drive West of Gralake Avenue – Borings SB2023-026 and SB2023-027

The investigation generally encountered 6 inches of HMA and 4 inches of natural aggregate base at the surface. Subgrade soils generally consisted of poorly graded sand with clay (SP-SC), clayey sand (SC) and lean clay (CL) to the explored depths of 3.2 to 4.5 ft.

Lake Park Lane West of McCotter Drive – Boring SB2023-028

Boring SB2023-028 encountered 2 1/2 inches of HMA at the surface. The boring encountered fill, consisting of poorly graded sand with clay and gravel (SP-SC), to a depth of 1.5 ft and native lean clay (CL) and poorly graded sand with clay (SP-SC) to the explored depth of 4 ft.

Lakeview Drive from Parklake Avenue to Hilltop Drive – Borings SB2023-029 to SB2023-031

The investigation generally encountered 3 to 3 1/2 inches of HMA and 10 to 12 inches of natural aggregate base at the surface, with the exception of Boring SB2023-031 which did not encounter aggregate base. Subgrade soils generally consisted of consisting of poorly graded sand with gravel (SP), lean clay (CL) and clayey sand (SC) to the explored depths of 5 ft.

Lakewood Drive from Sunnywood Drive to Galake Avenue – Borings SB2023-032 to SB2023-034

The investigation generally encountered 3 1/4 to 3 1/2 inches of HMA and 6 to 9 inches of natural aggregate base at the surface. Subgrade soils generally consisted of clayey sand (SC) and lean clay (CL) to the explored depths of 2.4 to 4 ft.

Mason Avenue South of Lakeview Drive – Borings SB2023-035 to SB2023-038

The investigation generally encountered 2 1/4 to 4 1/2 inches of HMA and 7 to 12 inches of natural aggregate at the surface, with the exception of Boring SB2023-035 which did not encounter any aggregate base. Subgrade soils generally consisted of fill, consisting of poorly

graded sand with clay and gravel (SP-SC), and native clayey sand (SC) and lean clay (CL) to the explored depths of 2.5 to 5 ft.

McCotter Drive from Parklake Avenue to Lakewood Drive – Boring SB2023-039

Boring SB2023-039 encountered 7 inches of HMA at the surface. The boring encountered fill, consisting of poorly graded sand with clay and gravel (SP-SC), to a depth of 1.5 ft and native lean clay (CL) to the explored depth of 1.7 ft.

Parklake Avenue from Jackson Road to Lakeview Drive – Boring SB2023-040

Boring SB2023-040 encountered 4 1/4 inches of HMA at the surface. The boring encountered fill, consisting of poorly graded sand with clay and gravel (SP-SC) to 1.4 ft, and native clayey sand (SC) and lean clay (CL) to the explored depth of 5 ft.

Pleasant Place from Jackson Avenue to Charlton Drive – Borings SB2023-041 and SB2023-042

The investigation generally encountered 5 3/4 to 6 inches of HMA at the surface. The subgrade soils generally consisted of fill, consisting of poorly graded sand with clay and gravel (SP-SC) to depths of 1 ft, and native clayey sand (SC) and lean clay (CL) to the explored depths of 5 ft.

Sunnywood Drive from Mohawk Court to Highlake Avenue – Borings SB2023-043 to SB2023-046

The investigation generally encountered 3 to 5 inches of HMA and 9 to 12 inches of natural aggregate base at the surface. The subgrade soils generally consisted clayey sand (SC) and lean clay (CL) to the explored depths of 3.6 to 5 ft.

Wines Drive from Hillridge Avenue to Miller Avenue – Borings SB2023-048 to SB2023-050

The investigation generally encountered 4 3/4 to 7 1/2 inches of HMA at the surface. The subgrade soils generally consisted of fill, consisting of poorly graded sand with clay and gravel (SP-SC), and native clayey sand (SC) and lean clay (CL) to the explored depths of 2.5 to 5 ft.

Winewood Avenue from South Maple Road to West Stadium Boulevard – Boring SB2023-051

Boring SB2023-051 encountered 3 3/4 inches of HMA and 8 inches of aggregate base at the surface. The boring encountered poorly graded sand (SP) to the explored depth of 5 ft.

Winewood Avenue East of Burwood Avenue – Borings SB2023-052 and SB2023-053

The investigation generally encountered 3 to 4 3/4 inches of HMA at the surface. The subgrade soils generally consisted of fill, consisting of poorly graded sand with clay and gravel (SP-SC), and native clayey sand (SC) and lean clay (CL) to the explored depths of 3 to 5 ft.

Page Avenue South of Harpst Avenue – Borings SB2023-084 to SB2023-091

The investigation generally encountered 2 to 5 1/4 inches of HMA at the surface. Borings SB2023-088 and SB2023-089 encountered 6 inches of natural aggregate base beneath the HMA. The subgrade soils generally consisted of poorly graded sand with varying amounts of clay (SP, SP-SC, SC) and lean clay (CL) to the explored depths of 1.2 to 5 ft.

Yost Boulevard from Washtenaw Avenue to Terhune Road – Borings SB2023-092 to SB2023-098

The investigation generally encountered 3 to 8 inches of HMA and 4 to 13 inches of natural aggregate at the surface, with the exception of Boring Sb2023-092 which did not encounter aggregate base. The subgrade soils generally consisted of poorly graded sand with varying amounts of clayey and silty fines (SP-SM, SP-SC, SC) and lean clay (CL) to the explored depths of 1.3 to 5 ft. Groundwater was encountered during the drilling activities in Borings SB2023-092 and SB2023-095 at depths ranging from 2.2 to 4.9 ft.

This section has provided a generalized description of the encountered subsurface soil conditions. The boring logs located in the Appendix should be reviewed for detailed soil descriptions. Some variation between boring locations may be expected.

CLOSURE

In this data package, descriptions of the geotechnical investigation and encountered conditions have been presented. The limitations of this study are described in the Appendix.

We appreciate the opportunity to provide this service to you on this project. Should you have any questions or require further assistance, please contact our office.

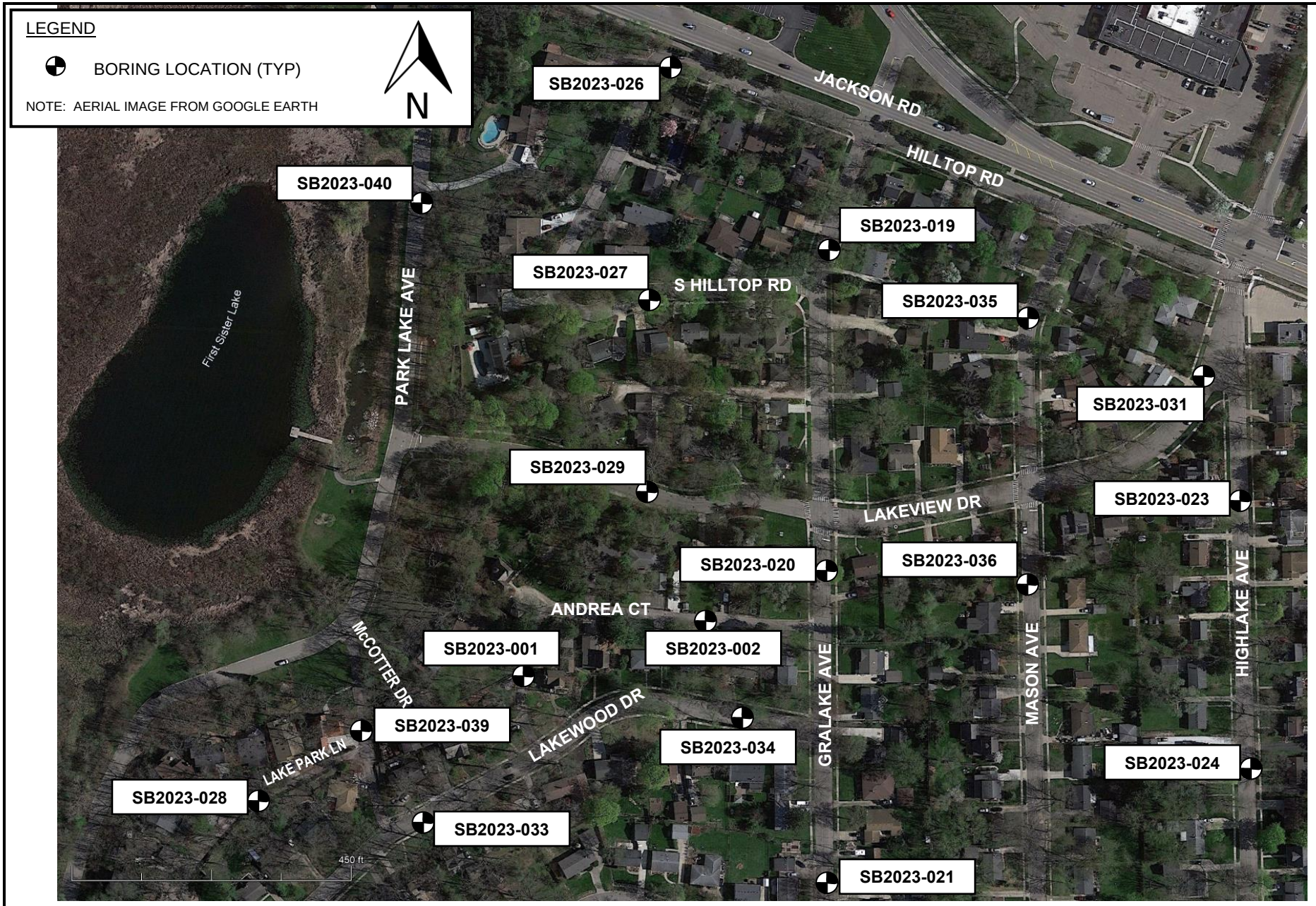
Sincerely,

MATERIALS TESTING CONSULTANTS, INC.

Ryan D. Starcher, E.I.T.
Project Engineer

Robert J. Warren, P.E.
Project Manager

Attachments: Figure Nos. 1 to 7 - Boring Location Plans
Table 1 – Summary of Investigation Results
Appendix
- Limitations
- Test Drilling and Sampling Procedures
- Boring Log Terminology and Classification Outline
- Boring Logs
- Summary of Laboratory Test Data



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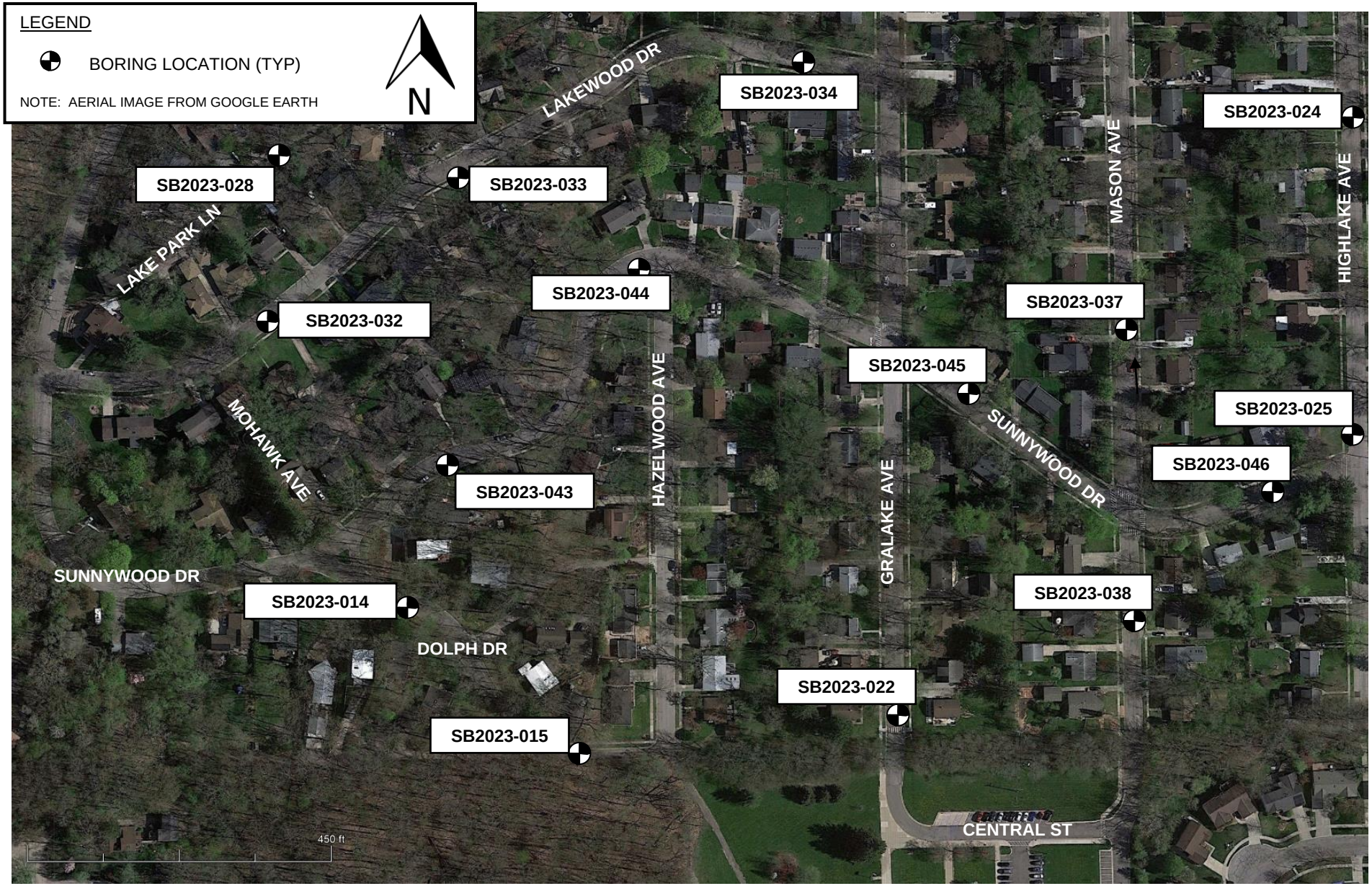

