PUBLIC IMPROVEMENT REQUEST FOR PROPOSAL

RFP# 26-11

N. University & Thayer Improvements

City of Ann Arbor
Public Services / Engineering

Due Date: February 17, 2026 at 11:00 a.m. (local time)

Issued By:

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

TABLE OF CONTENTS

SECTION I - GENERAL INFORMATION

A. OBJECTIVE

The purpose of this Request for Proposal (RFP) is to select a firm to provide construction services to reconstruct pavements North University Avenue from S. State Street to Fletcher Street and South Thayer Street from N. University Avenue to E. Washington Street, with water main construction, lighting improvements, ADA sidewalk and sidewalk ramp improvements, bump out bus stops, miscellaneous storm sewer facilities, infiltration trench, HMA paving, pavement markings, curb and gutter, and landscaping.

B. BID SECURITY

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

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

C. QUESTIONS AND CLARIFICATIONS / DESIGNATED CITY CONTACTS

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

All questions shall be submitted on or before February 6, 2026, at 5:00 p.m. (local time), and should be addressed as follows:

Scope of Work/Proposal Content questions shall be e-mailed to **Mark McCulloch, Project Manager, mmcculloch@a2gov.org**

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

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

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

D. PRE-PROPOSAL MEETING

A **mandatory in-person** pre-proposal conference for this project will be held on **January 29, 2026,** at **10:00 a.m. at City Offices. Failure to attend the meeting and sign the RFP sign-in sheet at the pre-proposal meeting will automatically disqualify a bidder from submitting a valid proposal.** Any proposal submitted by a party not attending and signing the roster at the pre-proposal meeting will not be opened or considered. Administrative and technical questions regarding this project will be answered at this time. The pre-proposal meeting 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.

To receive instructions to attend the pre-proposal conference, please email Mark McCulloch at mmcculloch@a2gov.org.

E. PROPOSAL FORMAT

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

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

F. SELECTION CRITERIA

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

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

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

G. SEALED PROPOSAL SUBMISSION

All proposals are due and must be delivered to the City on or before February, 17, 2026 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**
- **one (1) additional proposal copy**
- **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. 26-11 – N. University & Thayer 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 and time 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 including within this contract. **The wage determination(s) current on the date 10 days before proposals are due shall apply to this contract.** The U.S. Department of Labor (DOL) has provided explanations to assist with classification in the following resource link: www.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 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	Jan. 29, 2026, 10:00 a.m. (Local Time)
Written Question Deadline	Feb. 6, 2026, 5:00 p.m. (Local Time)
Addenda Published (if needed)	Week of February 11, 2026
Proposal Due Date	Feb. 17, 2026, 11:00 a.m. (Local Time)
Selection/Negotiations	February/April 2026
Expected City Council Authorizations	April 20, 2026

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 and proposal for more details.

SECTION III - MINIMUM INFORMATION REQUIRED

PROPOSAL FORMAT

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

Bidders should organize Proposals into the following Sections:

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

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

Pursuant to Sec 1:324.5 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. 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 evidence of a bidder's safety program (link to information on bidder's publicly available web-site preferred) and evidence of a safety-training program for employees addressing potential hazards of the proposed job site. Bidders 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 of 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 environmental record, including findings of violations and penalties imposed by government agencies.

E. Schedule of Pricing/Cost – 20 Points

Company:

Project: N. University & Thayer Improvements
File #: 2023-023

RFP#: 26-11

ITEM NUMBER	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE
	General				
01000.00	General Conditions, Max. $ 300,000.00	Lump Sum	1	$	$
01001.00	Project Supervision, Max. $ 120,000.00	Lump Sum	1	$	$
01002.70	DS_Project Clean-up	Lump Sum	1	$	$
01002.71	DS_Pavt Cleaning	Lump Sum	1	$	$
01003.00	Digital Audio Visual Coverage	Lump Sum	1	$	$
01020.00	Erosion Control, Inlet Protection, Fabric Drop	Each	25	$	$
01022.00	Erosion Control, Silt Fence	Foot	800	$	$
01030.00	Tree Protection Fence	Foot	268	$	$
01040.00	Minor Traffic Control, Max. $80,000.00	Lump Sum	1	$	$
01041.00	Traffic Regulator Control	Lump Sum	1	$	$
01050.00	Sign, Type B, Temp, Prismatic, Furn & Oper	Square Foot	648	$	$
01051.00	Sign, Type B, Temp, Prismatic, Special, Furn & Oper	Square Foot	398	$	$
01051.70	DS_Sign, Type A, Temp, Prismatic, Furn & Oper	Square Foot	7	$	$
01062.00	Lighted Arrow, Type C, Furn and Oper	Each	2	$	$
01070.00	Sign, Portable, Changeable Message, Furn & Oper	Each	2	$	$
01080.00	Plastic Drum, High Intensity, Lighted, Furn & Oper	Each	120	$	$
01092.00	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn & Oper	Each	50	$	$
01100.00	Pedestrian Type II Barricade, Temp, Furn & Oper	Each	30	$	$
01101.00	Pedestrian Channelizer Device, Furn & Oper	Feet	3,000	$	$
01102.00	Temporary Pedestrian Ramp, Furn & Oper	Each	12	$	$
01103.00	Temporary Pedestrian Mat, Furn & Oper	Foot	100	$	$
01103.72	DS_Pedestrian Path, Temp	Foot	500	$	$
01124.00	Pavt Mrkg, Wet Reflective, Type R, Tape, Rt Turn Arrow	Each	2	$	$
01169.70	DS_Trapezoid Delineator, Any Size	Foot	346	$	$
	Removals				
02000.01	Tree, Rem, 6 In. - 12 In.	Each	15	$	$
02021.00	HMA, Any Thickness, Rem	Square Yard	164	$	$
02022.70	DS_Cold Milling for Concrete Curb and Gutter Reveal	Square Yard	640	$	$
	TOTAL THIS PAGE (BF-1)				$

E. Schedule of Pricing/Cost – 20 Points

Company:

Project: N. University & Thayer Improvements
File #: 2023-023 **RFP#: 26-11**

ITEM NUMBER	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE
02023.00	Cold-Milling HMA Surface	Square Yard	1,465	$	$
02025.71	DS_Pavement, Remove, Modifed	Square Yard	6,391	$	$
02030.00	Curb, Gutter, and Curb and Gutter, Any Type, Rem	Foot	3,838	$	$
02040.00	Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	Square Foot	31,586	$	$
02050.00	Sign, Rem, Salv	Each	25	$	$
02060.70	DS_Trolley Track, Remove	Square Yard	1,000	$	$
02070.70	DS_Parking Markers, Rem	Each	7	$	$
02080.70	DS_Planter Box, Rem	Foot	644	$	$
02080.71	DS_Bollard, Rem	Each	26	$	$
02080.72	DS_Qwick Curb, Rem	Foot	130	$	$
02080.73	DS_Bench, Rem, Salv	Each	1	$	$
02080.74	DS_Bike Rack, Rem, Salv	Each	4	$	$
02080.75	DS_Tunnel, Rem	Cubic Yard	38	$	$
	Earthwork				
03000.70	DS_Machine Grading, Modified	Station	17	$	$
03021.00	Subgrade Undercutting, Type II	Cubic Yard	175	$	$
03022.00	Subgrade Undercutting, Type III	Cubic Yard	50	$	$
03030.01	Exploratory Excavation, SD-TD-1 , (0-10' deep)	Each	16	$	$
	Sanitary Sewer				
04000.01	8 In., SDR 26 PVC Sanitary Sewer, SD-TD-2	Foot	104	$	$
04014.70	DS_4 In., SDR 26 PVC Sanitary Service Lead, SD-TD-2	Foot	20	$	$
04014.71	DS_6 In., SDR 26 PVC Sanitary Service Lead, SD-TD-2	Foot	111	$	$
04014.72	DS_4 In., Sanitary Service Lead, Rem, 4 to 8 inch	Foot	50	$	$
04030.01	Sanitary Manhole, 48 In. Dia. (0-8' Deep)	Each	1	$	$
04050.01	Sanitary Manhole Over Existing ("Doghouse"), 48 In. Dia.	Each	1	$	$
04061.00	Sanitary Structure Cover, Adjust	Each	14	$	$
04070.01	Sanitary Sewer Pipe, 8 In. Dia., Abandon	Foot	31	$	$
04080.70	DS_Trench Drain, Rem	Foot	215	$	$
04110.01	Sanitary Sewer Tap, 8 In. Dia.	Each	1	$	$
	TOTAL THIS PAGE (BF-2)				$

E. Schedule of Pricing/Cost – 20 Points

Company: _____

Project: N. University & Thayer Improvements
File #: 2023-023 **RFP#: 26-11**

ITEM NUMBER	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE
	Sewer and Manhole Rehab				
05050.00	Internal Chimney Seal	Each	1	$ _____	$ _____
05051.00	External Chimney Seal	Each	25	$ _____	$ _____
	Storm and Drainage				
06000.01	12 In., CL IV RCP Storm Sewer, SD-TD-1	Foot	661	$ _____	$ _____
06000.03	18 In., CL IV RCP Storm Sewer, SD-TD-1	Foot	9	$ _____	$ _____
06003.01	6 In., PE Storm Sewer, SD-TD-2	Foot	22	$ _____	$ _____
06030.04	Storm Sewer Tap, 12 In. Dia.	Each	6	$ _____	$ _____
06050.01	Storm Manhole, 48 In. Dia., (0-8' deep)	Each	5	$ _____	$ _____
06050.70	Storm Manhole, 48 In. Dia., with Leaching Base (0-8' deep)	Each	2	$ _____	$ _____
06070.01	Storm Single Inlet, 24 In. Dia., (0-8' deep)	Each	9	$ _____	$ _____
06080.71	DS_Storm Outlet Control Structure, 60 In. Dia., (0-8' deep)	Each	1	$ _____	$ _____
06081.01	Storm High Capacity Inlet, 48 In. Dia., (0-8' deep)	Each	6	$ _____	$ _____
06110.01	Storm Sewer Pipe, 8 In. Dia, Rem	Foot	12	$ _____	$ _____
06120.03	Storm Sewer Pipe, 12 In. Dia, Rem	Foot	550	$ _____	$ _____
06120.04	Storm Sewer Pipe, 15 In. Dia, Rem	Foot	587	$ _____	$ _____
06140.00	Storm Sewer Structure, Rem	Each	25	$ _____	$ _____
06160.02	Storm Structure Cover, Adjust	Each	17	$ _____	$ _____
06160.72	DS_Misc. Structure Cover, Adjust	Each	5	$ _____	$ _____
06300.70	DS_Infiltration Trench	Foot	443	$ _____	$ _____
06300.71	DS_Perforated HDPE Pipe, 12 inch	Foot	10	$ _____	$ _____
06303.70	DS_Storm Pretreatment Structure, First Defense, 48 In. Dia., Inlet	Each	2	$ _____	$ _____
06303.71	DS_Storm Pretreatment Structure, First Defense, 48 In. Dia., Solid	Each	2	$ _____	$ _____
06303.72	DS_Storm Pretreatment Structure, First Defense, 60 In. Dia., Solid	Each	1	$ _____	$ _____
06400.70	DS_Trench Drain	Foot	216	$ _____	$ _____
	Water Mains				
07000.01	4 In., PC 350, DIP w/ polywrap, SD-TD-1	Foot	262	$ _____	$ _____
07000.02	6 In., PC 350, DIP w/ polywrap, SD-TD-1	Foot	123	$ _____	$ _____
07000.03	8 In., PC 350, DIP w/ polywrap, SD-TD-1	Foot	201	$ _____	$ _____
	TOTAL THIS PAGE (BF-3)				$ _____

E. Schedule of Pricing/Cost – 20 Points

Company: _____

Project: N. University & Thayer Improvements
File #: 2023-023 **RFP#: 26-11**

ITEM NUMBER	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE
07000.05	12 In., PC 350, DIP w/ polywrap, SD-TD-1	Foot	1,214	$ _____	$ _____
07001.01	16 In., PC 250 DIP w/polywrap, SD-TD-1	Foot	22	$ _____	$ _____
07004.70	DS_Water Service, 6 In., Drilled	Foot	47	$ _____	$ _____
07004.71	DS_Water Main Insulation	Foot	96	$ _____	$ _____
07009.70	DS_4 In. 45° DIP Bend	Foot	13	$ _____	$ _____
07010.02	6 In. 45° DIP Bend	Each	5	$ _____	$ _____
07011.02	8 In. 45° DIP Bend	Each	12	$ _____	$ _____
07011.03	8 In. 22.5° DIP Bend	Each	1	$ _____	$ _____
07013.02	12 In. 45° DIP Bend	Each	9	$ _____	$ _____
07013.03	12 In. 22.5° DIP Bend	Each	8	$ _____	$ _____
07014.02	16 In. 45° DIP Bend	Each	2	$ _____	$ _____
07020.03	8 In. x 6 In. DIP Reducer	Each	6	$ _____	$ _____
07020.14	16 In. x 12 In. DIP Reducer	Each	1	$ _____	$ _____
07030.11	12 In. x 12 In. x 4 In. DIP Tee	Each	5	$ _____	$ _____
07030.12	12 In. x 12 In. x 6 In. DIP Tee	Each	2	$ _____	$ _____
07030.13	12 In. x 12 In. x 8 In. DIP Tee	Each	8	$ _____	$ _____
07030.15	12 In. x 12 In. x 12 In. DIP Tee	Each	4	$ _____	$ _____
07050.01	Gate Valve in Box, 6 In.	Each	8	$ _____	$ _____
07050.02	Gate Valve in Box, 8 In.	Each	1	$ _____	$ _____
07050.70	DS_Gate Valve in Box, 4 In.	Each	5	$ _____	$ _____
07060.04	Gate Valve in Well, 12 In.	Each	14	$ _____	$ _____
07060.05	Gate Valve in Well, 16 In.	Each	1	$ _____	$ _____
07100.00	Fire Hydrant Assembly, Complete	Each	6	$ _____	$ _____
07102.00	Fire Hydrant Assembly, Rem	Each	4	$ _____	$ _____
07120.00	Gate Box, Adjust	Each	9	$ _____	$ _____
07130.01	Temporary Water Main Line Stop, 8 In. or Less	Each	2	$ _____	$ _____
07130.03	Temporary Water Main Line Stop, 12 In.	Each	4	$ _____	$ _____
07130.04	Temporary Water Main Line Stop, 16 In.	Each	2	$ _____	$ _____
07131.00	Temporary Water Main Line Stop, Additional Rental Day	Each	3	$ _____	$ _____
	TOTAL THIS PAGE (BF-4)				$ _____

E. Schedule of Pricing/Cost – 20 Points

Company:

Project: N. University & Thayer Improvements
File #: 2023-023 **RFP#: 26-11**

ITEM NUMBER	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE
07140.01	Water Main Pipe, 4 In. Dia, Abandon	Foot	296	$	$
07140.02	Water Main Pipe, 6 In. Dia, Abandon	Foot	646	$	$
07140.03	Water Main Pipe, 8 In. Dia, Abandon	Foot	643	$	$
07140.05	Water Main Pipe, 12 In. Dia, Abandon	Foot	1,432	$	$
07140.07	Water Main Pipe, 16 In. Dia, Abandon	Foot	40	$	$
07150.01	Water Main Pipe, 4 In. Dia, Rem	Foot	20	$	$
07150.02	Water Main Pipe, 6 In. Dia, Rem	Foot	60	$	$
07150.03	Water Main Pipe, 8 In. Dia, Rem	Foot	70	$	$
07150.05	Water Main Pipe, 12 In. Dia, Rem	Foot	150	$	$
07170.01	Gate Valve in Box, 4 In. Dia, Rem	Each	6	$	$
07170.02	Gate Valve in Box, 6 In. Dia, Rem	Each	6	$	$
07170.03	Gate Valve in Box, 8 In. Dia, Rem	Each	2	$	$
07170.05	Gate Valve in Box, 12 In. Dia, Rem	Each	1	$	$
07190.02	Gate Valve in Well, 6 In. Dia, Rem	Each	2	$	$
07190.05	Gate Valve in Well, 12 In. Dia, Rem	Each	4	$	$
	Streets, Driveways, & Sidewalks				
08000.00	Subbase, CIP	Cyd	974	$	$
08000.70	DS_Maintenance Gravel	Ton	430	$	$
08010.74	DS_Aggregate Base, 10 In., 21AA, Modified	Square Yard	6,450	$	$
08010.75	DS_Aggregate Base, 17 In., 21AA, Modified (Temporary)	Square Yard	2,100	$	$
08070.11	HMA, 3EML	Ton	1,134	$	$
08070.15	HMA, 4EML	Ton	753	$	$
08070.19	HMA, 5EML	Ton	773	$	$
08072.70	DS_HMA, Temp Pavt	Ton	556	$	$
08080.03	Conc Pavt, Non-Reinf, 8 In.	Square Yard	16	$	$
08090.71	DS_Joint, Contraction, Cp	Foot	76	$	$
08090.72	DS_Joint, Contraction, Crg	Foot	25	$	$
08093.70	DS_Lane Tie, Epoxy Anchored	Each	70	$	$
08110.00	Conc, Curb or Curb & Gutter, All Types	Foot	3,747	$	$
	TOTAL THIS PAGE (BF-5)				$

