

PUBLIC IMPROVEMENT REQUEST FOR PROPOSAL

RFP# 25-06

PITTSFIELD VILLAGE IMPROVEMENTS

City of Ann Arbor
Public Services / Engineering



Due Date: January 30, 2025, 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 Pittsfield Village Improvements Project.

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 January 15, 2025 at 5:00 p.m. (local time), and should be addressed as follows:

Scope of Work/Proposal Content questions shall be e-mailed to Chris Elenbaas, Project Manager – chris.elenbaas@ohm-advisors.com

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 on **Thursday, January 9, 2025, at 1:00 p.m. at Ann Arbor City Hall, Basement Conference Room A** located at 301 East Huron Street, Ann Arbor, Michigan 48107.

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 January 30, 2025 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 copies**
- **one (1) digital copy of the proposal, preferably on a USB/flash drive as one file in PDF format**

Proposals submitted should be clearly marked: **“RFP No. 25-06 – Pittsfield Village Improvements”** 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 B – General Declarations**
- **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 included 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.sam.gov.

For the purposes of this RFP the Construction Type of Heavy and 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 be 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	January 9, 2025, 1:00 p.m. (Local Time)
Written Question Deadline	January 15, 2025, 5:00 p.m. (Local Time)
Addenda Published (if needed)	Week of January 20, 2025
Proposal Due Date	January 30, 2025, 11:00 a.m. (Local Time)
Selection/Negotiations	February 2025
Expected City Council Authorizations	March 2025

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 strongly encourages potential vendors to bring forward tested, emerging, innovative, and environmentally preferable products and services that are best suited to the City's environmental principles. This includes products and services such as those with lower greenhouse gas emissions, high recycled content, without toxic substances, those with high reusability or recyclability, those that reduce the consumption of virgin materials, and those with low energy intensity.

As part of its environmental commitment, the City reserves the right to award a contract to the most responsive and responsible bidder, which includes bids that bring forward products or services that help advance the City's environmental commitment. In addition, the City reserves the right to request that all vendors report their annual greenhouse gas emissions, energy consumption, miles traveled, or other relevant criteria in order to help the City more fully understand the environmental impact of its procurement decisions.

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.

V. 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

Please see the 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 provide 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 either the city or the county.

Washtenaw County jurisdiction is prioritized for evaluation purposes for this solicitation.

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: Pittsfield Village Improvements

File #: 2022-031

RFP #: 25-06

ITEM NUMBER	LEGEND	ESTIMATED			
		UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
General					
01000.00	General Conditions, Max. \$1,300,000	LSUM	1	\$	\$
01001.00	Project Supervision, Max. \$650,000	LSUM	1	\$	\$
01002.00	Project Clean-Up and Restoration	LSUM	1	\$	\$
01003.00	Digital Audio Visual Coverage	LSUM	1	\$	\$
01020.00	Erosion Control, Check Dam	Ft	50	\$	\$
01021.00	Erosion Control, Inlet Protection, Fabric Drop	Ea	108	\$	\$
01022.00	Erosion Control, Silt Fence	Ft	250	\$	\$
01030.00	Tree Protection Fence	Ft	3,000	\$	\$
01040.00	Minor Traffic Control, Max. \$100,000	LSUM	1	\$	\$
01041.00	Traffic Regulator Control	LSUM	1	\$	\$
01050.00	Sign, Type B, Temp, Prismatic, Furn & Oper	Sft	400	\$	\$
01051.00	Sign, Type B, Temp, Prismatic, Special, Furn & Oper	Sft	250	\$	\$
01052.00	Temporary "No Parking" Sign	Ea	200	\$	\$
01070.00	Sign, Portable, Changeable Message, Furn & Oper	Ea	4	\$	\$
01080.00	Plastic Drum, High Intensity, Lighted, Furn & Oper	Ea	20	\$	\$
01081.00	Channelizer Cone, High Intensity, 42 In., Furn & Oper	Ea	600	\$	\$
01092.00	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn & Ope	Ea	25	\$	\$
01100.00	Pedestrian Type II Barricade, Temp, Furn & Oper	Ea	25	\$	\$
01101.00	Pedestrian Channelizer Device, Furn & Oper	Ea	25	\$	\$
01102.00	Temporary Pedestrian Ramp, Furn & Oper	Ea	5	\$	\$
01103.00	Temporary Pedestrian Mat, Furn & Oper	Ft	375	\$	\$
01160.71	DS_Sign, Type III, Erect, Salv	Ea	5	\$	\$
01160.72	DS_Sign, Type IIIA	Sft	150	\$	\$
01160.73	DS_Sign, Type IIIB	Sft	63	\$	\$
01160.74	DS_Post, Steel, 3 pound	Ft	616	\$	\$
01160.75	DS_Perforated Steel Square Breakaway System	Ea	5	\$	\$
Removals					
02000.01	Tree, Rem, 6 In. - 12 In.	Ea	11	\$	\$
02000.02	Tree, Rem, 13 In. - 19 In.	Ea	8	\$	\$
02000.03	Tree, Rem, 20 In. - 29 In.	Ea	4	\$	\$
02020.00	HMA, Any Thickness, Rem	Syd	134	\$	\$
02023.00	Cold-Milling HMA Surface	Syd	49,395	\$	\$
02025.00	Concrete Pavt, Any Thickness, Rem	Syd	718	\$	\$
02030.00	Curb, Gutter, and Curb and Gutter, Any Type, Rem	Ft	9,851	\$	\$
02040.00	Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	Sft	42,281	\$	\$
02050.71	DS_Sign, Type III, Rem	EA	50	\$	\$
02060.00	DS_Retaining Wall, Rem	Ft	12	\$	\$
Earthwork					
03001.00	Machine Grading	Syd	13,802	\$	\$
03021.00	Subgrade Undercutting, Type II	Cyd	200	\$	\$
03030.01	Exploratory Excavation, SD-TD-1, (0-10' Deep)	Ea	20	\$	\$
03030.02	Exploratory Excavation, SD-TD-1, Additional Depth	Ft	40	\$	\$
03040.00	Earth Excavation	Cyd	3,697	\$	\$
03050.00	Embankment	Cyd	246	\$	\$
Sanitary Sewer					
04000.01	8 In., SDR 26 PVC Sanitary Sewer, SD-TD-2	Ft	64	\$	\$
04000.02	10 In., SDR 26 PVC Sanitary Sewer, SD-TD-2	Ft	222	\$	\$
04000.03	12 In., SDR 26 PVC Sanitary Sewer, SD-TD-2	Ft	1,671	\$	\$
04014.01	6 In., SDR 26 PVC Sanitary Service Lead, SD-TD-2	Ft	443	\$	\$
TOTAL THIS PAGE (BF-1)					\$

E. Schedule of Pricing/Cost – 20 Points

Company:

Project: Pittsfield Village Improvements

File #: 2022-031

RFP #: 25-06

ITEM NUMBER	LEGEND	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
Sanitary (Continued)					
04020.00	Pipe Undercut & Backfill, Sanitary	Cyd	25	\$	\$
04030.01	Sanitary Manhole, 48 In. Dia. (0-8' Deep)	Ea	12	\$	\$
04030.02	Sanitary Manhole, 48 In. Dia., Additional Depth	Ft	11	\$	\$
04060.00	Sanitary Structure Cover	Ea	35	\$	\$
04061.00	Sanitary Structure Cover, Adjust	Ea	35	\$	\$
04070.02	Sanitary Sewer Pipe, 10 In. Dia., Abandon	Ft	240	\$	\$
04080.01	Sanitary Sewer Pipe, 8 In. Dia., Rem	Ft	1,396	\$	\$
04080.02	Sanitary Sewer Pipe, 10 In. Dia., Rem	Ft	45	\$	\$
04100.00	Sanitary Sewer Structure, Rem	Ea	14	\$	\$
04110.03	Santiary Sewer Tap, 12 In. Dia.	Ea	2	\$	\$
Stormwater					
06000.01	12 In., CL IV RCP Storm Sewer, SD-TD-1	Ft	3,654	\$	\$
06000.02	15 In., CL IV RCP Storm Sewer, SD-TD-1	Ft	679	\$	\$
06000.03	18 In., CL IV RCP Storm Sewer, SD-TD-1	Ft	693	\$	\$
06000.05	24 In., CL IV RCP Storm Sewer, SD-TD-1	Ft	1,059	\$	\$
06000.06	30 In., CL IV RCP Storm Sewer, SD-TD-1	Ft	1,831	\$	\$
06000.07	36 In., CL IV RCP Storm Sewer, SD-TD-1	Ft	1,241	\$	\$
06000.10	27 In., CL IV RCP Storm Sewer, SD-TD-1	Ft	544	\$	\$
06004.01	DS_Steel Casing Pipe, 48 In., Jacked in Place	Ft	220	\$	\$
06012.01	12 In., CL IV RCP End Section	Ea	2	\$	\$
06012.04	24 In., CL IV RCP End Section	Ea	3	\$	\$
06012.05	30 In., CL IV RCP End Section	Ea	1	\$	\$
06012.06	36 In., CL IV RCP End Section	Ea	3	\$	\$
06020.00	Pipe Undercut & Backfill, Storm	Cyd	200	\$	\$
06030.04	Storm Sewer Tap, 12 In. Dia.	Ea	9	\$	\$
06041.00	Riprap, Plain	Syd	134	\$	\$
06050.01	Storm Manhole, 48 In. Dia. (0-8' deep)	Ea	53	\$	\$
06050.02	Storm Manhole, 48 In. Dia. , Additional Depth	Ft	33	\$	\$
06050.03	Storm Manhole, 60 In. Dia. (0-8' deep)	Ea	12	\$	\$
06050.04	Storm Manhole, 60 In. Dia., Additional Depth	Ft	19	\$	\$
06050.05	Storm Manhole, 72 In. Dia. (0-8' deep)	Ea	7	\$	\$
06050.06	Storm Manhole, 72 In. Dia. , Additional Depth	Ft	13	\$	\$
06060.03	Storm Inlet-Junction, 48 In. Dia., (0-8' deep)	Ea	8	\$	\$
06060.04	Storm Inlet-Junction, 48 In. Dia., Additional Depth	Ft	2	\$	\$
06060.05	Storm Inlet- Junction, 60 In. Dia., (0-8' deep)	Ea	1	\$	\$
06070.01	Storm Single Inlet, 24 In. Dia., (0-8' deep)	Ea	92	\$	\$
06070.02	Storm Single Inlet, 24 In. Dia., Additional Depth	Ft	10	\$	\$
06100.04	Storm Manhole Over Existing (Doghouse), 84 In. Dia.	Ea	2	\$	\$
06101.01	DS_Outlet Control Structure, 4' Dia.	Ea	2	\$	\$
06110.04	Storm Sewer Pipe, 15 In. Dia., Abandon	Ft	613	\$	\$
06120.01	Storm Sewer Pipe, 8 In. Dia., Rem	Ft	270	\$	\$
06120.02	Storm Sewer Pipe, 10 In. Dia., Rem	Ft	22	\$	\$
06120.03	Storm Sewer Pipe, 12 In. Dia., Rem	Ft	2,941	\$	\$
06120.04	Storm Sewer Pipe, 15 In. Dia., Rem	Ft	194	\$	\$
06120.05	Storm Sewer Pipe, 18 In. Dia., Rem	Ft	250	\$	\$
06120.07	Storm Sewer Pipe, 24 In. Dia., Rem	Ft	400	\$	\$
06140.00	Storm Sewer Structure, Rem	Ea	76	\$	\$
06160.01	Storm Structure Cover	Ea	183	\$	\$
06160.02	Storm Structure Cover, Adjust	Ea	183	\$	\$
06180.02	Underdrain, Subgrade, 6 In.	Ft	937	\$	\$
TOTAL THIS PAGE (BF-2)					\$

E. Schedule of Pricing/Cost – 20 Points

Company:

Project: Pittsfield Village Improvements

File #: 2022-031

RFP #: 25-06

ITEM NUMBER	LEGEND	UNIT	ESTIMATED		TOTAL PRICE
			QUANTITY	UNIT PRICE	
Stormwater (Continued)					
06191.01	Curb Drain, HDPE DR 17, SD-TD-2, 6 inch	Ft	12,989	\$	\$
06200.01	Curb Drain, Tap	Ea	15	\$	\$
06210.01	Curb Drain, Cleanout	Ea	15	\$	\$
Water Mains					
07000.02	6 In., PC 350 DIP w/polywrap, SD-TD-1	Ft	48	\$	\$
07000.03	8 In., PC 350 DIP w/polywrap, SD-TD-1	Ft	7,145	\$	\$
07000.05	12 In., PC 350 DIP w/polywrap, SD-TD-1	Ft	2,550	\$	\$
07005.01	DS_8 In., PC 350 DIP w/polywrap, Directional Drill	Ft	439	\$	\$
07006.01	DS_Steel Casing Pipe, 24 In., Jacked in Place	Ft	60	\$	\$
07011.02	8 In. 45° DIP Bend	Ea	78	\$	\$
07011.03	8 In. 22.5° DIP Bend	Ea	10	\$	\$
07011.04	8 In. 11.25° DIP Bend	Ea	10	\$	\$
07013.02	12 In. 45° DIP Bend	Ea	8	\$	\$
07013.03	12 In. 22.5° DIP Bend	Ea	3	\$	\$
07013.04	12 In. 11.25° DIP Bend	Ea	5	\$	\$
07020.03	8 In. X 6 In. DIP Reducer	Ea	18	\$	\$
07020.09	12 In. X 8 In. DIP Reducer	Ea	1	\$	\$
07030.06	8 In. X 8 In. X 8 In. DIP Tee	Ea	20	\$	\$
07030.13	12 In. X 12 In. X 8 In. DIP Tee	Ea	11	\$	\$
07060.02	Gate Valve in Well, 8 In.	Ea	23	\$	\$
07060.04	Gate Valve in Well, 12 In.	Ea	8	\$	\$
07080.00	Excavate & Backfill For Water Service Tap and Lead	Ft	2,252	\$	\$
07090.00	Water Structure Cover	Ea	36	\$	\$
07091.00	Water Structure Cover, Adjust	Ea	36	\$	\$
07100.00	Fire Hydrant Assembly, Complete	Ea	15	\$	\$
07102.00	Fire Hydrant Assembly, Rem	Ea	3	\$	\$
07110.01	Sacrificial Anode, 17-pound	Ea	23	\$	\$
07110.02	Sacrificial Anode, 32-pound	Ea	1	\$	\$
07121.00	Curb Box, Adjust	Ea	5	\$	\$
07130.01	Temporary Water Main Line Stop, 8 In. or less	Ea	2	\$	\$
07130.03	Temporary Water Main Line Stop, 12 In.	Ea	2	\$	\$
07131.00	Temporary Water Main Line Stop, Additional Rental Day	Ea	2	\$	\$
07140.00	Water Main Pipe, 1.5 In. Dia., Abandon	Ft	152	\$	\$
07140.01	Water Main Pipe, 4 In. Dia., Abandon	Ft	4,556	\$	\$
07140.02	Water Main Pipe, 6 In. Dia., Abandon	Ft	4,812	\$	\$
07140.03	Water Main Pipe, 8 In. Dia., Abandon	Ft	249	\$	\$
07150.02	Water Main Pipe, 6 In. Dia., Rem	Ft	100	\$	\$
07150.03	Water Main Pipe, 8 In. Dia., Rem	Ft	250	\$	\$
07150.05	Water Main Pipe, 12 In. Dia., Rem	Ft	50	\$	\$
07151.01	DS_Water Main AC Pipe, 4 In. Dia, Rem	Ft	100	\$	\$
07151.02	DS_Water Main AC Pipe, 6 In. Dia, Rem	Ft	100	\$	\$
07151.03	DS_Water Main AC Pipe, 8 In. Dia, Rem	Ft	75	\$	\$
07160.01	Gate Valve in Box, 4 In. Dia., Abandon	Ea	2	\$	\$
07160.02	Gate Valve in Box, 6 In. Dia., Abandon	Ea	3	\$	\$
07160.03	Gate Valve in Box, 8 In. Dia., Abandon	Ea	1	\$	\$
07170.02	Gate Valve in Box, 6 In. Dia., Rem	Ea	2	\$	\$
07180.02	Gate Valve in Well, 6 In. Dia., Abandon	Ea	1	\$	\$
07190.01	Gate Valve in Well, 4 In. Dia., Rem	Ea	2	\$	\$
07190.02	Gate Valve in Well, 6 In. Dia., Rem	Ea	2	\$	\$
TOTAL THIS PAGE (BF-3)					\$