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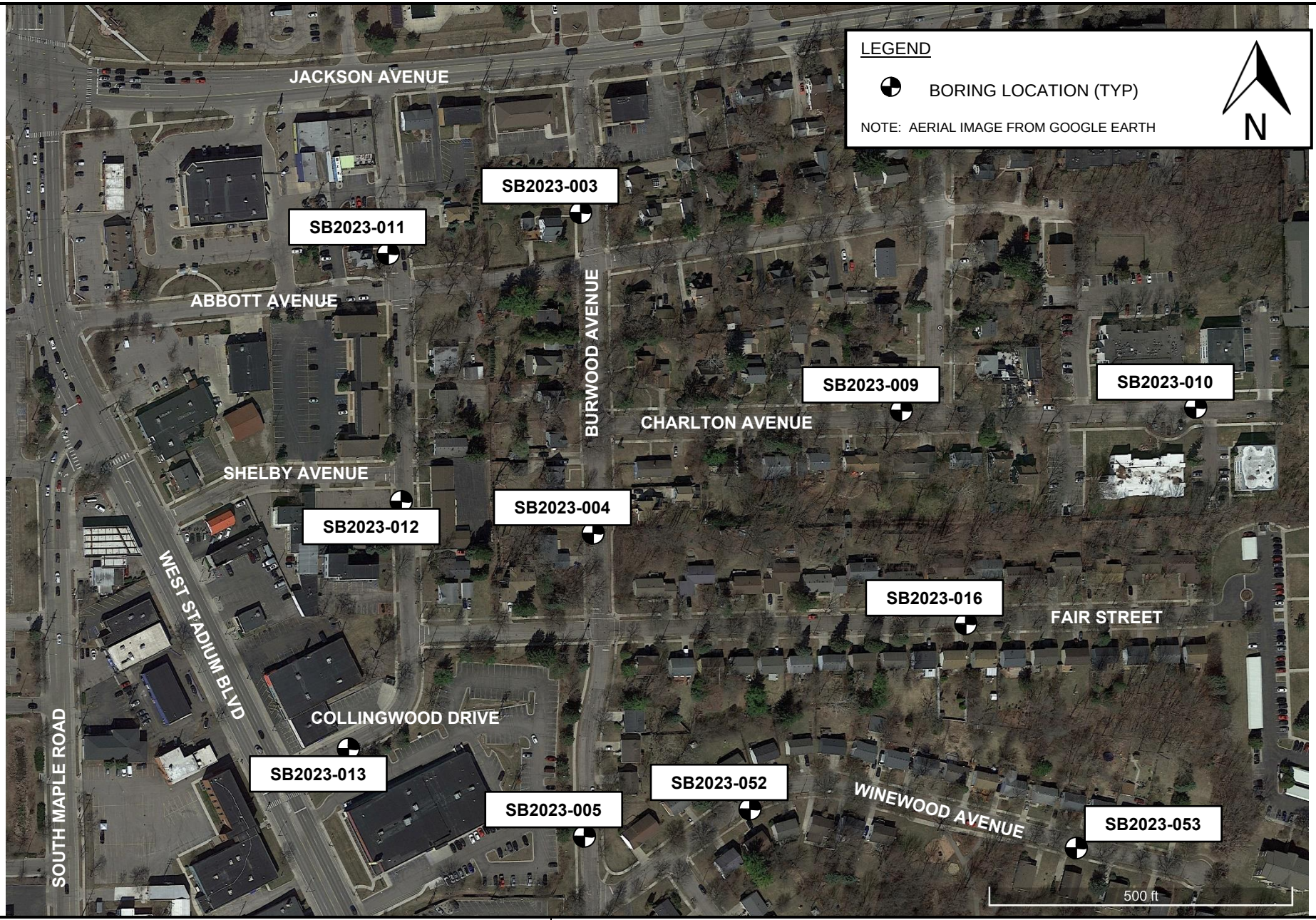

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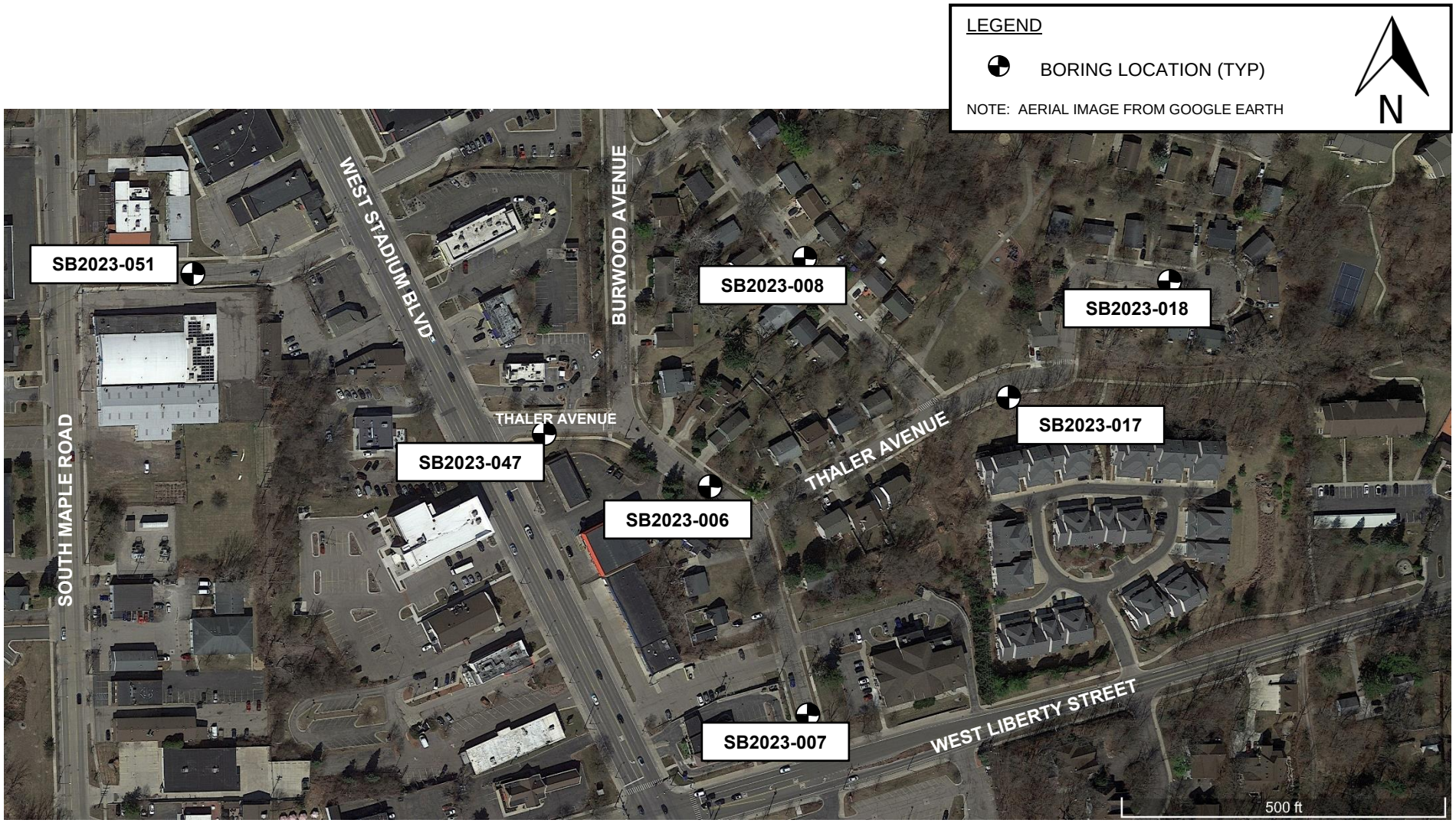

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TITLE: BORING LOCATION PLAN		PROJECT: ANN ARBOR 2023 SOIL BORINGS BUNDLE 1 - 2024 ROAD RESURFACING	
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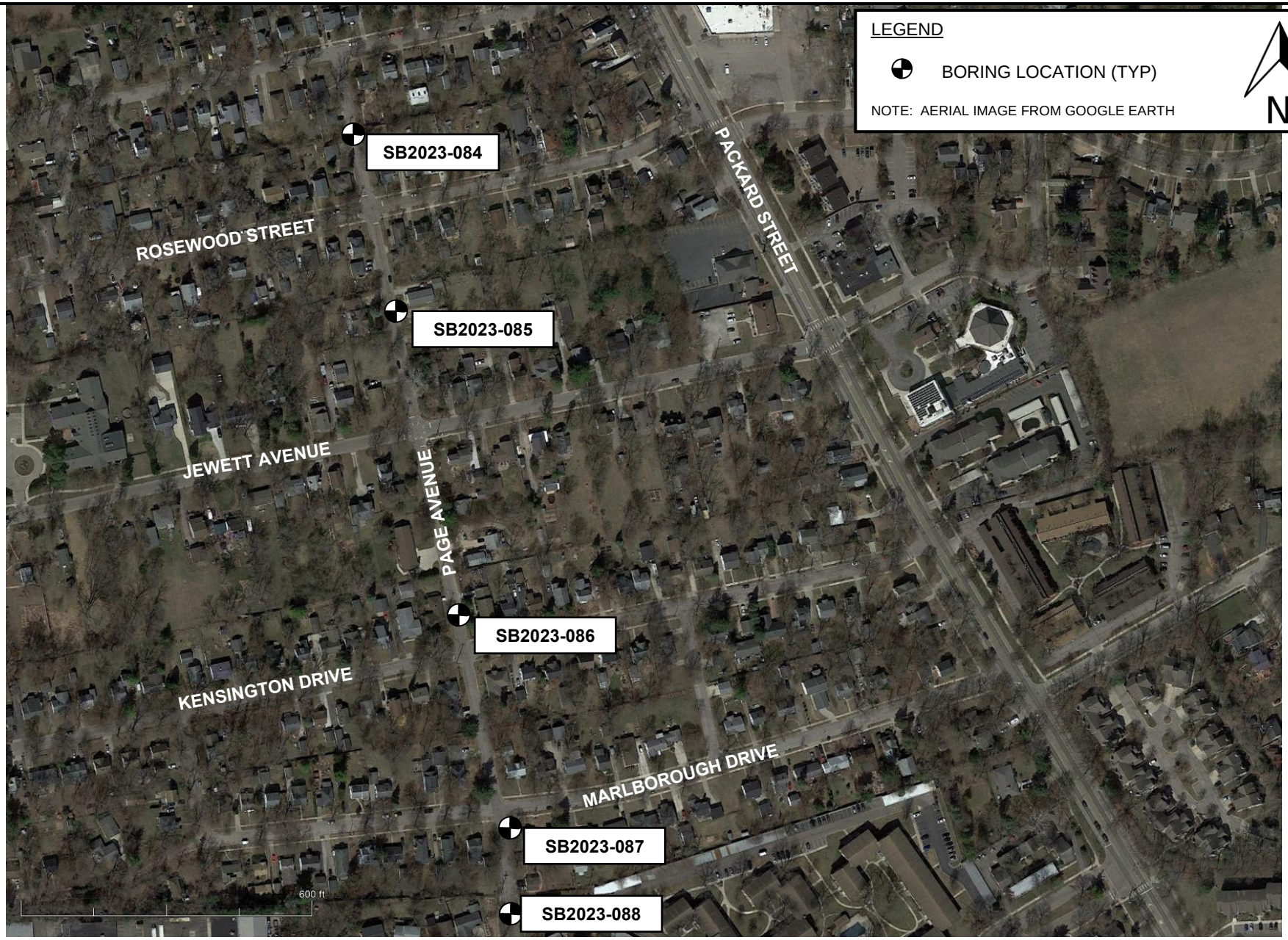

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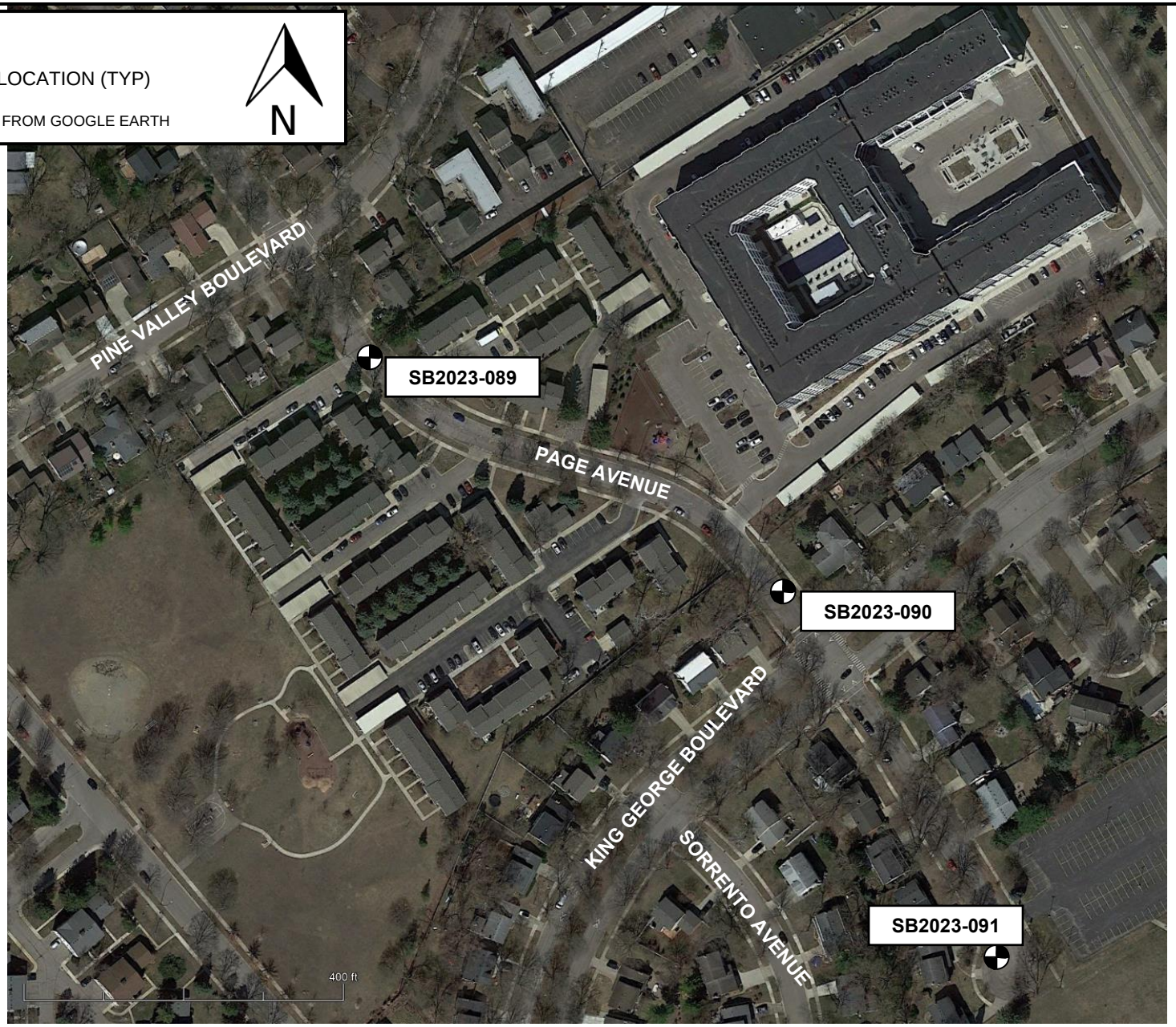