E. Schedule of Pricing/Cost – 20 Points

Company: _____

Project: N. University & Thayer Improvements
File #: 2023-023 **RFP#: 26-11**

ITEM NUMBER	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE
08110.71	DS_Mountable Curb and Gutter	Foot	115	$ _____	$ _____
08131.01	Conc, Sidewalk, Drive Approach, or Ramp, 6 In.	Square Foot	5,370	$ _____	$ _____
08133.70	DS_Conc, Sidewalk, Fibermesh, 8 In.	Square Foot	31,898	$ _____	$ _____
08133.71	DS_Conc, Sidewalk Ramp, Fibermesh, 8 In.	Square Foot	3,181	$ _____	$ _____
08133.71	DS_Handrail	Foot	70	$ _____	$ _____
08133.72	DS_Conc, Sidewalk, Fibermesh, 9 In., Raised	Square Foot	2,080	$ _____	$ _____
08140.70	DS_Brick Pavers, Sidewalk, Rem	Square Foot	6,643	$ _____	$ _____
08140.71	DS_Brick Pavers, Sidewalk, Rem and Salv	Square Foot	978	$ _____	$ _____
08140.72	DS_Brick Pavers, Sidewalk, Rem and Reinstall	Square Foot	223	$ _____	$ _____
08140.73	DS_Perforated Concrete Base, 6 In.	Square Foot	223	$ _____	$ _____
08150.00	Detectable Warning Surface	Foot	326	$ _____	$ _____
08150.70	DS_Detectable Warning Surface, Temp	Foot	100	$ _____	$ _____
08150.71	DS_Tactile Directional Indicator	Foot	60	$ _____	$ _____
08190.07	Pavt Mrkg, Polymer Cement Surface, Tan	Sft	45	$ _____	$ _____
08190.72	DS_Pavt Mrkg, Polymer Cement Surface, Bike Thru Arrow Sym	Each	7	$ _____	$ _____
08190.73	DS_Pavt Mrkg, Polymer Cement Surface, Bike, Small Sym	Each	8	$ _____	$ _____
08190.76	DS_Pavt Mrkg, Polymer Cement Surface, Bike Lane, Green	Square Foot	2,146	$ _____	$ _____
08190.78	DS_Pavt Mrkg, Polymer Cement Surface, Bus Lane, Red	Square Foot	4,321	$ _____	$ _____
08190.79	DS_Pavt Mrkg, Polymer Cement Surface, Bus	Each	7	$ _____	$ _____
08191.70	DS_Pavt Mrkg, Polymer Cement Surface, Only	Each	9	$ _____	$ _____
08191.71	DS_Pavt Mrkg, Polymer Cement Surface, Sharrow Sym	Each	4	$ _____	$ _____
08191.72	DS_Pavt Mrkg, Polymer Cement Surface, Merge Left Arrow	Each	1	$ _____	$ _____
08191.73	DS_Scarification, for Polyurea Spec Mrkg	Square Foot	20	$ _____	$ _____
08191.74	DS_Pavt Mrkg, Polymer Cement Surface, Rt Arrow	Each	1	$ _____	$ _____
08200.05	Pavt Mrkg, Polyurea, 12 In., Cross Hatching, White	Foot	264	$ _____	$ _____
08200.09	Pavt Mrkg, Polyurea, 24 In., Stop Bar	Foot	190	$ _____	$ _____
08200.10	Pavt Mrkg, Polyurea, 12 In., Crosswalk	Foot	1,314	$ _____	$ _____
08200.11	Pavt Mrkg, Polyurea, 4 In., White	Foot	86	$ _____	$ _____
08200.13	Pavt Mrkg, Polyurea, 6 In., White	Foot	3,917	$ _____	$ _____
	TOTAL THIS PAGE (BF-6)				$ _____

E. Schedule of Pricing/Cost – 20 Points

Company: _____

Project: N. University & Thayer Improvements
File #: 2023-023 **RFP#: 26-11**

ITEM NUMBER	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE
08200.14	Pavt Mrkg, Polyurea, 6 In., Yellow	Foot	2,050	$ _____	$ _____
08200.30	Pavt Mrkg, Polyurea, Yield Triangle Sym	Each	12	$ _____	$ _____
08200.31	Pavt Mrkg, Polyurea, Speed Hump Chevron, White	Each	6	$ _____	$ _____
08251.00	Recessing Pavt Mrkg, Longit	Foot	4,236	$ _____	$ _____
08252.00	Recessing Pavt Mrkg, Transv	Square Foot	1,870	$ _____	$ _____
08300.00	Monument Box, Adjust	Each	2	$ _____	$ _____
08300.70	DS_Bikeway Delineator Post	Each	109	$ _____	$ _____
08300.70	DS_Parking Meter Post, Install	Each	20	$ _____	$ _____
08300.71	Flexible Delineator Post, Surface Mounted	Each	8	$ _____	$ _____
08300.72	DS_Sign, Type IIIA	Square Foot	70	$ _____	$ _____
08300.73	DS_Sign, Type IIIB	Square Foot	168	$ _____	$ _____
08300.74	DS_Perforated Steel Square Tube Breakaway System, Modified	Each	43	$ _____	$ _____
08300.75	DS_Reflective Panel for Permanent Sign Support, 3 foot, Modified	Each	2	$ _____	$ _____
08300.76	DS_Qwick Kurb Sign	Each	9	$ _____	$ _____
08300.77	DS_Fdn, Perforated Steel Square Tube Breakaway System, Rem	Each	4	$ _____	$ _____
08300.78	DS_Ground Mtg Sign Support, Rem	Each	4	$ _____	$ _____
	Lighting and Electrical				
09000.01	Conductors, No. 4AWG	Foot	2,610	$ _____	$ _____
09000.03	Conductors, No. 8AWG	Foot	2,671	$ _____	$ _____
09000.04	Conductors, No. 10AWG	Foot	2,924	$ _____	$ _____
09010.71	DS_Conduit, Schedule 80 PVC, 2 In.	Foot	64	$ _____	$ _____
09010.72	DS_Conduit, Schedule 80 PVC, 3 In.	Foot	2,671	$ _____	$ _____
09020.00	Handhole, Rem	Each	9	$ _____	$ _____
09020.70	DS_Handhole, Adjust	Each	18	$ _____	$ _____
09030.01	Handhole Assembly, 17 In. X 30 In. x 18 In.	Each	20	$ _____	$ _____
09050.00	Foundation, Light Pole	Each	18	$ _____	$ _____
09060.00	Foundation, Light Pole, Rem	Each	34	$ _____	$ _____
09093.01	Light Pole, 30' Standard	Each	14	$ _____	$ _____
09093.71	DS_Light Pole, 30' Standard, 2 Luminaires	Each	4	$ _____	$ _____
	TOTAL THIS PAGE (BF-7)				$ _____

E. Schedule of Pricing/Cost – 20 Points

Company:

Project: N. University & Thayer Improvements
File #: 2023-023 **RFP#: 26-11**

ITEM NUMBER	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE
09110.01	Light Fixture, Standard	Each	18	$	$
09121.00	Light Fixture, Rem	Each	18	$	$
09130.00	Streetlight Disconnect Box,Complete	Each	1	$	$
	Landscaping				
10000.01	DS_Tree, B&B	Each	12	$	$
10000.70	DS_Irrigation, Remove and Replace	Lump Sum	1	$	$
10001.70	DS_Shrub, #5 Cont.	Each	34	$	$
10001.71	DS_Perennial, #2 Cont.	Each	466	$	$
10001.72	DS_Perennial, Quart Cont.	Each	556	$	$
10001.73	DS_Bulb	Each	528	$	$
10001.74	DS_Annuals, Owner Selected	Each	315	$	$
10001.75	DS_Mulch	Square Yard	275	$	$
10001.76	DS_Planting Mixture	Cubic Yard	225	$	$
10001.77	Washed Stone for Drainage	Cubic Yard	38	$	$
10001.78	Geotextile Wrap	Square Yard	143	$	$
10001.79	12" PiP Planter Wall	Cubic Yard	131	$	$
10002.70	4" Perforated tile drainage pipe	Foot	413	$	$
10006.71	DS_Turf Establishment, Performance	Square Yard	350	$	$
10100.70	DS_DDA Bike Hoop, Surface Mounted	Each	3	$	$
	TOTAL THIS PAGE (BF-8)				$
	TOTAL FROM PAGE (BF-1):				$
	TOTAL FROM PAGE (BF-2):				$
	TOTAL FROM PAGE (BF-3):				$
	TOTAL FROM PAGE (BF-4):				$
	TOTAL FROM PAGE (BF-5):				$
	TOTAL FROM PAGE (BF-6):				$
	TOTAL FROM PAGE (BF-7):				$
	TOTAL BASE BID:				**$**

F. AUTHORIZED NEGOTIATOR / NEGOTIATIBLE ELEMENTS (ALTERNATES)

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

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

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

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

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

G. ATTACHMENTS

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

PROPOSAL EVALUATION

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

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

3. The interview should include the project team members expected to work on the project, but no more than six members total. The interview shall consist of a

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

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

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

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

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

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

PREPARATION OF PROPOSALS

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

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

ADDENDA

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

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

SECTION IV - ATTACHMENTS

Attachment A – Sample Standard Contract

Attachment B – General Declarations

Attachment C - Legal Status of Bidder

Attachment D – Prevailing Wage Declaration of Compliance Form

Attachment E – Living Wage Declaration of Compliance Form

Attachment F – Living Wage Ordinance Poster

Attachment G – Vendor Conflict of Interest Disclosure Form

Attachment H – Non-Discrimination Ordinance Declaration of Compliance Form

Attachment I – Non-Discrimination Ordinance Poster

Sample Certified Payroll Report Template

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 **N. University @ Thayer Improvements, RFP #26-11** in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, all of which are incorporated as part of this Contract:

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

ARTICLE II - Definitions

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

Project means **N. University & Thayer Improvements, RFP #26-11**

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: **Mark McCulloch** 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 _____ ( ) consecutive calendar days.

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

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

ARTICLE IV - The Contract Sum

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 ($_____)

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]

By: _____

Name: _____

Title: _____

Date: _____

CITY OF ANN ARBOR

By: _____

Name: Milton Dohoney Jr.

Title: City Administrator

Date: _____

Approved as to substance:

By: _____

Name: Jordan Roberts

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

LABOR AND MATERIAL BOND

(1) _____

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

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

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

_____

_____

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

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

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

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

SIGNED AND SEALED this _____ day of _____, 202_

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

Approved as to form:

Atleen Kaur, City Attorney

Name and address of agent:

GENERAL CONDITIONS

Section 1 - Execution, Correlation and Intent of Documents

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

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

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

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

Section 2 - Order of Completion

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

Section 3 - Familiarity with Work

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

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

Section 4 - Wage Requirements

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

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

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

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

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

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

Section 5 - Non-Discrimination

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

Section 6 - Materials, Appliances, Employees

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

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

Adequate sanitary facilities shall be provided by the Contractor.

Section 7 - Qualifications for Employment

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

Section 8 - Royalties and Patents

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

Section 9 - Permits and Regulations

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

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

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

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

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

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

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

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

Section 11 - Inspection of Work

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

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

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

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

Section 12 - Superintendence

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

Section 13 - Changes in the Work

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

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

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

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

Section 14 - Extension of Time

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

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

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

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

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

(5) Delay due to an act of Government;

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

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

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

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

Section 15 - Claims for Extra Cost

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

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

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

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

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

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

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

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

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

Section 16 - Progress Payments

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

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

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

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

Section 17 - Deductions for Uncorrected Work

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

Section 18 - Correction of Work Before Final Payment

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

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

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

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

Section 19 - Acceptance and Final Payment

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

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

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

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

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

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

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

Section 20 - Suspension of Work

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

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

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

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

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

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

Section 22 - Contractor's Right to Terminate Contract

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

Section 23 - City's Right To Do Work

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

Section 24 - Removal of Equipment and Supplies

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

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

Section 25 - Responsibility for Work and Warranties

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

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

Section 26 - Partial Completion and Acceptance

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

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

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

Section 27 - Payments Withheld Prior to Final Acceptance of Work

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

(1) Defective work not remedied;

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

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

(4) Damage to another Contractor.

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

Section 28 - Contractor's Insurance

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

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

Required insurance policies include:

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

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

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

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

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

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

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

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

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

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

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

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

Section 29 - Surety Bonds

Bonds will be required from the successful bidder as follows:

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

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

Section 30 - Damage Claims

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

Section 31 - Refusal to Obey Instructions

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

Section 32 - Assignment

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

Section 33 - Rights of Various Interests

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

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

Section 34 - Subcontracts

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

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

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

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

Section 35 - Supervising Professional's Status

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

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

Section 36 - Supervising Professional's Decisions

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

Section 37 - Storing Materials and Supplies

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

Section 38 - Lands for Work

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

Section 39 - Cleaning Up

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

Section 40 - Salvage

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

Section 41 - Night, Saturday or Sunday Work

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

Section 42 - Sales Taxes

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

Section 43

CONTRACTOR'S DECLARATION

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

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

_____ _____
Contractor Date

By _____
(Signature)

Its _____
(Title of Office)

Past due invoices, if any, are listed below.

Section 44

CONTRACTOR'S AFFIDAVIT

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

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

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

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

_____ _____
Contractor Date

By _____
(Signature)

Its _____
(Title of Office)

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

STANDARD SPECIFICATIONS

All work under this contract shall be performed in accordance with the 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
PROGRESS CLAUSE

a. Description.

Examination of Plans, Specifications, and Work Site: Bidders will 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 will 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.

This Contract requires water main, storm sewer, sanitary sewer, concrete curb and gutters, concrete sidewalks, bituminous paving, streetlights and associated work on North University Avenue from east of State Street to east of Fletcher Street, and Thayer Street from North University Avenue to East Washington Street.

The entire work under this Contract will be completed in accordance with, and subject to, the scheduling requirements as outlined below, in the Maintenance of Traffic and Sequence of Construction Detailed Specification, and all other requirements of the Contract Documents.

1. The Contractor is expected to be furnished with an electronic copy of the Contract, for his/her execution, on or before **February 17, 2026.** The Contractor will electronically execute the Contract and return it, with the required Bonds and Insurance Certificate, to the City within **fourteen (14) days**. City Council review and approval of the Contract is expected on **April 20, 2026.** The Notice of Award would be provided after the Council approval. The Contractor will not begin the work on-site before the applicable date(s) as described herein without approval from the Project Engineer, and in no case before the receipt of the fully executed Contract.

2. The Contractor will only begin the work of this project upon receipt of the fully executed Contract and Notice to Proceed and no sooner than **May 4, 2026**. Appropriate time extensions will be granted if the Notice to Proceed is delayed beyond this date. Given the need to start the project on-time and meet deadlines, time extensions for Phase 1 will not be granted for delays associated with material procurement. The Contractor may elect to procure materials at their own risk prior to the Notice to Proceed being issued in order to meet the schedule if material delays are anticipated. Work on this project may not begin without an Engineer approved project schedule submitted by the Contractor that includes details of guaranteed material delivery dates. In the event that material delays result in a project start date or Phase completion dates that do not allow for the completion of work within the timeframe listed herein, the Engineer may elect to delay the

project or selected phases of the project to 2027. All bid prices will be held per the approved contract regardless of delays and/or schedule changes.

3. **Phase 1 Work** – All water and sanitary main installation will be completed in Phase 1 as depicted in the plans. Pavement, curb and gutter, and sidewalk removals and restoration with HMA hand-patching will be limited to areas needed only for installation of the water and sanitary main and associated leads to buildings. Note that the Engineer may require watermain shutdowns to occur during non-standard hours to ensure minimal interruption to businesses and the University of Michigan. All services will be installed and connected during Phase 1. Existing watermain will be abandoned once the new watermain is tested, accepted, and put in service. Install aggregate, concrete and HMA, as directed by the Engineer. Contractor is to open road and sidewalks to traffic as described in this provision.

   Installation of the water main and sanitary main for Thayer Street as reflected in the plans will be completed no later than **June 5, 2026.** Liquated damaged per Section 9 will apply for failure to meet this date. This deadline is to accommodate a roofing project for Hill Auditorium. Refer to the Coordination Clause in this contract for details specific to this project.

   No work shall occur on **May 8, May 11 and May 15, 2026,** due to University of Michigan commencement activities occurring at Hill Auditorium.

   The Contractor will be required to finish work by **5p EST** from **June 12 – June 28, 2026** (Mondays excluded) while the Ann Arbor Summerfest is occurring.

   Throughout the life of the project, various evening events and high school commencements will take place at Hill Auditorium. The Engineer will communicate specific event dates to the Contractor at the weekly coordination meeting. The Contractor will not impede traffic flow on westbound North University with equipment or stockpiled materials on evenings when an event is scheduled. The Contractor shall also not impede fire truck and emergency vehicle access within the project limits in the event of an emergency.

   No thru traffic will be allowed on North University from State Street to Fletcher Street, and Thayer Street from North University to Washington Street. Provide traffic control devices for detour routes as specified in the plans. Access for local traffic and emergency service vehicles, as specified in this special provision, will be maintained at all times. Pedestrian access will be maintained as specified in this special provision. The Ingalls Mall crosswalk at North University will remain open at all times.

   The pavement surface of North University and Thayer, as referenced in the plans, will have an HMA application of 165#/syd at the end of Phase 1 in preparation for the Art Fair.

Phase 1 will be completed in its entirety by **July 10, 2026.** Liquated damaged per Section 9 will apply for failure to meet this date. All temporary traffic control devices, construction equipment and materials shall be stored off-site so the project limits can be occupied for Art Fair activities. The project site will be left in a clean, safe and orderly condition and opened for use by the public. Prior to work stoppage, all businesses and University facilities will have unrestricted pedestrian access.

4. **Ann Arbor Art Fair Week (July 13, 2026 – July 18, 2026)** - This project falls within the limits of the Ann Arbor Art Fair. No work is allowed from July 11, 2026, to July 19, 2026.

5. **Phase 2 Work** – Phase 2 work will not begin until **Monday, July 20, 2026**. Work includes pavement removal, installation of storm sewer, storm inlets/structures, and storm infiltration from the P.O.E. to the Fletcher intersection. Pavement removal, concrete removal, new concrete curb and gutter, sidewalk, planter boxes and streetlights apply from the intersection of Fletcher to the P.O.E.