E. Schedule of Pricing/Cost – 20 Points

Company:

Project: Pittsfield Village Improvements

File #: 2022-031

RFP #: 25-06

ITEM NUMBER	LEGEND	ESTIMATED			
		UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
Streets, Driveways, & Sidewalks					
08010.03	Aggregate Base, 8 In., 21AA, CIP	Syd	23,625	\$	\$
08020.02	DS_Maintenance Gravel	Ton	100	\$	\$
08050.00	Geotextile Separator Fabric	Syd	167	\$	\$
08051.00	Geotextile Stabilization Fabric	Syd	112	\$	\$
08060.00	Hand Patching	Ton	25	\$	\$
08070.14	HMA, 4EL	Ton	6,292	\$	\$
08070.18	HMA, 5EL	Ton	3,834	\$	\$
08080.03	Conc Pavt, Non-Reinf, 8 In.	Syd	649	\$	\$
08110.00	Conc, Curb or Curb & Gutter, All Types	Ft	13,756	\$	\$
08120.01	Conc, Driveway Opening, Type M	Ft	44	\$	\$
08130.01	Conc, Sidewalk, 4 In.	Sft	24,924	\$	\$
08131.01	Conc, Sidewalk, Drive Approach, or Ramp, 6 In.	Sft	14,606	\$	\$
08131.02	Conc, Sidewalk, Drive Approach, or Ramp, 8 In.	Sft	100	\$	\$
08132.01	Conc, Sidewalk, Drive Approach, or Ramp, 6 In., High Early	Sft	510	\$	\$
08132.02	Conc, Sidewalk, Drive Approach, or Ramp, 8 In., High Early	Sft	100	\$	\$
08133.01	DS_Concrete Speed Table	Ea	9	\$	\$
08150.00	Detectable Warning Surface	Ft	390	\$	\$
08200.04	Pavt Mrkg, Polyurea, Sharrow Sym	Ea	8	\$	\$
08200.06	Pavt Mrkg, Polyurea, 12 In., Cross Hatching, Yellow	Ft	20	\$	\$
08200.09	Pavt Mrkg, Polyurea, 24 In., Stop Bar	Ft	443	\$	\$
08200.10	Pavt Mrkg, Polyurea, 12 In., Crosswalk	Ft	2,696	\$	\$
08200.12	Pavt Mrkg, Polyurea, 4 In., Yellow	Ft	360	\$	\$
08200.27	Pavt Mrkg, Polyurea, School	Ea	4	\$	\$
08200.31	Pavt Mrkg, Polyurea, Speed Hump Chevron, White	Ea	36	\$	\$
08251.00	Recessing Pavt Mrkg, Longit	Ft	360	\$	\$
08252.00	Recessing Pavt Mrkg, Transv	Sft	3,600	\$	\$
08263.00	Rem Curing Compound, for Spec Mrkg	Sft	540	\$	\$
Landscaping					
10001.01	DS_Tree and Planting Allowance	Dir	30,000	\$	\$
10020.02	DS_Fence, Chain Link, 60 In.	Ft	525	\$	\$
10030.00	Fence, Rem	Ft	27	\$	\$
10051.00	Irrigation System, Protection and Preserving	LSUM	1	\$	\$
10060.00	Turf Restoration	Syd	19,029	\$	\$
10090.00	Mulch Blanket	Syd	1,667	\$	\$
10091.00	Mulch Blanket, High Velocity	Syd	389	\$	\$
TOTAL THIS PAGE (BF-4)				\$	_____
TOTAL FROM PAGE BF-1:				\$	_____
TOTAL FROM PAGE BF-2:				\$	_____
TOTAL FROM PAGE BF-3:				\$	_____
TOTAL BASE BID:				\$	=====

F. AUTHORIZED NEGOTIATOR / NEGOTIABLE 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

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:

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 **Pittsfield Village Improvements, RFP No. 25-06** 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) | General Conditions |
| Vendor Conflict of Interest Form | Standard Specifications |
| Prevailing Wage Declaration of Compliance Form (if applicable) | Detailed Specifications |
| Bid Forms | Plans |
| Contract and Exhibits | Addenda |
| Bonds | |

ARTICLE II - Definitions

Administering Service Area/Unit means **Public Services Area, Engineering Unit**

Project means **Pittsfield Village Improvements, RFP No. 25-06**

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: **Igor Kotlyar** whose job title is **Project Manager**. 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 six hundred four (604) consecutive calendar days.
- (C) Failure to complete all the work, including sub-phases, within the time specified above and as detailed in the specifications, 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 \$2,000 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

- (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.

[Signatures on next page]

[INSERT CONTRACTOR NAME HERE]

CITY OF ANN ARBOR

By: _____

Name: _____

Title: _____

Date: _____

By: _____

Name: Milton Dohoney Jr.

Title: City Administrator

Date: _____

Approved as to substance:

By: _____

Name: Sue McCormick

Title: Interim Public Services Area
Administrator

Date: _____

Approved as to form:

By: _____

Name: Atleen Kaur

Title: City Attorney

Date: _____

(Signatures continue on following page)

CITY OF ANN ARBOR

By: _____

Name: _____

Title: Mayor _____

Date: _____

By: _____

Name: _____

Title: City Clerk _____

Date: _____

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)
By _____
(Signature)
Its _____
(Title of Office)

(Name of Principal)
By _____
(Signature)
Its _____
(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 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;
- (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)
By _____
(Signature)
Its _____
(Title of Office)

(Name of Principal)
By _____
(Signature)
Its _____
(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 I3. 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 180 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 10 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.

STANDARD SPECIFICATIONS

All work under this contract shall be performed in accordance with the Public Services Department Standard Specifications in effect at the date of availability of the contract documents stipulated in the Bid. 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:

<http://www.a2gov.org/departments/engineering/Pages/Engineering-and-Contractor-Resources.aspx>

DETAILED SPECIFICATIONS

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
PROJECT SCHEDULE AND PAYMENT

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Description

Examination of Plans, Specifications, and Work Site

Bidders shall carefully examine the Bid Form, plans, specifications, and the work site until the Bidder is satisfied as to all local conditions affecting the contract and the detailed requirements of construction. The submission of the bid shall be considered prima facie evidence that the Bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and all requirements of the Contract.

The entire work under this Contract shall be completed in accordance with, and subject to, the scheduling requirements as outlined below, and all other requirements of the Contract Documents.

1. The Contractor shall begin the work of this project on **March 31, 2025**, and only upon receipt of the fully executed Contract and Notice to Proceed. Appropriate time extensions shall be granted if the Notice to Proceed is delayed beyond this date.
2. This Contract requires water main, stormwater improvements, sanitary sewer, road resurfacing and turf establishment work throughout the Pittsfield Village neighborhood. The Contract shall be completed in phases and shall be completed within **six hundred ten (604) consecutive calendar days**. Contractor shall determine the sequence of work at the project locations and shall not be actively working on more than two project locations, unless otherwise approved by the Engineer.
3. The work shall be sequenced to meet the schedule requirements identified below.
 - a. Work on roads adjacent to Pittsfield Elementary School must occur during the summer break for Ann Arbor Public Schools. Pittsfield Blvd from Washtenaw to Parkwood is subject to this same time requirement.
 - b. Acceptable alternate local routes to Pittsfield Elementary School must be maintained for school traffic.
 - c. A continuous stretch of no more than one block or 850 feet of roadway may be disturbed at a given time except for Norwood from Bellwood to Pittsfield.
4. The following schedule and phasing of work shall form the basis for bidding of the project. The Contractor may submit an alternative project timeline for Owner review that adheres to the general scheduling requirements previously identified.

2025 Construction Season

Notice to Proceed (March 31, 2025) to June 11, 2025

- 1a. Norwood – Whitewood to Pittsfield
- 1b. Whitewood – Norwood to Oakwood
- 1c. Swift Run Stormwater Improvements

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June 12, 2025 to August 23,2025

- 2a. Pittsfield Blvd – Packard to Norwood
- 2b. Pittsfield Blvd – Norwood to Oakwood
- 2c. Oakwood – Whitewood to Fernwood

August 24. 2025 to November 25, 2025

- 3a. Whitewood – Packard to Norwood
- 3b. Norwood – Bellwood to Pittsfield
- 3c. Oakwood – Whitewood to Yost

2025 Flexible Scheduling - Notice to Proceed to November 26, 2025

These two subphases may be constructed as time permits while subphases 1 to 3 are ongoing, but not simultaneous to each other.

- 4a. Parkwood – Jeanne to Pittsfield – 56 Calendar Days
- 4b. Jeanne – Parkwood to Pittsfield – 28 Calendar Days

2026 Construction Season

January 5, 2026 to March 29, 2026

- 5a. Pittsfield Elementary School Stormwater Improvements

March 30, 2026 to June 13, 2026

- 6a. Pittsfield Blvd – Edgewood to Jeanne
- 6b. Pittsfield Blvd – Jeanne to Parkwood

June 14, 2025 to August 22,2026

- 7a. Pittsfield Blvd – Parkwood to Washtenaw
- 7b. Pittsfield Blvd – Oakwood to Edgewood
- 7c. Richard – Pittsfield to Edgewood

August 23. 2025 to November 25, 2026

- 8a. Fernwood – Jeanne to Parkwood
- 8b. Fernwood – Edgewood to Jeanne
- 8c. Edgewood – Pittsfield (south) to Pittsfield (north)
- 8d. Carolyn – Edgewood to Pinecrest

The entire work at these locations as required by this Contract includes, but is not limited to the following:

- Water main and valves installation, chlorinating, pressure testing and flushing.
- Coordinate with City transfer of existing water service leads.
- Pavement removal.
- Replacement of pavement base within utility trenches.
- Pavement base proof rolling and undercutting.

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- Replacement of storm sewer and structures.
 - Grading of stormwater improvement facilities
 - Sanitary service lead installation and sanitary sewer abandonment.
 - Replacement and installation of curb and gutter, sidewalk and driveway approaches as needed.
 - Permanent placement of hot mix asphalt.
 - Restoration of all disturbed areas.
 - Removal of all traffic control devices.
5. Contractor shall sequence the water and storm sewer installation in a way that does not interrupt service of other utilities.
6. Contractor shall provide all necessary sewer flow control to maintain flow at all sewer replacement sections, sewer crossings, connections and lead transfers.
7. The following workday, hour and other work restrictions are imposed by the City of Ann Arbor.

Contractor operations shall be limited by local municipality work time, noise and dust ordinance:

- Monday through Friday: 7am – 8pm
- Saturday: 7am – 8pm; Notice given to City of Ann Arbor no less than 48 hours and no more than 5 days
- Sunday: Only with written approval from the City of Ann Arbor

No work shall be performed during Holiday weekends as follows, unless approved by the City of Ann Arbor:

- Memorial Day, from 3:00 p.m. Friday through 7:00 a.m. Tuesday
- Fourth of July, from 3:00 p.m. July 3, 2025, through 7:00 a.m. July 7, 2025 and 3:00 pm July 2, 2026 through 7:00 a.m. July 6, 2025.
- Labor Day, from 3:00 p.m. Friday through 7:00 a.m. Tuesday
- Thanksgiving, from 3:00 p.m. the Wednesday before Thanksgiving through 7:00 a.m. the Monday after Thanksgiving.
- Christmas, from 3:00 p.m. December 23, 2025, through 7:00 a.m. January 2, 2026.

No work impacting Washtenaw Avenue or Packard Road shall be performed during University of Michigan home football games.

City Council approval is expected on or before **March 17, 2025**. The Contractor shall not begin the work without approval from the Project Engineer, and in no case before the receipt of the Notice to Proceed.

Contractor will be furnished with two (2) copies of the Contract, for his/her execution, before the aforementioned City Council meeting. The Contractor shall properly execute both copies of the

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Contract and return them, with the required Bonds and Insurance Certificate, to the City within ten (10) days.

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 final completion date. 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.

Prior to the start of any construction, the Contractor shall submit a detailed schedule of work for the Engineer's review and approval. Work shall not be started until a schedule is approved in writing by the Engineer. The proposed schedule must fully comply with the scheduling requirements contained in this Detailed Specification. The Contractor shall update the approved work schedule upon request by the Engineer and present it to the Engineer within seven days of said request.

The Engineer may delay or stop the work due to threatening weather conditions. The Contractor shall not be compensated for unused materials or downtime due to rain, or the threat of rain. The Contractor is solely responsible for repairing all damages to the work and to the site, including road infrastructures, road subgrades, and any adjacent properties, which are caused as a result of working in the rain.

The Contractor shall not work in the dark except as approved by the Engineer and only when lighting for night work is provided 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 work cannot be completed within the remaining daylight hours, or if inadequate daylight is present to either properly perform or inspect the work. The Contractor will not be compensated for unused materials or downtime when delays or work stoppages are directed by the Engineer for darkness and/or inadequate remaining daylight reasons. The Contractor is solely responsible for repairing all damages to the work and to the site, including road infrastructures, road subgrades, and any adjacent properties, which are caused as a result of working in the dark.

Liquidated Damages

Failure to complete all work, including sub-phases, as specified herein within the times specified herein, including time extensions granted thereto as determined by the Engineer, shall entitle the City to deduct from the payments due the Contractor, **\$2,000.00** in Liquidated Damages, and not as a penalty, for delays in the completion of the work for each and every calendar day beyond the times for each sub-phase, as required by this Detailed Specification, or as agreed upon based on the Contractor's approved alternate schedule for each sub-phase.

Substantial Completion for each sub-phase shall include the HMA roadway pavement open to traffic, permanent pavement markings, concrete and restoration. If restoration has not been installed, temporary erosion control measures such as staked in-place mulch blanket shall be installed. This work is included in the cost of **Turf Restoration**.

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Liquidated Damages will be assessed until the required work is completed in the current construction season. If, with the Engineer's approval, work is extended beyond seasonal limitations, the assessment of Liquidated Damages will be discontinued until the work is resumed in the following construction season.

If the construction Contract is not completed within the specified calendar day period including any extensions of time granted thereto, at the sole discretion of the City of Ann Arbor, this Contract may be terminated with no additional compensation 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, Contract items paid for on a Lump Sum basis shall be paid up to a maximum percentage equal to the percentage of the Contract work that has been completed.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
PROJECT COORDINATION

OHM:CJE

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Description

The Pittsfield Village Neighborhood has no off-street parking, and additional coordination is required to ensure resident access to parking and provide ample notification on available parking locations.

For those residents with accessibility concerns, the Contractor shall coordinate with the Engineer to develop an access plan specific to that unit. This shall include but not be limited to temporary walkways and/or ramps, temporary gravel driveways within the right-of-way, and routine notification of acceptable parking spots within the roadway. It is estimated that 25 units will require specific coordination on the project.

The Contractor shall provide two representatives to attend in-person public information meetings as scheduled for early April 2025 and March 2026. These meetings shall be approximately two hours in length and the Contractor's representatives shall attend up to two preparation meetings in advance with the project team.

The Contractor shall submit weekly updates to the Engineer on status of local road closures and on-street parking availability so the project website can be updated on a weekly basis.

Where temporary maintenance gravel, pedestrian mats, pedestrian ramps, barricades or other temporary measures are installed, they shall be paid for by the corresponding pay items included in the Contract.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
PERMANENT SIGN AND SUPPORT

OHM:CJE

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Description

This work consists of removing or furnishing all components for the Permanent Sign and Support as shown on the plans or as directed by the Engineer. The Sign and Support shall be in accordance with the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction and as specified herein.

Materials

The Contractor shall remove or furnish materials in accordance with Section 810 and 919 of the MDOT 2020 Standard Specifications for Construction, except where otherwise noted.