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SCALE: AS SHOWN	DATE: 11/10/2023	PROJECT NO.: 231532	MTC MATERIALS TESTING CONSULTANTS
FIG. NO.: 7	DR. BY: BG	REV. BY: RS	

Table 1 - Summary of Investigation Results

Street Name	Limits	Borings	Asphalt Thickness (inches)	Base Thickness and Description	Subgrade Soils	Estimated Resilient Modulus, psi	Laboratory Results - Moisture, %
Andrea Court	Lakewood Dr to Gralake Ave	SB2023-001 and SB2023-002	3 3/4 to 4 1/4	SB2023-001: None SB2023-002: 17" Agg.	SB2023-001: Poorly graded sand with clay and gravel (SP-SC) to 1.8 ft (Fill), clayey sand (SC) to 3.5 ft, lean clay (CL) to 5 ft SB2023-002: Lean clay (CL) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	SC: 17.1 CL: 15.5 to 17.8
Burwood Avenue	West Liberty St to Jackson Ave	SB2023-003 to SB2023-007	1 3/4 to 5 1/2	SB2023-003: 5 1/2" Concrete SB2023-004 to SB2023-007: None	SB2023-003: Lean clay (CL) to 5 ft SB2023-004 to SB2023-007: Poorly graded sand with clay and gravel (SP-SC) to 1.8 ft (Fill), lean clay (CL) to 2.5 to 5 ft SB2023-005: Poorly graded sand with clay and gravel (SP-SC) to 1.8 ft (Fill), lean clay (CL) to 3.5 ft, poorly graded sand (SP) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,101	CL: 6.6 to 17.2
Carolina Avenue	Winewood Ave to Thaler Ave	SB2023-008	3 3/4	10" Natural Agg.	Poorly graded sand with clay (SP-SC) to 3 ft, lean clay (CL) to 5 ft	SP-SC: 3,700 - 5,100 CL: 3,700 - 5,101	CL: 20.4
Chalrton Avenue	East of Burwood Ave	SB2023-009 and SB2023-010	4 1/2 to 6 1/4	None	SB-2023-009: Poorly graded sand with clay (SP-SC) to 1.4 ft (Fill), Lean clay (CL) to 5 ft SB2023-010: Poorly graded sand with varying amounts of clayey fines (SP, SP-SC) to 4.9 ft (Fill), Lean clay (CL) to 5 ft	SP: 5,500 - 7,500 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	CL: 11.3 to 18.2
Collingwood Drive	Jackson Ave to W Stadium Blvd	SB2023-011 to SB2023-013	4 1/4 to 6 1/4	None	Poorly graded sand with clay and gravel (SP-SC) to 1.2 to 1.5 (Fill), lean clay (CL) and clayey sand (SC) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	SC: 8.7 to 15.3 CL: 13.8 to 15.7
Dolph Drive	Sunnywood Dr to Hazelwood Ave	SB2023-014 and SB2023-015	2 to 4	None	Poorly graded sand with clay and gravel (SP-SC) to 2 to 2.5 (Fill), lean clay (CL) and clayey sand (SC) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	CL: 11.7 to 13.3
Fair Street	East of Burwood Ave	SB2023-016	3 3/4	None	Poorly graded sand with clay and gravel (SP-SC) to 1 ft (Fill), Clayey sand (SC) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100	SC: 12.6 to 13.1
Thaler Avenue	Burwood Ave to Graden Circle	SB2023-017	5	None	Poorly graded sand with clay and gravel (SP-SC) to 1.4 ft (Fill), clayey sand (SC) to 2.5 ft, lean clay (CL) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	-
	W Stadium Blvd to Burwood Ave	SB2023-047	6 1/4	12" Agg.	Poorly graded sand (SP) to 2.1 ft (Fill), clayey sand (SC) to 2.5 ft	SC: 3,700 - 5,100 SP: 5,500 - 7,500	-
Garden Circle	East of Thaler Ave	SB2023-018	5 3/4	None	Poorly graded sand with clay and gravel (SP-SC) to 1.5 ft (Fill), poorly graded sand (SP) to 2.9 ft	SP: 5,500 - 7,500 SP-SC: 3,700 - 5,100	-

Table 1 - Summary of Investigation Results, Continued

Street Name	Limits	Borings	Asphalt Thickness (inches)	Base Thickness and Description	Subgrade Soils	Estimated Resilient Modulus, psi	Laboratory Results - Moisture, %
Gralake Avenue	Hilltop St to Central St	SB2023-019 to SB2023-022	5 to 7	SB2023-019 to SB2023-021: 10 to 15" Natural Agg. SB2023-022: None	SB2023-019: Lean clay (CL) to 4.2 ft SB2023-020: Lean clay (CL) to 3.8 ft, clayey sand (SC) to 4.2 ft SB2023-021: Poorly graded sand with clay (SP-SC) to 2.2 ft SB2023-022: Poorly graded sand with clay and gravel (SP-SC) to 2 ft (Fill), lean clay (CL) to 3 ft	SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	SC: 13.9 CL: 15.9 to 18.8
Highlake Avenue	Lakeview Dr to Sunnywood Dr	SB2023-023 to SB2023-025	3 to 6	SB2023-023 and SB2023-024: None SB2023-025: 12" Agg.	SB2023-023: Poorly graded sand with gravel (SP) to 2.3 ft, clayey sand (SC) to 3.8 ft, lean clay (CL) to 5 ft SB2023-024: Poorly graded sand with gravel (SP) to 1.3 ft, lean clay (CL) to 5 ft SB2023-025: Lean clay (CL) to 5 ft	SC: 3,700 - 5,100 SP: 5,500 - 7,500 CL: 3,700 - 5,100	CL: 22.6
Hilltop Drive	West of Gralake Ave	SB2023-026 and SB2023-027	6	4" Natural Agg.	SB2023-026: Clayey sand (SC) to 4.5 ft SB2023-027: Poorly graded sand with clay (SP-SC) to 1.5 ft, lean clay with sand (CL) to 3.2 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	SC: 14.3 to 14.7 CL: 17.8
Lake Park Lane	West of McCotter Dr	SB2023-028	2 1/2	None	Poorly graded sand with clay and gravel (SP-SC) to 1.5 ft (Fill), lean clay (CL) to 3 ft, poorly graded sand with clay (SP-SC) to 4.0	SP: 5,500 - 7,500 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	CL: 16.4
Lakeview Drive	Parklake Ave to Hilltop Drive	SB2023-029 to SB2023-031	3 to 3 1/2	SB2023-029 and SB2023-030: 10 to 12" Natural Agg. SB2023-031: None	SB2023-029: Clayey sand (SC) to 5 ft SB2023-030: Lean clay (CL) to 2.5 ft (Fill), lean clay (CL) to 5 ft SB2023-031: Poorly graded sand with gravel (SP), lean clay (CL) to 5 ft	SC: 3,700 - 5,100 SP: 5,500 - 7,500 CL: 3,700 - 5,100	-
Lakewood Drive	Sunnywood Dr to Gralake Ave	SB2023-032 to SB2023-034	3 1/4 to 3 1/2	6 to 9" Natural Agg.	SB2023-032: Clayey sand (SC) to 2.2 ft, lean clay (CL) to 3.3 ft SB2023-033 and SB2023-034: Lean clay (CL) to 2.4 to 4 ft	SC: 3,700 - 5,100 CL: 3,700 - 5,100	SC: 15.0 to 15.9 CL: 14.2 to 23.8
Mason Avenue	South of Lakeview Dr	SB2023-035 to SB2023-038	2 1/4 to 4 1/2	SB20230-36 to SB2023-038: 7 to 12" Natural Agg. SB2023-035: None	SB2023-035: Poorly graded sand with silt and gravel (SP-SM) to 1.3 ft (Fill), lean clay (CL) to 5 ft SB2023-037: Clayey sand with gravel (SC) to 2.2 ft SB2023-036 and SB2023-038: Lean clay (CL) to 2.5 to 4.3 ft	SC: 3,700 - 5,100 SP-SM: 5,900 - 8,100 CL: 3,700 - 5,100	SC: 11.7 CL: 12.6 to 21.0
McCotter Drive	Park Lake Ave to Lakewood Dr	SB2023-039	7	None	Poorly graded sand with clay and gravel (SP-SC) to 1.5 ft (Fill), lean clay (CL) to 1.7	SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	CL: 17.6

Table 1 - Summary of Investigation Results, Continued

Street Name	Limits	Borings	Asphalt Thickness (inches)	Base Thickness and Description	Subgrade Soils	Estimated Resilient Modulus, psi	Laboratory Results - Moisture, %
Parklake Avenue	Jackson Rd to Lakeview Dr	SB2023-040	4 1/4	None	Poorly graded sand with clay and gravel (SP-SC) to 1.4 ft (Fill), clayey sand (SC) to 2.8 ft, lean clay (CL) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	SC: 27.5 CL: 17.5
Pleasant Place	Jackson Ave to Charlton Dr	SB2023-041 and SB2023-042	5 3/4 to 6	None	SB2023-041: Poorly graded sand with clay and gravel (SP-SC) to 1 ft (Fill), lean clay (CL) to 5 ft SB2023-042: Poorly graded sand with clay and gravel (SP-SC) to 1 ft (Fill), lean clay (CL) to 3.5 ft, clayey sand (SC) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	SC: 12.7 CL: 14.7 to 21.7
Sunnywood Drive	Mohawk Ct to Highlake Ave	SB2023-043 to SB2023-046	3 to 5	9 to 12 Natural Agg.	Lean clay (CL) to 4.5 to 5 ft SB2023-045: Clayey sand (SC) to 3.6 ft	SC: 3,700 - 5,100 CL: 3,700 - 5,100	SC: 4.8 CL: 13.4 to 26.7
Wines Drive	Hillridge Ave to Miller Ave	SB2023-048 to SB2023-050	4 3/4 to 7 1/2	None	Poorly graded sand with clay and gravel (SP-SC) to 1.9 to 2.5 ft (Fill), lean clay (CL) and clayey sand (SC) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	CL: 13.1 to 22.4
Winewood Avenue	S Maple Rd to W Stadium Blvd	SB2023-051	3 3/4	8" Agg.	Poorly graded sand (SP) to 5 ft	SP: 5,500 - 7,500	-
	East of Burwood Ave	SB2023-052 and SB2023-053	3 to 4 3/4	None	SB2023-052: Poorly graded sand with clay and gravel (SP-SC) to 1 ft (Fill), lean clay (CL) to 3 ft SB2023-053: Poorly graded sand with clay and gravel (SP-SC) to 1.5 ft (Fill), clayey sand (SC) to 4.2 ft, lean clay (CL) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	CL: 12.6 to 16.2

Table 1 - Summary of Investigation Results, Continued

Street Name	Limits	Borings	Asphalt Thickness (inches)	Base Thickness and Description	Subgrade Soils	Estimated Resilient Modulus, psi	Laboratory Results - Moisture, %
Page Avenue	South of Harpst St	SB2023-084 to SB2023-091	2 to 5 1/4	None SB2023-088 and SB2023-089: 6" Natural Agg.	SB2023-084: Poorly graded sand with clay and gravel (SP-SC) to 2.3 ft (Fill), poorly graded sand with gravel (SP) to 5 ft SB2023-085: Poorly graded sand with clay and gravel (SP-SC) to 1 ft (Fill), lean clay (CL) to 2.2 ft, clayey sand (SC) to 3.5 ft, poorly graded sand with gravel (SP) to 5 ft SB2023-086, SB2023-087: Poorly graded sand with clay and gravel (SP-SC) to 1.2 to 1.3 ft (FIll), clayey sand (SC) to 2.2 to 2.3 ft (Fill), Poorly graded sand with clay (SP-SC) to 5 ft SB2023-088: Clayey sand (SC) to 4.7 ft (Fill), lean clay to 5 ft SB2023-089: Poorly graded sand with clay and gravel (SP-SC) to 1.2 ft (Fill) SB2023-090: Poorly graded sand with clay and gravel (SP-SC) to 3 ft (Fill), poorly graded sand (SP) to 4.5 ft SB2023-091: Clayey sand with gravel (SC) to 3.6 ft (Fill)	SC: 3,700 - 5,100 SP: 5,500 - 7,500 SP-SC: 3,700 - 5,100 CL: 3,700 - 5,100	SC: 4.8 to 15.8 CL: 14.9 to 19.8
Yost Boulevard	Washtenaw Ave to Terhune Rd	SB2023-092 to SB203-098	3 to 8	4 to 13" Natural Agg. SB2023-092: None	SB2023-092: Poorly graded sand with clay and gravel (SP-SC) to 1.5 ft (Fill), lean clay (CL) to 4.9 ft, poorly graded sand with clay (SP-SC) to 5 ft SB2023-093: Lean clay (CL) to 3.7 ft (Fill), lean clay (CL) to 5 ft SB2023-094, SB2023-097: Lean clay (CL) to 1.3 to 2.8 SB2023-095, SB2023-096: Poorly graded sand with silt (SP-SM) to 1.3 to 2.4, lean clay (CL) to 3.2 to 4.3 ft SB2023-098: Lean clay (CL) to 1.7 ft, clayey sand (SC) to 5 ft	SC: 3,700 - 5,100 SP-SC: 3,700 - 5,100 SP-SM: 5,900 - 8,100 CL: 3,700 - 5,100	SC: 11.2 CL: 8.4 to 21.3

LIMITATIONS

Soil Variations

The recommendations in this report are based upon the data obtained from the soil borings. This report does not reflect variations which may occur between these borings, and which would not become evident until construction. If variations then become evident, it would be necessary for a re-evaluation of recommendations of this report, after performing on-site observations.

Warranties

We have prepared this report in accordance with generally accepted soil and foundation engineering practices. We make no other warranties, either expressed or implied, as to the professional advice provided under the terms of our agreement and included in this report. This report is prepared exclusively for our client and may not be relied upon by other parties without written consent from our office.

Boring Logs

In the process of obtaining and testing samples and preparing this report, we follow reasonable and accepted practice in the field of soil engineering. Field logs maintained during drilling describe field occurrences, sampling locations, and other information. The samples obtained in the field are subjected to additional testing in the laboratory and differences may exist between the field logs and the final logs. The engineer reviews the field logs and laboratory test data, and then prepares the final boring logs. Our recommendations are based on the contents of the final logs.