   The Contractor will have up to **21-calendar days** to close the intersection of Fletcher and North University. However, deliveries and access to the Chemistry Building must be maintained by the Contractor during that period. Liquated damages per Section 9 will apply for a closure exceeding a 21-calendar day period. The timing of the closure is to be coordinated in advance and approved by the Engineer. With approval from the Engineer, the Contractor can perform work in the Fletcher intersection during Phase 1. No extra compensation will be provided to the Contractor if work is performed prior to the Art Fair.

   During Phase 2, no thru traffic will be allowed on North University from State Street to Fletcher Street, and Thayer Street from North University to Washington Street. Access for local traffic and emergency service vehicles, as specified in this special provision, will be maintained at all times. The Ingalls Mall crosswalk at North University will remain open at all times.

   Phase 2 will be completed entirely by **August 15, 2026.** Liquated damages per Section 9 will apply for failure to meet this date. The Contractor will not be granted approval to close the traffic movement of southbound Fletcher Street to eastbound North University, and westbound North University to northbound Flatcher Street after Phase 2 is completed.

6. **Phase 3 Work** – Phase 3 work will begin on **Monday, August 17, 2026.** The Contractor will be required to implement part-width road construction sequencing as needed to maintain eastbound North University transit vehicles to travel through the job site for the duration of Phase 3. The access point for transit travel into the project will be at the intersection of State Street at North University. The exit point for transit travel through the job site will be intersection of Fletcher Street at North University. Transit operations will occur a minimum of 5 days a week, Monday – Friday, through the duration of Phase 3.

The Contractor will provide flagging operation as needed, or as directed by the Engineer, at the State & North University intersection to ensure safe passage of buses through the jobsite during working hours. Flagging operations will be paid for as part of the lump sum item '*Traffic Regulator Control'*.

Unless approved by the Engineer, transit travel will be maintained on a paved surface throughout Phase 3. At the direction of the Engineer, the Contractor will stop construction operations and perform corrective measures as necessary to maintain safe passage for transit vehicles through the work zone. Any work associated with maintaining access will be paid for as part of the Lump Sum '*General Conditions, Max. $300,000' and associated maintenance of traffic pay items.*

There are three suggested stages of work for Phase 3: (1) The south half of North University from P.O.B. to Fletcher Road; (2) The north half of North University from P.O.B. to Fletcher Road, and; (3) Thayer Street from North University to East Washington. Work includes pavement removal, concrete removal, the replacement of irrigation pit and sidewalk drainage trench box, new concrete curb and gutter, aggregate road base, sidewalk, HMA paving, planter boxes, a raised crosswalk at Ingalls Mall, streetlights, structure adjustments, temporary pavement markings, associated materials and work with stated items, and other miscellaneous items in the contract. With approval from the Engineer, the Contractor can work on Thayer street while working concurrently on one half of North University. The Contractor will not be approved to work on both sides of North University, unless approved by the Engineer and work occurs on a Saturday. This restriction is to prevent delays to transit bus schedules.

With the special exemption to University transit or other transit entities as allowed by the Engineer, no thru traffic will be allowed on North University from State Street to Fletcher Street, and Thayer Street from North University to Washington Street. Access for local traffic and emergency service vehicles, as specified in this special provision, will be maintained at all times. The Ingalls Mall crosswalk at North University will remain open at all times.

Phase 3 will be completed in its entirety by **November 25, 2026.** Liquated damages per Section 9 will apply for failure to meet this date. It is understood that turf establishment and other items as approved for Phase 4 will take place in April-June 2027. However, the Contractor will be responsible to use approved soil erosion and sedimentation control measures (SESC) to cover and maintain disturbed areas throughout the winter of 2026-2027. The project site will be left in a clean, safe and orderly condition and opened to public use.

7. **Phase 4 Work** – With approval from the Engineer, Phase 4 work can begin once seasonal weight restrictions following Ann Arbor City ordinance is suspended for the 2027 construction season. Work will involve applying permanent pavement markings, planting trees, landscaping planter boxes in the center median, and

establishing turf establish, and any punch list item identified by the Engineer. All work for Phase 4 will be done while maintaining through traffic via an approved traffic plan by the Engineer. The Engineer reserves the right to restrict work on dates that impact University commencement and special event activities. Phase 4 will be completed in its entirety and open to traffic by **June 11, 2027.** Liquated damages per Section 9 will apply for failure to meet this date.

8. 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 per phase identified. Should the Contractor demonstrate that they must work on 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 or non-standard hours. No work will occur on weekends when Michigan football has a home game.

   Prior to the start of construction, the Contractor will submit a detailed schedule of work for the Engineer's review and approval. Work will not start 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 will update the approved work schedule upon request by the Engineer and present it to the Engineer within seven days of said request.

   The City selected contractor will provide written weekly construction updates to the Engineer. Equally, the contractor will consult with the City, the University of Michigan, and the Engineer on any unanticipated scope changes that impact properties or operations of those entities.

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

   The Contractor will not work in the dark except when directed to do so for watermain shutdowns, or other operations as approved by the Engineer. Lighting equipment for night work will be provided by the Contractor and approved by the Engineer. Payment for lighting will be included in the pay items for the work occurring during periods of darkness. The Engineer, at their sole discretion, may stop the work or may require the Contractor to defer certain work to another day. The Contractor will not be compensated for unused materials or downtime, when delays or work stoppages are directed by the Engineer.

9. Failure to complete all work as specified herein within the times specified herein, including time extensions granted thereto as determined by the Engineer, will entitle the City to deduct from the payments due the Contractor, **$3,000.00 per calendar day** in Liquidated Damages, and not as a penalty, for delays in the completion of the work for each and every calendar day beyond the completion dates for each phase and "Calendar Days to Complete" for each sub-phase, as required by this Detailed Specification and the Maintenance of Traffic Detailed Specification.

   Liquidated Damages will apply to the following milestones:

   1) June 3, 2026 — Thayer Street Water and Sanitary Main Work
   2) July 10, 2026 — Completion of Phase 1
   3) August 15, 2026 — Completion of Phase 2
   4) November 25, 2026 — Completion of Phase 3
   5) June 11, 2027 — Completion of Phase 4

   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. Liquidated Damages will be assessed until all required work is completed for each phase as defined herein. There are no maximum limit on the Liquidated Damages amounts that may be charged to the Contractor. Contractor offered, and Engineer approved, maintenance of traffic, staging, and/or phasing changes will not negate the milestone dates and associated liquidated damages.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
INSURACE REQUIREMENTS

WT:MHM 1 of 1 01/23/2026

In addition to the insurance requirements noted in Section 28 of this contract, the following agencies must also be listed as additionally insured:

- University of Michigan
- Ann Arbor Downtown Development Authority

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
MAINTAINING TRAFFIC AND SEQUENCE OF CONSTRUCTION

a. Description. Traffic will be maintained in accordance with the City of Ann Arbor Public Services Department Standard Specifications and as specified in Sections 104.11, 812, and 922 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, the 2011 Michigan Manual of Uniform Traffic Control Devices (MMUTCD), and as described herein.

The following MDOT Maintaining Traffic Typicals and Work Zone Device Details apply to the project: 101-GEN-SPACING-CHARTS, 102-GEN-NOTES, WZD-100-A, and WZD-125-E. These maintaining traffic provisions are subject to change in the event of special community activities.

The Contractor will furnish, erect, maintain and, upon completion of the work, remove all temporary traffic control devices as required on the project for the safety and protection of local traffic. This includes, but is not limited to, temporary advance, regulatory, and warning signs; barricades and channelizing devices at intersections and on streets where traffic is to be maintained; barricades at the ends of the project and at right-of-way lines of intersecting streets, and traffic control devices for moving construction operations.

b. Materials. The materials and equipment will meet the requirements specified in the corresponding sections of the 2025 City of Ann Arbor Standard Specifications, the MDOT 2020 Standard Specifications for Construction (pay items starting DS_) and the 2011 MMUTCD.

All signs will be of sizes shown on the plans, unless otherwise directed by the Engineer. Install all temporary signs on portable supports. All signs will have a minimum bottom height of 7.0 feet.

Channelizing devices required for all lane closures will be plastic drums. 42-inch channelizing devices are permissible with approval from the Engineer.

Cold Patching Material will meet the requirements of the City of Ann Arbor Standard Specifications for Construction and as approved by the Engineer.

c. Maintaining Local Traffic

Local access will be maintained at all times for emergency vehicles (24-hours), refuse pick-up, mail delivery, business deliveries, and ingress/egress to public and private properties. The University of Michigan and City of Ann Arbor will try to provide special access passes to employees and vendors as needed to have access to the project site.

Notable vehicular access points for **U of M facilities** in the project limits include, but are not limited to:

Thayer Street (all access to be provided from Washington Street intersection)

- N4 parking structure on Thayer; one point of entrance, one point of exit. Vehicular access and egress must be maintained at all times and coordinated with parking structure management in advance.
- Driveway approach between Modern Language and Hill Auditorium; This access point services U of M maintenance and operation vehicles, permitted parking for faculty members, and service as an emergency access point to Ingalls Mall.
- Two service driveways to Hill Auditorium; These driveways serve as material and stage/performance deliveries. Closure of driveways will need to be coordinated with the University so that it does not interfere with scheduled events.
- Half the street adjacent to Hill Auditorium for the roofing project; June – August.

North University

- Service driveway on south approach of the Thayer intersection; This access point services U of M maintenance and operation vehicles, garbage pickup, patent appointments to the School of Kinesiology, and permitted parking for faculty members. Access to be provided from the North University / State Street intersection or Thayer / Washington intersection. The Contractor shall provide 2 days' notice, not including Saturday or Sunday, to the University when the access point is relocated between the two intersections.
- Ingalls Mall, north and south of North University; This crossing is used by maintenance and grounds vehicles to gain access to both sides of the Mall and is also used by emergency service vehicles.
- Michigan League; This building services a variety of University events and functions, as well as a hotel. Access will be provided via the Fletcher Street intersection.
- Dow Chemical Laboratory; Three angled bays service various deliveries and garbage pickup to the facility. Access will be provided from either the intersection of Church Street / North University or the intersection of Fletcher Street. The Contractor shall provide 2 days' notice, not including Saturday or Sunday, to the University when the access point is relocated between the two intersections.

Notable vehicular access points for **non-University facilities** in the project limits include, but are not limited to:

Thayer Street (all access to be provided from Washington Street intersection)

- Bell Tower Hotel; parking lot located on the north side of the building. Employee and ownership parking, as well as deliveries is via the driveway on the south side of the building.
- 312 & 318 Thayer Street; these buildings preliminary serve residential purposes.

- Alley between Bell Tower Hotel and 318 Thayer; this alley services multiple store fronts on Thayer, North University and State Street. The alley space serves as employee parking, trash pickup, and deliveries.

The contractor will accommodate safe pedestrian access to all University facilities, residences, and private businesses located within construction area of North University Avenue and Thayer Street. All sidewalks that can be open will be open to motorized and non-motorized traffic.

ADA compliant sidewalk widths (will not be less than four feet) will be provided and maintained throughout the project limits for the full duration of the project. Continuous pedestrian barricades will be provided between the pedestrian path and work zone, as directed by the Engineer, and surround the project limits. 24-hour pedestrian access will be provided for the Ingalls Mall location crossing North University. The Contractor will place signs at the crossing location warning all vehicles of a pedestrian crossing. When it is necessary and approved to close a section of sidewalk, temporary pedestrian ramps and pathways will be implemented to maintain continuous and safe pedestrian access along the corridor. Pedestrian ramp crossings at intersections will always be maintained at three of four corners. Only one corner of an intersection will be closed at a time. All pedestrian access will be ADA compliant. For work affecting pedestrian crossings, use the included staging sheets and typical details to maintain pedestrian traffic.

If it becomes necessary to temporarily block pedestrian access to building entrances, the Contractor will notify the Engineer seventy-two (72) hours (not including Saturdays or Sundays) in advance of any work planned on or near business entrances, and when possible, stage sidewalk work so that it is constructed part-width. Closure of ingress/egress points to a University facility (vehicular or non-vehicular) may require approval from the University Fire Marshall. The Engineer will not allow the Contractor to prohibit access to businesses during any phase of construction, unless authorized in writing by the Engineer.

If it becomes necessary to temporarily obstruct traffic on a roadway outside of the project limits, the Contractor will provide traffic regulator control in conformance with Chapter 6E of the MMUTCD, Sections 6E.01 thru 6E.08. A minimum of two traffic regulators is required. The cost of traffic regulator control will be included in the Contract pay item “Minor Traffic Control, Max _____”.

A lane-closure permit will be obtained by the Contractor from the City of Ann Arbor Engineering Unit, at least 48 hours in advance (not including Saturdays or Sundays) of any proposed lane or street closing, including the project limits. No lane closures outside of the project limits will be permitted during the following dates, unless approved by the Engineer:

- Memorial Day (3:00 PM Friday May 22, 2026 – 7:00 AM Tuesday, May 26, 2026)
- Independence Day (3:00 PM Friday July 3, 2026 – 7:00 AM Monday, July 6, 2026)
- Labor Day (3:00 PM Friday September 4, 2026 – 7:00 AM Tuesday, September 8, 2026)

- Saturday home University of Michigan football games.
- University of Michigan Fall Semester 2026 move-in week (to be posted on University website).
- 2026 University of Michigan Spring Commencement events as described in this provision, and 2027 commencement events to be posted on University website.

During non-working periods, any area with uncompleted work will have crush approved drums at specific locations and protective fencing, as directed by the Engineer, at no additional cost to the project.

The hours of work is 7:00 a.m. to 8:00 p.m., Monday through Saturday, or as specified on the lane-closure permit. No equipment will have their engine engaged during non-working hours.

All major changes in traffic control will be made either between 9:30 a.m. and 3:30 p.m. or between 7:00 p.m. and 6:30 a.m. in order to minimize interference with rush-hour traffic. All traffic controls must be in-place and ready for traffic each day by 6:30 a.m. and 3:30 p.m.

The Contractor will temporarily cover conflicting traffic and/or parking signs when directed by the Engineer included in the pay item "Minor Traffic Control, Max _____".

The Contractor will use quantities of water, Maintenance Gravel, and HMA Hand Patching mixtures for use as temporary base, surfacing, and dust control at utility crossings, road (laterally and longitudinally as instructed by Engineer), side roads and driveways (wherever required to maintain traffic), and where directed by the Engineer to maintain local access. The cost for the use of water will be included in Contract pay item *"General Conditions, Max _____",* and it will not be paid for separately. Maintenance Gravel and HMA Patching will be paid for by the unit price of the contracted pay item.

The work of maintaining and relocating existing warning, regulatory and/or guide signs; and of removing, salvaging and reinstalling existing signs and supports is included in the bid price for the Contract pay item "*Minor Traffic Devices, Max _____".*

Mail and paper delivery will not be interrupted during construction. Upon completion of construction, all mailboxes, including their support, will be repositioned in their permanent locations as approved by the Engineer. This work will be included the Contract unit price for the Contract pay item *"General Conditions, Max _____",* when applicable, and it will not be paid for separately.

The Contractor will perform the work of this Contract while maintaining traffic in accordance with the Contract Documents as specified herein. No traffic will be allowed on newly placed asphalt surfaces until rolling has been satisfactorily completed, and the surface has cooled sufficiently to prevent damage from traffic.

Each pressure distributor, paver and roller will be equipped with at least one approved flasher light which will be mounted on the equipment to give a warning signal ahead and behind.

The Contractor will furnish, erect, maintain, and upon completion of the work, remove any and all traffic control devices utilized on the project.

d. Construction Influence Area (CIA). The CIA will include the area from POB to POE within the Right-of-way of North University Avenue and Thayer Street, as shown in the plans. The CIA will include the affected portions of the driveways along and contiguous with these roadways.

In addition, the CIA will include the rights-of-way of all roadway segments used for detours and all locations that contain advance warning and/or regulatory signs, pavement markings, plastic drums, traffic delineators, and all other project related traffic maintenance items.

e. Police and Fire. The Contractor will notify local police, fire departments and emergency response units a minimum of three business days (48 hours) prior to the closure of any roads, or traffic shifts causing restricted movements of traffic or restricted access.

f. Permanent Traffic Signs. Work Performed by City of Ann Arbor Signs and Signals Unit. No additional or extra compensation will be paid for any delays caused by City of Ann Arbor Signs and Signals.

g. Sign Removal As necessary during construction, the Contractor will be responsible for logging the legend and location of any signs that:

1. Must be removed to facilitate the construction process;
2. Are to be permanently removed, or;
3. Are to be permanently relocated.

The Contractor will remove the signs as indicated on the plans. The Contractor will have all proposed signs, posts, and associated mounting materials delivered to the City of Ann Arbor Public Works, W.R. Wheeler Service Center, 4251 Stone School Road, Ann Arbor, MI. After construction is complete, but before opening any roadway to traffic, City of Ann Arbor Signs and Signals will install all signs in their proper, permanent location. To coordinate sign installation/reinstallation, the Contractor will notify the Signs and Signals Unit at least five (5) working days (Monday-Friday) in advance of when the sign work will need to be completed. It is the responsibility of the Contractor to ensure that City of Ann Arbor Signs and Signals Unit is scheduled, kept apprised of the progress of construction, and notified a second time immediately (4 working hours) prior to the need to complete the sign work. The installation/reinstallation of all signs will be completed by the City of Ann Arbor Signs and Signals Unit.

h. Project Milestones and Phasing. In general, the project will occur in four phases. The project takes place within a heavy University pedestrian environment. The Contractor is required to work with the City of Ann Arbor and University of Michigan to minimize disruptions as much as possible.