All materials for the Permanent Sign and Support shall be manufactured using design standards from the Michigan Manual on Uniform Traffic Control Devices (MMUTCD) and/or engineering judgment. The model includes the Sign Panel (Type IIIA or Type IIIB), Support (Perforated Steel Square Tube Breakaway System), Reflective Panel, and all associated hardware, that includes, but not limited to, bolts, nuts, washers, and plates.

Sign Type IIIA and Sign Type IIIB shall meet the requirements as stated in Section 919 of the MDOT Standard Specifications for Construction.

Ground Mounted Sign Support shall meet the requirement as stated in Section 810 of the MDOT Standard Specifications for Construction and MDOT Standard Plan SIGN-200-X (latest plan).

The Perforated Steel Square Tube Breakaway System shall meet the requirements as stated in Section 810 of the MDOT Standard Specifications for Construction and MDOT Standard Plan SIGN-207-X (latest plan).

Construction

The Contractor shall remove or furnish and install the permanent signs and supports as indicated on the plans or as directed by the Engineer. Ensure work complies with Sections 810 and 919 of the MDOT Standard Specifications for Construction and this special provision.

Measurement and Payment

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

Pay Item	Pay Unit
DS_Sign, Type III, Rem.....	Each
DS_Sign, Type III, Erect, Salv.....	Each
DS_Sign, Type IIIA.....	Square Foot
DS_Sign, Type IIIB.....	Square Foot
DS_Post, Steel, 3 pound.....	Foot
DS_Perforated Steel Square Tube Breakaway System.....	Each

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FOR
PERMANENT SIGN AND SUPPORT

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DS_Sign, Type __, Rem; DS_Sign, Type III, Erect, Salv; DS_Sign, Type __; DS_Post, Steel, 3 pound; and DS_Perforated Steel Square Tube Breakaway System will be measured by the quantity shown on the plans, as directed by the Engineer and as specified herein. For salvaged signed this includes payment for all materials to be delivered to the City of Ann Arbor Public Works Wheeler Service Center. Payment for accessories and mounting hardware required for installation shall not be paid separately but shall be included in the corresponding pay item.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
STEEL CASING PIPE, JACKED IN PLACE

OHM:CJE

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12/19/24

Description

This work shall consist of furnishing all labor, tools, equipment, and material to properly install of steel casing by jack and bore at the locations shown on the plans. This work shall be performed in accordance with 2024 Public Services Standard Specifications Article 1, except as specified herein.

Materials

All materials shall meet the requirements specified in 2024 Public Services Standard Specifications Article 1, Section XXVI.

Construction

Perform all work in accordance with subsection 401 of the MDOT 2020 Standard Specifications for Construction.

Excavate jacking and receiving pits as necessary. Provide and install sheeting, bracing, and other earth retention measures in accordance with section 704 of the Standard Specifications for Construction. Provide site drainage and subsurface dewatering and other items associated with the operation as necessary to facilitate the work.

Attach casing spacers to the carrier pipe and insert into the casing.

Bulkhead both ends of the casing and completely grout the annular space between the casing and carrier pipe with flowable fill.

Remove pits and backfill the excavation as necessary with material meeting the standard specifications as approved by the Engineer.

Ensure the casing joints are fully closed by welding or mechanical means as approved by the Engineer.

Measurement and Payment

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

Pay Item	Pay Unit
DS_Steel Casing Pipe, __ In. Dia., Jacked In Place	Foot

DS_Steel Casing Pipe, __ In. Dia., Jacked in Place will be paid for by the length installed. The unit price includes the cost of excavating pits; providing and installing sheeting, bracing, and any other safety devices; providing jacking equipment; drainage and dewatering; bulkheading the casing ends and filling with flowable fill or pressure grouting the ends (as applicable); and all other items associated with the operation.

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FOR
STEEL CASING PIPE, JACKED IN PLACE

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Pipe installed within the casing shall be paid for as standard open cut pay items for the applicable utility with Trench Detail SD-TD-1.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
OUTLET CONTROL STRUCTURE

OHM:CJE

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12/18/24

Description

This work shall consist of furnishing all labor, tools, equipment, and material to properly install a drainage outlet control structure as indicated on the Plans or as directed by the Engineer. This work shall be performed in accordance with 2024 Public Services Standard Specifications Article 4, except as specified herein.

Materials

All materials shall meet the requirements specified in Division 9 of the MDOT 2020 Standard Specifications for Construction.

Furnish a drainage outlet control structure that is in accordance with subsection 403.02 of the MDOT 2020 Standard Specifications for Construction, MDOT Standard Plan R-1 Series and the details shown on the plans.

Furnish 3-inch stone aggregate in accordance with section 902 of the MDOT 2020 Standard Specifications for Construction.

Furnish 6A coarse aggregate in accordance with section 902 of the MDOT 2020 Standard Specifications for Construction.

Furnish steel grate in accordance with the details shown on the plans.

Construction

Perform all work in accordance with subsection 403.03 of the MDOT 2020 Standard Specifications for Construction.

Measurement and Payment

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

Pay Item	Pay Unit
DS_Outlet Control Structure, __ In. Dia.	Each

DS_Outlet Control Structure, __ In. Dia includes constructing the concrete footing, precast concrete structure, orifices of the diameter shown on the plans, structure cover, and stone/aggregate as shown in the detail. Payment also includes all costs associated with furnishing shop drawings for the outlet control structure.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
WATER MAIN DIRECTIONAL DRILL

OHM:CJE

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Description

This work shall consist of furnishing all labor, tools, equipment, and material to install ductile iron water main by horizontal directional drilling method as indicated on the Plans. This work shall be performed in accordance with 2024 Public Services Standard Specifications Article 3 and Article 10, except as specified herein.

Materials

Water main pipe and tracer wire for directional drilling shall meet the requirements specified in 2024 Public Services Standard Specifications Article 3.

Restrained ductile iron pipe joints approved for use in the directional drilling of ductile iron water main are as follows:

1. American Ductile Iron - Flex Ring Joint
2. U.S. Pipe – HDSS Joint

Drilling fluid shall be liquid bentonite clay and water slurry; totally inert with no environmental risk formulated to move cuttings to the surface and lubricate the pipe during pullback. Drilling Fluid shall remain in the drilled hole to ensure the stability of the hole and reduce drag on the pulled pipe.

Construction

The Contractor shall have personnel experienced in the installation of ductile iron pipe via directional drilling.

Installation of ductile iron pipe by directional drilling shall meet the requirements specified in 2024 Public Services Standard Specifications Article 10.N., except for those requirements that are specific to HDPE pipe.

Do not exceed pipe manufacturer's recommended pullback forces.

Contain excess drilling fluids at entry and exit points until recycled or removed from site. Provide recovery system to remove drilling spoils from access pits. Remove, transport and legally dispose of drilling spoils off-site. Complete clean-up of drilling fluid at end of each work day.

When drilling fluid leaks to surface, immediately contain leak and barricade areas from vehicular and pedestrian travel before resuming drilling operations. Follow all procedures for the submitted and approved Fracture Mitigation Plan.

The ductile iron pipe shall be double wrapped with polyethylene encasement. The polyethylene encasement shall be taped in a spiral configuration along the length of the pipe, and overlapped at pipe joints, to prevent any movement during the directional drilling operation

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DETAILED SPECIFICATION
FOR
WATER MAIN DIRECTIONAL DRILL

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Measurement and Payment

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

Pay Item	Pay Unit
DS_ ___ In., PC 350 DIP, Directional Drill	Lump Sum

DS_ ___ In., PC 350 DIP, Directional Drill shall include all labor, material and equipment costs required for restrained joint ductile iron pipe, excavation, dewatering (including well points where needed), drilling and receiving pits and/or trench sheeting and shoring, directional drilling, assembly, furnishing proper backfill material, compaction, proper disposal off-site of excess excavated material and drilling fluid, disinfection, testing, flushing, and placing new mains into service.

Payment shall be measured in place by length in lineal feet along the centerline of the main with no reductions for fittings or valves. Payment for thrust blocks, restrained joints, plugs, or any other special fittings shall be considered as having been included with this pay item and will not be paid for separately.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
AC WATER MAIN REMOVAL

OHM:CJE

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Description

This work shall consist of furnishing all labor, tools, equipment, and material to properly remove and manage asbestos-containing concrete (AC) water mains as indicated on the Plans or as directed by the Engineer. This work shall be performed in accordance with 2024 Public Services Standard Specifications except as specified herein.

All existing water main identified for replacement within the original Pittsfield Village Neighborhood are assumed to be asbestos-containing concrete water main.

According to classification guidelines set forth in the National Emission Standards for Hazardous Air Pollutants (NESHAP), the asbestos-containing concrete water main is classified as a non-friable Category II material, as defined in 40 CFR Part 61.

Construction

The non-friable Category II concrete water main is likely to become friable during excavation and removal activities and therefore shall be removed by a licensed asbestos abatement contractor or Contractor's own properly trained personnel, using special abatement techniques and engineering controls as defined in Subsection 7 of Section g of Part 602 of Section 24 of 1974 PA 154. Standard work practices providing these techniques and controls include:

- The quantity of asbestos-containing concrete water main will exceed the Michigan Department of Licensing and Regulatory Affairs (LARA) notification limits (10 linear feet/15 square feet); therefore, removal activities for the concrete water main will require a 10-calendar day notification to the LARA;
- The material shall be thoroughly wetted prior to and during its removal;
- The material shall be removed intact unless the Contractor demonstrates that intact removal is not possible;
- Cutting, abrading or breaking of the material shall be prohibited unless the Contractor can demonstrate that such methods are less likely to result in an asbestos release;
- The material shall be immediately wrapped in plastic or kept wetted until transferred to a closed receptacle no later than the end of the work shift; and
- All wastes generated from the material removal shall be transported to a Type II landfill for proper disposal.

According to part VI of subsection 7 of Section g of Part 602 of Section 24 of 1974 PA 154, alternative work practices shall be preceded by:

- Contractor shall demonstrate by data representing employee exposure during the use of such method under conditions which closely resemble the conditions under which the method is to be used, that employee exposure will not exceed permissible exposure limits (PELs) under any anticipated circumstances;
- A competent person shall evaluate the work area, the project work practices and the engineering controls, and shall certify in writing that the different or modified controls are adequate to reduce direct and indirect employee exposure to below PELs under all

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DETAILED SPECIFICATION
FOR
AC WATER MAIN REMOVAL

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expected conditions of use and that the method meets the requirements of the standard.

Measurement and Payment

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

Pay Item	Pay Unit
DS_Water Main AC Pipe, __In. Dia, Rem	Foot

DS_Water Main AC Pipe, __In. Dia, Rem shall be payment in full for all labor, materials and equipment necessary to remove the asbestos-containing concrete water main. This item includes removal of 4 inch to 8-inch diameter water main. Excavation as well as furnishing, placing, and compacting suitable backfill shall be considered as included in the removal of asbestos-containing concrete water main work. Proper disposal of the asbestos-containing concrete water main shall also be considered as included in the work.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
MAINTENANCE GRAVEL

OHM:CJE

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Description

This work consists of constructing an aggregate surface on a prepared grade, where directed by the Engineer, to maintain traffic or parking during construction. Removal and disposal of the aggregate when no longer needed is included in this item of work. This work will be in accordance with section 306 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, except as modified herein.

Materials

All materials will be dense graded aggregate 100 percent crushed limestone conforming to Class 21AA Aggregate under section 902 of MDOT 2020 Standard Specifications for Construction.

Construction

Maintenance gravel is to be placed at locations as directed by the Engineer to provide a flush transition to driveways, roadway, and other areas where traffic or parking is to be maintained or temporarily created.

The aggregate surface shall be maintained in a smooth and firm condition until no longer needed for maintaining traffic or parking. When construction operations progress to the point that the maintenance gravel is no longer needed, removal of maintenance gravel is to occur in the same workday as paving or aggregate surfacing of the removal area. Contractor is responsible for removal and disposal of the material in accordance with the MDOT 2020 Standard Specifications for Construction.

Measurement and Payment

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

Pay Item	Pay Unit
DS_Maintenance Gravel	Ton

DS_Maintenance Gravel shall be paid for one time based on weight tickets of material used. Includes all labor, equipment, and materials required for the construction, maintenance, and removal of the aggregate surface as described in this special provision and as directed by the Engineer. Weigh tickets shall be provided to the Engineer.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
CONCRETE SPEED TABLE

OHM:CJE

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12/18/24

Description

This work shall consist of furnishing all labor, tools, equipment, and material to construct concrete speed tables as indicated and detailed on the Plans. This work shall be performed in accordance with 2024 Public Services Standard Specifications, except as specified herein.

Materials

Concrete speed tables shall be non-reinforced MDOT Grade 3500 concrete in conformance with MDOT Specifications, Section 1004 (Concrete Mixtures). An existing compacted aggregate base may be utilized where approved by the Engineer.

Lane tie bars shall be straight epoxy-coated No. 4 tie bars in accordance with Section 914 of the MDOT 2020 Standard Specifications for Construction.

Construction

Concrete speed tables shall be constructed in accordance with the requirements of Section 602 of the MDOT 2020 Standard Specifications for Construction. Construct final HMA surface, sawcut and remove HMA in accordance with plan details, and construct concrete speed table.

Only one concrete speed table shall be constructed on a given block at a time to ensure access for local traffic.

Install four (4) speed hump chevron, white, polyurea pavement markings as shown on the plan details.

Measurement and Payment

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

Pay Item	Pay Unit
DS_Concrete Speed Table.....	Each

DS_Concrete Speed Table includes all labor, material and equipment costs required to furnish and install concrete sidewalk and drive approaches including but not limited to sawcutting; HMA pavement removal, tie bars, chevron pavement markings, performing the specified concrete durability tasks; curing the concrete for the required time period; and, protection of the newly placed concrete against rain, wind, and temperature conditions that are adverse to the proper curing of the newly placed concrete as specified.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
ALLOWANCE FOR TREES AND PLANTINGS

OHM:CJE

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12/19/24

Description

This work shall consist of an allowance for planting trees, shrubs, live cuttings and native seed mixes at the stormwater basins and within the street right-of-way as directed by the Engineer. Work shall be in accordance with Sections 815, 816 and 917 of the 2020 Michigan Department of Transportation Standard Specifications for Construction and the City of Ann Arbor 2024 Public Services Standard Specifications except as specified herein.

Full extent of the plantings shall be determined during construction. Trees, Plantings and seed mixes will be paid for at the final negotiated price after the Work has been authorized by the Engineer. Price paid shall be payment in full for all labor, material, and equipment required for the plantings and warranty period and shall be based upon an agreement negotiated and approved prior to beginning this Work.

Watering, removing weeds, and completing all necessary tasks to maintain a healthy stand of plants, and Balled and Burlapped (B&B) Trees shall be included in this work. Extent of work shall include a two-year warranty and maintenance period, including but not limited to the following:

1. Watering
2. Weed Control
3. Mulching
4. Disease and Insect Control
5. Pruning
6. Fertilizer Application
7. Removal of Tree Support and Tags

The Contractor shall attend up to four (4) site walkthroughs to review final plantings within the project area. The Contractor is required to present a detailed scope of work and costs for any Work contemplated under the Trees and Plantings allowance to the Engineer. No Work is to begin until scope and costs have been finalized and approval by the Engineer in writing.

Tree drip irrigation bags are in addition to planting specifications 815, 816 and 917 of the 2020 Michigan Department of Transportation Standard Specifications.

Materials

All planting methods and materials shall conform to Sections 815, 816 and 917 and the planting details shown on the plans. In addition, tree planting shall include and Tree Drip Irrigation Bags and Watering and Cultivating. Tree and plant types and sizes shall be as shown on the Drawings or as directed by the Engineer.

Tree Drip Irrigation Bags shall be Treegator Original 20-gallon slow-release watering bags, or approved substitution.

Fertilizer shall be slow release, at minimum 50% derived from a natural, organic source, 12-0-6 or approved substitution.

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DETAILED SPECIFICATION
FOR
ALLOWANCE FOR TREES AND PLANTINGS

OHM:CJE

2 of 2

12/19/24

The Contractor shall submit a minimum size sample of ½-gallon sized container of structural soil and topsoil for approval prior to installation.