Review of Design Plans and Specifications

In the event that any changes in the design of the building or the location, however slight, are planned, our recommendations shall not be considered valid unless modified or approved in writing by our office. We recommend that we be provided the opportunity to review the final design and specifications in order to determine whether changes in the original concept may have affected the validity of our recommendations, and whether our recommendations have, in fact, been implemented in the design and specifications.

TEST DRILLING AND SAMPLING PROCEDURES

Test Drilling Methods:

_____ Hollow stem auger, ASTM D6151
_____ Mud rotary, ASTM D5783
_____ Casing advancer, ASTM D5872
_____ Rock coring, ASTM D2113
__X__ Core/Hand Auger

Note: Cone penetration test data can be used to interpret subsurface stratigraphy and can provide data on engineering properties of soils. The ASTM procedure does not include a procedure for determining soil classification from CPT testing. Soil classifications shown on CPT logs are based on published procedures and are not based on physical ASTM soil classification tests.

Sampling Methods:

_____ SPT, ASTM D1586, Auto hammer (140 lb., 30" drop, 2" OD split spoon sampler)
__X__ Grab Samples

Note: The number of hammer blows required to drive the SPT sampler 12 inches, after seating 6 inches, is termed the soil N-value and provides an indication of the soil's relative density and strength parameters at the sample location. SPT blow counts in 6 inch increments are recorded on the boring logs.

Drill Rig:

_____ CME 55 LC (ATV)
_____ CME 750 Rubber tired (ATV)
_____ CME 45 Truck
_____ Geoprobe Direct Push
_____ Geoprobe Rotary Sonic

Boreholes Backfilled With:

__X__ Excavated soil
_____ Cement bentonite grout
_____ Piezometer or Monitoring Well (see notes on logs)
__X__ Concrete or asphalt patch where appropriate

Sample Handling and Disposition:

__X__ Samples labeled, placed in jars, returned to MTC Laboratory
__X__ Discard after 60 days

BORING LOG TERMINOLOGY AND ASTM D 2488 CLASSIFICATION OUTLINE

TERMS DESCRIBING CONSISTENCY OR CONDITION

COARSE-GRAINED SOILS (major portions retained on No. 200 sieve): includes (1) clean gravel and sands and (2) silty or clayey gravels and sands. Condition is rated according to relative density as determined by laboratory tests or standard penetration resistance tests.

Descriptive Terms	Relative Density	SPT Blow Count
Very loose	0 to 15 %	< 5
Loose	15 to 35 %	5 to 10
Medium dense	35 to 65 %	10 to 30
Dense	65 to 85 %	30 to 50
Very dense	85 to 100 %	> 50

Per ASTM D2487, the following conditions must be met based on laboratory testing to justify the label 'well graded' in a soil description.

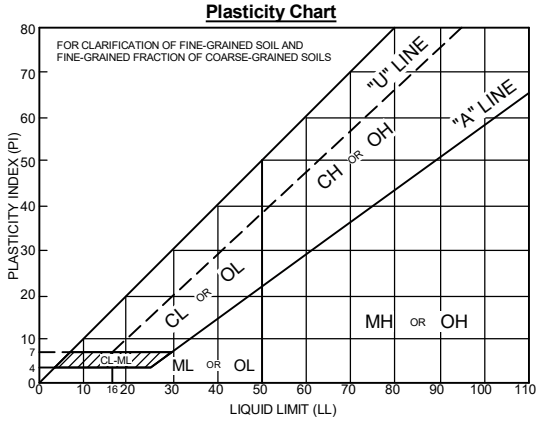
Gravel: $C_U = \frac{D_{60}}{D_{10}}$ greater than 4; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3

Sand: $C_U = \frac{D_{60}}{D_{10}}$ greater than 6; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3

FINE-GRAINED SOILS (major portions passing on No. 200 sieve): includes (1) inorganic and organic silts and clays, (2) gravelly, sandy, or silty clays, and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer readings, SPT blow count, or unconfined compression tests.

Descriptive Terms	Unconfined Compressive Strength TSF	SPT Blow Count
Very soft	< 0.25	< 2
Soft	0.25 to 0.5	2 to 4
Medium stiff	0.5 to 1.0	4 to 8
Stiff	1.0 to 2.0	8 to 15
Very stiff	2.0 to 4.0	15 to 30
Hard	> 4.0	> 30

Plasticity Chart



MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LESS THAN 15% FINES	GW		WELL-GRADED GRAVELS WITH OR WITHOUT SAND
			GP		POORLY-GRADED GRAVELS WITH OR WITHOUT SAND
		GRAVELS WITH 15% OR MORE FINES	GM		SILTY GRAVELS WITH OR WITHOUT SAND
			GC		CLAYEY GRAVELS WITH OR WITHOUT SAND
	SANDS MORE THAN HALF COARSE FRACTION IS FINER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 15% FINES	SW		WELL-GRADED SANDS WITH OR WITHOUT GRAVEL
			SP		POORLY-GRADED SANDS WITH OR WITHOUT GRAVEL
			SP-SM		POORLY-GRADED SANDS WITH SILT WITH OR WITHOUT GRAVEL
		SANDS WITH 15% OR MORE FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			OL		ORGANIC SILTS OR CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			CH		INORGANIC CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			OH		ORGANIC SILTS OR CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
HIGHLY ORGANIC SOILS			PT/OL		PEAT AND OTHER HIGHLY ORGANIC SOILS

GENERAL NOTES

1. Classifications are based on the United Soil Classification System and include consistency, moisture, and color. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate.

2. "Grades with" or "Grades without" may be used to describe soil when characteristics vary within a stratum.

3. Preserved soil samples will be discarded after 60 days unless alternate arrangements have been made.

GROUNDWATER OBSERVATIONS:

During - indicates water level encountered during the boring
End- indicates water level immediately after drilling
Date and Depth - Measurements at indicated date

SAMPLE TYPES AND NUMBERING

S	SPT, split barrel sample, ASTM D1586
U	Shelby tube sample, ASTM D1587
R	Rock core run
*S	Other than 2" split barrel sample
L	SPT with liner, ASTM D1586
A	Auger cuttings
G	Geoprobe liner

MINOR COMPONENT QUANTIFYING TERMS

Less than 5%	TRACE
5 to 10%	FEW
15 to 25%	LITTLE
30 to 40%	SOME
50 to 100%	MOSTLY

GRAIN SIZE

BOULDER	>12"
COBBLE	12" to 3"
COARSE GRAVEL	3" to 0.75"
FINE GRAVEL	0.75" to No. 4
COARSE SAND	No. 4 to No. 10
MEDIUM SAND	No. 10 to No.40
FINE SAND	No. 40 to No. 200

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-001
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 945.0 ft Datum: Washtenaw County GIS
Notes: Andrea Court, 3.0'W of of E Edge of Pavement, 25.0'S of 265 Andrea Court Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/12/2023 Date End: 10/12/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
944.8	0.25					4 1/4" HMA				Fill: 0.0' to 1.8'
944.5	0.50					0.4				
944.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist				
944.0	1.00									
943.8	1.25									
943.5	1.50									
943.3	1.75					Grades black (Possible Buried Topsoil) at 1.4'				
943.0	2.00	A-2				1.8		17.1		
942.8	2.25									
942.5	2.50									
942.3	2.75				SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, trace coarse to fine gravel, moist				
942.0	3.00									
941.8	3.25									
941.5	3.50					3.5				
941.3	3.75	A-3				Brown CLAY with sand; mostly clayey fines, little coarse to fine sand, few tree fragments, moist	3.0	17.8		
941.0	4.00									
940.8	4.25				CL					
940.5	4.50									
940.3	4.75									
940.0	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-002
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 945.0 ft Datum: Washtenaw County GIS
Notes: Andrea Court, 7.5'N of S Edge of Pavement; 27.5'W of 3051 Andrea Court Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/12/2023 Date End: 10/12/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
944.8	0.25					3 3/4" HMA 0.3				Fill: 0.0' to 1.8'
944.5	0.50	A-1				17" Aggregate Base				
944.3	0.75									
944.0	1.00									
943.8	1.25									
943.5	1.50									
943.3	1.75					1.8				
943.0	2.00	A-2				Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace coarse to fine gravel, moist	4.0			
942.8	2.25									
942.5	2.50									
942.3	2.75									
942.0	3.00									
941.8	3.25									
941.5	3.50				CL					
941.3	3.75									
941.0	4.00									
940.8	4.25									
940.5	4.50						4.0			
940.3	4.75									
940.0	5.00	A-3				5.0		15.5		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-003
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 944.0 ft Datum: Washtenaw County GIS
Notes: Burwood Avenue, 1.0'E of N Curb, 7.0'N of 110 Burwood Avenue Sidewalk
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/18/2023 Date End: 09/18/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
943.8	0.25					1 3/4" HMA (0.1)				
943.5	0.50					5 1/2" Concrete				
943.3	0.75					(0.7)				
943.0	1.00	A-1				Brown lean CLAY; mostly clayey fines, trace coarse to fine sand, moist	1.0	19.6		
942.8	1.25									
942.5	1.50									
942.3	1.75									
942.0	2.00									
941.8	2.25									
941.5	2.50									
941.3	2.75									
941.0	3.00				CL					
940.8	3.25									
940.5	3.50									
940.3	3.75									
940.0	4.00									
939.8	4.25									
939.5	4.50									
939.3	4.75									
939.0	5.00	A-2				(5.0)		13.0		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-004
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 947.0 ft Datum: Washtenaw County GIS
Notes: Burwood Avenue, 9.5'E of W Curb, 45.5' N of 310 Burwood Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/19/2023 Date End: 09/19/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.5 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
946.8	0.25					5 1/2" HMA				Fill: 0.0' to 1.0'
946.5	0.50					0.5				
946.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
946.0	1.00					1.0				
945.8	1.25	A-2				Brown lean CLAY; mostly clayey fines, few coarse to fine sand, few coarse to fine gravel, moist	3.0	17.1		
945.5	1.50									
945.3	1.75				CL					
945.0	2.00									
944.8	2.25									
944.5	2.50					2.5				
						End of Boring				Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-005
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 934.0 ft Datum: Washtenaw County GIS
Notes: Burwood Avenue, 7.8'E of W Curb; 5.5'N of Light Pole

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/19/2023 Date End: 09/19/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
933.8	0.25					3" HMA 0.3				Fill: 0.0' to 1.8'
933.5	0.50	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill 1.8				
933.3	0.75									
933.0	1.00									
932.8	1.25									
932.5	1.50									
932.3	1.75									
932.0	2.00	A-2			CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, few coarse to fine gravel, moist 3.5	3.0			
931.8	2.25									
931.5	2.50									
931.3	2.75									
931.0	3.00									
930.8	3.25									
930.5	3.50									
930.3	3.75	A-3			SP	Brown poorly graded SAND; mostly coarse to fine sand, few coarse to fine gravel, trace clayey fines, moist 5.0				
930.0	4.00									
929.8	4.25									
929.5	4.50									
929.3	4.75									
929.0	5.00	A-4				End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-006
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 921.0 ft Datum: Washtenaw County GIS
Notes: Burwood Avenue, 3.5'W of E Curb; 24'S of 533 Burwood Avenue Drive Centerline
Plugging Record: Backfilled borehole with compacted cuttings.