Phase 1 Work – All water and sanitary main installation will be completed in Phase 1 as depicted in the plans. Pavement, curb and gutter, and sidewalk removals and restoration with HMA hand-patching will be limited to areas needed only for installation of the water and sanitary main and associated leads to buildings. Note that the Engineer may require watermain shutdowns to occur during non-standard hours to ensure minimal interruption to businesses and the University of Michigan. All services will be installed and connected during Phase 1. Existing watermain will be abandoned once the new watermain is tested, accepted, and put in service. Install aggregate, concrete and HMA, as directed by the Engineer. Contractor is to open road and sidewalks to traffic as described in this provision.

Installation of the water main and sanitary main for Thayer Street as reflected in the plans will be completed no later than **June 5, 2026.** Liquated damaged per the Progress Clause will apply for failure to meet this date. This deadline is to accommodate a roofing project for Hill Auditorium. Refer to the Coordination Clause in this contract for details specific to this project.

No work shall occur on **May 8, May 11 and May 15, 2026,** due to University of Michigan commencement activities occurring at Hill Auditorium.

The Contractor will be required to finish work by **5p EST** from **June 12 – June 28, 2026** (Mondays excluded) while the Ann Arbor Summerfest is occurring.

Throughout the life of the project, various evening events and high school commencements will take place at Hill Auditorium. The Engineer will communicate specific event dates to the Contractor at the weekly coordination meeting. The Contractor will not impede traffic flow on westbound North University with equipment or stockpiled materials on evenings when an event is scheduled. The Contractor shall also not impede fire truck and emergency vehicle access within the project limits in the event of an emergency.

No thru traffic will be allowed on North University from State Street to Fletcher Street, and Thayer Street from North University to Washington Street. Provide traffic control devices for detour routes as specified in the plans. Access for local traffic and emergency service vehicles, as specified in this special provision, will be maintained at all times. Pedestrian access will be maintained as specified in this special provision. The Ingalls Mall crosswalk at North University will remain open at all times.

The pavement surface of North University and Thayer, as referenced in the plans, will have an HMA application of 165#/syd at the end of Phase 1 in preparation for the Art Fair.

Phase 1 will be completed in its entirety by **July 10, 2026.** Liquated damaged per the Progress Clause will apply for failure to meet this date. All temporary traffic control

devices, construction equipment and materials shall be stored off site so the project limits can be occupied for Art Fair activities. The project site will be left in a clean, safe and orderly condition and opened for use by the public. Prior to work stoppage, all businesses and University facilities will have unrestricted pedestrian access.

Ann Arbor Art Fair Week (July 13, 2026 – July 18, 2026) - This project falls within the limits of the Ann Arbor Art Fair. **No work is allowed from July 11, 2026, to July 19, 2026.**

Phase 2 Work – Phase 2 work will not begin until **Monday, July 20, 2026**. Work includes pavement removal, installation of storm sewer, storm inlets/structures, and storm infiltration from the P.O.E. to the Fletcher intersection. Pavement removal, concrete removal, new concrete curb and gutter, sidewalk, planter boxes and streetlights apply from the intersection of Fletcher to the P.O.E.

The Contractor will have up to **21-calendar days** to close the intersection of Fletcher and North University. However, deliveries and access to the Chemistry Building must be maintained by the Contractor during that period. Liquated damages per the Progress Clause will apply for a closure that exceeds 21-calendar days. The timing of the closure is to be coordinated in advanc and approved by the Engineer. With approval from the Engineer, the Contractor can perform work in the Fletcher intersection during Phase 1. No extra compensation will be provided to the Contractor if work is performed prior to the Art Fair.

During Phase 2, no thru traffic will be allowed on North University from State Street to Fletcher Street, and Thayer Street from North University to Washington Street. Access for local traffic and emergency service vehicles, as specified in this special provision, will be maintained at all times. The Ingalls Mall crosswalk at North University will remain open at all times.

Phase 2 will be completed entirely by **August 15, 2026.** Liquated damages per the Progress Clause will apply for failure to meet this date. The Contractor will not be granted approval to close the traffic movement of southbound Fletcher Street to eastbound North University, and westbound North University to northbound Flatcher Street after Phase 2 is completed.

Phase 3 Work – Phase 3 work will begin on **Monday, August 17, 2026.** The Contractor will be required to implement part-width road construction sequencing as needed to maintain eastbound North University transit vehicles to travel through the job site for the duration of Phase 3. The access point for transit travel into the project will be at the intersection of State Street at North University. The exit point for transit travel through the job site will be intersection of Fletcher Street at North University. Transit operations will occur a minimum of 5 days a week, Monday – Friday, through the duration of Phase 3.

The Contractor will provide flagging operation as needed, or as directed by the Engineer, at the State & North University intersection and other locations as determined by the Engineer, to ensure safe passage of buses through the jobsite during working hours.

Flagging operations will be paid for as part of the lump sum item '*Traffic Regulator Control'*.

Unless approved by the Engineer, transit travel will be maintained on a paved surface throughout Phase 3. The southern half of North University will be paved prior to switching transit traffic. At the direction of the Engineer, the Contractor will stop construction operations and perform corrective measures as necessary to maintain safe passage for transit vehicles through the work zone. Any work associated with maintaining access will be paid for as part of the Lump Sum '*General Conditions, Max. $300,000' and associated maintenance of traffic pay items*
There are three suggested stages of work for Phase 3: (1) The south half of North University from P.O.B. to Fletcher Road; (2) The north half of North University from P.O.B. to Fletcher Road, and; (3) Thayer Street from North University to East Washington. Work includes pavement removal, concrete removal, the replacement of irrigation pit and sidewalk drainage trench box, new concrete curb and gutter, aggregate road base, sidewalk, HMA paving, planter boxes, a raised crosswalk at Ingalls Mall, streetlights, structure adjustments, temporary pavement markings, associated materials and work with stated items, and other miscellaneous items in the contract. With approval from the Engineer, the Contractor can work on Thayer street while working concurrently on one half of North University. The Contractor will not be approved to work on both sides of North University, unless approved by the Engineer and work occurs on a Saturday. This restriction is to prevent delays to transit bus schedules.

With the special exemption to University transit or other transit entities as allowed by the Engineer, no thru traffic will be allowed on North University from State Street to Fletcher Street, and Thayer Street from North University to Washington Street. Access for local traffic and emergency service vehicles, as specified in this special provision, will be maintained at all times. The Ingalls Mall crosswalk at North University will remain open at all times.

Phase 3 will be completed in its entirety by **November 25, 2026.** Liquated damages per Progress Clause will apply for failure to meet this date. It is understood that turf establishment and other items as approved for Phase 4 will take place in April-June 2027. However, the Contractor will be responsible to use approved soil erosion and sedimentation control measures (SESC) to cover and maintain disturbed areas throughout the winter of 2026-2027. The project site will be left in a clean, safe and orderly condition and opened to public use.

Phase 4 Work – With approval from the Engineer, Phase 4 work can begin once seasonal weight restrictions following Ann Arbor City ordinance is suspended for the 2027 construction season. Work will involve applying permanent pavement markings, planting trees, landscaping planter boxes in the center median, and establishing turf establish, and any punch list item identified by the Engineer. All work for Phase 4 will be done while maintaining through traffic via an approved traffic plan by the Engineer. The Engineer reserves the right to restrict work on dates that impact University commencement and special event activities. Phase 4 will be completed in its entirety and open to traffic by

June 11, 2027. Liquated damages per the Progress Clause will apply for failure to meet this date.

The contractor should also be aware of the following events within the project area. If the project is delayed, the contractor will be required to make provisions following the "**Ann Arbor Art Fair**" paragraph herein:

- Ann Arbor Summer Festival & Top of the Park; June 12 – 28, 2026
- Ann Arbor Firecracker 5k & Ann Arbor Jaycees 4th of July Parade – July 4, 2026

Measurement and Payment. The estimated quantities for maintaining traffic is based on the maintenance of traffic plans. Any additional signing, traffic control devices, pavement markings, or the like required to expedite the construction, beyond that which is specified, shall be at the Contractor's sole expense.

The completed work as measured shall be paid at the Contract unit price for the following Contract pay items:

Contract Item (Pay Item)	**Pay Unit**
Traffic Regulator Control	Lump Sum
Minor Traffic Devices, Max $80,000.00	Lump Sum
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn and Oper	Each
Plastic Drum, High Intensity, Lighted, Furn and Oper	Each
Sign, Type B, Temp, Prismatic, Furn and Oper	Square Foot
Sign, Type B, Temp, Prismatic, Spec, Furn and Oper	Square Foot
Sign, Portable, Changeable Message, Furn & Oper	Each
Lighted Arrow, Type C, Furn & Oper	Each
DS_Temporary Pedestrian Ramp, Furn and Oper	Each
Temporary Pedestrian Mat, Furn and Oper	Foot
DS_Detectable Warning Surface, Temp	Square Foot
DS_Pedestrian Path, Temp	Foot
DS_Temporary Audible Message Device	Each
Pedestrian Channelizer Device, Furn and Oper	Each
Pedestrian Type II Barricade, Temp, Furn and Oper	Each

The unit price for this item of work shall include all labor, material, and equipment costs required to perform the work specified herein and includes both furnishing and operating the devices.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PROJECT COORDINATION

WT: MHM | 1 of 1 | 01/21/2026

The Contractor is hereby notified that there will be coordination efforts that will need to occur as part of the North University and Thayer Street project, and efforts that may need to be made with work not associated with this project. Please note that this listing may not be complete, and the Contractor will verify any other projects within the local vicinity that may impact this project.

1. **University of Michigan Hill Auditorium Roofing Project (June – August 2026)**
   A portion of the Thayer Road adjacent to the Auditorium will need to be used by a crane to load materials to the roof. This crane will be parked in this space for the duration of the roofing project. The road contractor will be required to provide and maintain ingress/egress for material deliveries and waste haul off from the intersection of Washington and Thayer. Refer to the Progress Clause for dates related to the roofing project.

2. **Ann Arbor Summer Fest (June 12-28, 2026)**
   East Washington Street from Thayer Street to Fletcher Street, and Ingalls Mall between Washington Street and North University. Refer to the webpage www.a2sf.org. The contractor will be required to stop work by 5p every day with the exception of Monday while the Festival is occurring.

3. **DTE Gas – Relocation of Gas Meter Servicing Michigan League Building**
   The Contractor will be required to coordinate a natural gas meter servicing the Michigan League building when directional drilling a 6 inch water services lead into the base of the building.

The Contractor will coordinate its work with Contractors of other projects, internal and external to the construction influence area, as directed by the Engineer. No additional compensation will be allowed for costs incurred by the Contractor due to coordinating with or delays caused by other projects.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PROJECT CLEAN-UP

a. Description. This work consists of providing all labor, materials, and equipment required to perform project cleanup in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein.

b. Materials. The materials will meet the requirements specified in the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as specified herein.

c. Construction.

Clean-up

The Contractor will ensure the project site is left in a condition that is clean and free of all project generated debris and to the satisfaction of the Engineer. This work will consist of removing and disposing of miscellaneous packing materials and debris, soil erosion control fences, protective fences, fallen timber, logs, brush, rocks, boulders, and any rubbish generated from the Contractor's operations within the project limits, or areas impacted by their operations or areas impacted by their operations.

Immediately after completion of the construction phase or segment, the Contractor will clean the entire area within the influence of construction, including but not limited to all pavement, sidewalks, lawn areas, and underground utility structures of all materials which may have accumulated prior to or during the construction.

Inlet filters will be removed from inlets and catch basins only after all pavement surfaces have been cleaned of debris and at the direction of the Engineer.

Provide project cleanup as an ongoing operation. Perform project cleanup within the right-of-way of all roadways and any other areas impacted by the project work.

Clean existing culverts, ditches, depressions, or other areas that contain sediment or debris from the work operations.

Neatly fill any ruts, holes, or depressions resulting from removal of soil erosion control materials with Engineer approved materials after their removal. Maintenance of silt fencing and other soil erosion control materials until such time as they are no longer needed, then removal and proper disposal of them from the site, will be included in the bid price for the related soil erosion control device.

All backfill materials will be compacted, and ruts and holes restored to the surrounding

contour as directed by the Engineer.

The project site will be left in a condition that is clean and free of all project-generated debris to the satisfaction of the Engineer.

d. Measurement and Payment. The completed work, as described, will be paid at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Project Clean-Up	Lump Sum

Payment for **DS_Project Clean-up** will include all costs for labor, materials, and equipment required to complete the work for all project clean-up work, as specified herein and will be paid on a lump sum basis per phase as described in the plans and specifications. The Contractor will not receive payment until the Contractor has cleaned and restored the project limits to the satisfaction of the Engineer.

Pavement cleaning utilizing a street sweeper for paving operations will be paid as DS_Pavt, Cleaning.

The Contractor will be exclusively responsible for maintaining a clean project site. The Engineer may direct additional clean-up operations throughout each project phase. Payment will be made after completing each project milestone listed according to the following schedule, regardless of the number of times the Contractor conducts clean up operations:

Milestone	**Payment Amount**
Phase 1	45%
Phase 2	45%
Phase 3	10%

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PAVT, CLEANING

WT:MHM 1 of 1 11/3/2025

a. Description. This work consists of providing all labor, materials, and equipment required to clean pavement as described herein and at the frequency directed by the Engineer in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications and the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein, or as directed by the Engineer.

b. Materials. None.

c. Construction. The Contractor will utilize equipment to minimize dust production, such as a street sweeper with vacuum and watering capabilities, and employ all dust control measures deemed necessary by the Engineer to clean pavement surfaces immediately prior to commencing paving operations, as directed by the Engineer, prior to installing pavement markings, and after all contract work is complete in accordance with section 501.03.C.2 of the Michigan Department of Transportation 2020 Standard Specifications Construction.

The Engineer may direct suspension of watering capabilities prior to paving operations.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Pavt, Cleaning	Lump Sum

Payment for **DS_Pavt, Cleaning** will be measured by the lump sum for all pavement cleaning operations and will include all costs for labor, material, and equipment required to complete the work, including employing a vacuum and watering capable street sweeper.

Payment will be made after completing each operation listed according to the following schedule, regardless of the number of times pavements are cleaned:

Operation	**Payment Amount**
Leveling Course	50%
Top Course	25%
Project Clean-up	25%

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PEDESTRIAN PATH, TEMP

a. Description. This work consists of providing all labor, materials, and equipment required to furnish, install, maintain, and remove a temporary pedestrian path as identified in the proposal or on the plans. Temporary pedestrian paths, or segments thereof, will be repaired or replaced as directed by the Engineer.

b. Materials. Provide materials to construct a temporary pedestrian path in accordance with the contract, the *Public Right of Way Accessibility Guidelines (PROWAG)*, the *MMUTCD*, as directed by the Engineer, and the following requirements:

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

2. If asphalt materials are not used to construct the path, provide an antiskid coating, or surface treatment as directed by the Engineer.

c. Construction. Construct the temporary pedestrian path in accordance with *PROWAG*, the *MMUTCD*, the contract, the direction of the Engineer, and the following:

1. The useable surface of the path must be a minimum of 48 inches wide, additional width may be provided to preclude the use of Temporary Pedestrian Passing Spaces (paid for separately). A minimum width of 60 inches is required if Temporary Pedestrian Passing Spaces are not provided as part of the temporary facility. The maximum cross slope for the path is 2 percent. The path, including transitions to the adjacent surface at both ends, must be free of vertical discontinuities greater than 1/4 inch. Eliminate any vertical discontinuities greater than 1/4 inch up to 1/2 inch or bevel with a slope not steeper than 1:2. If a vertical discontinuity greater than 1/2 inch or a running slope greater than 1:20 occurs on the project, a Temporary Pedestrian Ramp (paid for separately) is required.

A. Ensure an anti-skid surface treatment is applied to the surface of the path, if not constructed with asphalt materials, as directed by the Engineer.

B. If the surface of the path is constructed from OSB, plywood, or dimensional lumber securely connect all sections with appropriate fasteners to ensure a continuous, uniform and flat surface.

2. Ensure all debris and construction materials is cleared from the path throughout its use. Ensure snow and ice is removed; the use of an approved de-icing agent may be required.

3. Repair or replace the path, or segments thereof, if it becomes uneven, unstable, or displaces due to weather events, construction activities, or other causes as directed by the Engineer.

4. Following the use of the temporary path, the Contractor must remove and dispose all materials used to construct the path, and restore the area as directed by the Engineer.

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

Contract Item (Pay Item)	**Pay Unit**
DS_Pedestrian Path, Temp	Foot

Payment for **DS_Pedestrian Path, Temp** will be measured along the centerline of the path for units installed and will include costs for all labor, materials, and equipment required to install, maintain, restore, and remove the path and disposal of all associated materials throughout the life of the contract.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
TRAPEZOID DELINEATOR

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install trapezoid delineators where shown and detailed on the plans in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, the manufacturer's instructions, except as modified herein, and as directed by the Engineer.

b. Materials. The Contractor will furnish TekWay Trapezoid Delineators manufacture by StrongGo or an Engineer approved equal.

The color of the trapezoid delineators will be 'charcoal'. The Contractor will verify this color choice with Owner prior to ordering materials.

c. Construction. The Contractor will engage an experienced installer qualified for installation of this type and who has successfully completed detectable warning installations similar in material, design and extent to that indicated for this project.

d. Preparation. During all concrete pouring and tile installation procedures, the Contractor will ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.

The physical characteristics of the concrete will be consistent with these Specifications while maintaining a slump range of 4 inches to 7 inches to permit solid placement of the cast-in-place tactile tile system.

The concrete will be poured and finished, true and smooth to the required dimensions and slope prior to tile placement.

e. Installation. The Contractor will not be allowed to install Trapezoid Delineator Tiles until all submittals have been reviewed and approved by the Engineer.

The Contractor will install Trapezoid Tactile Warning Delineator tiles in accordance with the manufacturer's instructions.