The Contractor shall submit to the ENGINEER sources for all plant material 30 (thirty) days after contract award and submit an invoice following purchase and delivery of the plants.

Construction

The construction methods shall be in accordance with the 2020 Michigan Department of Transportation Standard Specifications for Construction Section 815.03 unless otherwise stated in this special provision.

All open tree pits shall be excavated to the full extent of their dimensions as shown in the City Standard Details.

Watering and Cultivating shall follow the schedule in the 2020 Michigan Department of Transportation Standard Specifications for construction Section 815 with the adjustment of filling the tree drip irrigation bags with water and using the fertilizer as dictated in this special provision. For each watering and cultivating visit, verification in the form of a report of maintenance activities and certified payroll covering visits, shall be provided to the OWNER by the end of each month that the visits have taken place.

Measurement and Payment

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

Pay Item	Pay Unit
DS_Trees and Plantings (Allowance)	Dollar

DS_Trees and Plantings (Allowance) shall include excavation, backfill, topsoil, seed mixes, fertilizer, tree drip irrigation bags, water, and all other equipment necessary, and as described herein, for a complete installation. Warranty and maintenance for two seasons shall also be included in the prices provided under this allowance.

The final inspection of all planting work under the Contract will be made by the Contractor and Engineer at the end of the maintenance and establishment periods. Before final acceptance is given, the terms of the establishment shall be met and the site shall be cleared of all debris, soil and containers.

If the approved price for this work is more or less than the lump sum amount of the allowance in the Contract, the Contract allowance 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.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
CHAIN LINK FENCE

OHM:CJE

1 of 1

12/18/24

Description

This work shall consist of constructing chain link fence and gates as indicated on the Plans or where directed by the Engineer. This work shall be performed in accordance with 2024 Public Services Standard Specifications Article 10, Section VI.N., except as specified herein.

Materials

Chain link fencing materials shall be black vinyl coated in accordance with ASTM F668.

Measurement and Payment

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

Pay Item	Pay Unit
DS_Fence, Chain Link, __ In.....	Foot

DS_Fence, Chain Link, __ In. includes all labor, material and equipment required to furnish and install chain link fence, foundations, and gates of the size and type specified.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
RETAINING WALL, REMOVE

OHM:CJE

1 of 1

12/19/24

Description

This work shall consist of furnishing all labor, tools, equipment, and material to remove existing retaining wall at the locations shown on the plans.

Construction

Completely remove existing block, timber or concrete retaining wall or headwall as necessary to perform construction of proposed utilities. Provide associated excavation and backfill as necessary to facilitate the work.

Measurement and Payment

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

Pay Item	Pay Unit
DS_Retaining Wall, Rem	Foot

DS_Retaining Wall, Rem shall be paid for by the linear foot of removal and disposal of existing retaining wall as identified on the drawings for removal regardless of the thickness or height of the retaining wall.

APPENDIX



MATERIALS TESTING CONSULTANTS

**REPORT OF GEOTECHNICAL INVESTIGATION
PITTSFIELD VILLAGE IMPROVEMENTS
ANN ARBOR, MICHIGAN**

Prepared For:

OHM ADVISORS

Prepared By:

MATERIALS TESTING CONSULTANTS, INC.

February 2024
MTC Project No. 231797



February 9, 2023
Project No. 231797

OHM Advisors
355 South Zeeb Road, Suite A
Ann Arbor, Michigan 48103

Attention: Chris Elenbaas, P.E.
Senior Project Manager

Reference: Report of Geotechnical Investigation
Pittsfield Village Improvements
Ann Arbor, Michigan

Dear Mr. Elenbaas:

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, analyze the conditions relative to the planned construction and to provide recommendations for pavement design and utility installation. This work has been performed as described in our proposal dated July 14, 2023.

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 boring log terminology, soil classification chart, boring logs and laboratory test data.

DESIGN CONSIDERATIONS

Available Information

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

- A map showing requested boring locations and locations of proposed infiltration and corrosivity testing provided by Mr. Chris Elenbaas, P.E. of OHM Advisors on December 14, 2023.
- Traffic count information provided by Mr. Thomas Lentner, P.E. of OHM Advisors on January 18, 2024.
- Telephone and email correspondence with Mr. Chris Elenbaas, P.E. of OHM Advisors regarding the type of construction, boring locations and scope of geotechnical investigation.



Project Description

The areas of investigation are shown on the attached Boring Location Plans, Figure Nos. 1 and 2. The investigation was located along 9 streets within the Pittsfield Village neighborhood in the City of Ann Arbor, Michigan. The proposed construction will generally consist of the replacement of the existing water main along Pittsfield Boulevard, Parkwood Avenue, Fernwood Avenue, Edgewood Drive, Carolyn Street, Richard Street, Oakwood Street, Whitewood Street and Norwood Street, the existing storm sewer along sections of Oakwood Street, Whitewood Street and Norwood Street, and the existing sanitary sewer along sections of Norwood Street, Pittsfield Boulevard and Oakwood Street. We understand the proposed utilities will have invert depths of less than 10 ft and the open-cut utility installations will require full depth pavement reconstruction. No repaving is expected outside of utility installation areas.

For design purposes, we have considered that the city streets included in this project will generally classify as either “Minor Local” or “Local” according to the City of Ann Arbor Public Services Department Standard Specifications (2024). We understand that the minimum pavement section for reconstruction will consist of 4 inches of HMA over 8 inches of gravel base and 8 inches of sand subbase. The following design traffic count data was provided by Mr. Thomas Lentner, P.E. of OHM Advisors for consideration in pavement design for all streets presented in this report. We have considered an estimated 0.5% annual increase for design.

Traffic Counts	2024	2044
All Streets	1,532	1,693
Commercial (3%)	46	51

Our analysis has considered the following design parameters as defined in the 1993 AASHTO Guide for Design of Pavement Structures and the City of Ann Arbor Public Services Department Standard Specifications (2024). We should be informed of any changes between the actual design conditions and those described herein as this information may affect our recommendations.

Design Period	20 years
Reliability Level (R)	90%
Combined Standard Error (S ₀)	0.45
Initial Serviceability Index (p _i)	4.5
Terminal Serviceability index (p _t)	2.0
Delta Serviceability Loss (ΔPSI)	2.5

We should be informed of any changes between the actual design conditions and those described herein as this information may affect our recommendations.



INVESTIGATION METHODOLOGY

Field Investigation

Subsurface conditions were investigated by 22 conventional soil test borings. Boring depths ranged from 5 ft to 15 ft below the existing ground surface in the requested areas of road reconstruction and utility installation. Boring locations are shown on the attached plans, Figure Nos. 1 and 2.

MTC staked the approximate boring locations in the field. Boring elevations were approximated by GPS. The elevations used in this report are given in feet and are based on NAVD88 datum, with boring coordinates given in the Michigan State Plane south system. If more precise location and elevation data are desired, a registered professional land surveyor should be retained to locate the borings and determine their ground elevations.

The drilling was performed using conventional hollow-stem auger methods to advance the boreholes. The boreholes were backfilled to the original ground surface after drilling completion and patched with asphalt cold patch where appropriate.

Soil samples were recovered at regular intervals by means of the Standard Penetration Test (SPT), ASTM D1586. The SPT test involves the use of a 140-lb hammer with a 30-inch drop to drive a standard 2.0-inch O.D. split spoon sampler. The number of hammer blows required to drive the 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. The drill rig was equipped with an automatic hammer system which delivers a more consistent driving energy to the sampler compared to the rope and cathead system.

Recovered samples were sealed, labeled and transported to our laboratory. All soil samples will be discarded after sixty days unless a longer hold time is specifically requested.

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

The recovered soil samples were reviewed by an engineer and technically classified according to the methods of ASTM D2488 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)". Estimates of the unconfined compressive strength of the cohesive samples were made using a calibrated penetrometer. A copy of the test boring logs along with a description of the terminology used on the logs and a chart of the ASTM D2488 group symbol names are provided in the Appendix. Selected samples were subjected to various laboratory tests, including:

- ASTM D2216 "Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass"
- ASTM D2974 "Test Methods for Determining the Water (Moisture) Content, Ash Content, and Organic Material of Peat and Other Organic Soils"

Results of the laboratory tests have been summarized in a table provided in the Appendix.

Select samples were submitted to Brighton Analytical Laboratory for testing including soil resistivity (EPA 120.1), pH (SW846 9045C), reduction oxidation potential (ASTM G200), sulfides (SM4500 S2F) and percent solids. The test report from Brighton Analytical Laboratory is provided in the Appendix.

INVESTIGATION RESULTS

Regional Geology

The *Map of the Surface Formations of the Southern Peninsula of Michigan*, published by the State of Michigan, indicates the site is in an area of moraines. Soil conditions typically are found to range from clay and silt to sand and gravel with possible cobble and boulder in this type of geologic area. The *Map of Bedrock Topography of the Southern Peninsula of Michigan* indicates bedrock to be at approximately el 600 to 650 ft, on the order of 100 to 150 ft below the site elevations.

Site Conditions

At the time of our field work, all the streets in the area of investigation were covered with asphalt. Sidewalks and stormwater drains were observed on the sides of the streets during field investigation. Site elevations, in general, sloped down to the east and west from the intersection of Oakwood Street and Parkwood Avenue (el 828) to the east towards Swift Run (el 800) and to the west towards Mallets Creek (el 784).



During our investigation, pavement in fair to poor condition was observed throughout the site. Moderate surface raveling and transverse, alligator and block cracking were generally observed. Cracks were only occasionally sealed.

Surface drainage throughout the site appeared to be facilitated through positive drainage to outer pavement edges. Depressions in the pavement were observed in areas where block, edge and alligator cracking has occurred, creating low areas for water to accumulate.

Subsurface Conditions

The investigation, in general, encountered pavement sections as noted below in Table 1. Borings SB-10 and SB-22 were drilled outside of the roadway and encountered 12 and 30 inches of topsoil, respectively, at the surface.

Table No. 1 – Pavement Section Information and Location

Boring Number	HMA Thickness (in)	Base Type and Thickness	Street Name
SB-1	3	7" of Gravel Base	Parkwood Ave
SB-2	5	3" of Gravel Base	Fernwood Ave
SB-3	9 1/2	5" of Gravel Base	Pittsfield Blvd
SB-4	7 1/2	8" of Gravel Base	Parkwood Ave
SB-5	5	3" of Gravel Base	Fernwood Ave
SB-6	12	1" of Gravel Base	Pittsfield Blvd
SB-7	7	13" of Gravel Base	Parkwood Ave
SB-8	4 1/2	8" of Gravel Base	Fernwood Ave
SB-9	7	5" of Gravel Base	Pittsfield Blvd
SB-11	7	5" of Gravel Base	Edgewood Dr
SB-12	4	9" of Gravel Base	Edgewood Dr
SB-13	6	5" of Gravel Base	Richard St
SB-14	6	6" of Gravel Base	Pittsfield Blvd
SB-15	6	5" of Gravel Base	Oakwood St
SB-16	3 1/2	11" of Gravel Base	Norwood St
SB-17	4	10" of Gravel Base	Norwood St
SB-18	10	No Agg. Base	Pittsfield Blvd
SB-19	7	10" of Gravel Base	Whitewood St
SB-20	10	2" of Gravel Base	Pittsfield Blvd
SB-21	5	9" of Gravel Base	Whitewood St

Listed below are summaries of the encountered subsurface conditions within the area of investigation. Soil conditions were generally clayey, with occasional layers of sand and gravel. Some variation between boring locations is to be expected. Boulder may be present where cobble is noted.

Groundwater was encountered during the drilling activities in Borings SB-17, SB-18, SB-20 and SB-22 at depths ranging from 6.1 to 9.7 ft (els 804.8 to 808.4). 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.

Parkwood Avenue – Borings SB-1, SB-4 and SB-7

Beneath the pavement sections, SB-1 and SB-4 encountered very stiff to hard lean clay (CL) to the explored depths of 5 ft (els 805 to 809.3), while Boring SB-7 encountered hard lean clay (CL) to a depth of 3 ft and medium dense poorly graded sand with silt (SP-SM) to the explored depth of 5 ft (el 799.3). Poor recovery due to possible coarse gravel or cobble was encountered in Borings SB-1, SB-4 and SB-7 at depths up to 5 ft (el 799.3).

Pittsfield Boulevard – Borings SB-3, SB-6, SB-9, SB-14, SB-18, SB-20 and SB-22

Beneath the pavement sections, Borings SB-3, SB-6, SB-9, SB-14, SB-18 and SB-20 generally encountered hard lean clay to the explored depths of 10 to 15 ft (els 797.8 to 817), with occasional layers of sand and gravel.

Boring SB-22 encountered 30 inches of silty topsoil at the surface. Below the topsoil, Boring SB-22 encountered medium dense poorly graded sand with silt (SP-SM) to a depth of 5.5 ft (el 807.3) and medium dense poorly graded gravel (GP) to the explored depth of 10 ft (el 802.8).

Poor recovery due to possible coarse gravel or cobble was encountered in Borings SB-3, SB-6, SB-9, SB-14, SB-20 and SB-22 at depths up to 10 ft (el 802.8). Sampler refusal due to possible coarse gravel or cobble was encountered in Boring SB-20 at a depth of 15 ft (el 797.8). A layer of coarse gravel or cobble was noted in Boring SB-9 at depths ranging from 14.1 to 14.3 ft (els 809.5 to 809.7).

Groundwater was encountered during the drilling activities in Borings SB-18, SB-20 and SB-22 at depths ranging from 7 to 9.7 ft (els 804.8 to 808.4).

Fernwood Avenue – Borings SB-2, SB-5 and SB-8

Beneath the pavement sections, Boring SB-2 encountered hard lean clay (CL) to the explored depth of 10 ft (el 809.2). Boring SB-5 encountered medium dense clayey sand (SC) and very stiff to hard lean clay (CL) to the explored depth of 10 ft (el 810.4). Boring SB-8 encountered very stiff lean clay (CL) to a depth of 3 ft (el 809.5) and loose clayey sand (SC) to the explored depth of 5 ft (el 807.5). Poor recovery due to possible coarse gravel or cobble was encountered in Borings SB-2, SB-5 and SB-8 at depths up to 10 ft (el 807.5).



Carolyn Street – Boring SB-10

Boring SB-10 encountered subgrade soils consisting of loose to medium dense clayey sand (SC) to a depth of 5.5 ft (el 810.3) and hard lean clay (CL) to the explored depth of 10 ft (el 805.8). Poor recovery due to possible coarse gravel or cobble was encountered at a depth of 2 ft (el 813.8).

Edgewood Drive – Borings SB-11 and SB-12

Borings SB-11 and SB-12 generally encountered subgrade soils consisting of very stiff to hard lean clay (CL) to the explored depths of 5 to 10 ft (els 813 to 821.3). Poor recovery due to possible coarse gravel or cobble was encountered at depths up to 10 ft (el 813).

Richard Street – Boring SB-13

Boring SB-13 encountered subgrade soils consisting of hard lean clay (CL) to a depth of 5.5 ft (el 815.1), loose to medium dense clayey gravel with sand (GC) to a depth of 12 ft (el 808.6) and medium dense poorly graded gravel with sand (GP) to the explored depth of 15 ft (el 805.6). Poor recovery due to possible coarse gravel or cobble was encountered at a depth of 15 ft (el 805.6).

Oakwood Street – Boring SB-15

Boring SB-15 encountered hard lean clay (CL) to the explored depth of 10 ft (el 799.6).

Norwood Street – Borings SB-16 and SB-17

Borings SB-16 and SB-17 generally encountered very stiff to hard lean clay (CL) to the explored depths of 15 ft (els 799.2 to 803.4), with the exception of a layer of medium dense poorly graded sand with silt and gravel (SP-SM) encountered in Boring SB-17 at depths ranging from 8 to 14.5 ft (els 800.7 to 806.2). Poor recovery due to possible coarse gravel or cobble was encountered at depths up to 15 ft (el 799.2). Groundwater was encountered in Boring SB-17 at a depths ranging from 6.1 to 6.8 ft (els 807.6 to 808.1).