Date Begin: 09/14/2023 Date End: 09/14/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
920.8	0.25					3 1/2" HMA 0.3				Fill: 0.0' to 1.5'
920.5	0.50	A-1			SP-SC	Brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, moist, Fill 1.5				
920.3	0.75									
920.0	1.00									
919.8	1.25									
919.5	1.50									
919.3	1.75	A-2			CL	Gray lean CLAY with sand; mostly clayey fines, little sand, trace coarse to fine gravel, moist	2.75	11.6		
919.0	2.00									
918.8	2.25									
918.5	2.50									
918.3	2.75									
918.0	3.00									
917.8	3.25									
917.5	3.50						4.25			
917.3	3.75									
917.0	4.00									
916.8	4.25									
916.5	4.50					4.5				
916.3	4.75	A-3			CL	Brown lean CLAY with sand; mostly clayey fines, little coarse to fine sand, few coarse to fine gravel, moist	2.0	6.6		
916.0	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-007
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 934.0 ft Datum: Washtenaw County GIS
Notes: Burwood Avenue, 4.0'W of E Curb; 30'N of Bank of Ann Arbor Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/14/2023 Date End: 09/14/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
933.8	0.25					4" HMA 0.3				Fill: 0.0' to 1.5'
933.5	0.50	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill 1.5				
933.3	0.75									
933.0	1.00									
932.8	1.25									
932.5	1.50									
932.3	1.75	A-2			CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace coarse to fine gravel, moist	4.5+	15.7		
932.0	2.00									
931.8	2.25									
931.5	2.50									
931.3	2.75									
931.0	3.00									
930.8	3.25									
930.5	3.50									
930.3	3.75									
930.0	4.00									
929.8	4.25									
929.5	4.50									
929.3	4.75									
929.0	5.00	A-3				5.0	3.0	17.2		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-008
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IA Rev. By: RS
Coordinates:
Elevation: 923.0 ft Datum: Washtenaw County GIS
Notes: Carolina Avenue; 25'N of Driveway 525 Carolina Avenue, 4'W from NB Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 11/07/2023 Date End: 11/07/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
922.7	0.25					3 3/4" HMA (0.3)				
922.5	0.50					10" Natural Aggregate Base (1.2)				
922.2	0.75									
922.0	1.00									
921.7	1.25									
921.5	1.50									
921.2	1.75	A-1			SP-SC	Brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, moist (3.0)				
921.0	2.00									
920.7	2.25									
920.5	2.50									
920.2	2.75									
920.0	3.00									
919.7	3.25									
919.5	3.50									
919.2	3.75									
919.0	4.00	A-2			CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, moist (5.0)	2.75	20.4		
918.7	4.25									
918.5	4.50									
918.2	4.75									
918.0	5.00									
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-009
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 938.0 ft Datum: Washtenaw County GIS
Notes: Charleton Avenue, 3.9' S of N Curb; 39.0' W of 2101 Charleton Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/09/2023 Date End: 10/09/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
937.8	0.25					6 1/4" HMA				
937.5	0.50					0.5				
937.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, some coarse to fine gravel, few clay fines, moist				Fill: 0.0' to 1.4'
937.0	1.00									
936.8	1.25									
936.5	1.50					1.4				
936.3	1.75	A-2			CL	Brown lean CLAY; mostly clay fines, few coarse to fine sand, trace coarse to fine gravel, moist	2.5	18.2		
936.0	2.00									
935.8	2.25									
935.5	2.50									
935.3	2.75									
935.0	3.00									
934.8	3.25									
934.5	3.50									
934.3	3.75									
934.0	4.00									
933.8	4.25									
933.5	4.50									Too powdery for QP reading
933.3	4.75									
933.0	5.00	A-3				5.0		12.4		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-010
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 931.0 ft Datum: Washtenaw County GIS
Notes: Charleton Avenue, 4.5' of N Curb; 17.5' W of 2041 Charleton Avenue Parking Lot Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/09/2023 Date End: 10/09/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
930.8	0.25					4 1/2" HMA				
930.5	0.50					0.5				
930.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clay fines, moist				Fill: 0.0' to 4.9'
930.0	1.00									
929.8	1.25									
929.5	1.50									
929.3	1.75	A-2				1.6				
929.0	2.00					Brown pooly graded SAND; mostly coarse to fine sand, few coarse to fine gravel, trace clay fines, moist				
928.8	2.25									
928.5	2.50									
928.3	2.75									
928.0	3.00									
927.8	3.25				SP					
927.5	3.50									
927.3	3.75									
927.0	4.00									
926.8	4.25									
926.5	4.50									
926.3	4.75									
926.0	5.00	A-3				4.9	2.5	11.3		
					CL	Brown lean CLAY; mostly clay fines, trace coarse to fine sand, moist				
						5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-011
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 936.0 ft Datum: Washtenaw County GIS
Notes: Collingwood Drive, 4.8'E of W Curb; 6.5'S of 112 Collingwood Drive Sidewalk
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/14/2023 Date End: 09/14/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
935.8	0.25					4 1/4" HMA				Fill: 0.0' to 1.5'
935.5	0.50	A-1				0.4				
935.3	0.75				SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill with trace tree roots				
935.0	1.00									
934.8	1.25									
934.5	1.50					Grades gray at 1.3' 1.5				
934.3	1.75	A-2				Gray clayey SAND with gravel; mostly coarse to fine sand, little clayey fines, little coarse to fine gravel, trace tree roots, moist		8.7		
934.0	2.00				SC					
933.8	2.25									
933.5	2.50					2.6				
933.3	2.75	A-3				Gray clayey SAND; mostly coarse to fine sand, some clayey fines, trace coarse to fine gravel, trace tree roots, moist		14.9		
933.0	3.00									
932.8	3.25									
932.5	3.50									
932.3	3.75				SC					
932.0	4.00									
931.8	4.25									
931.5	4.50									
931.3	4.75									
931.0	5.00	A-4				5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-012
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 943.0 ft Datum: Washtenaw County GIS
Notes: Collingwood Drive, 5.5'E of W Curb; 42.5'S of Shelby Avenue Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/01/2023 Date End: 09/01/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
942.8	0.25					5 1/4" HMA				Fill: 0.0' to 1.2'
942.5	0.50					0.5				
942.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
942.0	1.00									
941.8	1.25					1.2				
941.5	1.50	A-2				Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace coarse to fine gravel, moist	3.75	15.7		
941.3	1.75									
941.0	2.00									
940.8	2.25									
940.5	2.50									
940.3	2.75									
940.0	3.00									
939.8	3.25				CL					
939.5	3.50									
939.3	3.75									
939.0	4.00									
938.8	4.25									
938.5	4.50									
938.3	4.75									
938.0	5.00	A-3				5.0		13.8		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-013
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 942.0 ft Datum: Washtenaw County GIS
Notes: Collingwood Drive, 2.0'N of S Curb; In Line with SE Corner of Building 2370 Collingwood Drive
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/14/2023 Date End: 09/14/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
941.8	0.25					6 1/4" HMA				Fill: 0.0' to 1.3'
941.5	0.50					0.5				
941.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, trace tree roots, moist, Fill with trace tree roots				
941.0	1.00					1.3				
940.8	1.25									
940.5	1.50	A-2			CL	Brown lean CLAY; mostly clayey fines, trace coarse to fine gravel, trace tree roots, moist	4.0	16.3		
940.3	1.75									
940.0	2.00									
939.8	2.25									
939.5	2.50									
939.3	2.75									
939.0	3.00									
938.8	3.25					3.3				
938.5	3.50	A-3			SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, few coarse to fine gravel, trace tree roots, moist				
938.3	3.75									
938.0	4.00									
937.8	4.25									
937.5	4.50									
937.3	4.75									
937.0	5.00	A-4				5.0		15.3		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-014
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 925.0 ft Datum: Washtenaw County GIS
Notes: Dolph Drive, 4.2'N of South Curb; 64.0'E of 3165 Dolph Drive Sidewalk Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/23/2023 Date End: 10/23/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
924.8	0.25					2" HMA 0.2				Fill: 0.0' to 2.0'
924.5	0.50	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
924.3	0.75									
924.0	1.00									
923.8	1.25									
923.5	1.50									
923.3	1.75									
923.0	2.00					2.0				
922.8	2.25	A-2			CL	Brown lean CLAY; mostly clayey fines, few coarse to fine gravel, trace coarse to fine sand, trace tree root fragments, moist	2.25	13.3		
922.5	2.50									
922.3	2.75									
922.0	3.00									
921.8	3.25									
921.5	3.50									
921.3	3.75									
921.0	4.00									
920.8	4.25									
920.5	4.50									
920.3	4.75					4.8				
920.0	5.00	A-3			SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, trace coarse to fine gravel, moist 5.0		11.7		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-015
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 938.0 ft Datum: Washtenaw County GIS
Notes: Dolph Drive, 5.5'S of North Curb; 18.7'E of 3120 Dolph Drive Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/23/2023 Date End: 10/23/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.5 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
937.8	0.25					4" HMA 0.3				Fill: 0.0' to 2.5'
937.5	0.50									
937.3	0.75	A-1								
937.0	1.00									
936.8	1.25									
936.5	1.50				SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
936.3	1.75									
936.0	2.00									
935.8	2.25									
935.5	2.50	A-2				2.5				
						End of Boring				Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-016
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 934.0 ft Datum: Washtenaw County GIS
Notes: Fair Street, 4.0'N of S Curb; 14.0'E of 2101 Fair Street Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/18/2023 Date End: 10/18/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
933.8	0.25					3 3/4" HMA				Fill: 0.0' to 1.0'
933.5	0.50	A-1				0.3				
933.3	0.75				SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist				
933.0	1.00					1.0				
932.8	1.25	A-2				Brown clayey SAND; mostly coarse to fine sand, little clayey fines, trace coarse to fine gravel, moist		13.1		
932.5	1.50									
932.3	1.75									
932.0	2.00									
931.8	2.25									
931.5	2.50									
931.3	2.75									
931.0	3.00				SC					
930.8	3.25									
930.5	3.50									
930.3	3.75									
930.0	4.00									
929.8	4.25									
929.5	4.50									
929.3	4.75									
929.0	5.00	A-3				5.0		12.6		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-017
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 907.0 ft Datum: Washtenaw County GIS
Notes: Thaler Avenue, 2.5'N of S Curb; 35.0'E of Light Pole

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/19/2023 Date End: 09/19/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
906.8	0.25					5" HMA				Fill: 0.0' to 1.4'
906.5	0.50					0.4				
906.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
906.0	1.00									
905.8	1.25									
905.5	1.50					1.4				
905.3	1.75	A-2			SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, trace coarse to fine gravel, moist				
905.0	2.00									
904.8	2.25									
904.5	2.50					2.5				
904.3	2.75	A-3			CL	Brown sandy lean CLAY; mostly clayey fines, some coarse to fine sand, trace coarse to fine gravel, moist				
904.0	3.00									
903.8	3.25									
903.5	3.50					3.5				
903.3	3.75	A-4			CL	Gray lean CLAY; mostly clayey fines, trace coarse to fine gravel, moist	4.0			
903.0	4.00									
902.8	4.25									
902.5	4.50									
902.3	4.75									
902.0	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-018
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 913.0 ft Datum: Washtenaw County GIS
Notes: Garden Circle, 6'S of N Curb; 50'W of 2077 Garden Circle Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/21/2023 Date End: 09/21/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.9 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
912.8	0.25					5 3/4" HMA				Fill: 0.0' to 1.5'
912.5	0.50					0.5				
912.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
912.0	1.00									
911.8	1.25									
911.5	1.50					1.5				
911.3	1.75	A-2			SP	Brown poorly graded SAND; mostly coarse sand, few finely graded gravel, trace clay fines, moist				
911.0	2.00									
910.8	2.25									
910.5	2.50									
910.3	2.75					2.9				
						End of Boring				Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-019
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IA Rev. By: RS
Coordinates:
Elevation: 950.0 ft Datum: Washtenaw County GIS
Notes: Garlake Drive, 26'S from Center of 3020 Driveway

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/27/2023 Date End: 10/27/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 4.2 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
949.8	0.25					7" HMA (0.6)				
949.5	0.50									
949.3	0.75									
949.0	1.00	A-1				10" Natural Aggregate Base (1.4)				
948.8	1.25									
948.5	1.50									
948.3	1.75									
948.0	2.00	A-2			CL	Brown sandy CLAY; mostly clayey fines, some coarse to fine sand, trace medium to fine gravel, moist (2.5)		18.8		
947.8	2.25									
947.5	2.50									
947.3	2.75					Brown lean CLAY with sand; mostly clayey fines, little coarse to fine sand, moist				
947.0	3.00									
946.8	3.25	A-3			CL			17.6		
946.5	3.50									
946.3	3.75									
946.0	4.00					(4.2)				
						End of Boring				Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-020
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IA Rev. By: RS
Coordinates:
Elevation: 942.0 ft Datum: Washtenaw County GIS
Notes: Garlake Drive, 27'S of Center of 210 Driveway

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/27/2023 Date End: 10/27/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 4.2 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
941.8	0.25					6 1/2" HMA				
941.5	0.50					0.5				
941.3	0.75					15" Natural Aggregate Base				
941.0	1.00									
940.8	1.25	A-1								
940.5	1.50									
940.3	1.75									
940.0	2.00					1.9				
939.8	2.25	A-2				Brown lean CLAY with sand; mostly clayey fines, little medium to fine sand, moist	2.5	15.9		
939.5	2.50									
939.3	2.75									
939.0	3.00				CL					
938.8	3.25									
938.5	3.50									
938.3	3.75					3.8				
938.0	4.00	A-3				Brown clayey SAND; mostly coarse to fine sand, little clayey fines, moist		13.9		
					SC	4.2				
						End of Boring				Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-021
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IA Rev. By: RS
Coordinates:
Elevation: 946.0 ft Datum: Washtenaw County GIS
Notes: Garlake Drive, 16'S from Center of 280 Driveway

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/27/2023 Date End: 10/27/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.2 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
945.8	0.25					6 1/2" HMA				
945.5	0.50					0.5				
945.3	0.75	A-1				10" Natural Aggregate Base				
945.0	1.00					1.3				
944.8	1.25									
944.5	1.50				SP-SC	Brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, moist				
944.3	1.75	A-2				2.2				
944.0	2.00					End of Boring				Auger refusal at 2.2' due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-022
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 956.0 ft Datum: Washtenaw County GIS
Notes: Gralake Avenue, 9.4'W of E Curb, 31.5'S of 340 Gralake Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/31/2023 Date End: 10/31/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 3.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
955.8	0.25					5" HMA (0.4)				Fill: 0.0' to 2.0'
955.5	0.50									
955.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill (2.0)				
955.0	1.00									
954.8	1.25									
954.5	1.50									
954.3	1.75									
954.0	2.00									
953.8	2.25	A-2			CL	Brown lean CLAY; mostly clayey fines, few coarse to fine gravel, trace coarse to fine sand, moist (3.0)	3.0	16.8		
953.5	2.50									
953.3	2.75									
953.0	3.00									
						End of Boring				Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-023
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates:
Elevation: 962.0 ft Datum: Washtenaw County GIS
Notes: Highlake, 10' E of W Curb, 31' S of 120 Highlake Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/24/2023 Date End: 10/24/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
961.8	0.25					6" HMA				
961.5	0.50					0.5				
961.3	0.75	A-1			SP-SC	Brown poorly graded SAND with gravel; mostly coarse to fine sand, little coarse to fine gravel, trace clayey fines, moist				
961.0	1.00									
960.8	1.25									
960.5	1.50									
960.3	1.75									
960.0	2.00									
959.8	2.25					2.3				
959.5	2.50				SC	Brown clayey SAND; mostly fine to coarse sand, some clayey fines, moist				
959.3	2.75	A-2								
959.0	3.00									
958.8	3.25									
958.5	3.50									
958.3	3.75					3.8				
958.0	4.00				CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, moist				
957.8	4.25	A-3						22.6		
957.5	4.50									
957.3	4.75									
957.0	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-024
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates:
Elevation: 961.0 ft Datum: Washtenaw County GIS
Notes: Highlake, 4.5' W of E Curb, 31' S of 241 Highlake Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/24/2023 Date End: 10/24/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
960.8	0.25					3" HMA 0.3				
960.5	0.50				SP-SC	Brown poorly graded SAND with gravel; mostly coarse to fine sand, some coarse to fine gravel, trace clayey fines, moist 1.3				
960.3	0.75	A-1								
960.0	1.00									
959.8	1.25									
959.5	1.50				CL	Gray lean CLAY; mostly clayey fines, moist 2.3				
959.3	1.75	A-2								
959.0	2.00									
958.8	2.25									
958.5	2.50				CL	Gray gravelly lean CLAY; mostly clayey fines, little coarse to fine gravel, moist 3.3				
958.3	2.75	A-3								
958.0	3.00									
957.8	3.25									
957.5	3.50				CL	Gray sandy lean CLAY; mostly clayey fines, some coarse to fine sand, moist 5.0				
957.3	3.75	A-4								
957.0	4.00									
956.8	4.25									
956.5	4.50									
956.3	4.75									
956.0	5.00									
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-025
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates:
Elevation: 954.0 ft Datum: Washtenaw County GIS
Notes: Highlake, 4' E of W Curb, 53.5' S of 284 Highlake Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/24/2023 Date End: 10/24/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
953.8	0.25					6" HMA				
953.5	0.50					0.5				
953.3	0.75					12" Aggregate Base				
953.0	1.00									
952.8	1.25									
952.5	1.50					1.5				
952.3	1.75	A-1				Gray lean CLAY; mostly clayey fines, trace coarse to fine gravel, moist				
952.0	2.00									
951.8	2.25									
951.5	2.50									
951.3	2.75									
951.0	3.00									
950.8	3.25				CL					
950.5	3.50									
950.3	3.75									
950.0	4.00									
949.8	4.25									
949.5	4.50									
949.3	4.75									
949.0	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-026
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IA Rev. By: BG
Coordinates:
Elevation: 944.0 ft Datum: Washtenaw County GIS
Notes: Hilltop Drive, 30'W from Center of 3125 Driveway