The largest size tile manufactured will be used to minimize the amount of installation-seams, unless directed by the Engineer otherwise. The tiles will be placed in accordance with the drawings. Cutting of the tiles may be required. Tile to tile joints between Trapezoid Tactile Warning Delineator tiles must be laid out by adjoining factory edges. A 12-inch sloped end section will be used whenever a gap is provided per the locations referenced on the plans. The Contractor will order a sufficient number of full length tiles and end sections to complete the work.

The Contractor will install tiles into the fresh concrete using a rubber mallet to ensure that

there are no voids or air pockets, and the edges of tile are to be flush with the adjacent surface or as the drawings indicate to permit proper water drainage and eliminate tripping hazards between adjacent finishes.

While the concrete is workable, the Contractor will use a 1/8 inch radius edging tool to create a finished edge of concrete, and then a steel trowel will be used to finish the concrete around the tile's perimeter.

f. Cleaning and Protection. The Contractor will protect trapezoid tactile warning delineators against damage during construction to comply with tile manufacturer's Specifications.

During and after the tile installation and the concrete curing stage, the Contractor will exhaust all efforts to prevent walking, leaning, or other external forces from loading the tile and/or to displace the tile, causing a void between the underside of tile and its concrete substrate.

The Contractor will protect trapezoid tactile warning delineators against damage from rolling loads following installation by covering with plywood or hardwood.

The Contractor will clean tiles prior to the date scheduled for inspection and remove protective covering.

g. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Unit**
DS_Trapezoid Delineator, Any Size	Foot

Payment for **DS_Trapezoid Delineator, Any Size** will be measured by the foot for units installed and will include all costs for labor, materials, and equipment required to furnish and install the materials as shown on the plans and as specified herein. This payment item covers full length tiles as well as sloped end sections.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
TRENCH DRAIN, REM

WT:AJK 1 of 1 1/22/2026

a. Description. This work consists of providing all labor, materials, and equipment required to remove, haul away, and dispose of trench drain systems and associated materials in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, the Michigan Department of Transportation 2020 Standard Specification for Construction, as shown on the plans, as specified herein, and as directed by the Engineer.

b. Construction. The Contractor will remove, haul away, and dispose of trench drain systems in accordance with Section 204. This will include removal of miscellaneous material, including, but not limited to sand, geotextile, concrete, other cementitious materials, PVC pipe, drain grate, other materials within the limits of removals.

The Contractor will sawcut concrete sidewalk prior to removals.

c. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	Unit
DS_Trench Drain, Rem	Foot

Payment for **DS_Trench Drain, Rem** will be measured by the linear foot, measured along the longitudinal length, for units completely removed in the field, and includes all costs for labor, material, and equipment required to sawcut, remove, haul away, and dispose of brick pavers, concrete base, sand, geotextiles, and other materials within the cross-section as shown on the plans and as specified herein.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
BRICK PAVERS, SIDEWALK, REM

WT:AJK 1 of 1 1/22/2026

a. Description. This work consists of providing all labor, materials, and equipment required to remove, haul away, and dispose of brick pavers and concrete base in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, the Michigan Department of Transportation 2020 Standard Specification for Construction, as shown on the plans, as specified herein, and as directed by the Engineer.

b. Construction. The Contractor will remove, haul away, and dispose of brick pavers and concrete base beneath brick pavers in accordance with Section 204. This will include removal of miscellaneous materials, including, but not limited to sand, geotextile, cementitious materials, and other materials that make up the material cross-section.

The Contractor will sawcut prior to removals.

c. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	Unit
DS_Brick Paver, Sidewalk, Rem	Square Foot

Payment for **DS_Brick Paver, Sidewalk, Rem** will be measured by the square foot for units completely removed in the field, and includes all costs for labor, material, and equipment required to sawcut, remove, haul away, and dispose of brick pavers, concrete base, sand, geotextiles, and other materials within the cross-section as shown on the plans and as specified herein.

CITY OF ANN ARBOR

DETAILED SPECIFICAITON
FOR
PLANTER BOX, REM

WT:AJK 1 of 1 1/22/2026

a. Description. This work consists of providing all labor, materials, and equipment required to remove, haul away, and dispose of concrete planter boxes in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, the Michigan Department of Transportation 2020 Standard Specification for Construction, as shown on the plans, as specified herein, and as directed by the Engineer.

b. Materials. The Contractor will furnish materials in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Class II granular material meeting the requirements of Section 902.

c. Construction. The Contractor will remove, haul away, and dispose of planter boxes in accordance with Section 204.

The Contractor will sawcut prior to removals at the direction of the Engineer only.

The Contractor will furnish and install class II granular material following removals to establish subgrade elevations as directed by the Engineer in accordance with Section 301.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	Unit
DS_Planter Box, Rem	Foot

Payment for **DS_Planter Box, Rem** will be measured by the linear foot along the perimeter for units completely removed in the field, and includes all costs for labor, material, and equipment required to sawcut, remove, haul away, and dispose of planter boxes, including reinforcing members, regardless of the material type, as shown on the plans and as specified herein. Furnishing and installing compacted class II granular material will not be paid for separately but will be included in payment for DS_Planter Box, Rem.

CITY OF ANN ARBOR

DETAILED SPECIFICAITON
FOR
MISCELLANEOUS SITE FURNISHING REMOVALS

WT:AJK 1 of 1 1/22/2026

a. Description. This work consists of providing all labor, materials, and equipment required to remove and salvage or remove, haul away, and site furnishings, which include bollards, Qwick Kurb signs, benches, and bike racks in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, as specified herein, and as directed by the Engineer.

b. Construction. The Contractor will carefully remove, haul away, and dispose of bollards and Qwick Kurb signs from existing surfaces, including hardware, mounting hardware, and foundations and protect existing facilities to remain in place.

The Contractor will carefully remove, salvage, and store benches and bike racks, including hardware and mounting hardware, and protect existing facilities to remain in place. Existing foundations will be removed, hauled away, and disposed of. Salvaged materials will be stored in an Engineer approved location on site.

c. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	Unit
DS_Bollard, Rem	Each
DS_Qwick Kurb, Rem	Each
DS_Bench, Rem, Salv	Each
DS_Bike Rack, Rem, Salv	Each

Payment for **DS_Bollard, Rem** and **DS_Qwick Kurb, Rem** will be measured by each for units completely removed, hauled away, and disposed of, and includes all costs for labor, material, and equipment required to complete the work as shown on the plans and as specified herein.

Payment for **DS_Bench, Rem, Salv** and **DS_Bike Rack, Rem, Salv** will be measured by each for units completely removed, salvaged, and stored, and includes all costs for labor, material, and equipment required to complete the work as shown on the plans and as specified herein. Payment for foundations removed, hauled away, and disposed will not be paid for separately and will be included in the corresponding pay item.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
TROLLEY TRACK, REMOVE

a. Description. This work will consist of furnishing all labor, tools, equipment, and material to remove, and dispose of off-site, any concrete curb, gutter, curb and gutter, integral curb, sidewalk, sidewalk ramps, pavement, drive openings, and drive approach pavements as shown on the plans, in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, except as specified herein, and as directed by the Engineer.

b. Materials. Granular Material, Class II will be furnished in accordance with Michigan Department of Transportation 2020 Standard Specifications for Construction section 902.

c. Construction. Remove and dispose of bituminous and/or composite pavement overlay and to break up and remove the trolley track concrete base, steel reinforcement, ties, rails, and hardware where necessary for utility installation, pavement cross section or any other item of work as approved by the Engineer. Concrete base foundation is anticipated to be 7-ft wide by 12-14 inches deep.

Prior to the start of work, the Engineer and Contractor will work together to identify and field measure all items to be removed. The Engineer will approve of all removal limits prior to any removals being performed by the Contractor.

The Contractor will perform full-depth saw cutting at removal limits as shown on the Plans, as marked for removal, or as directed by the Engineer.

The Contractor will cut steel reinforcement as directed by the Engineer at all areas of removal.

All saw-cutting will be performed under wet conditions to prevent excessive airborne dust. All resulting slurry and debris will be cleaned up the satisfaction of the Engineer.

The Contractor will coordinate with the City Forester prior to the removal of any tree roots.

Excavated / removal areas will be adequately protected with barricades and/or fencing at all times.

Removed or excavated materials which are not incorporated into the work will become the property of the Contractor and will be immediately removed and properly disposed of off-site. Removed or excavated materials may not be stockpiled overnight on, or adjacent to, the site.

Base, subbase, or subgrade materials removed without authorization by the Engineer will be replaced and compacted by the Contractor at the Contractor's expense, with materials specified by the Engineer.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Trolley Track, Remove	Square Yard

All saw-cutting required for removals will be included in the appropriate item of work and will not be paid for separately.

Payment for **DS_Trolley Track, Remove** will be measured by the square yard for foundations removed and will include all costs for labor, material, and equipment required to remove and dispose of existing pavement, steel reinforcement, rails, ties, and hardware, regardless of pavement thickness and type of material and will excavate and furnish and place compacted granular material to establish the subgrade elevations required to accommodate the proposed cross section, install utilities, or as approved by the engineer

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
TUNNEL, REM

a. Description. This work consists of providing all labor, materials, and equipment required to remove segments of an existing underground abandoned tunnel as shown on the plans or as directed by the Engineer in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction and the City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein, or as directed by the Engineer.

b. Materials. The Contractor will furnish the following materials in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction:

Class II granular material which meets the requirements of Section 902.

Brick and block masonry units which meet the requirements of Section 913.

Mortar, Type R-2 which meets the requirements of Section 1005.

c. Construction. The existing underground tunnel is abandoned. To the best knowledge of the Owner, the tunnel does not contain hazardous materials and/or live utilities and is entirely filled with flowable fill. The Contractor will anticipate removals to include concrete, mortar, flowable fill, reinforcing members, and miscellaneous materials such as insulation, fiberglass, pipe, brick, block, hardware, and other construction materials and/or trash.

The Contractor will excavate and completely expose the edges of the existing tunnel structure. The Contractor will work with the Engineer to identify and mark the limits of removal. Once approved by the Engineer, the Contractor will proceed with scoring the limits by sawcutting and proceed with removal operations. The Contractor will not begin removals until authorized by the Engineer.

The Contractor will remove the existing tunnel structure by sawcutting, breaking, and jackhammering and other means approved by the Engineer. Blasting will not be authorized.

The Contractor will ensure that the faces of the structures remaining in place outside of the removal limits are clean, plumb, smooth, and free of any rough edges and voids. The Contractor will utilize brick, block, and mortar to fill any voids in the face of the structures remaining in place.

The Contractor will furnish and install compacted class II granular material as directed by

the Engineer.

The Contractor will clean up, haul away, and dispose of all materials generated from removing the existing abandoned tunnel structure.

The Contractor will maintain wet surfaces for the tunnel surface and adjacent earth to mitigate dust production throughout removal operations.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Tunnel, Rem	Cubic Yard

Payment for **DS_Tunnel, Rem** will be measured in the field by the cubic yard for tunnel segments completely removed and will include all costs for labor, material, and equipment required to excavate, sawcut, remove, haul away, and dispose of excavation spoils and tunnel materials removed, regardless of material type, provide dust mitigation measures (water), and furnish and install mortar, masonry units, and compacted class II granular material.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PAVEMENT, REMOVE

a. Description. This work consists of providing all labor, materials, and equipment required to remove, and dispose of off-site, roadway and drive approach pavements, regardless of thickness and material type, and excavate and furnish compacted granular material outside of Machine Grading, Modified areas as shown on the plans, in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, except as specified herein, and as directed by the Engineer.

b. Materials. The Contractor will furnish MDOT Class II Granular Material in accordance with Section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

c. Construction. Pavement materials are anticipated to include asphalt, concrete, brick, aggregate and composite pavement sections. Also included is bituminous overlay pavement on the concrete gutter without disturbing the curb and gutter remaining in place.

Prior to the start of work, the Engineer and Contractor together will identify and field measure all items to be removed. The Engineer will approve of all removal limits prior to any removals being performed by the Contractor.

In areas where pavement removal is to be performed adjacent to existing pavement that is to remain in place, the pavement will be sawcut prior to removal. Backhoe teeth, jackhammers equipped with spike points, milling machines, and backhoe mounted wheel cutters will not be used.

All saw cutting will be performed under wet conditions to prevent excessive airborne dust. All resulting slurry and debris will be cleaned up the satisfaction of the Engineer.

The Contractor will cut steel reinforcement bars as directed by the Engineer at all areas of removal.

The Contractor will perform full-depth saw cutting at removal limits, including those necessary to construct 2-foot wide MDOT Type M drive openings, as shown on the Plans, as directed by the Engineer, and as marked for removal. All pavement cuts will be made full depth and perpendicular to, or parallel with, the centerline of the pavement. Butt joints must be saw cut straight and a clean edge will be maintained.

The Contractor will excavate and furnish and place compacted granular material embankment where required to establish the subgrade elevations to accommodate the proposed subbase, aggregate base, and pavement sections.

The Contractor will coordinate with the City Forester prior to the removal of any tree roots.

Excavated / removal areas will be adequately protected with barricades and/or fencing at all times.

Removed or excavated materials which are not incorporated into the work will become the property of the Contractor and will be immediately removed and properly disposed of off-site.

The proper disposal of asphalt, concrete, and all other excess excavated material will be the responsibility of the Contractor. At no time will the Contractor stockpile removed or excavated materials overnight on or adjacent to the site.

Base, subbase, or subgrade materials removed without authorization by the Engineer will be replaced and compacted by the Contractor at the Contractor's expense, with materials specified by the Engineer.

Damage to adjacent pavement, pavement base, subbase, curb and gutter, sidewalk, utility structures, or other site features, due to removal operations will be repaired by the Contractor at the Contractor’s expense, as directed by the Engineer.

Paving bricks within the right-of-way will be salvaged and neatly stacked/stockpiled by the Contractor. Paving bricks not reinstalled will be delivered by the Contractor to a City-owned facility as directed by the Engineer.

At various times throughout the work, the Engineer may direct the Contractor to use smaller and/or lighter equipment, or to defer certain work tasks in order to protect the grade and/or adjacent areas. The Contractor will swap equipment to the satisfaction of the Engineer at no additional cost to the Owner.

For utility construction patches or repair, the existing pavement will be removed to provide for a replacement of not less than 1 foot wider and longer than the utility trench on each side. All patches will be rectangular (four-sided in shape) and performed in accordance with the details shown on the plans or as directed by the Engineer. If these removals will result in existing pavement less than 5 feet wide from the patch to a lane line, gutter line, edge-of-metal, or existing patch, this existing pavement will also be removed to the lane line, gutter line, edge-of-metal, or existing patch.

d. Measurement and Payment. The completed work, as described, will be for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Pavement, Remove	Square Yard

All saw cutting required for removals will be included in DS_Pavement, Remove and will not be paid for separately.

Payment for **DS_Pavement, Remove** will be measured by the square yard for pavements removed and will include all costs for labor, material, and equipment required to remove and dispose of existing pavement and driveway approaches, regardless of pavement thickness and type of material, or whether it is composite, and will excavate and furnish and place compacted granular material to establish the subgrade elevations required to accommodate the proposed cross section, install utilities, or as approved by the engineer.

Excavation and granular material included in payment for **DS_Pavement, Remove** will be limited to sections outside of the influence of Machine Grading, Modified areas indicated on the plans and cross sections.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
COLD MILLING FOR CONCRETE CURB AND GUTTER REVEAL

AA:NJB 1 of 1 1/18/2024

a. Description. This work consists of providing all labor, materials, and equipment required to cold mill existing concrete curb and gutter areas overlaid with HMA material to reveal the edge-of-metal of the curb and gutter in advance of the rest of removal work, allowing for a condition inspection of revealed concrete curb and gutter in advance of curb repair work. Work to be done in accordance with section 501 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, as directed by the Engineer and as described herein.

b. Materials. None specified.

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

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

Contract Item (Pay Item)	**Pay Unit**
DS_Cold Milling for Concrete Curb and Gutter Reveal	Syd

Payment for **DS_Cold Milling for Concrete Curb and Gutter Reveal** will be measured by square yards of gutter pan revealed, unit price includes the cost for all labor, equipment and materials required to remove, load, haul, and dispose of the cold milled material, and sweeping of the cold milled surface. The pay item will not be paid if the work is performed at the same time as the overall road cold milling operation.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PERMANENT TRAFFIC SIGNS AND SUPPORTS

a. Description. This work consists of providing all labor, materials, and equipment required to furnish permanent traffic signs and supports to the City of Ann Arbor and coordinating with the City for installation and removing signs and associated supports and foundations in accordance with the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, as shown on the plans, and as specified herein.

b. Materials. All materials required for the proposed permanent regulatory signage as shown on the plans shall be delivered to the City of Ann Arbor Public Works, W.R. Wheeler Service Center, 4251 Stone School Road, Ann Arbor, MI 48108. The Contractor shall be responsible for all coordination with the City of Ann Arbor Signs and Signals Supervisor at 734.794.6361 for delivery. The contractor will not be entitled to extra compensation due to delays caused by City of Ann Arbor personnel.

The Contractor will furnish materials in accordance with the following sections of the Michigan Department of Transportation Standard Specifications for Construction, except where otherwise noted below:

Anchor bolts, nuts, and washers – materials as specified in section 908

Sign, Type IIIA – materials as specified in section 919

Sign, Type IIIB – materials as specified in section 919

c. Construction. The Contractor will furnish signs, sign supports, and hardware in accordance with Section 810 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein.

Remove signs of the type indicated and sign supports in accordance with section 810.03.U Michigan Department of Transportation 2020 Standard Specifications for Construction.

Remove foundations for perforated steel square tube breakaway systems in accordance with section 810.03.V Michigan Department of Transportation 2020 Standard Specifications for Construction.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Fdn, Perforated Steel Square Tube Breakaway System, Rem	Each
DS_Ground Mtd Sign Support, Rem	Each
DS_Sign, Type IIIA, Modified	Square Foot
DS_Sign, Type IIIB, Modified	Square Foot

Payment for permanent **Sign, Type III_, Modified,** supports, and associated hardware will be measured by the square foot for signs furnished and will include all costs for labor, material, and equipment required to furnish permanent signs and supports materials to the City and coordinate installation with the City as shown on the plans and as specified herein.