Whitewood Street – Borings SB-19 and SB-21

Beneath the pavement section, Boring SB-21 encountered fill, consisting of lean clay (CL) and loose poorly graded sand with silt (SP-SM), to a depth of 3.8 ft (el 809.7). The fill appeared to contain brick debris. Due to the loose sand and debris encountered, we have considered this fill was likely placed in an uncontrolled manner.

Beneath the pavement section and uncontrolled fill, Borings SB-19 and SB-21 generally encountered very stiff to hard lean clay (CL), medium dense clayey sand with gravel (SC) and stiff to very stiff silt (ML) to the explored depths of 10 to 15 ft (els 794 to 803.5). Poor



recovery due to possible coarse gravel or cobble was encountered in Boring SB-19 at a depth of 5 ft (el 804).

The relative density of granular soil is based on recorded SPT N-values while the consistency of cohesive soil is based on both recorded SPT N-values and on estimates of the unconfined compressive strength obtained with a calibrated penetrometer.

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.

Infiltration Testing

Double ring infiltrometer tests, per the SEMCOG method, were performed adjacent to Borings SB-6 and SB-20 at depths of 5 ft (els 807.8 to 822.1). Two concentric rings were used to perform the tests, with an 6-inch outer ring diameter and 4-inch inner ring diameter. The purpose of the outer ring is to prevent divergent flow of water from the inner ring while water level in the inner ring is monitored to calculate a one-dimensional infiltration rate. For each test, readings were taken at 30-minute intervals until a stabilized infiltration rate was achieved. A summary of the stabilized infiltration rates for each test are listed in Table 1, below. The infiltration test reports are attached.

Table 2 – Infiltration Test Results

Test	Test Elevation (ft)	Stabilized Infiltration Rate (in/hr)
IT-1 (SB-6)	822.1	0
IT-2 (SB-20)	807.8	0

Environmental Testing

Select samples were submitted to Brighton Analytical Laboratory to be tested for soil resistivity (EPA 120.1), pH (SW846 9045C), reduction oxidation potential (ASTM G200), sulfides (SM4500 S2F) and percent solids. Test reports are included in the Appendix.

Table 3 – Environmental Results for Tested Specimens

Boring Location	Sample Depth (ft)	Soil Resistivity (megohms/cm)	pH	Reduction Oxidation Potential (mV)	Total Sulfide (µg/Kg)	Percent Solids (%)
SB-2	3.5-5	0.005	10.3	190	Not Detected*	85
SB-9	3.5-5	0.003	9.7	190	9,200	87
SB-11	3.5-5	0.006	9.6	180	4,700	86
SB-13	3.5-5	0.004	9.4	170	Not Detected*	86
SB-21	3.5-5	0.007	9.7	160	Not Detected*	88

*: Total Sulfide Detection limit of 1,000 µg/Kg



CONCLUSIONS AND RECOMMENDATIONS

Utility Considerations

Excavation Considerations

Cobble and boulders may be encountered, which the contractor should be prepared to excavate. Groundwater was encountered during the drilling activities in Borings SB-17, SB-18, SB-20 and SB-22 at depths ranging from 6.1 to 9.7 ft (els 804.8 to 808.4), above the expected excavation depths.

The Contractor should be prepared to support structures and provide a safe work environment in accord with all safety standards. It is important that the preconstruction survey be thorough and include documentation of existing cracks.

Foundation Considerations

The borings generally encountered soil conditions suitable for the support of the new utilities at the proposed bearing elevations. The foundation subgrade should be inspected by qualified geotechnical personnel. Any isolated areas of unsuitable miscellaneous fill or unacceptably weak subgrade will need to be removed to an approved subgrade or improved by soil compaction. Any overexcavated areas should be backfilled with MDOT Class II engineered fill. Dewatering is discussed in the following section.

Groundwater

Groundwater was generally encountered Borings SB-17, SB-18, SB-20 and SB-22 at depths ranging from 6.1 to 9.7 ft (els 804.8 to 808.4), up to 4 ft above the anticipated depth of excavation for construction and site preparation.

Groundwater may be a major concern during construction and suitable control of groundwater should be anticipated and planned for accordingly before the start of construction. The Contractor should be responsible for evaluating dewatering requirements on the project. We have provided test boring logs with groundwater levels recorded while drilling. Groundwater levels will fluctuate and may be different at the time of construction.

We recommend that dewatering be required to temporarily lower the groundwater a minimum of 2 ft below the deepest anticipated utility excavation. The design, implementation and monitoring of all dewatering will be the responsibility of the Contractor. The dewatering plan should be submitted to the design engineer for review at least two weeks before the start of construction and contain at a minimum the location of the well points/dewatering wells, expected pumping rates, discharge location, groundwater lowering elevation, permits and piezometer locations. The Contractor should take all necessary means to provide protection to existing structures during dewatering. The Contractor should



have previous dewatering experience on sites with similar conditions. Suitable silt and sediment traps should be incorporated into the dewatering system.

It will be necessary for the Contractor to control storm water during rain events and to prevent the wash-out of excavation slopes and potential undermining of utilities or structures.

Bedding and Backfill

Bedding for the proposed utilities should consist of MDOT Class II sand except that 100 percent of the materials should pass a 3/8-inch sieve. Sand bedding and structural backfill should be compacted to 95 percent of its maximum dry density (ASTM D1557). In general, soil encountered in the borings with USCS group symbols of SP-SM may meet sand bedding or backfill requirements but should be evaluated through the performance of gradation testing prior to placement.

Slopes and Temporary Excavations

Excavations up to 10 ft depth are anticipated for open-cut water main installation. As an alternative to temporary slopes, vertical excavations can be temporarily shored. The Contractor or the specialty subcontractor should be responsible for the design of the temporary shoring in accordance with applicable regulatory requirements.

The Contractor should be fully responsible for determining suitable excavation slope angles, excavation and soil support methods and assessing the need for lateral earth retention to protect the integrity of all existing structures and to maintain traffic as specified in the contract documents. OSHA and other applicable State, Federal and local agency and code requirements must be adhered to during construction. The use of a trench box (temporary shoring within the excavation trench limits) is expected to be feasible for open-cut water main construction.

The Contractor shall be responsible for designing, constructing and maintaining any temporary support systems in a safe manner and monitoring the system's performance throughout construction. All temporary earth retention system or sloping/benching design should be submitted to the design engineer at least two weeks before the start of construction. Precautions shall be taken against excessive ground vibrations during construction by the Contractor. If vibratory earth retention is used, including, but not limited to, steel sheet pile, we recommend a vibration limit be established for nearby structures and vibration monitoring be conducted at those structures during vibratory earth retention activities.

The Owner and the Contractor should make themselves aware of and become familiar with applicable local, state, and federal safety regulations, including current OSHA excavation and trench safety standards. Construction site safety generally is the sole responsibility of



the Contractor. The Contractor shall also be solely responsible for the means, methods, techniques, sequences and operations of construction operations. We are providing the following information solely as a service on this project and, under no circumstances, should our provision of the following information be construed to mean that we are assuming responsibility for construction site safety or the Contractor's activities; such responsibility is not implied and should not be inferred.

The Contractor should be aware that slope height, slope inclination, and excavation depths (including utility trench excavations) should in no case exceed those specified in local, state, or federal safety regulations; e.g., OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations. For these sites, the overburden soil encountered in our exploratory program is a combination of cohesive and granular soil. We anticipate that OSHA will classify these materials as Types A and C, respectively. OSHA recommends a maximum slope inclination of ¾H:1V for Type A and 1½H:1V for Type C soil under ideal conditions. If excavations within the Type A soil are open less than 24 hours and are 12 ft or less in depth then OSHA allows the maximum slope inclination to be 1/2H:1V under ideal conditions.

Pavement Considerations

We have presented herein recommendations for pavement reconstruction considering the design parameters previously summarized. The pavement sections recommended in this section are based on procedures contained in the 1993 AASHTO Guide for Design of Pavement Structures and design parameters contained in the City of Ann Arbor Public Services Department Standard Specifications (2024).

For road reconstruction, we have considered that the minimum section of 4 inches of HMA over 8 inches of gravel base and 8 inches of sand subbase exceeds the required structural number based on the traffic loading provided. The following flexible pavement sections are recommended:

Table No. 4 - Flexible Pavement Section

Sand subbase thickness, inches	8
Aggregate base thickness, inches	8
Bituminous leveling course thickness, inches	2.5
Bituminous wearing course thickness, inches	1.5

The following materials are recommended:

Table No. 5 - Flexible Pavement Materials

Sand subbase	MDOT Class II granular
Aggregate base	MDOT 21AA Natural Aggregate
Bituminous leveling	MDOT 4EL
Bituminous wearing	MDOT 5EL
Minimum Binder Grade	PG 58-28



MDOT standard specifications for materials and placement should be observed. We recommend a maximum of 17 percent recycled asphalt pavement (RAP), measured as a percent of asphalt replacement, be utilized in HMA mixes. Air voids should be field regressed to 3.5 percent using liquid asphalt cement.

A natural aggregate base product, often consisting of crushed limestone, is recommended relative to crushed concrete aggregate base products considering the long-term performance risk crushed concrete presents due to potential hydration of free cement and decreased permeability over time.

Construction procedures and workmanship are of key importance with respect to pavement appearance and long-term pavement performance. Key components of workmanship include appropriate joint construction resulting in sufficient density, prevention of segregation, and maintaining a minimum temperature during placement. At a minimum, the procedures outlined in Section 501 of the 2020 MDOT Specifications should be followed with respect to equipment, placement, and temperatures. Compaction of the asphalt courses should range between 92 and 96 percent of the Theoretical Maximum Density (TMD) based on MDOT requirements.

It is recommended that cracks that may develop in the pavement be quickly and properly sealed through a regular maintenance program. Also, the subgrade should be sufficiently sloped to provide drainage within the sand subbase and underdrains should be provided within the subbase, at catch basins and pavement edges, to facilitate drainage. At each catch basin, four underdrains with a watertight connection should extend out radially at least 20 ft. A suitable rubberized asphalt sealant should be placed between all concrete curb/HMA joints immediately after paving.

Site and Subgrade Preparation

After removal of all existing surficial materials, the exposed subgrade should be proofrolled by the Contractor and, where granular soil is present, compacted to at least 95 percent of the soil's maximum ASTM D1557 dry density. Proofrolling is defined as the passing of relatively heavy construction equipment over the soil subgrade under observation by the Geotechnical Engineer. The response of the soil, when subjected to the applied load, is subjectively evaluated by qualified geotechnical personnel with respect to its ability to support the overlying soil or structure. In areas where excessive deflection is observed, special subgrade preparation measures may be recommended to provide an acceptable subgrade condition. These measures may consist of compaction of the subgrade at moisture contents close to the optimum value, undercutting affected areas and replacing with engineered fill, use of a geotextile separation fabric or some combination of these measures. Where existing aggregate is removed, it should be replaced with MDOT 21AA aggregate.



Engineered fill is approved on-site or imported soil placed in uniform layers and compacted to a minimum required density. Generally, on-site soil with a group symbol of SP-SM is expected to be suitable for engineered fill. Imported engineered fill should meet the requirements for MDOT Class II granular material.

Granular engineered fill and backfill should be compacted to at least 95 percent of the soil's maximum dry density as determined by the Modified Proctor test (ASTM D1557). Vibratory compaction methods are typically found to be most effective in granular soils. The fill should be placed and compacted in horizontal layers not exceeding 9 inches. Field density tests should be taken on each lift, as the fill is being placed, to verify compliance with compaction specifications. If the earthwork takes place during winter months, fill must not be placed on frozen ground and fill with frozen conglomerations of soil must not be used.

CLOSURE

In this report, descriptions of the geotechnical investigation, encountered conditions, and recommendations for pavement and utilities have been provided. The limitations of this study are described in the Appendix.

The recommendations presented in this report are based upon a limited number of subsurface samples obtained from various sampling locations. The samples may not fully indicate the nature and extent of the variations that actually exist between sampling locations. For that reason, among others, we strongly recommend that a qualified geotechnical firm be retained to observe earthwork construction. If variations or other latent conditions become evident during construction, it will be necessary for us to review these conditions and our recommendations as appropriate.



We appreciate this opportunity to provide foundation engineering services and express our interest in providing continuing services in the areas of subgrade verification, special inspections and quality assurance testing on various construction materials. Please contact our office should you have any questions or require further assistance.

Sincerely,

MATERIALS TESTING CONSULTANTS, INC.

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Attachments: Figure Nos. 1 and 2 - Boring Location Plans
Appendix
- Limitations
- Test Drilling and Sampling Procedures
- Boring Log Terminology and Classification Outline
- Boring Logs
- Infiltration Test Reports
- Summary of Laboratory Test Data
- Brighton Analytical Test Reports



TITLE: BORING LOCATION PLAN		PROJECT: PITTSFIELD VILLAGE IMPROVEMENTS	
SCALE: AS SHOWN	DATE: 02/09/2024	PROJECT NO.: 231797	
FIG. NO.: 1	DR. BY: JM	REV. BY: RS	




LEGEND

-  BORING LOCATION (TYP)
-  INFILTRATION TEST LOCATION (TYP)

NOTE: AERIAL IMAGE FROM GOOGLE EARTH



TITLE: BORING LOCATION PLAN		PROJECT: PITTSFIELD VILLAGE IMPROVEMENTS	
SCALE: AS SHOWN	DATE: 02/09/2024	PROJECT NO.: 231797	
FIG. NO.: 2	DR. BY: JM	REV. BY: RS	



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
- 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)
- Thin-walled tube sampler (Shelby), ASTM D1587

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:

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

Sample Handling and Disposition:

- Samples labeled, placed in jars, returned to MTC Laboratory
- 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.

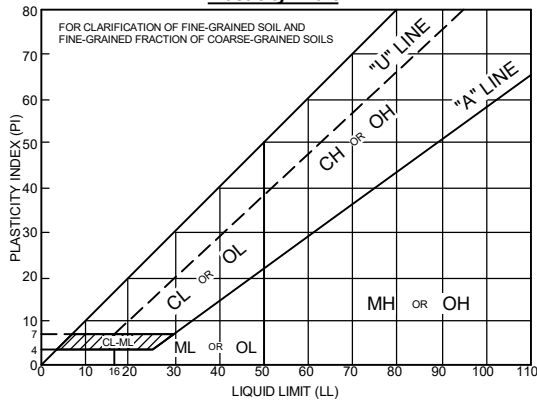
Gravel: $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3

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
		GRAVELS WITH 15% OR MORE FINES	GP	POORLY-GRADED GRAVELS WITH OR WITHOUT SAND
			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
		SANDS WITH 15% OR MORE FINES	SP-SM	POORLY-GRADED SANDS WITH SILT WITH OR WITHOUT GRAVEL
			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
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

- 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.
- "Grades with" or "Grades without" may be used to describe soil when characteristics vary within a stratum.
- 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.: 231797

Boring No.: SB-1

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM

Field Eng.: JV

Rev. By: IA

Coordinates: N=275647.9 E=1330553.4 (MI South 1ft)

Elevation: 814.3 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 01/03/2024

Date End: 01/03/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 3.5 ft.

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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
813.3	1					3" HMA	0.3			
812.3	2	S-1	1.3	3-5-6 N=11	CL	7" Gravel Base	3.5	21.3		
811.3	3					Brown lean CLAY; mostly clayey fines, few coarse to fine sand, few fine gravel, moist				
810.3	4									
809.3	5	S-2	0.9	7-7-10 N=17		5.0	4.5+	10.4	S-2: Poor recovery; possible coarse gravel / COBBLE	
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.: 231797

Boring No.: SB-2

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** RS

Coordinates: N=275587.9 E=13306015.4 (MI South ift)

Elevation: 819.2 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 12/21/2023

Date End: 12/21/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 6.5 ft.