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/27/2023 Date End: 10/27/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 4.5 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
943.8	0.25					6" HMA				
943.5	0.50					0.5				
943.3	0.75					4" Natural Aggregate Base				
943.0	1.00					0.8				
942.8	1.25					Brown clayey SAND; mostly coarse to fine sand, little clayey fines, moist				
942.5	1.50									
942.3	1.75	A-1						14.7		
942.0	2.00									
941.8	2.25									
941.5	2.50									
941.3	2.75				SC					
941.0	3.00									
940.8	3.25									
940.5	3.50									
940.3	3.75	A-2						14.3		
940.0	4.00									
939.8	4.25									
939.5	4.50					4.5				
						End of Boring				Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-027
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IA Rev. By: BG
Coordinates:
Elevation: 948.0 ft Datum: Washtenaw County GIS
Notes: Hilltop Drive, 20'W from Center of 3059 Driveway

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/27/2023 Date End: 10/27/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 3.2 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
947.8	0.25					6" HMA				
947.5	0.50					0.5				
947.3	0.75	A-1				4" Natural Aggregate Base				
947.0	1.00					0.8				
946.8	1.25	A-2			SP-SC	Brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey sand, moist				
946.5	1.50					1.5				
946.3	1.75					Brown lean CLAY with sand; mostly clayey fines, little coarse to fine sand, moist				
946.0	2.00									
945.8	2.25									
945.5	2.50	A-3			CL		2.75	17.8		
945.3	2.75									
945.0	3.00									
						3.2				
						End of Boring				Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-028
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 935.0 ft Datum: Washtenaw County GIS
Notes: Park Lake Lane, 8.0'S of North Road Edge, 2.0'E of 337 Park Lake Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/31/2023 Date End: 10/31/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 4.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
934.8	0.25					2 1/2" HMA 0.2				Fill: 0.0' to 1.5'
934.5	0.50	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill 1.5				
934.3	0.75									
934.0	1.00									
933.8	1.25									
933.5	1.50									
933.3	1.75	A-2			CL	Brown lean CLAY; mostly clayey fines, few coarse to fine gravel, few coarse to fine sand, moist 3.0	3.0	16.4		
933.0	2.00									
932.8	2.25									
932.5	2.50									
932.3	2.75									
932.0	3.00									
931.8	3.25	A-3			SP-SC	Brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, trace coarse to fine gravel, trace root fragments, moist 4.0				
931.5	3.50									
931.3	3.75									
931.0	4.00									
						End of Boring				Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-029
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 931.0 ft Datum: Washtenaw County GIS
Notes: Lakeview, 6.5' S of N Curb, 105' W of 3067 Lakeview Drive Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/25/2023 Date End: 10/25/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
930.8	0.25					3 1/2" HMA 0.3				
930.5	0.50	A-1				10" Natural Aggregate Base 1.1				
930.3	0.75									
930.0	1.00									
929.8	1.25									
929.5	1.50									
929.3	1.75									
929.0	2.00									
928.8	2.25									
928.5	2.50	A-2								
928.3	2.75									
928.0	3.00									
927.8	3.25				SC	Brown clayey SAND; mostly coarse to fine sand, some clayey fines, trace fine gravel, moist				
927.5	3.50									
927.3	3.75									
927.0	4.00									
926.8	4.25									
926.5	4.50									
926.3	4.75									
926.0	5.00	A-3				5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-030
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 943.0 ft Datum: Washtenaw County GIS
Notes: Lakeview, 5' N of S Curb, 15' E of 2993 Lakeview Drive Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/25/2023 Date End: 10/25/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
942.8	0.25					3 1/2" HMA (0.3)				Fill: 0.0' to 2.5'
942.5	0.50	A-1				12" Natural Aggregate Base (1.2)				
942.3	0.75									
942.0	1.00									
941.8	1.25									
941.5	1.50				CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace coarse to fine gravel, moist, Fill (2.5)	4.5+			
941.3	1.75									
941.0	2.00	A-2								
940.8	2.25									
940.5	2.50									
940.3	2.75				CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace coarse to fine gravel, moist (5.0)	4.5+			
940.0	3.00									
939.8	3.25									
939.5	3.50									
939.3	3.75									
939.0	4.00									
938.8	4.25									
938.5	4.50									
938.3	4.75									
938.0	5.00	A-3								
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-031
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates:
Elevation: 963.0 ft Datum: Washtenaw County GIS
Notes: Lakeview, 5.8' E of W Curb, 21' N of 2906 Lakeview Drive Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/25/2023 Date End: 10/25/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
962.8	0.25					3" HMA (0.3)				
962.5	0.50				SP	Brown poorly graded SAND with gravel; mostly coarse to fine sand, some coarse to fine gravel (1.3)				
962.3	0.75									
962.0	1.00									
961.8	1.25									
961.5	1.50				CL	Brown lean CLAY; mostly clayey fines, moist (2.5)				
961.3	1.75	A-1								
961.0	2.00									
960.8	2.25									
960.5	2.50									
960.3	2.75	A-2			CL	Brown lean CLAY with sand; mostly clayey fines, little coarse to fine sand, moist (3.8)				
960.0	3.00									
959.8	3.25									
959.5	3.50									
959.3	3.75									
959.0	4.00				CL	Brown lean CLAY with gravel; mostly clayey fines, little coarse to fine gravel, moist (5.0)				
958.8	4.25	A-3								
958.5	4.50									
958.3	4.75									
958.0	5.00									
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-032
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 924.0 ft Datum: Washtenaw County GIS
Notes: Lakewood, 9.5' S of N Curb, 38' E of 3224 Lakewood Drive Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/24/2023 Date End: 10/24/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 3.3 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
923.8	0.25					3 1/2" HMA (0.3)				Fill: 0.0' to 1.5'
923.5	0.50	A-1				6" Natural Aggregate Base (0.8)				
923.3	0.75									
923.0	1.00				SC	Dark brown clayey SAND; mostly medium to fine sand, some clayey fines, moist, Fill (1.5)		15.9		Horizontal HMA separation at 2.0"
922.8	1.25	A-2								
922.5	1.50									
922.3	1.75				SC	Light brown clayey SAND; mostly medium to fine sand, some clayey fines, moist (2.2)		15.0		
922.0	2.00	A-3								
921.8	2.25									
921.5	2.50				CL	Brown lean CLAY; mostly clayey fines, few medium to fine sand, moist (3.3)	4.5+			
921.3	2.75									
921.0	3.00	A-4								
920.8	3.25									
						End of Boring				Hand auger refusal due to hard clay

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-033
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 940.0 ft Datum: Washtenaw County GIS
Notes: Lakewood, 4' N of S Curb, 34' W of 3139 Lakewood Drive Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/24/2023 Date End: 10/24/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 4.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
939.8	0.25					3 1/2" HMA 0.3				
939.5	0.50	A-1				9" Natural Aggregate Base 1.0				
939.3	0.75									
939.0	1.00									
938.8	1.25					Brown lean CLAY; mostly clayey fines, moist				
938.5	1.50	A-2					4.5+	19.8		
938.3	1.75									
938.0	2.00									
937.8	2.25									
937.5	2.50				CL					
937.3	2.75					Grades with few medium to fine sand				
937.0	3.00									
936.8	3.25									
936.5	3.50									
936.3	3.75									
936.0	4.00	A-3				4.0		14.2		
						End of Boring				Hand auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-034
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 946.0 ft Datum: Washtenaw County GIS
Notes: Lakewood, 10' S of N Curb, 28' W of 3045 Lakewood Drive Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/24/2023 Date End: 10/24/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.4 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
945.8	0.25					3 1/4" HMA (0.3)				
945.5	0.50	A-1				6" Natural Aggregate Base (0.8)				
945.3	0.75									
945.0	1.00					Brown lean CLAY; mostly clayey fines, moist				
944.8	1.25									
944.5	1.50									
944.3	1.75				CL					
944.0	2.00									
943.8	2.25	A-2				(2.4)	4.5+	23.8		
						End of Boring				Hand auger terminated due to hard clay