Payment for permanent Reflective Panel for **Perforated Steel Square Tube Breakaway System, Rem,** and **Ground Mtd Sign Support, Rem** and removal of associated hardware will be measured by each for units completely removed and will include all costs for labor, material, and equipment required to remove, haul away, and dispose of signs, supports, and hardware.

Payment for bases, posts, and mounting hardware shall not be paid for separately but shall be included in the corresponding pay item(s).

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PARKING KIOSK, REM AND PARKING MARKERS, REM

WT:MHM 1 of 1 11/3/2025

a. Description. This work will consist of removing parking kiosks and markers in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein, or as directed by the Engineer.

b. Materials. All sand will meet the gradation of MDOT Class II granular material in accordance with Section 902 of the 2020 MDOT Standard Specifications for Construction.

Concrete will be Grade 3500 in accordance with Section 1004 of the MDOT 2020 Standard Specifications for Construction.

c. Construction. The City will locate and mark markers and kiosks requiring removal. Prior to removal, contact PCI Municipal Services at (734) 761-3582 for the removal of the parking meter heads.

The Contractor will removal, haul away, and dispose of the post and concrete foundation.

The void will be backfilled with Class II Granular Material or Engineer approved backfill.

The surface will be restored in-kind to adjacent material.

Concrete sidewalk will comply with plans and specifications.

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

Pay Item	**Pay Unit**
DS_Parking Markers, Rem	Each

Payment for **DS_ DS_Parking Markers, Rem** will be measured by each unit completely removed and will include all costs for labor, material, and equipment required to remove, haul away, and dispose of existing parking kiosks, markers, posts, bases, and hardware and furnishment and placement of granular materials and concrete.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
MACHINE GRADING MODIFIED

a. Description. This work consists of providing all labor, material, and equipment required to excavate, fill, and grade to establish proposed subgrade elevations as described in Section 205 of the Michigan Department of Transportation Standard 2020 Specifications for Construction with the following exceptions: includes hauling, disposal, storing and stockpiling topsoil, salvaging and stockpiling of aggregate base, miscellaneous removals, furnishing and compacting granular material, subgrade manipulation, proof rolling, temporary lowering of structures, removing, salvaging, storing, and reinstalling site furnishings with new hardware, protecting existing utilities, site preparation for plantings, and all work described herein within the grading limits indicated on the plans.

Earth grades will be constructed by saw cutting and excavating and disposing of existing bituminous pavement, concrete pavement, sidewalks, curbs, gutters, culverts, soil, rock, vegetation (including trees, stumps, brush, shrubs, roots, and logs) or other deleterious materials; removing and salvaging or disposing of topsoil; and by placing and compacting existing approved fill material or imported MDOT Class II Granular Material.

All work will be completed in accordance with Sections 204, 205, 403, 501, 815 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein.

b. Materials. All materials will meet the requirements as specified in Sections 205 and 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as specified herein.

Fill material will be suitable material obtained from the site approved by the Engineer or imported MDOT Class II granular material.

Hardware furnished for site furnishings will match the existing in-kind and will have anchors appropriate for the fastening application.

c. Soils Information. Soil information provided as part of the contract documents is for informational purposes only and will not relieve the Contractor of the responsibility of investigating all local conditions before bidding.

d. Contractor's Calculations. Existing and proposed cross sections are provided in the plans. The Contractor will perform his/her own computations and is responsible to inspect the site to determine his/her own estimate of the quantities of work involved.

Deviations between the existing and proposed cross-sections shown on the plans will not be cause for additional compensation.

e. Permit to Place. The Engineer will issue to the Contractor a “Permit to Place” for the aggregate base. If the Contractor does not immediately place the aggregate base, the Contractor will be solely responsible for the protection of the subgrade and will conduct operations and provide the necessary equipment to ensure the satisfactory completion of the work without damaging the subgrade. This may require the transportation and movement of materials over additional distances in lieu of driving upon the unprotected or partially unprotected subgrade.

f. Suspension of Work. The Engineer will have the authority to suspend the work wholly or in part for any periods of time as may be deemed necessary due to unsuitable weather or such other conditions which are considered unfavorable for the prosecution of the work or for any other condition or reason deemed to be in the best interest of the project. The Contractor will not suspend work without giving prior written notification to the Engineer.

g. Coordination. The Contractor will coordinate all work with utility companies and others where work by others is within the areas indicated for Machine Grading on the plans or at the direction of the Engineer.

h. Access. The Contractor will maintain access to the project site per the Maintenance of Traffic special provision.

i. Removal and Salvaging of Topsoil and Aggregate Base. The Contractor will remove, salvage, and stockpile topsoil and/or aggregate base and perform all related work in accordance with Section 205.03.A.1 and/or 205.03.A.2 of the Michigan Department of Transportation Standard Specifications for Construction to prepare for the existing surface for placement of 4 inches of topsoil to accommodate turf establishment in the areas indicated on the plans.

j. Miscellaneous Removals. The Contractor will remove bituminous, aggregate, and concrete materials around manholes, structures, and utility covers, remove bituminous curbs, driveway wedges, overlays on existing curb and gutter, and other miscellaneous bituminous surfaces, and remove any surface feature located within the grading limits indicated on the plans or as directed by the Engineer for which there is no specific pay item in the proposal for its removal.

The Contractor will remove and dispose of all abandoned cables, conduit, and pipe encountered within the limits of any earthwork excavation including undercuts at the direction of the Engineer. Where the inverts of abandoned, or to be abandoned or removed, conduits or pipe are less than 16 inches below the bottom of any earth excavation or undercut, the conduits and/or pipe will be removed and the resulting void filled with an Engineer approved material. The fill material will be compacted to 95% of its maximum unit weight in lifts not exceeding 12 inches. The Contractor will remove

aggregate base furnished as temporary aggregate to cover utility trenches. The Contractor may elect to reuse aggregate base at the approval of the Engineer.

k. Protection of the Grade. The work will be kept well drained at all times. The Contractor will repair all areas of the work that become damaged due to rain at the Contractor's expense as directed by the Engineer.

The Contractor will be responsible for the maintenance of the foundation, roadway embankment, and subgrade. Any damage caused by traffic or the Contractor's operations, to the foundation, roadway embankment or subgrade will be remedied by the Contractor at his/her sole expense.

The Contractor will conduct his/her operations and provide the necessary equipment to ensure the satisfactory completion of the work without damaging the foundation, roadway embankment or subgrade. This may require the transporting and movement of materials over additional distances.

l. Protection of Utilities. Utility lines may become exposed at, above, or below, the foundation or subgrade elevation during machine grading or subgrade undercutting operations. If this occurs, the Contractor will excavate around, above and/or below the utility lines, as directed, to complete the machine grading or subgrade undercutting operations.

m. Foundation Preparation. The Contractor will prepare the earth grade in accordance with Section 205.03.A of the Michigan Department of Transportation 2020 Standard Specifications for Construction as shown on the plans, and as specified herein.

The earth grade will be compacted to 95% of its maximum unit weight, as measured by the AASHTO T-180 method, to a depth of at least 10 inches. If this cannot be achieved, in the opinion of the Engineer, he/she will direct the Contractor to perform Subgrade Undercutting of the type specified or as directed by the Engineer.

n. Subgrade Construction. The Contractor will construct the subgrade by performing earth excavation and placing roadway embankment work in accordance with Sections 205.03.G and 205.03.H of the Michigan Department of Transportation 2020 Standard Specifications for Construction, as shown on the plans, and as specified herein.

The Contractor will shape and prepare the subgrade outside of proposed utility trench areas to the grades and cross-sections, shown on the plans, including sidewalk, driveways, and landscape areas, or as directed by the Engineer, and as specified herein. The subgrade will be prepared to ensure uniform support for the pavement structure. To achieve this, the work will include, but not be limited to:

1. Excavate, remove, haul away, and dispose of any surplus or unsuitable materials.
2. Import and furnish any additional Engineer approved fill materials necessary.

3. Move existing and/or furnished materials longitudinally and transversely as necessary.
4. Cut, place, compact, and trim existing and/or furnished materials to construct the roadway embankment and subgrade to the specified elevations within tolerances.
5. Stockpiling, and moving again, any cut materials which cannot be immediately placed upon excavation due to construction staging.
6. Grade around mailboxes, trees, utilities poles, other utility features, and all other distinguished permanent features. The Contractor will be responsible for any damaged caused to such features.
7. Maintain the work in a finished smooth condition until it is accepted by the Engineer.

If the Contractor's equipment should cause any rutting or other damage in the base, subbase or subgrade, the equipment will be immediately restricted from the grade and the Contractor will restore the area to the satisfaction of the Engineer at the Contractor's expense.

The Contractor will excavate, fill, and grade the subgrade to accommodate all proposed subbases, aggregate bases, pavements, swales and adjacent planting beds, curb and gutter, driveways, sidewalks, bicycle paths, other similar structures, bioswale planting mix, topsoil, and any other features which the subgrade supports.

The Contractor will prepare the subgrade to ensure uniform support for the pavement structure. The finished subgrade will be placed to within 1 inch below and ¾ inch above the plan grade. Variations will be corrected with the placement of compacted granular material. The tolerances for the pavement structure strata are not additive.

In areas where the existing grade is to be cut to achieve proposed subgrade elevation (cut sections), rubber tire equipment including scrapers, wheel loaders, and graders may be used by the Contractor but only to within 2 feet above the proposed subgrade elevation.

After the grade has been cut to within 2 feet above the subgrade elevation, the Contractor will install all proposed underground utilities and underdrains within the 1:1 influence of the proposed pavement section.

Following the installation of utilities, the Contractor will perform the remaining cutting using tracked equipment only. The Contractor will only excavate an amount that the Contractor can maintain and protect and keep well drained at all times.

In areas where the existing grade is to be filled to achieve the proposed subgrade elevation (fill-sections), filling will not take place until all proposed underground utilities within the 1:1 influence of the proposed pavement have been installed. However, if the existing grade does not provide the required minimum cover for a portion of any utility, filling for the road subgrade will be performed to provide such minimum cover. This filling

will be for the entire width of the roadway (to 1 foot behind the curb) at a length as determined by the Engineer.

The Contractor will place fill materials only on stable earth grade approved by the Engineer.

The Contractor will place fill in 6-inch lifts and compacted to 95% of the maximum unit weight as determined by the AASHTO 180 test.

o. Proof Roll to Establish Subgrade. Immediately following the completion of the grading and compaction of the subgrade as required above, the Contractor will notify and allow the Engineer to inspect the finished subgrade for soft or uncompacted areas, and for areas of unsuitable and deleterious soils.

The Contractor will proof roll the grade or other surfaces as directed by the Engineer. Equipment for proof rolling will be a pneumatic-tired roller and will have suitable body for ballast loading with such capacity that the gross load may be varied between 25 and 40 tons. The Contractor may use an appropriately loaded single axle or tandem axle dump truck in lieu of the specified roller to achieve the loads specified above. The proof rolling vehicle will be operated at walking speed. The proof roller will make one or more passes to complete coverage of the completed subgrade. Where proof rolling shows the subgrade to be unstable, such areas will be undercut and repaired as determined by the Engineer. Following the completion and approval of all undercuts required based on the proof rolling, the subgrade will be considered established.

The Contractor will not operate rubber-tired equipment on the established subgrade unless specifically authorized in writing by the Engineer.

The Contractor will be responsible for the maintenance of the subgrade. Any damage to the subgrade due to the Contractor's activities or the activities of its subcontractors, will be repaired by the Contractor at the Contractor's expense including any additional undercuts required after the subgrade had been established.

p. Subgrade Manipulation. The Contractor will perform Subgrade Manipulation on the foundation or subgrade in accordance with Section 205.03.F of the Michigan Department of Transportation 2020 Standard Specifications for Construction where indicated on the plans, as specified herein, and as directed by the Engineer.

Where subgrade manipulation is required, the foundation or subgrade will be thoroughly scarified, blended, and mixed to a depth of 12 inches. The work will be accomplished by means of a large diameter disc, motor grader, or other equipment approved by the Engineer. After the foundation or subgrade has been manipulated to the satisfaction of the Engineer and allowed to dry, the soil will be compacted to 95% of its maximum dry density as measured by the AASHTO T-180 method. The time required for drying the soil will not be a basis for an extension of time.

q. Site Preparation. The Contractor will perform Site Preparation for tree plantings in accordance with Section 815.03B of the Michigan Department of Transportation 2020 Standard Specifications for Construction where indicated on the plans, as specified herein, and as directed by the Engineer.

r. Rock Excavation. The Contractor will perform Rock Excavation for boulders ½ cubic yard in volume or less in accordance with Section 205.03.B of the Michigan Department of Transportation 2020 Standard Specifications for Construction where shown on the plans, as specified herein, and as directed by the Engineer.

s. Lowering Structures. Prior to cutting the subgrade, the Contractor will remove structure covers, lower the structures to a point between 8 inches and 12 inches below the proposed subgrade, and cover the structures with a steel plate. Structures will not be raised prior to placing roadway embankment.

The steel plates for covering structure openings will conform to the plan detail, be anchored in place, and properly placed to prevent their movement under all traffic, be thick enough to carry all traffic, and prevent the infiltration of debris into the structures.

The Contractor will lower valve boxes to a point between 8 inches and 12 inches below the proposed subgrade. Valve boxes will not be raised prior to placing roadway embankment.

The void in the grade above the steel plates used for structure lowerings and valve box lowerings will be backfilled, and compacted to 95% of its maximum dry density, with an Engineer approved coarse aggregate.

The Contractor will coordinate the lowering of private utility structures with the corresponding utility company.

t. Structure and Sewer Cleanliness. All sewers and structures, including manholes, gate wells, valve boxes, inlet structures, and curbs will be protected from damage and contamination by debris and construction materials. Structures will be maintained clean of construction debris and properly covered at all times throughout construction. The Contractor will immediately clean any structures and/or sewers that become contaminated with construction debris. The Contractor will be responsible for all direct and indirect damages which are caused by sewers or structures which have been made unclean or have been damaged by the Contractor.

u. Site Furnishings. The Contractor will remove, salvage, and reinstall all site furnishings which conflict with proposed site work. Expected site furnishings include bicycle racks, wayfinding signage, trash cans, bollards, delineator posts, qwick kurb, and decorative signage. The contractor will furnish new hardware for the reinstallation.

v. Measurement and Payment. The completed work, as described, will be paid for by planned quantities at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Machine Grading, Modified	Station
DS_Bench, Rem, Salv	Each
DS_Bike Rack, Rem, Salv	Each
DS_Bikeway Delineator Post, Rem	Each
DS_Qwick Curb, Rem	Foot

Payment for **DS_Machine Grading, Modified** will include all costs for labor, materials, and equipment necessary to complete the work described herein except when separate pay items are provided in the proposal to compensate for the work.

Quantities paid for **DS_Machine Grading, Modified** will be planned quantities by the station, measured along the proposed North University Ave. and Thayer Street construction centerline from right-of-way to right-of-way, including temporary grading permits, from POB to POE, which may be adjusted due to changes in the limits of work as issued in writing by the Engineer.
Earthwork associated with utility work is included in their pay items. Estimated quantities for excavation and embankment may be more or less based on field conditions encountered during construction. The Contractor is responsible for reviewing the information in the bid documents to compare to these estimated figures. Claims related to estimated quantities for excavation and embankment will be denied by the Owner.

Granular material backfill required for utility trenches will be paid for as part of the corresponding utility pay items.

The Contractor is advised that due to the phasing of the project and the probable unsuitability of some or all of the excavated material for use as approved fill material, there may be imbalances between the amount of earth cut which is suitable for reuse as fill, and the amount of earth needed to construct the lines and grades shown on the plans, or as directed by the Engineer. The Contractor will make provisions for such imbalances and will include in the bid price for this work the cost of importing/furnishing, placement, and compaction of MDOT Class II granular material, as well as the cost of stockpiling and re- handling of imported and/or on-site Engineer approved materials as necessary to complete the work of constructing the embankment and subgrade to the cross sections shown on the plans.
Payment for **DS_Qwick Curb, Rem**, will be measured by each complete foot removed and will include all costs for labor, materials, and equipment required to remove, haul away, and dispose of posts, curb units, and associated mounting hardware materials as shown on the plans and as specified herein.

Payment for **DS_Bench, Rem, Salv**, **DS_Bike Rack, Rem, Salv**, and **DS_Bikeway Delineator Post, Rem** will be measured by each complete unit removed and will include all costs for labor, materials, and equipment required to remove and return to owner benches, bike racks, and associated mounting hardware materials as shown on the plans and as specified herein.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
SANITARY SEWER SERVICE LEAD REMOVAL AND INSTALLATION

a. Description. This work consists of providing all labor, materials, and equipment required to remove and install sanitary sewer service leads where authorized by the Engineer to accommodate utility construction and maintain service in accordance with City of Ann Arbor 2025 Public Services Standard Specifications and the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein, or as directed by the Engineer.

b. Materials.

Pipe and fittings materials shall be SDR 26 polyvinyl chloride (PVC) with integral wall bell and spigot which conforms to ASTM D3034 (Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings).

Lubricants used in making up joints will be supplied by the pipe manufacturer, and the joints will be coupled in accordance with the manufacturer's requirements.

Joints for PVC pipe will be elastomeric gasketed push-on joints conforming to the requirements of ASTM D3212 (Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals). Gaskets will conform to ASTM F477 (Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe).