Depth Drilled: 10.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
818.2	1					5" HMA				
817.2	2	S-1	0.8	4-4-5 N=9	CL	3" Gravel Base	4.5+	19.5		S-1, S-2, S-4: Poor recovery; possible coarse gravel / COBBLE
816.2	3					Gray lean CLAY; mostly clayey fines, few medium to fine sand, trace fine gravel, moist				
815.2	4									
814.2	5	S-2	0.9	3-4-8 N=12		4.5+	18.1			
813.2	6									
812.2	7	S-3	1.4	4-7-10 N=17		4.5+	16.6			
811.2	8									
810.2	9									
809.2	10	S-4	1.5	3-7-10 N=17		10.0	18.1			
							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.: 231797

Boring No.: SB-3

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM

Field Eng.: JV

Rev. By: IA

Coordinates: N=275610.9 E=13306349.9 (MI South 1ft)

Elevation: 824.9 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 01/03/2024

Date End: 01/03/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 5.3 ft.

Depth Drilled: 10.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
823.9	1					9 1/2" HMA	0.8			
822.9	2	S-1	1.1	22-23-16 N=39	CL	5" Gravel Base	4.5+			S-1, S-2: Poor recovery; possible coarse gravel / COBBLE
821.9	3									
820.9	4	S-2	1.1	6-6-9 N=15	CL		4.5+	17.2		
819.9	5									
818.9	6	S-3	1.4	5-7-11 N=18	CL		4.5+	19.8		
817.9	7									
816.9	8	S-4	1.3	3-5-8 N=13	CL		4.5+	20.2		
815.9	9									
814.9	10					10.0				

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.: 231797

Boring No.: SB-4

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM

Field Eng.: JV

Rev. By: IA

Coordinates: N=275238.0 E=13305374.5 (MI South 1ft)

Elevation: 810.0 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 01/03/2024

Date End: 01/03/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 1.0 ft.

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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
809.0	1					7 1/2" HMA	0.6			
808.0	2	S-1	1.0	5-5-7 N=12	CL	8" Gravel Base	1.3	3.0		S-1, S-2: Poor recovery; possible coarse gravel / COBBLE
807.0	3					Gray lean CLAY with sand and gravel; mostly clayey fines, little coarse to fine gravel, few coarse to fine sand, moist				
806.0	4	S-2	1.1	3-7-9 N=16	CL		4.5	12.7		
805.0	5						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.: 231797

Boring No.: SB-5

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM

Field Eng.: JV

Rev. By: IA

Coordinates: N=275255.1 E=13305654.3 (MI South 1ft)

Elevation: 820.4 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 6.8 ft.

Date Begin: 01/03/2024

Date End: 01/03/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Depth Drilled: 10.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
819.4	1					5" HMA	0.4			
818.4	2	S-1	1.0	5-6-6 N=12	SC	3" Gravel Base	0.7			
817.4	3					Brown clayey SAND with gravel; mostly coarse to fine sand, little clayey fines, little coarse to fine gravel, moist	3.0			
816.4	4	S-2	1.4	3-4-8 N=12	CL	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, few coarse to fine gravel, moist	5.5	4.5+	18.9	S-1: Poor recovery; possible coarse gravel / COBBLE
815.4	5					Gray lean CLAY; mostly clayey fines, trace fine gravel, moist	4.0	19.4		
814.4	6	S-3	1.5	3-6-10 N=16	CL					
813.4	7									
812.4	8	S-4	1.5	4-5-7 N=12						
811.4	9									
810.4	10						10.0	3.0	19.3	

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.: 231797

Boring No.: SB-6

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** RS

Coordinates: N=275189.4 E=13306132.8 (MI South 1ft)

Elevation: 827.0 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 12/21/2023

Date End: 12/21/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 6.5 ft.

Depth Drilled: 10.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
826.0	1					12" HMA				
825.0	2	S-1	0.9	7-11-10 N=21	CL	1" Gravel Base	4.5+	10.3		S-1 to S-3: Poor recovery; possible coarse gravel / COBBLE
824.0	3									
823.0	4									
822.0	5	S-2	0.7	10-7-11 N=18		4.5+	16.5			
821.0	6									
820.0	7	S-3	1.0	7-6-8 N=14			4.5+	18.5		
819.0	8									
818.0	9									
817.0	10	S-4	1.3	4-6-9 N=15			4.5+	18.8		

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.: 231797

Boring No.: SB-7

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM

Field Eng.: JV

Rev. By: IA

Coordinates: N=274862.5 E=13305199.9 (MI South 1ft)

Elevation: 804.3 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 01/03/2024

Date End: 01/03/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 3.5 ft.

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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
803.3	1					7" HMA	0.6			
802.3	2	S-1	1.2	5-3-5 N=8	CL	13" Gravel Base	1.6	4.5		S-1, S-2: Poor recovery; possible coarse gravel / COBBLE
801.3	3					Brown lean CLAY; mostly clayey fines, few coarse to fine sand, few coarse to fine gravel, moist	3.0			
800.3	4									
799.3	5	S-2	1.0	6-12-12 N=24	SP-SM	Light brown poorly graded SAND with silt; mostly coarse to fine sand, few silty fines, trace coarse to fine gravel, 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.: 231797

Boring No.: SB-8

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** IA

Coordinates: N=274910.0 E=13305539.2 (MI South 1ft)

Elevation: 812.5 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 1.0 ft.

Date Begin: 01/03/2024

Date End: 01/03/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
811.5	1					4 1/2" HMA	0.4			
810.5	2	S-1	1.0	5-5-4 N=9	CL	8" Gravel Base	1.0	3.75	21.2	S-1, S-2: Poor recovery; possible coarse gravel / COBBLE
809.5	3					Gray lean CLAY; mostly clayey fines, few coarse to fine sand, trace fine gravel, moist	3.0			
808.5	4	S-2	1.0	4-4-5 N=9	SC	Brown clayey SAND; mostly medium to fine sand, some clayey fines, moist	5.0			
807.5	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.: 231797

Boring No.: SB-9

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM

Field Eng.: JV

Rev. By: IA

Coordinates: N=274738.5 E=13305750.0 (MI South 1ft)

Elevation: 823.8 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 01/03/2024

Date End: 01/03/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 10.6 ft.

Depth Drilled: 15.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS	
822.8	1					7" HMA	0.6				
821.8	2	S-1	0.8	4-6-10 N=16	CL	5" Gravel Base	4.5+	16.1		S-1, S-2: Poor recovery; possible coarse gravel / COBBLE	
820.8	3					Brown lean CLAY; mostly clayey fines, trace fine gravel, moist					
819.8	4	S-2	1.1	4-7-12 N=19		4.5+	16.1				
818.8	5										
817.8	6	S-3	1.5	5-6-12 N=18		4.5+	18.7				
816.8	7										
815.8	8										
814.8	9	S-4	1.3	3-4-8 N=12		4.5	18.6				
813.8	10										
812.8	11	S-5	1.5	12-30-23 N=53		Coarse gravel / COBBLE from 14.1' to 14.3'	15.0	4.5			20.0
811.8	12										
810.8	13										
809.8	14										
808.8	15										

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.: 231797

Boring No.: SB-10

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM

Field Eng.: JV

Rev. By: IA

Coordinates: N=274893.5 E=13306464.1 (MI South 1ft)

Elevation: 815.8 ft Datum: NAVD 88 (GPS Observation)

Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement. Cave in at 8.4 ft.

Date Begin: 01/03/2024

Date End: 01/03/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Depth Drilled: 10.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
814.8	1					12" Sandy Topsoil	1.0			
813.8	2	S-1	0.5	6-6-7 N=13	SC	Brown clayey SAND; mostly medium to fine sand, little clayey fines, trace coarse to fine gravel, moist				S-1: Poor recovery; possible coarse gravel / COBBLE
812.8	3									
811.8	4									
810.8	5									
809.8	6	S-2	1.3	4-4-3 N=7	CL	Gray lean CLAY; mostly clayey fines, trace fine gravel, moist	4.5+	17.2		
808.8	7									
807.8	8	S-3	1.4	2-5-9 N=14	CL		4.5+	18.1		
806.8	9									
805.8	10	S-4	1.3	3-6-10 N=16						

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.: 231797

Boring No.: SB-11

Sheet: 1 of 1

Project: Pittsfield Village Improvements
 Client: OHM Advisors
 Location: Ann Arbor, Michigan
 Drill Type: CME 45
 Crew Chief: ZM Field Eng.: JV Rev. By: RS
 Coordinates: N=274679.3 E=13306066.4 (MI South 1ft)
 Elevation: 823.0 ft Datum: NAVD 88 (GPS Observation)
 Notes:

Date Begin: 01/02/2024 Date End: 01/02/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 7.1 ft.

Depth Drilled: 10.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS	
822.0	1					7" HMA	0.6				
821.0	2	S-1	1.4	4-5-7 N=12	CL	5" Gravel Base	4.5+	17.2			
820.0	3										
819.0	4										
818.0	5	S-2	1.5	5-8-11 N=19	CL	Brown lean CLAY; mostly clayey fines, trace fine gravel, moist	4.5+	16.5			
817.0	6										
816.0	7	S-3	1.5	4-8-12 N=20	CL		4.5+	17.7			
815.0	8										
814.0	9	S-4	1.2	3-6-9 N=15	CL		4.5+	17.8		S-4: Poor recovery; possible coarse gravel / COBBLE	
813.0	10										
End of Boring							10.0				

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



LOG OF BORING

Project No.: 231797

Boring No.: SB-12

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM Field Eng.: JV Rev. By: RS

Coordinates: N=274495.0 E=13305612.4 (MI South 11)

Elevation: 826.3 ft Datum: NAVD 88 (GPS Observation)

Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 1.0 ft.

Date Begin: 12/29/2023

Date End: 12/29/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
825.3	1					4" HMA	0.3			
824.3	2	S-1	1.2	5-5-4 N=9	CL	9" Gravel Base	1.1			
823.3	3					Brown lean CLAY with sand; mostly clayey fines, little coarse to fine sand, few coarse to fine gravel, moist	4.25	8.1	S-1, S-2: Poor recovery; possible coarse gravel / COBBLE	
822.3	4									
821.3	5	S-2	1.2	3-3-3 N=6	5.0					3.0
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.: 231797

Boring No.: SB-13

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** RS

Coordinates: N=274305.5 E=13306045.8 (MI South lift)

Elevation: 820.6 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 01/02/2024

Date End: 01/02/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 11.6 ft.

Depth Drilled: 15.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
819.6	1					6" HMA	0.5			
818.6	2	S-1	1.3	6-5-2 N=7	CL	5" Gravel Base	0.9			
817.6	3					Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace fine gravel	4.5+	20.6		
816.6	4									
815.6	5	S-2	1.4	4-6-8 N=14			4.5+	17.9		
814.6	6						5.5			
813.6	7	S-3	1.3	3-3-4 N=7	GC	Brown clayey GRAVEL with sand; mostly coarse to fine gravel, little clayey fines, little coarse to fine sand, moist	12.0			
812.6	8									
811.6	9									
810.6	10	S-4	1.3	3-4-6 N=10						
809.6	11									
808.6	12									
807.6	13									
806.6	14	S-5	1.0	7-14-14 N=28	GP	Gray poorly graded GRAVEL with sand; mostly coarse to fine gravel, little coarse to fine sand, moist	15.0			S-5: Poor recovery; possible coarse gravel / COBBLE
805.6	15									

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.: 231797

Boring No.: SB-14

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** RS

Coordinates: N=273802.0 E=13305792.3 (MI South ift)

Elevation: 821.0 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 6.5 ft.

Date Begin: 12/29/2023

Date End: 12/29/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Depth Drilled: 10.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
820.0	1					6" HMA	0.5			
819.0	2	S-1	1.2	3-5-7 N=12	CL	6" Gravel Base	1.0	3.5	20.0	S-1: Poor recovery; possible coarse gravel / COBBLE
818.0	3					Brown lean CLAY; mostly clayey fines, few coarse to fine sand, few coarse to fine gravel, moist				
817.0	4	S-2	1.3	3-5-10 N=15	CL	Grades with trace fine gravel	4.5+	15.6		
816.0	5									
815.0	6	S-3	1.5	4-9-14 N=23	CL		4.5+	15.2		
814.0	7									
813.0	8	S-4	1.5	7-9-18 N=27	GP		9.6	4.5+		
812.0	9									
811.0	10					Gray poorly graded GRAVEL; mostly coarse to fine gravel, few coarse to fine sand, few silty fines, moist	10.0			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.: 231797

Boring No.: SB-15

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** RS

Coordinates: N=273682.3 E=13306328.3 (MI South ift)

Elevation: 809.6 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 01/02/2024

Date End: 01/02/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 7.2 ft.

Depth Drilled: 10.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
808.6	1					6" HMA	0.5			
807.6	2	S-1	1.4	4-6-6 N=12	CL	5" Gravel Base	0.9			
806.6	3									4.5+
805.6	4	S-2	1.5	5-7-11 N=18				4.5+	18.0	
804.6	5									
803.6	6									
802.6	7	S-3	1.5	4-9-12 N=21				4.5+	16.5	
801.6	8									
800.6	9									
799.6	10	S-4	1.5	4-9-13 N=22				4.5+	16.2	
							End of Boring	10.0		

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



LOG OF BORING

Project No.: 231797

Boring No.: SB-16

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** RS

Coordinates: N=273065.6 E=13304923.7 (MI South 1ft)

Elevation: 818.4 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 12/29/2023

Date End: 12/29/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 12.2 ft.

Depth Drilled: 15.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
817.4	1					3 1/2" HMA	0.3			
816.4	2	S-1	1.5	5-9-12 N=21	CL	11" Gravel Base	3.75	21.3		
815.4	3					Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace fine gravel, moist				
814.4	4									
813.4	5	S-2	1.1	5-6-9 N=15	CL	Grades without sand	4.5+	16.6		S-2: Poor recovery; possible coarse gravel / COBBLE
812.4	6									
811.4	7	S-3	1.5	3-9-13 N=22	CL	Grades gray	4.5+	16.9		
810.4	8									
809.4	9	S-4	1.5	2-5-7 N=12	CL		3.75	16.9		
808.4	10									
807.4	11									
806.4	12									
805.4	13									
804.4	14	S-5	1.3	3-3-4 N=7	CL		3.5	16.2		
803.4	15									
						End of Boring	15.0			

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



LOG OF BORING

Project No.: 231797

Boring No.: SB-17

Sheet: 1 of 1

Project: Pittsfield Village Improvements
 Client: OHM Advisors
 Location: Ann Arbor, Michigan
 Drill Type: CME 45
 Crew Chief: ZM Field Eng.: JV Rev. By: RS
 Coordinates: N=273076.1 E=13305398.5 (MI South 1ft)
 Elevation: 814.2 ft Datum: NAVD 88 (GPS Observation)
 Notes:

Date Begin: 12/22/2023 Date End: 12/22/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	6.8
Sampler	SPT	2"	End	6.1
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 8.1 ft.

Depth Drilled: 15.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
813.2	1					4" HMA	0.3			
812.2	2	S-1	1.2	3-4-5 N=9	CL	10" Gravel Base	1.2	4.5+		
811.2	3					Brown lean CLAY; mostly clayey fines, few coarse to fine sand, few coarse to fine gravel, moist				
810.2	4									
809.2	5	S-2	1.0	3-3-4 N=7	CL		2.0			
808.2	6									
807.2	7	S-3	1.5	5-10-12 N=22	SP-SM		6.8			
806.2	8					Brown poorly graded SAND with silt and gravel; mostly coarse to fine sand, little coarse to fine gravel, few silty fines, wet				
805.2	9									
804.2	10	S-4	0.8	5-5-8 N=13	SP-SM					
803.2	11									
802.2	12	S-5	1.0	3-6-8 N=14	CL		14.5	3.0		
801.2	13					Gray lean CLAY; mostly clayey fines, moist				
800.2	14									
799.2	15				CL		15.0			

End of Boring

S-1, S-2, S-4, S-5: Poor recovery; 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.: 231797

Boring No.: SB-18

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** RS

Coordinates: N=273161.5 E=13305822.6 (MI South 1ft)

Elevation: 818.1 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 12/22/2023

Date End: 12/22/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	9.7
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 12.7 ft.