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-035
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 956.0 ft Datum: Washtenaw County GIS
Notes: Mason, 7.4'S of 100 Mason Avenue Driveway
Centerline; 8.4' E of Western Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/19/2023 Date End: 10/19/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
955.8	0.25					4" HMA (0.3)				Fill: 0.0' to 1.3'
955.5	0.50				SP-SM	Brown poorly graded SAND with silt and gravel; mostly coarse to fine sand, little coarse to fine gravel, few silty fines, moist, Fill (1.3)				
955.3	0.75									
955.0	1.00	A-1								
954.8	1.25									
954.5	1.50				CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, moist (4.6)				
954.3	1.75									
954.0	2.00	A-2					4.5+	21.0		
953.8	2.25									
953.5	2.50									
953.3	2.75									
953.0	3.00									
952.8	3.25									
952.5	3.50									
952.3	3.75									
952.0	4.00									
951.8	4.25									
951.5	4.50									
951.3	4.75				CL	Brown lean CLAY with sand; mostly clayey fines, little coarse to fine sand, moist (5.0)	2.0	18.5		
951.0	5.00	A-3								
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-036
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 954.0 ft Datum: Washtenaw County GIS
Notes: Mason Avenue, 42.5'N of 216 Mason Driveway Centerline; 3.1'E of Western Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/18/2023 Date End: 10/18/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.5 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
953.8	0.25					4 1/2" HMA				
953.5	0.50					0.4				
953.3	0.75	A-1				7" Natural Aggregate Base				
953.0	1.00					1.0				
952.8	1.25					Brown lean CLAY with sand; mostly clayey fines, little coarse to fine sand, trace coarse to fine gravel, moist				
952.5	1.50									
952.3	1.75				CL		4.5+			
952.0	2.00									
951.8	2.25	A-2						19.9		
951.5	2.50					2.5				
						End of Boring				Hand Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-037
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 952.0 ft Datum: Washtenaw County GIS
Notes: Mason Avenue, 4.5'N of 284 Mason Driveway Centerline; 10.2'E of Western Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/19/2023 Date End: 10/19/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.2 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
951.8	0.25					2 1/4' HMA 0.2				
951.5	0.50	A-1				12" Natural Aggregate Base 1.2				
951.3	0.75									
951.0	1.00									
950.8	1.25									
950.5	1.50				SC	Brown clayey SAND with gravel; mostly coarse to fine sand, little clayey fines, little coarse to fine gravel, moist 2.2		11.7		
950.3	1.75									
950.0	2.00	A-2								
						End of Boring				Hand Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-038
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 956.0 ft Datum: Washtenaw County GIS
Notes: Mason Avenue, 21.5'N of 311 Mason Driveway Centerline; 3.5'W of East Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/20/2023 Date End: 10/20/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 4.3 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
955.8	0.25					4" HMA				
955.5	0.50					0.3				
955.3	0.75	A-1				7" Natural Aggregate Base				
955.0	1.00					0.9				
954.8	1.25					Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace fine gravel, moist				
954.5	1.50									
954.3	1.75									
954.0	2.00	A-2					4.5+	12.6		
953.8	2.25									
953.5	2.50									
953.3	2.75				CL					
953.0	3.00									
952.8	3.25									
952.5	3.50									
952.3	3.75									
952.0	4.00	A-3					4.5+	12.9		
951.8	4.25					4.3				
						End of Boring				Auger refusal at 4.3' due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-039
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 926.0 ft Datum: Washtenaw County GIS
Notes: McCotter Lane, 7.0'E of W Curb, 12.0'N of 321 Lake Park Lane Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/31/2023 Date End: 10/31/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 1.7 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
925.8	0.25					7" HMA				Fill: 0.0' to 1.5'
925.5	0.50					0.6				
925.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
925.0	1.00									
924.8	1.25									
924.5	1.50					1.5				
		A-2			CL	Gray brown lean CLAY; mostly clayey fines, few coarse to fine gravel, trace coarse to fine sand, moist	2.5	17.6		Auger refusal due to possible coarse gravel / COBBLE
						1.7				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-040
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 912.0 ft Datum: Washtenaw County GIS
Notes: Park Lake Avenue, 7.7'W of E Curb; 26.0'S of 75 Park Lake Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/31/2023 Date End: 10/31/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
911.8	0.25					4 1/4" HMA				Fill: 0.0' to 1.4'
911.5	0.50					0.4				
911.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
911.0	1.00									
910.8	1.25									
910.5	1.50					1.4				
910.3	1.75	A-2			SC	Grya brown clayey SAND; mostly coarse to fine sand, some clayey fines, trace coarse to fine gravel, moist				
910.0	2.00									
909.8	2.25									
909.5	2.50									
909.3	2.75					2.8				
909.0	3.00	A-3			CL	Dark brown lean CLAY; mostly clayey fines, trace coarse to fine gravel, moist	3.5	27.5		
908.8	3.25									
908.5	3.50									
908.3	3.75									
908.0	4.00									
907.8	4.25					Grades gray at 4.0'				
907.5	4.50									
907.3	4.75									
907.0	5.00	A-4				5.0	4.0	17.5		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-041
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 941.0 ft Datum: Washtenaw County GIS
Notes: Pleasant Place, 3.5'N of E Curb; 15.7'S of 2101 Pleasant Place Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/19/2023 Date End: 10/19/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
940.8	0.25					6" HMA				Fill: 0.0' to 1.0'
940.5	0.50					0.5				
940.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
940.0	1.00					1.0				
939.8	1.25	A-2				Gray brown lean CLAY; mostly clayey fines, few coarse to fine gravel, trace coarse to fine sand, moist	3.25	17.9		
939.5	1.50									
939.3	1.75									
939.0	2.00									
938.8	2.25									
938.5	2.50									
938.3	2.75									
938.0	3.00				CL					
937.8	3.25									
937.5	3.50									
937.3	3.75									
937.0	4.00									
936.8	4.25									
936.5	4.50									
936.3	4.75									
936.0	5.00	A-3				5.0	3.25	14.7		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-042
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 940.0 ft Datum: Washtenaw County GIS
Notes: Pleasant Place, 6.0'W of East Curb; 25.0'S of 204 Pleasant Place Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/20/2023 Date End: 10/20/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
939.8	0.25					5 3/4" HMA				Fill: 0.0' to 1.0'
939.5	0.50					0.5				
939.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
939.0	1.00					1.0				
938.8	1.25	A-2				Gray brown lean CLAY; mostly clayey fines, few coarse to fine gravel, trace coarse to fine sand, moist	3.5	21.7		
938.5	1.50									
938.3	1.75									
938.0	2.00									
937.8	2.25				CL					
937.5	2.50									
937.3	2.75									
937.0	3.00									
936.8	3.25									
936.5	3.50					3.5				
936.3	3.75	A-3				Brown clayey SAND; mostly coarse to fine sand, little clayey fines, trace coarse to fine gravel, moist		12.7		
936.0	4.00									
935.8	4.25				SC					
935.5	4.50									
935.3	4.75									
935.0	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-043
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 934.0 ft Datum: Washtenaw County GIS
Notes: Sunnywood Drive, 11.5'E of 3177 Sunnywood Mailbox; 6.0'N of Southern Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/18/2023 Date End: 10/18/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
933.8	0.25					3 1/2" HMA				
933.5	0.50	A-1				0.3				
933.3	0.75					12" Natural Aggregate Base				
933.0	1.00									
932.8	1.25					1.3				
932.5	1.50					Brown lean CLAY with sand; mostly clayey fines, little coarse to fine sand, trace coarse to fine gravel, moist				
932.3	1.75									
932.0	2.00	A-2					4.5+	15.1		
931.8	2.25									
931.5	2.50									
931.3	2.75									
931.0	3.00									
930.8	3.25				CL					
930.5	3.50									
930.3	3.75									
930.0	4.00									
929.8	4.25									
929.5	4.50									
929.3	4.75									
929.0	5.00	A-3				5.0	4.5+	13.4		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-044
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 943.0 ft Datum: Washtenaw County GIS
Notes: Sunnywood Drive, 42.0'W of Hazelwood and Sunnywood Intersection Centerline; 4.5'N of Southern Curb on Sunnywood Drive
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/18/2023 Date End: 10/18/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 4.5 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
942.8	0.25					3" HMA (0.3)				
942.5	0.50	A-1				9" Natural Aggregate Base (1.0)				
942.3	0.75									
942.0	1.00									
941.8	1.25					Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace fine gravel, moist				
941.5	1.50									
941.3	1.75									
941.0	2.00									
940.8	2.25									
940.5	2.50	A-2					4.5+	16.3		
940.3	2.75				CL					
940.0	3.00									
939.8	3.25									
939.5	3.50									
939.3	3.75									
939.0	4.00									
938.8	4.25									
938.5	4.50	A-3				(4.5)	4.5+	17.9		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-045
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 947.0 ft Datum: Washtenaw County GIS
Notes: Sunnywood Drive, 2.6'W of 2988 Sunnywood Driveway Centerline; 2.9'S of Northern Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/18/2023 Date End: 10/18/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 3.6 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
946.8	0.25					4" HMA (0.3)				
946.5	0.50					9" Natural Aggregate Base (1.1)				
946.3	0.75									
946.0	1.00									
945.8	1.25	A-1						4.8		
945.5	1.50					Brown clayey SAND; mostly coarse to fine sand, some clayey fines, few coarse to fine gravel, moist				
945.3	1.75									
945.0	2.00									
944.8	2.25									
944.5	2.50				SC					
944.3	2.75									
944.0	3.00									
943.8	3.25									
943.5	3.50					(3.6)				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-046
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 954.0 ft Datum: Washtenaw County GIS
Notes: Sunnywood Drive, 30.2'W of 2922 Sunnywood Driveway Centerline; 11.3'S of Northern Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/18/2023 Date End: 10/18/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
953.8	0.25					5" HMA				
953.5	0.50	A-1				0.4				
953.3	0.75					12" Natural Aggregate Base				
953.0	1.00									
952.8	1.25									
952.5	1.50					1.4				
952.3	1.75					Brown lean CLAY; mostly clayey fines, few coarse to fine sand, moist				
952.0	2.00	A-2					4.5+	23.1		
951.8	2.25									
951.5	2.50									
951.3	2.75									
951.0	3.00									
950.8	3.25				CL					
950.5	3.50									
950.3	3.75									
950.0	4.00									
949.8	4.25					Grades gray				
949.5	4.50									
949.3	4.75									
949.0	5.00	A-3				5.0	4.5+	26.7		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-047
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 931.0 ft Datum: Washtenaw County GIS
Notes: Thaler Avenue, 9.5E of W Curb; 40'N of Taco Bell Drive Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/14/2023 Date End: 09/14/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.5 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
930.8	0.25					6 1/4" HMA				Fill: 0.0' to 2.1'
930.5	0.50					0.5				
930.3	0.75	A-1				12" Aggregate Base				
930.0	1.00									
929.8	1.25									
929.5	1.50					1.5				
929.3	1.75	A-2			SP	Brown poorly graded SAND; mostly coarse to fine sand, trace fine gravel, moist, Fill				
929.0	2.00					2.1				
928.8	2.25	A-3			SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, few coarse to fine gravel, moist				
928.5	2.50					2.5				
						End of Boring				Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-048
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 954.0 ft Datum: Washtenaw County GIS
Notes: Wines Drive, SB Lane, 6.0'E of N Curb; 25.5'S of 1335 Wines Drive Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/01/2023 Date End: 09/01/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
953.8	0.25					7 1/2" HMA				Top 3" of core highly deteriorated
953.5	0.50									
953.3	0.75					0.7				
953.0	1.00	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				Fill: 0.0' to 1.9'
952.8	1.25									
952.5	1.50					1.5				
952.3	1.75	A-2			SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, few coarse to fine gravel, moist, Fill				
952.0	2.00					1.9				
951.8	2.25	A-3			CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace coarse to fine gravel, moist	3.75	14.8		
951.5	2.50									
951.3	2.75									
951.0	3.00									
950.8	3.25									
950.5	3.50									
950.3	3.75									
950.0	4.00									
949.8	4.25									
949.5	4.50									
949.3	4.75									
949.0	5.00	A-4				5.0	3.25	16.5		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-049
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 944.0 ft Datum: Washtenaw County GIS
Notes: Wines Drive, 9.5'E of N Curb; 7.0'S of 1235 Wines Drive Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 08/31/2023 Date End: 08/31/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
943.8	0.25					7" HMA				Fill: 0.0' to 2.0'
943.5	0.50					0.6				
943.3	0.75									
943.0	1.00	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
942.8	1.25									
942.5	1.50									
942.3	1.75									
942.0	2.00					2.0				
941.8	2.25	A-2			CL	Gray lean CLAY; mostly clayey fines, trace coarse to fine sand, trace fine gravel, moist	3.5	13.1		
941.5	2.50									
941.3	2.75									
941.0	3.00									
940.8	3.25									
940.5	3.50									
940.3	3.75									
940.0	4.00									
939.8	4.25									
939.5	4.50									
939.3	4.75						2.5	22.4		
939.0	5.00	A-3				5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-050
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 941.0 ft Datum: Washtenaw County GIS
Notes: Wines Drive, 7.5'E of W Curb; 27.5'S of 1117 Wines Drive Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/01/2023 Date End: 09/01/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
940.8	0.25					4 3/4" HMA				Fill: 0.0' to 2.5'
940.5	0.50					0.5				
940.3	0.75	A-1				Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
940.0	1.00									
939.8	1.25									
939.5	1.50				SP-SC					
939.3	1.75									
939.0	2.00									
938.8	2.25									
938.5	2.50					2.5				
938.3	2.75	A-2				Brown clayey SAND; mostly coarse to fine sand, little clayey fines, few coarse to fine gravel, trace root fragments, moist				
938.0	3.00									
937.8	3.25									
937.5	3.50									
937.3	3.75				SC					
937.0	4.00									
936.8	4.25									
936.5	4.50									
936.3	4.75									
936.0	5.00	A-3				5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-051
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 948.0 ft Datum: Washtenaw County GIS
Notes: Winewood Avenue, 5.9'S of N Curb; 44.5'E of 2390 Winewood Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/18/2023 Date End: 10/18/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
947.8	0.25					3 3/4" HMA (0.3)				
947.5	0.50	A-1				8" Aggregate Base (1.0)				
947.3	0.75									
947.0	1.00									
946.8	1.25	A-2				Brown poorly graded SAND; mostly coarse to fine sand, few coarse to fine gravel, moist				
946.5	1.50									
946.3	1.75									
946.0	2.00									
945.8	2.25									
945.5	2.50									
945.3	2.75									
945.0	3.00				SP					
944.8	3.25									
944.5	3.50									
944.3	3.75									
944.0	4.00									
943.8	4.25									
943.5	4.50									
943.3	4.75									
943.0	5.00	A-3				(5.0)				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-052
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 926.0 ft Datum: Washtenaw County GIS
Notes: Winewood Avenue, 4.0'N of S Curb; 16.8'E of 2135 Winewood Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/18/2023 Date End: 10/18/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 3.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
925.8	0.25					3" HMA 0.3				Fill: 0.0' to 1.0'
925.5	0.50	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill 1.0				
925.3	0.75									
925.0	1.00									
924.8	1.25	A-2			CL	Gray brown lean CLAY; mostly clayey fines, few coarse to fine sand, few coarse to fine gravel, moist 3.0	2.75	12.6		
924.5	1.50									
924.3	1.75									
924.0	2.00									
923.8	2.25									
923.5	2.50									
923.3	2.75									
923.0	3.00					End of Boring				Hand Auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-053
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 905.0 ft Datum: Washtenaw County GIS
Notes: Winewood Avenue, 3.8'E of W Curb; 19'S of 2083 Winewood Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/21/2023 Date End: 09/21/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
904.8	0.25					4 3/4" HMA				Fill: 0.0' to 1.5'
904.5	0.50					0.4				
904.3	0.75	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
904.0	1.00									
903.8	1.25									
903.5	1.50					1.5				
903.3	1.75	A-2			SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, trace coarse to fine gravel, moist				
903.0	2.00									
902.8	2.25									
902.5	2.50									
902.3	2.75									
902.0	3.00									
901.8	3.25									
901.5	3.50									
901.3	3.75									
901.0	4.00									
900.8	4.25					4.2				
900.5	4.50	A-3			CL	Brown sandy lean CLAY; mostly clayey fines, some coarse to fine sand, trace coarse to fine gravel, moist	2.5	16.2		
900.3	4.75									
900.0	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-084
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 827.0 ft Datum: Washtenaw County GIS
Notes: Page Avenue, 4.5'W of E Curb; 0.5'S of Electric Pole