Pipe bedding and backfill will be class II granular which meets the requirements of section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

The following information shall be clearly marked on each length of pipe:

1. The pipe designation and class (e.g., C 76, Class IV). For PVC pipe, this shall include the PVC cell classification.
2. The name or trademark of the manufacturer.
3. Identification of the manufacturing plant.
4. The date of manufacture.
5. Testing lot number or testing lab stamp.
6. Beveled pipe shall be marked with the amount of bevel, and the point of maximum length shall be marked on the beveled end.

All pipe furnished will be accompanied by the manufacturer's certificate of test showing conformity with the relevant standard specifications. Each certificate shall identify a specific lot number, quantity of pipe, and show actual test results for the lot furnished. These certificates shall be submitted to the Engineer and must be pre-approved prior to the start of construction.

c. Construction.

The Contractor will perform work in accordance with City of Ann Arbor 2025 Public Services Standard Specifications and sections 203, 402, and 825 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

The Contractor will maintain sanitary sewer services at all times throughout construction utilizing bypass pumping or other Engineer approved means. It may be necessary for the Contractor to maintain pumping during outside of working hours.

The Contractor will take all measures necessary to ensure that no site debris enter the ends of the pipe remaining in place and the new pipe installed.

The Contractor will work with the Engineer to identify existing sanitary service leads that prohibit the installation of proposed work. The Contractor will only remove sanitary service leads approved by the Engineer for removal.

The Contractor will protect existing pipe, connections, and fittings to remain in place and will install or remove sanitary service leads in a manner so as to not disturb adjacent upstream and downstream pipes.

The Contractor will make clean cuts and trim and deburr the pipe ends to remain in place so that the edge is smooth and 90 degrees to the longitudinal axis of the pipe. New services shall be capped at the Right-of-Way for future connections as shown on the plans and/or as directed by the Engineer.

The Contractor will clean the pipe ends before installing new pipe.

The Contractor will maintain the trench in a clean and dry condition.

The Contractor will install sanitary service leads in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications.

d. Measurement and Payment. The completed work, as described, will be paid for at contract unit prices for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Sanitary Service Lead, Rem, 4 to 8 inch	Foot
DS_4 In., SDR 26 PVC Sanitary Service Lead, SD-TD-2	Foot

Payment for **DS_Sanitary Service Lead, Rem, 4 to 8 inch** will be measured by the foot for pipe removed and will include all costs for labor, materials, and equipment required to complete all the work described herein, including cutting, removing, hauling, and

disposing of existing materials, protecting existing pipe remaining in place, and maintaining existing sanitary service utilizing Engineer approved means.

Payment for **DS_4 In., SDR 26 PVC Sanitary Service Lead, SD-TD-2** will be measured by the foot for pipe installed and will include all costs for labor, materials, and equipment required to complete all the work described herein, including excavation, furnish and install pipe, fittings, caps and risers, any sheeting, shoring, and bracing required, dewatering, furnish and install water-tight plugs, protection of all existing utilities and service connections, furnish and install pipe bedding and backfill, cleaning, video inspection, and testing.

CITY OF ANN ARBOR

SPECIAL PROVISION
FOR
STORM CONTROL STRUCUTRE, 60 IN. DIA., (0-8' DEEP)

a. Description. This work consists of providing all labor, materials, and equipment required to construct drainage structures in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications and Section 403 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, as shown on the plans, and as specified herein.

b. Submittal Requirements. The Contractor will submit to the Engineer for review and approval shop drawings in accordance with Section 104.02 of the Michigan Department of Transportation 2020 Standard Specifications for Construction for all materials related to drainage structures.

For each submittal or resubmittal, the Contractor will allow at least 14 calendar days from the date of the submittal to receive the Engineer's acceptance or request for revisions. The Engineer's comments will be incorporated into the submitted plans, calculations and descriptions. The Engineer's acceptance is required before beginning the work. Resubmittals will be reviewed and returned to the General Contractor within 14 calendar days. Required submittal revisions will not be a basis of payment for additional compensation, extra work, or an extension of contract time.

c. Materials. The materials used for this work will conform to Section 403.02 of the Michigan the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as specified herein.

Storm sewer drainage structures will be constructed of precast reinforced concrete sections topped with an eccentric cone or, in situations in which it is not possible to install precast sections, concrete masonry units where approved by Engineer.

All sanitary sewer manholes will be constructed of precast reinforced concrete sections topped with an eccentric cone.

Precast reinforced concrete bases, bottom sections, manhole risers, grade adjustment rings, concentric cones, eccentric cones, and flat slab tops will conform to the requirements of ASTM C478. Joints on precast manholes used on all sanitary sewers will meet ASTM C443, rubber O-ring gasket.

Precast manhole tees and radius pipe sections will conform to requirements for reinforced concrete pipe, ASTM C76, class IV (up to 23 feet of cover) or class V (up to 33 feet of cover). Joints will conform to adjacent pipe. Tees and radius pipe will conform to details indicated on drawings offered by the Concrete Pipe Association of Michigan, Inc., or Engineer approved equal.

All structures will be designed to accommodate HS-20 Live Load requirements as determined by a Professional Engineer licensed by the State of Michigan, regardless of where they are to be installed.

The Contractor will field verify inverts prior to fabricating precast units. No additional payment will be made to the Contractor for precast units that cannot be used due to existing inverts being different than shown on the plans, changes in vertical or horizontal alignment due to conditions found in the field, or similar unforeseen circumstances.

Concrete masonry units will conform to the requirements for concrete masonry units for catch basins and manholes, ASTM C139.

Concrete brick will conform to the requirements for concrete building brick, ASTM C55, Grade N-1.

Plastic coated manhole steps will be injection molded of copolymer, polypropylene, encapsulating a 1/2 inch grade 60 steel reinforcing bar. Plastic-coated manhole steps will meet the performance test described in ASTM C-478, Paragraph ll, and will have an impact resistance of 300 ft.-lbs. with only minor deflection and no cracking or breaking. The steps will resist pull out forces of 1,500 lbs.

Backfill will be MDOT class II granular material only and will be compacted to 95% of its maximum unit weight in maximum 10-inch lifts.

Control structures will be precast reinforced concrete sections of the type specified in the details shown on the plans.

Control structure regulator valves will be Contech models FA1012 and as specified in the details shown on the plans or engineer approved equals.

d. Construction. The Contractor will construct drainage structures in accordance with Section 403.03 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as specified herein.

Excavation will be carried to the depth and width required to permit the construction of the required base. The excavation width will be greater than the base. The bottom of the excavation will be trimmed to a uniform horizontal bed and be completely dewatered before any concrete is placed therein. Precast manhole bases and precast bottom sections are allowed.

Circular precast manhole sections will be constructed in accordance with the details as shown on the plans. Manhole stack units will be constructed on level poured-in-place bases, precast concrete bases, or precast concrete bottom sections.

Precast cone sections will be constructed in accordance with the details as shown on the plans. These units will be eccentric for all manholes, precast or block. All structures will be topped with a minimum of one, and a maximum of three, 2” tall, brick or precast adjustment courses.

Manholes, inlets, and structures will be constructed within 2-1/2 inches of plumb.

Frames and covers will be set in full mortar beds and pointed on the structure interior to a smooth, brushed finish. The covers will be set flush with sidewalk, roadway pavement, or ground surfaces. The Engineer will be notified prior to the final paving to allow inspection of the final casting adjustments for all utility structures. In gravel streets, covers will be set 6 to 8 inches below finished gravel surface.

Sewer pipes will extend into structures a minimum of 1/2 inch and a maximum of 3 inches.

The excavation will be kept in a dry condition.

All necessary adjustments for new structures will be included in the cost of the structure.

Manhole steps, installed where required, will be spaced 16 inches.

The Contractor will backfill drainage structures only after the exterior mortar coating has cured and approved by the Engineer.

The Contractor will ensure that the completed drainage structure is clean and free of any debris from construction activities.

The Contractor will furnish and install structure covers in accordance with the details on the plans the City of Ann Arbor 2025 Public Services Standard Specifications.

The Contactor will construct control structures in accordance with the details shown on the plans and install control structure regulator (vortex) valves in accordance with the manufacturer's specifications and instructions. Valves will be installed into the weir utilizing appropriate sized sleeves and o-ring gaskets.

The Contractor will install external seals to all manhole chimneys.

e. Measurement and Payment. The completed work, as described, will be paid at the contract unit price for the following contract items (pay items):

Pay Item	**Pay Unit**
DS_Storm Control Structure, 60 In. Dia., (0-8’ deep).....	Each

Payment for **DS_Storm Control Structure, 60 In. Dia., (0-8’ deep)** will be paid by each complete unit installed and will include all costs for labor, materials, and equipment required for all necessary excavation, disposing of surplus excavated materials, frame and cover, backfilling, adjusting frame and cover to finished elevation, and constructing the complete structure, regardless of depth, including weir and orifices, regulator (vortex) valve, pipe connections, and structure cleaning.

Measurement and payment for internal and external chimney seals will be paid for separately.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
TRENCH DRAIN

WT:AJK 1 of 2 12/18/2025

a. Description. This work consists of providing all labor, materials, and equipment required to install a trench drain system as shown on the plans or as directed by the Engineer in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein.

b. Materials. The Contractor will furnish the following materials:

Trench drain system will be a channel style system with a trough and cover assembly.

The trough material will be polymer or fiberglass and suitable to be embedded directly into concrete. Troughs depths will match the thickness of adjacent concrete.

Covers will be 2-foot cast iron spans and match the existing style in kind. Covers will not bolt down and will be easy to remove for maintenance. Covers will be ADA compliant.

Outlet will be 6-inch diameter and suitable for connection to PVC pipe.

Pipe and fittings will be gasketed 6-inch diameter SDR 26 PVC.

Solvent cement will be heavy-duty and suitable for SDR 26 PVC.

Class II granular material will meet the requirements of Section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

c. Submittals. The Contractor will submit shop drawings that detail the trench drain, liner, grates, outlets, and all other materials and appurtenances relevant to constructing the trench drain system for approval.

d. Construction. The Contractor will install trench drain systems according to the manufacturer's instructions.

The Contractor will excavate and install trench drain systems on a bed of 4 inches of class II granular material compacted to at least 95% maximum unit weight and will set systems prior to pouring concrete for inspection and approval by the Engineer.

The Contractor will ensure that trench drain systems provide positive drainage and are not deformed by concrete loads when concrete is poured. Drains segments deformed by concrete loads will be removed and replaced at the direction of the Engineer.

The Contractor will install drain systems so that the grate is flush with the finished grade and ensure the installation is free of any trip and fall hazards for pedestrians.

The Contractor will connect the trench drain system to outlets utilizing PVC pipe and fittings and join pipe and fittings with primer and cement where gaskets are not used.

The Contractor will protect trench drain and outlets from concrete and other construction debris and will clean trench drain, connections, leads, and sewer to be free of any foreign material prior to

e. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Trench Drain	Foot

Payment for **DS_Trench Drain** will be measured in the field by the linear foot for trench drain completely installed and will include all costs for labor, material, and equipment required to excavate, haul away, and dispose of spoils and furnish and install compacted class II granular material, trench drain system including grates, troughs, and pipe.

Pipe lengths will not be measured. Payment for pipe, fittings, gaskets, cement, and other related materials will be considered incidental to payment for DS_Trench Drain.

The Contractor will be responsible for all costs related to trench systems that must be removed and replaced due to deformation resulting from concrete loads, including removal and replacement of adjacent facilities.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
LANE TIE, EPOXY ANCHORED

WT:MHM 1 of 1 11/3/2025

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install lane ties where shown and detailed on the plans in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein, or as directed by the Engineer.

b. Materials. Epoxy coatings will meet the requirements of section 905.03.C of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Epoxy resin adhesive will meet the requirements of section 914.06 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Lane ties will be epoxy coated #5 deformed bars which meet the requirements of section 914.09.A of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

c. Construction. The Contractor will construct Lane Tie, Epoxy anchored in accordance with section 603 of the Michigan Department of Transportation 2020 Standard Specifications Construction.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Lane Tie, Epoxy Anchored	Each

Payment for **DS_Lane Tie, Epoxy Anchored** will be measured by each unit completely installed and will include all costs for labor, material, and equipment required to complete the work, including drilling and cleaning holes, providing, mixing, and installing adhesive, and installing deformed bars.

CITY OF ANN ARBOR

SPECIAL PROVISION
FOR
STRUCTURE COVER ADJUSTMENTS

a. Description. This work consists of providing all labor, materials, and equipment required to adjust, replace, and point drainage structures, sanitary structures, valve wells or boxes, handholes, and monument boxes of concrete and concrete block masonry; sealing manhole chimneys; the replacing, salvaging and transporting of new and existing metal covers, and/or castings; including all excavation, backfilling, patching and the removal and proper disposal off-site of all excavated material and debris, all in accordance with Division 4 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as specified herein.

b. Materials. Materials will meet the requirements of sections 403, 1004 and 1005 of the 2020 edition of the MDOT Standard Specifications.

Concrete will be grade P-NC.

Manhole external chimney seals will be Wrapidseal Manhole Encapsulation System CCI Piping Systems or an engineer approved equal.

Sanitary manholes will have an internal chimney seal. The Contractor will provide the Engineer with submittals for three different manufacturers of internal chimney manhole systems in advance of the preconstruction meeting. The Engineer will review and provide a selected product within two weeks after receipt of submittals.

Internal manhole frame-chimney sealant material and application methods will meet current ASTM standards and consist of an Engineer approved plural component, spray applied, quick setting urethane material conforming to the following requirements:

Viscosity:

(a) Part A, 12,000-17,000 cps @ 25C, 20 RPM per ASTM D2393 (Test Method for Viscosity of Epoxy Resins and Related Components)

(b) Part B, 300-510 cps @ 25C, 300 RPM per ASTM D4287 (Standard Test Method for High-Shear Viscosity Using a Cone/Plate Viscometer)

Weight:

(a) Weight/Gallon Part A, 8.90-9.20 lb/gal per ASTM D1875 (Standard Test Method for Density of Adhesives in Fluid Form)

(b) Weight/Gallon Part B, 9.60-9.75 lb/gal per ASTM D1875

(c) Weight/Gallon Mixed, 9.25-9.48 lb/gal per ASTM D1875

Processing:

(a) Mix Ratio by Weight, 100:107

(b) Mix Ratio by Volume, 100:100 10-89 Construction Specifications

(c) Cure Schedule, Hours, 4-5 hours @ 25C

Gel Time:

(a) Gel Time, Seconds, 0-15 seconds @ 25C, 100 grams per ASTM D3056 (Standard Test Method for Gel Time of Solventless Varnishes)

Cured Properties:

(a) Hardness, Shore A, 95-100 per ASTM D2240 (Standard Test Method for Rubber Property—Durometer Hardness

(b) Elongation, 379-473% per ASTM D638 (Standard Test Method for Tensile Properties of Plastics) or ASTM D412 (Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension)

(c) Tensile Strength, 2616-3216 psi per ASTM D638 or ASTM D412 (d) Peel Strength, 30.8-46.8 PLI (AL to AL) per ASTM D1876 (Standard Test Method for Peel Resistance of Adhesives (T-Peel Test))

Cementitious grout will be a premixed, non-metallic, high strength, non-shrink grout which meets the requirements of ASTM C191 (Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle) and ASTM C827 (Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures) as well as Corps of Engineers CRD-C-588 (Nonshrink Grout) and CRD-C-621 (Non-shrink Grout). When mixed to a mortar or "plastic" consistency, it will have minimum 1 day and 28-day compressive strength of 6,000 and 9,000 psi, respectively.

c. Construction.

General

Materials will be stored by the Contractor at locations arranged by the Contractor, subject to the approval of the Engineer. The Contractor will not store materials or equipment, including metal castings and steel plates, on any lawn area. City of Ann Arbor castings not being reused will be stored at a clear location for pick up by the City of Ann Arbor.

Hidden, or unknown utility structures may be encountered during the work. It is the

Contractor's responsibility to inform the respective utility owner(s) of such findings. In such instances, the City may direct the Contractor to adjust the structure(s) to grade.

The pointing of structures is included in all adjustments.

For bituminous pavement, all covers will be adjusted to grade after the initial leveling, base course(s), and/or patching course has been placed, but before the placement of the wearing course. Prior to the leveling or base course(s) being placed, the structures will have their covers and castings removed and the structures covered by a steel plate. This plate will be removed, and the structure adjusted after the completion of all base and leveling courses.

After the removal of the casting, the structure's opening will be covered by a steel plate. The plate will be properly placed in order to avoid any slippage due to traffic or construction machinery movements. The opening will be covered to prevent construction debris from entering the structure. The plate will be covered with MDOT 21AA gravel to existing surface elevation or as directed by the Engineer. Steel plates will be sufficiently strong and thick enough to carry the traffic and construction equipment without any deflection. Steel plates will also be pegged as shown on the Plans and Details in order to prevent their shifting and/or moving. Steel plates are the property of the Contractor and will be removed by the Contractor upon completion of the work.

All structures are to be adjusted to a level that results in their surface being flush with the finished grade. Failure to meet these conditions will result in the readjustment of the structure and finish patching of the area as directed by the Engineer at the Contractor's expense.

The Contractor will replace frames and covers as directed by the Engineer.

All salvaged frames and covers (of any type) will be picked up by the City of Ann Arbor Public Works. The Contractor will promptly notify the Engineer when frames and covers are ready to be picked up from the project site.

Frames and covers will be set in full mortar beds and pointed on the structure interior to a smooth, brushed finish. The covers will be set flush with sidewalk, roadway pavement, or ground surfaces. The Engineer will be notified prior to the final paving to allow inspection of the final casting adjustments for all utility structures. In gravel streets, covers will be set 6 to 8 inches below finished gravel surface.

Adjust Structure Cover or Handhole

The Contractor will adjust structure or handhole covers, water valve boxes, and all other public utility underground access or control point covers will be adjusted to conform to the finished surface section and elevation, including excavation, backfill, compaction and patching.