Depth Drilled: 15.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
817.1	1					10" HMA	0.8			
816.1	2	S-1	1.5	3-4-7 N=11	CL	Brown gray lean CLAY; mostly clayey fines, few medium to fine sand, trace fine gravel, moist	4.5+	19.9		
815.1	3									
814.1	4	S-2	1.5	7-7-10 N=17	CL	Grades brown	4.5+	14.4		
813.1	5									
812.1	6	S-3	1.5	4-6-11 N=17	CL		4.5+	17.1		
811.1	7									
810.1	8	S-4	1.5	4-8-13 N=21	SP-SM	Brown poorly graded SAND with silt; mostly coarse to fine sand, few silty fines, wet	9.7	4.5+	10.3	
809.1	9									
808.1	10	S-5	1.5	4-4-7 N=11	CL	Gray lean CLAY; mostly clayey fines, moist	12.0	4.5+	15.6	
807.1	11									
806.1	12									
805.1	13									
804.1	14									
803.1	15									

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.: 231797

Boring No.: SB-19

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** RS

Coordinates: N=273182.8 E=13306388.3 (MI South 1ft)

Elevation: 809.0 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 12/29/2023

Date End: 12/29/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 12.0 ft.

Depth Drilled: 15.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
808.0	1					7" HMA	0.6			
807.0	2	S-1	1.4	3-4-6 N=10	CL	10" Gravel Base	1.4	3.75	17.2	S-2: Poor recovery; possible coarse gravel / COBBLE
806.0	3					Gray lean CLAY; mostly clayey fines, few medium to fine sand, few fine gravel, moist				
805.0	4	S-2	0.7	3-4-5 N=9	CL		2.0	30.2		
804.0	5									
803.0	6	S-3	1.5	2-3-5 N=8	CL		4.5+	12.4		
802.0	7									
801.0	8	S-4	1.3	2-5-7 N=12	ML		9.2			
800.0	9									
799.0	10					Gray SILT; mostly silty fines, moist				
798.0	11	S-5	1.5	4-9-10 N=19	SC		12.0			
797.0	12									
796.0	13							Gray clayey SAND with gravel; mostly coarse to fine sand, little coarse to fine gravel, little clayey fines, moist		
795.0	14						15.0			
794.0	15					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.: 231797

Boring No.: SB-20

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** RS

Coordinates: N=272693.2 E=13305925.6 (MI South 1ft)

Elevation: 812.8 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 12/21/2023

Date End: 12/22/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	8.0
Sampler	SPT	2"	End	6.9
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 9.4 ft.

Depth Drilled: 15.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
811.8	1					10" HMA	0.8	4.5+	21.2	
810.8	2	S-1	1.0	4-5-6 N=11	CL	2" Gravel Base	1.0			S-1, S-2: Poor recovery; possible coarse gravel / COBBLE
809.8	3					Brown lean CLAY; mostly clayey fines, trace medium to fine sand, trace fine gravel, moist				
808.8	4	S-2	1.0	3-5-8 N=13	CL			4.5+	16.6	Driller noted hard drilling from 5' to 15'
807.8	5									
806.8	6	S-3	1.0	17-50/6"	GP		6.0			S-3: Sampler refusal; possible coarse gravel/ COBBLE
805.8	7					Brown poorly graded GRAVEL with sand; mostly coarse to fine gravel, some coarse to fine sand, few silty fines, moist				
804.8	8	S-4	1.5	14-11-13 N=24	SP-SM		8.0			
803.8	9					Brown poorly graded SAND with silt and gravel; mostly coarse to fine sand, some coarse to fine gravel, few silty fines, wet				
802.8	10	S-5	1.5	10-11-13 N=24	CL		11.5			
801.8	11					Gray lean CLAY with sand; mostly clayey fines, little coarse to fine sand, few coarse to fine gravel, moist				
800.8	12									
799.8	13									
798.8	14							4.5+	7.4	
797.8	15						15.0			
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.: 231797

Boring No.: SB-21

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM **Field Eng.:** JV **Rev. By:** RS

Coordinates: N=272585.9 E=13306361.8 (MI South 1ft)

Elevation: 813.5 ft **Datum:** NAVD 88 (GPS Observation)

Notes:

Date Begin: 12/29/2023

Date End: 12/29/2023

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 6.5 ft.

Depth Drilled: 10.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
812.5	1					5" HMA	0.4			Fill: 0' to 3.8'
811.5	2	S-1	1.5	3-4-3 N=7	CL	9" Gravel Base	1.2			
810.5	3				SP-SM	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, moist, Fill	1.8			
809.5	4	S-2	1.5	2-3-3 N=6	CL	Brown poorly graded SAND with silt; mostly coarse to fine sand, few coarse to fine gravel, moist, Fill with brick debris	3.8	4.0	14.4	
808.5	5									
807.5	6	S-3	1.5	2-6-8 N=14	ML	Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace fine gravel, moist	6.4			
806.5	7									
805.5	8	S-4	1.5	2-12-15 N=27		Gray SILT; mostly silty fines, moist				
804.5	9									
803.5	10						10.0			

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.: 231797

Boring No.: SB-22

Sheet: 1 of 1

Project: Pittsfield Village Improvements

Client: OHM Advisors

Location: Ann Arbor, Michigan

Drill Type: CME 45

Crew Chief: ZM

Field Eng.: JV

Rev. By: IA

Coordinates: N=272390.7 E=13305934.8 (MI South 1ft)

Elevation: 812.8 ft Datum: NAVD 88 (GPS Observation)

Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement. Cave in at 6.8 ft.

Date Begin: 01/03/2024

Date End: 01/03/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	4 1/4"	During	7.0
Sampler	SPT	2"	End	NA
Core			Delayed Groundwater, ft.	
Tube			Date	Depth, ft.
SPT Hammer	Auto			

Depth Drilled: 10.0 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.	Penetration (Blows Per 6") ASTM D 1586	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
811.8	1	S-1	0.8	3-3-3 N=6		30" Silty Topsoil	2.5	22.8		S-1, S-3, S-4: Poor recovery; possible coarse gravel / COBBLE S-1: Organic Content: 3.9%
810.8	2									
809.8	3									
808.8	4	S-2	1.3	5-6-6 N=12	SP-SM	Brown poorly graded SAND; mostly coarse to fine sand, few silty fines, few coarse to fine gravel, moist	5.5			
807.8	5									
806.8	6	S-3	0.5	4-6-9 N=15	GP	Gray poorly graded GRAVEL; mostly coarse to fine gravel, few coarse to fine sand, few silty fines, wet	10.0			
805.8	7									
804.8	8									
803.8	9	S-4	0.6	3-6-7 N=13						
802.8	10									

End of Boring

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



Double Ring Infiltration Test

Client:

 OHM Advisors
 355 S Zeeb Rd
 Ann Arbor, MI 48103

Project:

 231797G
 Pittsfield Village Improvements
 2220 Pittsfield Blvd

Activity Information

Weather: Cloudy

Low / High Temp, °F: 31 / 43

Activity Date: 12/21/2023

Tested By: Goike, Benjamin

Test No.: IT-1 (SB-6)

DOUBLE RING INFILTRATION TEST - SEMCOG METHOD

Pre-Test Soaking Duration (min): 60

Ground Surface Elev. (ft): 827.1

Water Level Drop in Last 30 Minutes of Presoak (in): 0

Test Elev. (ft): 822.1

Inner Diameter (in): 4

Groundwater Elev. (ft): N/A

Outer Diameter (in): 6

Soil Description: Brown lean CLAY

Test Data

Time (min:sec)	Water Drop (in)	Time Interval (min)	Infiltration Rate (inches per hour)
30:00	0	30	0
60:00	0	30	0
90:00	0	30	0
120:00	0	30	0

Note: This test method provides a measure of infiltration rate, not hydraulic conductivity. Although the units of infiltration rate, and hydraulic conductivity are similar, there is a distinct difference between these two quantities. They cannot be directly related unless the hydraulic boundary conditions, such as hydraulic gradient and the extent of lateral flow of water are known or can be reliably estimated. Test results apply only to the specific test location, depth/elevation, and in-situ moisture content and density at time of test. An appropriate factor of safety should be applied to these results.

Remarks: Initial head: 60 in



Double Ring Infiltration Test

Client:

 OHM Advisors
 355 S Zeeb Rd
 Ann Arbor, MI 48103

Project:

 231797G
 Pittsfield Village Improvements
 2220 Pittsfield Blvd

Activity Information

Weather: Partly Cloudy

Low / High Temp, °F: 32 / 42

Activity Date: 01/02/2024

Tested By: Ahmed, Isaq

Test No.: IT-2 (SB-20)

DOUBLE RING INFILTRATION TEST - SEMCOG METHOD

Pre-Test Soaking Duration (min): 60

Ground Surface Elev. (ft): 812.8

Water Level Drop in Last 30 Minutes of Presoak (in): 1

Test Elev. (ft): 807.8

Inner Diameter (in): 4

Groundwater Elev. (ft): 804.8

Outer Diameter (in): 6

Soil Description: Gravelly lean CLAY

Test Data

Time (min:sec)	Water Drop (in)	Time Interval (min)	Infiltration Rate (inches per hour)
30	1/4	30	1/2
60	1/4	30	1/2
90	1/4	30	1/2
120	0	30	0

Note: This test method provides a measure of infiltration rate, not hydraulic conductivity. Although the units of infiltration rate, and hydraulic conductivity are similar, there is a distinct difference between these two quantities. They cannot be directly related unless the hydraulic boundary conditions, such as hydraulic gradient and the extent of lateral flow of water are known or can be reliably estimated. Test results apply only to the specific test location, depth/elevation, and in-situ moisture content and density at time of test. An appropriate factor of safety should be applied to these results.

Remarks: Initial head: 48 in



SUMMARY OF LABORATORY TEST DATA

Boring Number	Sample No.*	Sample Depth (ft)	Sample Description (USCS Symbol)	Organic Content (%)	Natural Moisture Content (%)
SB-1	S-1	0-1.5	CL		21.3
SB-1	S-2	3.5-5.0	CL		10.4
SB-2	S-1	0.7-2.2	CL		19.5
SB-2	S-2	3.5-5	CL		18.1
SB-2	S-3	6.0-7.5	CL		16.6
SB-2	S-4	8.5-10	CL		18.1
SB-3	S-2	3.5-5.0	CL		17.2
SB-3	S-3	6.0-7.5	CL		19.8
SB-3	S-4	8.5-10.0	CL		20.2
SB-4	S-2	3.5-5.0	CL		12.7
SB-5	S-2	3.5-5.0	CL		18.9
SB-5	S-3	6.0-7.5	CL		19.4
SB-5	S-4	8.5-10.0	CL		19.3
SB-6	S-1	0.7-2.2	CL		10.3
SB-6	S-2	3.5-5	CL		16.5
SB-6	S-3	6.0-7.5	CL		18.5
SB-6	S-4	8.5-10	CL		18.8
SB-8	S-1	0-1.5	CL		21.2
SB-9	S-1	0-1.5	CL		16.1
SB-9	S-2	3.5-5.0	CL		16.1
SB-9	S-3	6.0-7.5	CL		18.7
SB-9	S-4	8.5-10.0	CL		18.6
SB-9	S-5	0.9-2.4	CL		20.0
SB-10	S-3	6.0-7.5	CL		17.2
SB-10	S-4	8.5-10.0	CL		18.1
SB-11	S-1	1-2.5	CL		17.2
SB-11	S-2	3.5-5	CL		16.5
SB-11	S-3	6.0-7.5	CL		17.7
SB-11	S-4	8.5-10	CL		17.8
SB-12	S-1	1.1-2.6	CL		8.1
SB-12	S-2	3.5-5	CL		13.7
SB-13	S-1	0.9-2.4	CL		20.6
SB-13	S-2	3.5-5	CL		17.9
SB-14	S-1	1-2.5	CL		20.0

* S – Split Spoon Sample (ASTM D 1586)

PROJECT NO.: 231797

PAGE: 1 OF 2



SUMMARY OF LABORATORY TEST DATA

Boring Number	Sample No.*	Sample Depth (ft)	Sample Description (USCS Symbol)	Organic Content (%)	Natural Moisture Content (%)
SB-14	S-2	3.5-5	CL		15.6
SB-14	S-3	6.0-7.5	CL		15.2
SB-15	S-1	0.9-2.4	CL		15.8
SB-15	S-2	3.5-5	CL		18.0
SB-15	S-3	6.0-7.5	CL		16.5
SB-15	S-4	8.5-10	CL		16.2
SB-16	S-1	1.2-2.7	CL		21.3
SB_16	S-2	3.5-5	CL		16.6
SB-16	S-3	6.0-7.5	CL		16.9
SB-16	S-4	8.5-10	CL		16.9
SB-16	S-5	13.5-15	CL		16.2
SB-17	S-1	1.2-2.7	CL		21.6
SB-17	S-2	3.5-5	CL		21.6
SB-17	S-3	6.0-7.5	CL		9.6
SB-18	S-1	0-1.5	CL		19.9
SB-18	S-2	3.5-5	CL		14.4
SB-18	S-3	6.0-7.5	CL		17.1
SB-18	S-4	8.5-10	CL		10.3
SB-18	S-5	13.5-15	CL		15.6
SB-19	S-1	0-1.5	CL		17.2
SB-19	S-2	3.5-5	CL		30.2
SB-20	S-1	1-2.5	CL		12.4
SB-20	S-2	3.5-5	CL		21.2
SB-20	S-5	13.5-15	CL		16.6
SB-21	S-2	3.5-5	CL		7.4
SB-22	S-1	0-1.5	Topsoil	3.9	22.8

* S – Split Spoon Sample (ASTM D 1586)

PROJECT NO.: 231797
PAGE: 2 OF 2

January 16, 2024

Materials Testing Consultants
253 Dino Drive
Suite B
Ann Arbor, MI 48335

Subject: Pattsfield Village Improvements
231797

Dear : Mr. Warren

Thank you for making Brighton Analytical, L.L.C. your laboratory of choice. Attached are the results for the samples submitted on 01/09/2024 for the above mentioned project. NELAP/TNI Accredited Analysis and EGLE Drinking Water Certified Analysis will be identified in their respective reporting formats. Hard copies can be supplied at your request for a fee of \$20.00 per copy.

The invoice for this project will be emailed separately. If you have any questions concerning the data or invoice, please don't hesitate to contact our office. We welcome your comments and suggestions to improve our quality systems. Please reference Brighton Analytical, L.L.C. Project ID 94611 when calling or emailing. We thank you for this opportunity to partner with you on this project and hope to work with you again in the future.

Sincerely,
Brighton Analytical, L.L.C.



Brighton Analytical LLC
 2105 Pless Drive
 Brighton, Michigan 48114
 Phone: (810)229-7575 (810)229-8650
 e-mail: bai-brighton@sbcglobal.net
 EGLE Certified #9404
 NELAC Accredited #176507

Sample Date: 01/09/2024
 Submit Date: 01/09/2024
 Report Date: 01/16/2024

To: Materials Testing Consultants
 253 Dino Drive
 Suite B
 Ann Arbor, MI 48335

BA Report Number: **94611** Project Name: **Pattsville Village Improvements**
 BA Sample ID: **CU08899** Project Number: **231797**

Sample ID: **231797- SB-2; S-2**

Parameters	Result	Units	DL	Method Reference	Analyst	Analysis Date
Inorganic Analysis						
pH (Soil and Waste)	10.3	S.I.		SW846 9045C	RG	01/12/2024
Reduction Oxidation Potential	190	mV	2.0	ASTM G200	AP	01/16/2024
Resistivity (ASTM Leach)	0.005	megohms/cm		EPA 120.1	AP	01/16/2024
Total Sulfide	Not detected	ug/Kg	1000	SM4500 S2F	RM	01/15/2024
%Solid	85	%		ASTM D2216	AP	01/10/2024

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve EGLE designated target detection limits (TDL).

All soil results based on dry weight.