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/17/2023 Date End: 10/17/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
826.8	0.25					2 1/2" HMA 0.2				Fill: 0.0' to 2.3'
826.5	0.50	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
826.3	0.75									
826.0	1.00									
825.8	1.25									
825.5	1.50									
825.3	1.75									
825.0	2.00									
824.8	2.25					2.3				
824.5	2.50	A-2			SP	Gray brown poorly graded SAND with gravel; mostly coarse to fine sand, little coarse to fine gravel, trace clayey fines, moist				
824.3	2.75									
824.0	3.00									
823.8	3.25									
823.5	3.50									
823.3	3.75									
823.0	4.00									
822.8	4.25									
822.5	4.50									
822.3	4.75									
822.0	5.00	A-3				5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-085
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 827.0 ft Datum: Washtenaw County GIS
Notes: Page Avenue, 3.2'W of E Curb; 28.5'S of 2213 Page Avenue Drive Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/17/2023 Date End: 10/17/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
826.8	0.25					2" HMA 0.2				Fill: 0.0' to 1.0'
826.5	0.50	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill 1.0				
826.3	0.75									
826.0	1.00									
825.8	1.25	A-2			CL	Dark brown lean CLAY with sand; mostly clayey fines, little coarse to fine sand, trace coarse to fine gravel, trace root fragments, moist 2.2	2.5	19.8		
825.5	1.50									
825.3	1.75									
825.0	2.00									
824.8	2.25									
824.5	2.50	A-3			SC	Gray brown clayey SAND; mostly coarse to fine sand, little clayey fines, trace coarse to fine gravel, moist 3.5		15.8		
824.3	2.75									
824.0	3.00									
823.8	3.25									
823.5	3.50									
823.3	3.75	A-4			SP	Gray poorly graded SAND with gravel; mostly coarse to fine sand, little coarse to fine gravel, trace clayey fines, moist 5.0				
823.0	4.00									
822.8	4.25									
822.5	4.50									
822.3	4.75									
822.0	5.00									
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-086
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 826.0 ft Datum: Washtenaw County GIS
Notes: Page Avenue, 7.3'W of E Curb; 45.5'S of 2323 Page Avenue Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/17/2023 Date End: 10/17/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
825.8	0.25					2 1/2" HMA 0.2				Fill: 0.0' to 2.3'
825.5	0.50	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
825.3	0.75									
825.0	1.00									
824.8	1.25					1.3				
824.5	1.50	A-2			SC	Light brown clayey SAND; mostly coarse to fine sand, little clayey fines, trace coarse to fine gravel, moist, Fill		0.0		
824.3	1.75									
824.0	2.00									
823.8	2.25					2.3				
823.5	2.50	A-3			SP-SC	Gray brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, trace coarse to fine gravel, moist				
823.3	2.75									
823.0	3.00									
822.8	3.25									
822.5	3.50									
822.3	3.75									
822.0	4.00									
821.8	4.25									
821.5	4.50									
821.3	4.75									
821.0	5.00	A-4				5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-087
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 824.0 ft Datum: Washtenaw County GIS
Notes: Page Avenue, 6.5'W of E Curb; 39.0'S of Southern Marlborough Drive Sidewalk
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/17/2023 Date End: 10/17/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
823.8	0.25					2 1/4" HMA 0.2				Fill: 0.0' to 2.2'
823.5	0.50	A-1			SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
823.3	0.75									
823.0	1.00									
822.8	1.25					1.2				
822.5	1.50	A-2			SC	Dark brown clayey SAND with gravel; mostly coarse to fine sand, little clayey fines, little coarse to fine gravel, moist, Fill		4.8		
822.3	1.75									
822.0	2.00									
821.8	2.25					2.2				
821.5	2.50	A-3			SP-SC	Gray brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, trace coarse to fine gravel, moist				
821.3	2.75									
821.0	3.00									
820.8	3.25									
820.5	3.50									
820.3	3.75									
820.0	4.00									
819.8	4.25									
819.5	4.50									
819.3	4.75									
819.0	5.00	A-4				5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-088
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: JV
Coordinates:
Elevation: 822.0 ft Datum: Washtenaw County GIS
Notes: Page Avenue, 22.8'N of 2591 Page Driveway Centerline; 5.0'W of Eastern Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/16/2023 Date End: 10/16/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
821.8	0.25					3" HMA (0.3)				Fill: 0.0' to 4.7'
821.5	0.50	A-1				6" Natural Aggregate Base (0.8)				
821.3	0.75									
821.0	1.00					Brown clayey SAND; mostly coarse to fine sand, little clayey fines, few coarse to fine gravel, moist, Fill				
820.8	1.25									
820.5	1.50									
820.3	1.75									
820.0	2.00	A-2			SC			11.9		
819.8	2.25									
819.5	2.50									
819.3	2.75									
819.0	3.00									
818.8	3.25									
818.5	3.50					(3.4)				
818.3	3.75					Brown clayey SAND; mostly coarse to fine sand, few clayey fines, few coarse to fine gravel, moist, Fill				
818.0	4.00									
817.8	4.25				SP-SC					
817.5	4.50	A-3								
817.3	4.75					(4.7)				
817.0	5.00	A-4			CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, moist (5.0)	4.5+	14.9		
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-089
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: JV
Coordinates:
Elevation: 823.0 ft Datum: Washtenaw County GIS
Notes: Page Avenue, 43.6'S of 2723 Page Driveway Centerline; 6.4'W of Eastern Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/16/2023 Date End: 10/16/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 1.2 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
822.8	0.25					2 1/2" HMA 0.2				Fill: 0.0' to 1.2'
822.5	0.50	A-1				6" Natural Aggregate Base 0.7				
822.3	0.75									
822.0	1.00				SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill 1.2				
		A-2				End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-090
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 832.0 ft Datum: Washtenaw County GIS
Notes: Page Avenue, 7.5' W of E Rub; 51.0' N of Northen Page Avenue & King Jones Boulevard
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/16/2023 Date End: 10/16/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 4.5 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
831.8	0.25					5 1/4" HMA				Fill: 0.0' to 3.0'
831.5	0.50					0.4				
831.3	0.75	A-1				Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
831.0	1.00									
830.8	1.25									
830.5	1.50									
830.3	1.75				SP-SC					
830.0	2.00									
829.8	2.25									
829.5	2.50									
829.3	2.75									
829.0	3.00					3.0				
828.8	3.25	A-2				Brown poorly graded SAND; mostly coarse to fine sand, few coarse to fine gravel, trace clayey fines, moist				
828.5	3.50									
828.3	3.75				SP					
828.0	4.00									
827.8	4.25									
827.5	4.50					4.5				
						End of Boring				Auger refusal due to coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-091
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 834.0 ft Datum: Washtenaw County GIS
Notes: Page Avenue, 36.0'S of "Crossroads" Driveway Centerline; 39.0'W of Eastern Curb
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/16/2023 Date End: 10/16/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 3.6 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
833.8	0.25					3" HMA 0.3				Fill: 0.0' to 3.6'
833.5	0.50	A-1				6" Natural Aggregate Base 0.8				
833.3	0.75									
833.0	1.00					Brown clayey SAND with gravel; mostly coarse to fine sand, little clayey fines, little coarse to fine gravel, moist, Fill				
832.8	1.25									
832.5	1.50									
832.3	1.75									
832.0	2.00									
831.8	2.25				SC					
831.5	2.50									
831.3	2.75									
831.0	3.00	A-2						10.5		
830.8	3.25									
830.5	3.50					3.6				
						End of Boring				Hand auger refusal due to possible gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-092
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates:
Elevation: 825.0 ft Datum: Washtenaw County GIS
Notes: Yost Boulevard, 6.5' E of W Curb; 2.0' N of Electric Pole; 65N6052
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/16/2023 Date End: 10/16/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	4.9
Sampler	Hand Auger	3 1/4"	End	4.9
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
824.8	0.25					4 1/4" HMA				Fill: 0.0' to 1.5'
824.5	0.50	A-1				0.4				
824.3	0.75				SP-SC	Dark brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist, Fill				
824.0	1.00									
823.8	1.25									
823.5	1.50					1.5				
823.3	1.75	A-2				Brown lean CLAY; mostly clayey fines, few coarse to fine sand, few coarse to fine gravel, moist	4.5+	20.3		
823.0	2.00									
822.8	2.25									
822.5	2.50									
822.3	2.75									
822.0	3.00									
821.8	3.25				CL					
821.5	3.50									
821.3	3.75									
821.0	4.00									
820.8	4.25									
820.5	4.50									
820.3	4.75									
820.0	5.00	A-3				4.9				
					SP-SC	Brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, wet				
						5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-093
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 824.0 ft Datum: Washtenaw County GIS
Notes: Yost Boulevard, 3.1' E of W Curb, 44' S of 2292 Yost Boulevard Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/12/2023 Date End: 10/12/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
823.8	0.25					7" HMA				Fill: 0.0' to 3.7'
823.5	0.50	A-1				0.6				
823.3	0.75					4" Natural Aggregate Base				
823.0	1.00					1.1				
822.8	1.25					Gray lean CLAY; mostly clayey fines, few coarse to fine sand, trace coarse to fine gravel, moist, Fill				
822.5	1.50									
822.3	1.75									
822.0	2.00	A-2					4.0	19.4		
821.8	2.25									
821.5	2.50				CL					
821.3	2.75									
821.0	3.00									
820.8	3.25									
820.5	3.50									
820.3	3.75					3.7				
820.0	4.00					Brown lean CLAY; mostly clayey fines, moist				
819.8	4.25									
819.5	4.50	A-3			CL			17.5		
819.3	4.75									
819.0	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-094
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 808.0 ft Datum: Washtenaw County GIS
Notes: Yost Boulevard, 8.5' W of E Curb, 33' S of 2359 Yost Boulevard Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings.

Date Begin: 10/12/2023 Date End: 10/12/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.8 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
807.8	0.25					3" HMA 0.3				
807.5	0.50	A-1				13" Natural Aggregate Base 1.3				
807.3	0.75									
807.0	1.00									
806.8	1.25									
806.5	1.50					Gray lean CLAY; mostly clayey fines, few coarse to fine sand, trace coarse to fine gravel, moist				
806.3	1.75									
806.0	2.00	A-2			CL		4.5+	21.3		
805.8	2.25									
805.5	2.50									
805.3	2.75					2.8				
						End of Boring				Hand auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-095
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 805.0 ft Datum: Washtenaw County GIS
Notes: Yost Boulevard, 3' E of W Curb, 22' S of 2472 Yost Boulevard Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/12/2023 Date End: 10/12/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	2.2
Sampler	Hand Auger	3 1/4"	End	2.2
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 3.2 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
804.8	0.25					8" HMA				
804.5	0.50					0.7				
804.3	0.75					7" Natural Aggregate Base				
804.0	1.00					1.3				
803.8	1.25									
803.5	1.50	A-1			SP-SM	Brown poorly graded SAND with silt; mostly coarse to fine sand, few silty fines, trace coarse to fine gravel, moist				
803.3	1.75									
803.0	2.00									
802.8	2.25					Grades wet				
802.5	2.50					2.4				
802.3	2.75					Gray lean CLAY; mostly clayey fines, moist				
802.0	3.00	A-2			CL		3.5	8.4		
						3.2				
						End of Boring				Boring terminated due to cave-in of sand layer

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-096
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 804.0 ft Datum: Washtenaw County GIS
Notes: Yost Boulevard, 4.8' E of W Curb, 17.3' N of Speedbump
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/09/2023 Date End: 10/09/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 4.3 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
803.8	0.25					4" HMA (0.3)				
803.5	0.50	A-1				6" Natural Aggregate Base (0.8)				
803.3	0.75									
803.0	1.00	A-2			SP-SM	Brown poorly graded SAND with silt; mostly medium to fine sand, few silty fines, moist (1.3)				
802.8	1.25									
802.5	1.50					Brown lean CLAY; mostly clayey fines, few coarse to fine sand, moist				
802.3	1.75									
802.0	2.00									
801.8	2.25									
801.5	2.50									
801.3	2.75									
801.0	3.00	A-3			CL		4.5+	18.0		
800.8	3.25									
800.5	3.50									
800.3	3.75									
800.0	4.00									
799.8	4.25					(4.3)				
						End of Boring				Hand auger refusal due to possible coarse Gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-097
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 813.0 ft Datum: Washtenaw County GIS
Notes: Yost Boulevard, 5.5' E of W Curb, 50' S of Brandywine Drive Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch

Date Begin: 10/09/2023 Date End: 10/09/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 1.3 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
812.8	0.25					5 1/4" HMA				
812.5	0.50	A-1				0.4				
812.3	0.75					6" Natural Aggregate base				
812.0	1.00					0.9				
811.8	1.25	A-2			CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, few coarse to fine gravel, moist	4.0	14.1		
						1.3				
						End of Boring				Hand auger refusal due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 231532
Boring No.: SB2023-098
Sheet: 1 of 1

Project: Ann Arbor 2023 Soil Borings Bundle 1
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RS
Coordinates:
Elevation: 826.0 ft Datum: Washtenaw County GIS
Notes: Yost Boulevard, 14.7' E of W Curb, 15.2' S of 2828 Yost Boulevard Driveway Centerline
Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 10/09/2023 Date End: 10/09/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
825.8	0.25					5 1/4" HMA				
825.5	0.50					0.4				
825.3	0.75	A-1				6" Natural aggregate base				
825.0	1.00					0.9				
824.8	1.25				CL	Brown lean CLAY; mostly clayey fines, few medium to fine sand, few coarse to fine gravel, moist	4.5+	15.5		
824.5	1.50	A-2								
824.3	1.75					1.7				
824.0	2.00					Brown clayey SAND; mostly medium to fine sand, little clayey fines, trace coarse to fine gravel, moist				
823.8	2.25									
823.5	2.50									
823.3	2.75									
823.0	3.00	A-3						11.2		
822.8	3.25									
822.5	3.50				SC					
822.3	3.75									
822.0	4.00									
821.8	4.25									
821.5	4.50									
821.3	4.75									
821.0	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

SUMMARY OF LABORATORY TEST DATA

Boring Number	Sample No.*	Sample Depth (ft)	Sample Description (USCS Symbol)	Natural Moisture Content (%)	Boring Number	Sample No.*	Sample Depth (ft)	Sample Description (USCS Symbol)	Natural Moisture Content (%)
SB2023-001	A-2	1.75-2	SC	17.1	SB2023-036	A-2	2-2.25	CL	19.9
SB2023-001	A-3	3.5-3.75	CL	17.8	SB2023-037	A-2	1.75-2	SC	11.7
SB2023-002	A-3	4.75-5	CL	15.5	SB2023-038	A-2	1.75-2	CL	12.6
SB2023-003	A-1	1-1.25	CL	19.6	SB2023-038	A-3	3.75-4	CL	12.9
SB2023-003	A-2	4.757-5	CL	13.0	SB2023-039	A-2	1.5-1.75	CL	17.6
SB2023-004	A-2	1-1.25	CL	17.1	SB2023-040	A-3	2.75-3	SC	27.5
SB2023-006	A-2	1.5-1.75	CL	11.6	SB2023-040	A-4	4.775-5	CL	17.5
SB2023-006	A-3	4.5-4.75	CL	6.6	SB2023-041	A-2	1-1.25	CL	17.9
SB2023-007	A-2	1.5-1.75	CL	15.7	SB2023-041	A-3	4.75-5	CL	14.7
SB2023-007	A-3	4.75-5	CL	17.2	SB2023-042	A-2	1-1.25	CL	21.7
SB2023-008	A-2	3.75-4	CL	20.4	SB2023-042	A-3	3.5-3.75	SC	12.7
SB2023-009	A-2	1.5-1.75	CL	18.2	SB2023-043	A-2	1.75-2	CL	15.1
SB2023-009	A-3	4.75-5	CL	12.4	SB2023-043	A-3	4.75-5	CL	13.4
SB2023-010	A-3	4.75-5	CL	11.3	SB2023-044	A-2	2.25-2.5	CL	16.3
SB2023-011	A-2	1.5-1.75	SC	8.7	SB2023-044	A-3	4.25-4.5	CL	17.9
SB2023-011	A-3	2.75-3	SC	14.9	SB2023-045	A-1	1-1.25	SC	4.8
SB2023-012	A-2	1.25-1.5	CL	15.7	SB2023-046	A-2	1.75-2	CL	23.1
SB2023-012	A-3	4.75-5	CL	13.8	SB2023-046	A-3	4.75-5	CL	26.7
SB2023-013	A-2	1.25-1.5	CL	16.3	SB2023-048	A-3	2-2.25	CL	14.8
SB2023-013	A-4	4.75-5	SC	15.3	SB2023-048	A-4	4.75-5	CL	16.5
SB2023-014	A-2	2-2.25	CL	13.3	SB2023-049	A-2	2-2.25	CL	13.1
SB2023-014	A-3	4.75-5	CL	11.7	SB2023-049	A-3	4.75-5	CL	22.4
SB2023-016	A-2	1-1.25	SC	13.1	SB2023-052	A-2	1-1.25	CL	12.6
SB2023-016	A-3	4.75-5	SC	12.6	SB2023-053	A-3	4.25-4.5	CL	16.2
SB2023-019	A-2	1.75-2	CL	18.8	SB2023-085	A-2	1-1.25	CL	19.8
SB2023-019	A-3	3-3.25	CL	17.6	SB2023-085	A-3	2.25-2.5	SC	15.8
SB2023-020	A-2	2-2.25	CL	15.9	SB2023-086	A-2	1.25-1.5	SC	0.0
SB2023-020	A-3	3.75-4	SC	13.9	SB2023-087	A-2	1.25-1.5	SC	4.8
SB2023-022	A-2	2-2.25	CL	16.8	SB2023-088	A-2	1.75-2	SC	11.9
SB2023-023	A-3	4-4.25	CL	22.6	SB2023-088	A-4	4.75-5	CL	14.9
SB2023-026	A-1	1.5-1.75	SC	14.7	SB2023-091	A-2	2.75-3	SC	10.5
SB2023-026	A-2	3.5-3.75	SC	14.3	SB2023-092	A-2	1.5-1.75	CL	20.3
SB2023-027	A-3	2.25-2.5	CL	17.8	SB2023-093	A-2	1.75-2	CL	19.4
SB2023-028	A-2	1.5-1.75	CL	16.4	SB2023-093	A-3	4.25-5	CL	17.5
SB2023-032	A-2	1-1.25	SC	15.9	SB2023-094	A-2	1.75-2	CL	21.3
SB2023-032	A-3	1.75-2	SC	15.0	SB2023-095	A-2	2.75-3	CL	8.4
SB2023-033	A-2	1.25-1.5	CL	19.8	SB2023-096	A-3	2.75-3	CL	18.0
SB2023-033	A-3	3.775-4	CL	14.2	SB2023-097	A-2	1-1.25	CL	14.1
SB2023-034	A-2	2-2.25	CL	23.8	SB2023-098	A-2	1.25-1.5	CL	15.5
SB2023-035	A-2	1.75-2	CL	21.0	SB2023-098	A-3	2.75-3	SC	11.2
SB2023-035	A-3	4.75-5	CL	18.5					

* A – Grab Sample

PROJECT NO.: 231532

PAGE: 1 OF 1