Released by *Cynthia Williams*
 Date 1/16/2024



Brighton Analytical LLC
 2105 Pless Drive
 Brighton, Michigan 48114
 Phone: (810)229-7575 (810)229-8650
 e-mail: bai-brighton@sbcglobal.net
 EGLE Certified #9404
 NELAC Accredited #176507

Sample Date: 01/09/2024
 Submit Date: 01/09/2024
 Report Date: 01/16/2024

To: Materials Testing Consultants
 253 Dino Drive
 Suite B
 Ann Arbor, MI 48335

BA Report Number: **94611** Project Name: **Pattsville Village Improvements**
 BA Sample ID: **CU08900** Project Number: **231797**

Sample ID: **SB-9; S-2**

Parameters	Result	Units	DL	Method Reference	Analyst	Analysis Date
Inorganic Analysis						
pH (Soil and Waste)	9.7	S.I.		SW846 9045C	RG	01/12/2024
Reduction Oxidation Potential	190	mV	2.0	ASTM G200	AP	01/16/2024
Resistivity (ASTM Leach)	0.003	megohms/cm		EPA 120.1	AP	01/16/2024
Total Sulfide	9200	ug/Kg	1000	SM4500 S2F	RM	01/15/2024
%Solid	87	%		ASTM D2216	AP	01/10/2024

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve EGLE designated target detection limits (TDL).

All soil results based on dry weight.

Released by Cynthia Williams
 Date 1/16/2024



Brighton Analytical LLC
 2105 Pless Drive
 Brighton, Michigan 48114
 Phone: (810)229-7575 (810)229-8650
 e-mail: bai-brighton@sbcglobal.net
 EGLE Certified #9404
 NELAC Accredited #176507

Sample Date: 01/09/2024
 Submit Date: 01/09/2024
 Report Date: 01/16/2024

To: Materials Testing Consultants
 253 Dino Drive
 Suite B
 Ann Arbor, MI 48335

BA Report Number: **94611** Project Name: **Pattsville Village Improvements**
 BA Sample ID: **CU08901** Project Number: **231797**

Sample ID: **SB-11; S-2**

Parameters	Result	Units	DL	Method Reference	Analyst	Analysis Date
Inorganic Analysis						
pH (Soil and Waste)	9.6	S.I.		SW846 9045C	RG	01/12/2024
Reduction Oxidation Potential	180	mV	2.0	ASTM G200	AP	01/16/2024
Resistivity (ASTM Leach)	0.006	megohms/cm		EPA 120.1	AP	01/16/2024
Total Sulfide	4700	ug/Kg	1000	SM4500 S2F	RM	01/15/2024
%Solid	86	%		ASTM D2216	AP	01/10/2024

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve EGLE designated target detection limits (TDL).

All soil results based on dry weight.

Released by Cynthia Williams
 Date 1/16/2024



Brighton Analytical LLC
 2105 Pless Drive
 Brighton, Michigan 48114
 Phone: (810)229-7575 (810)229-8650
 e-mail: bai-brighton@sbcglobal.net
 EGLE Certified #9404
 NELAC Accredited #176507

Sample Date: 01/09/2024
 Submit Date: 01/09/2024
 Report Date: 01/16/2024

To: Materials Testing Consultants
 253 Dino Drive
 Suite B
 Ann Arbor, MI 48335

BA Report Number: **94611**

Project Name: **Pattsville Village Improvements**

BA Sample ID: **CU08902**

Project Number: **231797**

Sample ID: **SB-13; S-2**

Parameters	Result	Units	DL	Method Reference	Analyst	Analysis Date
Inorganic Analysis						
pH (Soil and Waste)	9.4	S.I.		SW846 9045C	RG	01/12/2024
Reduction Oxidation Potential	170	mV	2.0	ASTM G200	AP	01/16/2024
Resistivity (ASTM Leach)	0.004	megohms/cm		EPA 120.1	AP	01/16/2024
Total Sulfide	Not detected	ug/Kg	1000	SM4500 S2F	RM	01/15/2024
%Solid	86	%		ASTM D2216	AP	01/10/2024

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve EGLE designated target detection limits (TDL).

All soil results based on dry weight.

Released by *Cynthia Williams*
 Date 1/16/2024



Brighton Analytical LLC
 2105 Pless Drive
 Brighton, Michigan 48114
 Phone: (810)229-7575 (810)229-8650
 e-mail: bai-brighton@sbcglobal.net
 EGLE Certified #9404
 NELAC Accredited #176507

Sample Date: 01/09/2024
 Submit Date: 01/09/2024
 Report Date: 01/16/2024

To: Materials Testing Consultants
 253 Dino Drive
 Suite B
 Ann Arbor, MI 48335

BA Report Number: **94611** Project Name: **Pattsville Village Improvements**
 BA Sample ID: **CU08903** Project Number: **231797**

Sample ID: **SB-21; S-2**

Parameters	Result	Units	DL	Method Reference	Analyst	Analysis Date
Inorganic Analysis						
pH (Soil and Waste)	9.7	S.I.		SW846 9045C	RG	01/12/2024
Reduction Oxidation Potential	160	mV	2.0	ASTM G200	AP	01/16/2024
Resistivity (ASTM Leach)	0.007	megohms/cm		EPA 120.1	AP	01/16/2024
Total Sulfide	Not detected	ug/Kg	1000	SM4500 S2F	RM	01/15/2024
%Solid	88	%		ASTM D2216	AP	01/10/2024

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve EGLE designated target detection limits (TDL).

All soil results based on dry weight.

Released by Cynthia Williams
 Date 1/16/2024

Brighton Analytical, L.L.C™
 2105 Pless Drive
 Brighton, MI 48114
 Phone: 810-229-7575 Fax: 810-229-8650
 email: bai-brighton@sbcglobal.net

BA PROJECT #
94601

Analysis Requested/Method

PAGE: ___ OF ___
 COMPANY INFO:
 MTL, AA office

MATERIAL TESTING Consultants

Attn: **Rob Warren**
 PHONE: **248464-8209**
 SEND: **rob.warren@mtc-est.com**
 EMAIL:

Pathfield Village Improvements
 231797

Container Type & Quantity

For Laboratory Use Only:
 Sample received within holding time? yes no
 Temperature of samples °C: _____
 pH verified in login? yes no
 Headspace/bubbles in VOAS? yes no n/a
 Sample containers and COC match? yes no

If RUSH approved by
 Sample Description
 35 Characters Limit

Sample Matrix

VOAS (PRES) Y N
 HDPE UNPRESERVED
 HDPE HNO₃
 HDPE H₂SO₄
 HDPE NaOH
 AMBER GLASS (UNPRESERVED)
 AMBER GLASS (PRESERVED)
 GLASS, NO PRESERVATIVE
 STERILIZED BACTERIA
 METALS FILTERED:
 (Field OR Lab)
 MEOH PRESERVED:
 (Field or Lab) Preserved

P.O. NUMBER:
 BILLING ADDRESS (IF REQUIRED)

Sample Description
 35 Characters Limit

For Laboratory Use Only: Field pH/Temp/Time/Initials
 Drinking Water Only:
 Send to LCHD? yes no
 Chlorinated Water Supply? yes no
 MCL Failure yes no
 Client Notified (date/time/initials): _____

RECEIVED BY:
 DATE:
 TIME:
 Trans #

RECEIVED BY:
 DATE/TIME:

RECEIVED BY:
 DATE:
 TIME:
 Trans #

RECEIVED BY:
 DATE/TIME:

RECEIVED BY:
 DATE:
 TIME:
 Trans #

RECEIVED BY:
 DATE/TIME:

Please fill out the Chain of Custody completely and review. Incorrect or incomplete information will result in a "hold" on all analyses. All hold samples = \$10.

RECEIVED BY: *[Signature]*
 DATE: 11/19/23
 TIME: 2:05 PM
 Trans # 4

RECEIVED BY:
 DATE/TIME:



COMPANY NAME

PROJECT NAME
 (48 SPACES MAXIMUM)

PROJECT NUMBER
 (25 SPACES MAXIMUM)

Requested Turnaround: (X BOX WITH TAT NEEDED)
 Default TAT Standard: 7-10 Business days
 RUSH: 1 Business day (verify with lab) @3x Surcharge
 RUSH: 2 Business days @2x Surcharge (Non TCLP)
 RUSH: 3 Business days @1.5x Surcharge (TCLP @ 2X)

Sample collected by
JV

Sample Description
 35 Characters Limit

Special Instructions:

Trans #

SAMPLE ACCEPTANCE POLICY

Below are the terms and conditions required by Brighton Analytical, LLC for the acceptance/rejection of samples.

SAMPLE SUBMISSION:

1. All samples must be accompanied by a complete chain-of-custody which will include sample identification, location, date and time of collection, collector's name, preservation type/bottle type, sample matrix, and any remarks concerning the sample, i.e. contains radioactive materials or hazardous. The chain-of-custody form authorizes Brighton Analytical to perform the testing it summarizes.
2. Attach a quote, if applicable, to the chain of custody to ensure accurate invoicing.
3. All samples must be properly labeled by the customer and in appropriate sample container/volumes.
4. If samples not within hold time, the client is informed and this is noted on the Chain of Custody and final report if analysis proceeds.
5. New clients are required to pay all fees up front before analytical testing begins. After that, clients are to submit a credit application and all work will be billed upon completion of the analytical testing.
6. Any criteria not met will be clearly flagged on the chain of custody and final report.

LABORATORY PROCEDURE:

1. All samples are properly labeled by the laboratory to include unique identification with a water resistant label and indelible ink.
2. If samples show signs of damage or contamination, notify the client by fax, email or phone immediately. Place samples on hold until the client advises the lab to proceed or cancel the project. If samples are inadequately preserved, preserve the samples in correct preservative/containers and clearly note on the Chain of Custody.
3. Brighton Analytical performs the testing requested on the Chain of Custody. If changes occur that are different than the requested tests, it must be submitted in writing via fax or email. If original sample analysis is cancelled, changed, or put on hold, any analysis that has already been performed/completed before the change, the client may be responsible for additional fees. Brighton Analytical will dispose of the clients samples 60 days after receipt unless the client requests the samples to be held an additional amount of time, up to 6 months total, or return of the samples. Samples that are hazardous, such as PCBs, may be returned to the client for disposal. If samples have to be prepped or analyzed "Rush" due to holding time issues, the client is responsible for additional fees. Brighton Analytical will confirm this with the client prior to prepping/analyzing.
4. Brighton Analytical accepts no legal responsibility for the purpose for which the test results are applied and/or interpretations/conclusions based on the test results.
5. **FINAL REPORTS AND INVOICING:**
 1. Analytical reports are provided to the client upon completion of analytical testing requested on the chain of custody. Data is retained for a minimum of 5 years.
 2. Results of sample analysis only relate to samples submitted for the tests requested.
 3. Reports should not be reproduced except in full unless otherwise authorized by the lab.
 4. Additional copies of reports are provided for a \$20 fee.
 5. The client is responsible for cost of shipment or delivery of samples to the laboratory unless prior arrangements have been made for sample pickup by Brighton Analytical which is found in the quote.
6. Payment for analytical services and all fees are to be made within 30 days. The client is responsible for payment to Brighton Analytical and it is not contingent on third party payments.

LIABILITIES:

1. Brighton Analytical will indemnify and hold the client harmless from and against demands, damages, and expenses caused by our negligent acts and omissions and breach of contract, and by the negligent acts and omissions and breach of contract of the persons for whom we are legally responsible. The client agrees to indemnify and hold Brighton Analytical harmless from and against demands, damages, and expenses caused by the clients negligent acts and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom the client is legally responsible.
2. Brighton Analytical's total liability to you, the client, for any and all injuries, claims, losses, expenses, damages, or claim expenses arising under these Terms and Conditions from any cause(s), shall not exceed \$1,000,000. Such causes include, but not limited to, Brighton Analytical's negligence, errors, omissions, strict liability, breach of contract or breach of warranty.
3. In the event of a dispute arising under these Terms and conditions, Brighton Analytical shall resolve the dispute by good faith negotiations between the parties involved. If good faith negotiations fail, any dispute shall be submitted to non-binding mediation, except to the extent necessary to obtain injunctive relief. Each party is responsible for their own mediation fees. Except for the obligation to pay for services rendered, neither party hereto shall be liable for its failure to perform hereunder in whole or in part due to contingencies beyond its reasonable control. These contingencies include but are not limited to fire, acts of God, equipment failure, matrix interference, injunction to compliance with any law, regulations or order of any governmental body or any instrumentality thereof whether now existing or hereafter created.
5. Neither party will be liable to the other for special incidental, consequential, or punitive losses or damage including, but not limited to, those arising from delay, loss of use, loss of profits or revenue or the cost of capital.



BRIGHTON ANALYTICAL, LLC

QUALITY ASSURANCE/QUALITY
CONTROL

REPRESENTATIVE BATCH QUALITY CONTROL

Accuracy & Precision

Analyst: AP

Parameter: CONDUCTIVITY

Analysis Date: 1/16/2024

Method Reference: EPA 120.1
BATCH 1

SPIKE - ACCURACY					
Laboratory ID	Spike Concentration	Background	% Recoveries	Range (%)	Method Blank Concentration
ERA P327-506	547	<10000	98	80-120	<10000
Laboratory ID	Observed A	Observed B	RPD	Acceptable Range	
CU08903	136	136.3	0.2	≤ 20%	
		Standard ID #	% Recovery		
Independent Secondary Reference Material:					
Method Standard (Laboratory Control Spike):					

COMMENTS: _____

REPRESENTATIVE BATCH QUALITY CONTROL
Accuracy & Precision

Analyst: RM

Parameter: Sulfide

Analysis Date: 1/15/2024

Method Reference: 376.1/9030A

SPIKE - ACCURACY

Laboratory Identification	Spike Conc. (µg/L)	Background (µg/L)	Percent Recoveries	Acceptable Range (%)	Method Blank Concentration
8903 MS/MSD	50000	ND	62 / 58	80 - 120	<200

SPIKE - PRECISION

Laboratory Identification	Observed A (µg/L)	Observed B (µg/L)	RPD	Acceptable Range
8903 MS/MSD	30800	28800	6.7	≤ 20%

MISCELLANEOUS

	Standard ID #	%Recovery
Method Standard (Laboratory Control Spike):	806	97%

COMMENTS: Spike recovery is out of control due to sample matrix.

REPRESENTATIVE BATCH QUALITY CONTROL
Accuracy & Precision

Analyst: RG

Parameter: pH

Analysis Date: 1/12/2024

Method Reference: SM4500H+B/9040/9045

SPIKE - ACCURACY				
Laboratory ID	True Value	Observed (°F)	DIFFERENCE	Acceptable Range
ERA P324-977	6.19	6.20	0.01	0.05
Laboratory ID	Observed A	Observed B	DIFFERENCE	Acceptable Range
CU08899	10.29	10.25	0.04	0.05

COMMENTS: _____

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 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 \$16.43/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 \$18.32/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, 2024 - ENDING APRIL 29, 2025

\$16.43 per hour

If the employer provides health care benefits*

\$18.32 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.

ENFORCEMENT

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**



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.	<input type="checkbox"/> Relationship to employee <hr style="border: 0; border-top: 1px solid black;"/> <input type="checkbox"/> Interest in vendor’s company <input type="checkbox"/> 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 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)	(b)	(c)	(d) DAY AND DATE							(e)	(f)	(g)	(h)	(i)	(j) DEDUCTIONS					(k)	
															TOTAL HOURS ON PROJECT	PROJECT RATE OF PAY	PROJECT RATE OF FRINGE PAY	GROSS PROJECT EARNED	GROSS WEEKLY EARNED		TOTAL WEEKLY HOURS WORKED ALL JOBS
EMPLOYEE INFORMATION	WORK CLASSIFICATION	Hour Type	HOURS WORKED ON PROJECT							TOTAL HOURS ON PROJECT	PROJECT RATE OF PAY	PROJECT RATE OF FRINGE PAY	GROSS PROJECT EARNED	GROSS WEEKLY EARNED	TOTAL WEEKLY HOURS WORKED ALL JOBS	FICA	FEDERAL	STATE	OTHER	TOTAL DEDUCT	TOTAL WEEKLY WAGES PAID FOR ALL JOBS
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00
ETH#GEN: ID #:	GROUP/CLASS #:	S							0											\$0.00	\$0.00
NAME:									0				\$0.00							\$0.00	\$0.00

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 Stat. 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.	