The Engineer will be given the opportunity by the Contractor to witness all survey monuments prior to their being disturbed and/or adjusted.

This item includes the final adjustment of castings of any type (including drop inlets) to their respective finished elevations, up or down. All materials required to make the adjustmentswill be included in this item of work.

All underground structure covers will be adjusted such that their finished surface elevation is flush with the finished surface sections, grades, slopes, and elevations, as shown on the Plans, and as directed by the Engineer. The work will be verified by the use of a10-foot straight-edge placed parallel with the pavement centerline. Structures not meeting these conditions will be readjusted and finish patched, as directed by the Engineer, at the Contractor's expense.

The Contractor will coordinate with the Engineer and applicable non-City utilities for manholes and valve adjustments during this project.

All structure covers, utility covers, valve boxes or monument boxes will be backfilled with MDOT P-NC concrete from the depth of excavation necessary for adjustment, up to an elevation 2-inches below the top flange of the adjusted casting.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay Items):

Contract Item (Pay Item)	**Pay Unit**
DS_Misc. Structure Cover, Adjust	Each
DS_Handhole, Adjust	Each

Payment for **DS_Misc. Structure Cover, Adjust** and **DS_Handhole, Adjust** will be measured by each structure cover or handhole adjusted and will include all costs for labor, material and equipment necessary to raise a structure frame and cover not more than 6 inches or lower them not more than 12 inches. Adjusting covers includes sawcutting, removing and replacing pavement; furnishing and installing a structure frame; reuse of the existing cover; and furnishing, installing and compacting granular backfill material as necessary; and concrete. Payment for furnishing a structure cover will be paid for as Structure Cover.

Furnishing and placing concrete as backfill for these items will not be paid separately, but will be included in the bid prices for these items of work.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
INFILTRATION TRENCH

a. Description. This work consists of providing all labor, materials, and equipment required to construct an infiltration trench where shown and as detailed on the plans in accordance with City of Ann Arbor 2025 Public Services Standard Specifications and the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein, or as directed by the Engineer.

b. Materials. Geotextile separator will be non-woven and meet the requirements of section 910.03.C of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Aggregate bedding and backfill will be 6A limestone and meet the requirements of section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Granular material will be class II and meet the requirements of section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Pipe and fittings will be 12-inch perforated dual wall corrugated high-density polyethylene (HDPE) and meet the requirements of AASHTO M-294. Where pipe is installed outside of an infiltration trench, the pipe shall be wrapped with geotextile meeting City of Ann Arbor 2025 Public Services Standard Specifications.

Mortar will be type R-2 and meet the requirements of section 1005 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

c. Construction. The Contractor will perform the following sequence of construction to complete this work:

1. Excavate to the limits shown on the plans and haul away and dispose of spoils.

2. Notify the Engineer and allow the Engineer time to inspect the existing subgrade. The Engineer may direct subgrade undercutting.

3. Place geotextile separator to be smooth and taut, flush with the subgrade surfaces, and plan to completely enclose (wrap) the entirety of the trench with a lap joint accounting for pipe and backfill. Lap joints will be a minimum of 24 inches.

4. Notify the Engineer and allow the Engineer time to inspect the geotextile to ensure it is installed properly and free of perforations, frays, or other damage. Remove

and reset geotextile and/or remove and replace geotextile at the direction of the Engineer at no additional cost to the Owner.

5. Place 12 inch lifts of 6A aggregate compacted as specified below.

6. Install pipe and drainage structures. Install perforated pipe where indicated on the plans. Connect pipe to drainage structures with mortar joints. Join all pipe sections with couplers.

7. Notify the Engineer and allow the Engineer time to inspect the pipe to ensure it is properly installed, wrapped as required, free of humps or bellies, and free of damage. Remove and reset and/or remove and replace pipe and/or fittings at the direction of the Engineer at no additional cost to the Owner.

8. Backfill with 6A aggregate in 12-inch layers compacted to the satisfaction of the engineer. Finish the top layer to be consistently smooth.

9. Completely enclose the finished aggregate surface with geotextile separator and ensure a minimum 24-inch lap joint.

10. Backfill with class II granular material in 12-inch layers compacted to a minimum of 95% of the maximum density to establish the proposed subgrade elevation.

d. Compaction of 6A Aggregate. The Contractor will compact 6A aggregate layers to a minimum of 95% of the maximum density. If the aggregate cannot be accurately tested with a nuclear gauge, then the Engineer will develop a procedural specification at the time of construction utilizing a required number of passes based on the Contractor's compaction equipment and visual movement of the aggregate.

e. Measurement and Payment. The completed work, as described, will be paid for at contract unit prices for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Infiltration Trench	Foot
DS_Perforated HDPE Pipe, 12 inch	Foot

Payment for **DS_Infiltration Trench** will be measured by the linear foot for the completed work and will include all costs for labor, materials, and equipment required to complete all work described herein, including excavation, hauling, disposal, furnishing and installing geotextile, furnishing and installing perforated HDPE pipe of the size specified on the plans, and furnishing, installing, and compacting granular material and aggregate.

Payment for **DS_Perforated HDPE Pipe, 12 inch** will be measured by the linear foot for the completed work and will include all costs for labor, materials, and equipment required to complete all work described herein, including excavation, hauling, disposal, and furnishing and installing perforated HDPE pipe, geotextile wrap, and granular backfill.

Drainage structures and subgrade undercutting will be paid for separately.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
STORM PRETREATMENT STRUCTURE, _

a. Description. This work consists of providing all labor, material, and equipment required to furnish and install Hydro International First Defense pretreatment structures as detailed and shown on the plans in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, the manufacturer's specifications and written instructions, and as directed by the Engineer.

This item will govern the furnishing and installation of the First Defense® by Hydro International, complete and operable as shown and as specified herein, in accordance with the requirements of the plans and contract documents.

The treatment system shall be manufactured and/or supplied under the direction of a company(s) with at least 10 years' experience in the design, manufacture, and supply of stormwater treatment equipment. The manufacturer shall design and supply the equipment listed herein and the Contractor shall install the equipment in accordance with the manufacturer's Handling, Storage, and Installation Instructions.

The manufacturer of the pretreatment device will be one that is regularly engaged in the engineering design and production of systems deployed for the treatment of storm water runoff for at least ten years and which have a history of successful production, acceptable to the Engineer. In accordance with the Drawings, the device will be a First Defense device manufactured by:

Hydro International
94 Hutchins Drive
Portland, ME 04102
Tel: 1 207 756 6200

All components will be subject to inspection by the engineer at the place of manufacture and/or installation. All components are subject to being rejected or identified for repair if the quality of materials and manufacturing do not comply with the requirements of this specification. Components which have been identified as defective may be subject for repair where final acceptance of the component is contingent on the discretion of the Engineer.

The manufacturer shall guarantee the treatment system free from defects in materials and workmanship for a period of two years following installation. If during the warranty period defects in materials or workmanship are noted, then the manufacturer shall be promptly notified. The decision to repair or replace affected units shall be made at the discretion of the manufacturer.

Upon request, the manufacturer shall provide a “Letter of Certification” to certify that the treatment system adheres to the specifications required herein and complies with the project’s stormwater management permit.

No product substitutions will be accepted unless submitted 10 days prior to project bid date, or as directed by the Engineer of Record. Submissions for substitutions require review and approval by the Engineer of Record, for hydraulic performance, impact to project designs, equivalent treatment performance, and any required project plan and report (hydrology/hydraulic, water quality, stormwater pollution) modifications that would be required by the approving jurisdictions/agencies. Contractor to coordinate with the Engineer of Record any applicable modifications to the project estimates of cost, bonding amount determinations, plan check fees for changes to approved documents, and/or any other regulatory requirements resulting from the product substitution.

b. Materials. The Contractor will Furnish all materials required to complete the work in accordance with the plans and specifications as specified herein, and the manufacturer's specifications and instructions.

i. Treatment Device – The treatment device shall use an inlet chute and outlet chute to create a rotational flow within a cylindrical treatment chamber, with dual integrated bypass weirs. Access to the sump shall be via a central round access port, free of obstructions, located directly beneath the manhole access casting. No entry shall be required to maintain the Device and no internal parts moved or removed to access the sump (such as a tray or other device).

ii. Water Quality Flow (WQF) – The flow rate at which the Device must achieve the pollutant reduction standard required. Flows in excess of the WQF are considered bypass flow.

iii. Headloss – The treatment system shall not exceed the pressure drop (headloss) for the design flow rates specified herein as determined by ASTM C1745 / C1745M – 11.

iv. Site – The treatment system shall fit within the limits of excavation (area and depth) as shown in the project plans.

v. Storage Capacities – The storage capacities shall not be less than the volumes listed in Table 1. The treatment system shall operate as intended and perform as specified herein as pollutants accumulate. The accumulation of pollutants that settle shall not reduce the volume required in the treatment system for separation and for preventing re-suspension and washout of particulates or reduce the floatables (debris/sediment) storage volume capacity.

vi. Access – Minimum 24-inch frame and cover shall provide access to the sediment storage volumes from the surface for inspection and maintenance.

Removal of pollutants from the treatment system shall be possible without requiring confined space entry, and will not require the removal of any excess materials.

vii. Manhole and Access Covers – All manholes and castings shall conform to relevant AASHTO and ASTM standards including any local and job specific requirements that may exceed these standards. Covers will be coated per City standards.

viii. Grout – All manhole penetrations shall be sealed with non-shrink hydraulic cement.

The treatment system shall be manufactured with materials typically used in stormwater drainage systems that have a minimum life expectancy of 30 years.

i. Materials of construction shall be cross-linked polyethylene (XLPE) and/or Type 304 stainless steel. All components shall be designed to withstand normal loadings associated with fabrication, shipping, site installation, and normal operation and maintenance of the pretreatment device equipment.

ii. All piping connections and ancillary connections, grade ring, and items not listed herein shall be provided by the Contractor and included in this pay item.

iii. Any local applicable standards or project unique requirements must be read in conjunction with this specification.

Housing unit of stormwater treatment device will be constructed of pre-cast or cast-in-place concrete. Precast structures shall be manufactured with concrete that has attained a compressive strength of 4,000 psi after 28 days. The structure shall be reinforced to withstand an HS20-44 loading. Slab tops shall be suitably reinforced and provided with manhole openings and covers as required. The cast iron manhole frames and covers shall be sized as per the manufacturer’s drawings and shall be in accordance with ASTM A48, CL.35B and AASHTO M105. The masonry fixing bolts shall be Type 304 stainless steel. Precast concrete components will conform to applicable sections of ASTM C 478, ASTM C 857 and ASTM C 858 and the following:

i. Cement will be Type III Portland Cement conforming to ASTM C 150;

ii. Aggregates will conform to ASTM C 33;

iii. Reinforcing steel will be deformed billet-steel bars, welded steel wire or deformed welded steel wire conforming to ASTM A 615, A 185, or A 497.

iv. Joints will be sealed with preformed joint sealing compound conforming to

ASTM C 990.

v. Shipping of components will not be initiated until a minimum compressive strength of 4,000 psi is attained or five calendar days after fabrication has expired, whichever occurs first.

Bedding material will be 21AA limestone which meets the requirements of section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Backfill will be class II granular material which meets the requirements of section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

c. Performance. The Device shall be sized based on treating the WQF calculated using the locally approved methods, or standard methods outlined in the applicable design guides and regulations. The Device shall meet the performance and capacities specified in Table 1.

The treatment system performance shall be tested using New Jersey Department of Environmental Protection Laboratory Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device, January 25, 2013, and be verified by New Jersey Corporation for Advanced Technology (NJCAT) and listed on the NJCAT website as Laboratory Verified.

Any device claiming NJCAT Verification and/or NJDEP Certification must be installed in the tested configuration.

Performance of the treatment system shall be based on treating the Water Quality Flow rate without re-suspension and washout of captured pollutants (scour).

Full-scale independent laboratory scour testing shall demonstrate effluent control of less than or equal to 20 mg/L for all flows up to 200% of Manufacturer’s Treatment Flow Rate (MTFR).

Substitutions require preapproval authorization by the Engineer of Record. Contractors proposing substitutions must submitted to the Engineer of Record prior to bid, documentation demonstrating the proposed Device meets all aspects of this specification. Post bid substitutions are not permitted.

The Contractor is responsible for all costs associated with gaining approval for alternate Devices, including permit fees, engineering review fees, bond fees, etc.

Table 1 – Minimum Performance Requirements (for First Defense Optimum units)

Model	Manhole Diameter	WQF NJDEP Certified[1]	Sediment Storage Capacity
	(ft / m)	(cfs / L/s)	(yd^3 / m^3)
FDO-3	3 / 0.9	1.02 / 28.9	0.4 / 0.3
FDO-4	4 / 1.2	1.81 / 51.2	0.7 / 0.5
FDO-5	5 / 1.6	2.83 / 80.1	1.1 / 0.84
FDO-6	6 / 1.8	4.07 / 115.2	1.6 / 1.2
FDO-8	8 / 2.4	7.23 / 204.7	2.8 / 2.1
FDO-10	10 / 3.0	11.33 / 320.8	4.4 / 3.4

1. Flow rates applicable to the “as tested” configuration only, one inlet pipe, one outlet pipe with 180^0 inlet to outlet.

d. Construction. The contractor will exercise care in the storage and handling of the pretreatment device and components prior to and during installation. Any repair or replacement costs associated with events occurring after delivery is accepted and unloading has commenced will be borne by the contractor.

The treatment components of the treatment system shall be delivered within six weeks of date of approved technical submittal unless agreed otherwise. The components of the treatment system shall be preassembled and delivered to the site fully fabricated and ready for the final assembly and installation. Off-loading, storage, and installation shall be by the Contractor. The Contractor shall inspect and provide signed acceptance of equipment prior to unloading or notify the manufacturer of any damage to equipment to effect proper remedial action. Failure to notify the manufacturer of damage to equipment prior to unloading will void all warranties pertaining to subject equipment.

The system shall be installed in strict accordance with the site plans, and the manufacturer’s general arrangement drawings and handling, storage and installation instructions. The Contractor shall be responsible for installing the equipment and all necessary site connections.

The Manufacturer shall be notified immediately of any equipment which is damaged during unloading, storage, or installation. The damaged equipment shall be repaired or replaced at the discretion of the manufacturer and entirely at the Contractor’s expense.

The precast concrete structure shall be set on a granular or compacted sand sub-base in accordance with local requirements for standard manhole installation. In no instances shall the compacted sub-base material have a thickness of less than 12 inches. The precast concrete structure shall be set level and plumb to within 0.5%.

Non-shrink grout or hydraulic cement conforming to ASTM C 595 shall be used to provide a watertight seal in the lift holes, any drain holes, and around the concrete knock-outs for the inlet and outlet pipes.The Contractor shall, at the discretion of the owner or owner's representative, test the concrete structure for water tightness before backfilling.

The contractor will fill all voids associated with lifting provisions provided by the manufacturer. These voids will be filled with non-shrinking grout providing a finished surface consistent with adjacent surfaces. The contractor will trim all protruding lifting provisions flush with the adjacent concrete surface in a manner, which leaves no sharp points or edges.

The contractor will removal all loose material and pooling water from the structure prior to the transfer of operational responsibility to the Owner.

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

Pay Item	**Pay Unit**
DS_Storm Pretreatment Structure, First Defense, 48 In. Dia., Inlet	Each
DS_Storm Pretreatment Structure, First Defense, 48 In. Dia., Solid	Each
DS_Storm Pretreatment Structure, First Defense, 60 In. Dia., Solid	Each

Payment for **DS_Storm Pretreatment Structure, First Defense, __ In. Dia., ____** will be measured by each complete unit installed of the size and type specified and will include all costs for labor, material, and equipment required to complete the work as described herein, including excavation, hauling away and disposal of spoils, furnishing and installing structure, frame and cover as specified by the pay item, bedding and backfill, adjusting frame and cover to final elevation, and making all necessary connections.

CITY OF ANN ARBOR

SPECIAL PROVISION
FOR
STORM MANHOLE, 48 IN. DIA., WITH LEACHING BASE (0-8' DEEP)

WT:AJK 1 of 4 2/18/2025

a. Description. This work consists of providing all labor, materials, and equipment required to construct a storm manhole with a leaching base where shown and as detailed on the plans in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications and Section 403 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, as shown on the plans, and as specified herein.

b. Submittal Requirements. The Contractor will submit to the Engineer for review and approval shop drawings in accordance with Section 104.02 of the Michigan Department of Transportation 2020 Standard Specifications for Construction for all materials related to drainage structures.

For each submittal or resubmittal, the Contractor will allow at least 14 calendar days from the date of the submittal to receive the Engineer's acceptance or request for revisions. The Engineer's comments will be incorporated into the submitted plans, calculations and descriptions. The Engineer's acceptance is required before beginning the work. Resubmittals will be reviewed and returned to the General Contractor within 14 calendar days. Required submittal revisions will not be a basis of payment for additional compensation, extra work, or an extension of contract time.

c. Materials. The materials used for this work will conform to Section 403.02 of the Michigan the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as specified herein.

Storm sewer drainage structures will be constructed of precast reinforced concrete sections topped with an eccentric cone or, in situations in which it is not possible to install precast sections, concrete masonry units where approved by Engineer.

Precast reinforced concrete bases, bottom sections, manhole risers, grade adjustment rings, concentric cones, eccentric cones, and flat slab tops will conform to the requirements of ASTM C478. Joints on precast manholes used on all sanitary sewers will meet ASTM C443, rubber O-ring gasket.

All structures will be designed to accommodate HS-20 Live Load requirements as determined by a Professional Engineer licensed by the State of Michigan, regardless of where they are to be installed.

The Contractor will field verify inverts prior to fabricating precast units. No additional payment will be made to the Contractor for precast units that cannot be used due to existing inverts being different than shown on the plans, changes in vertical or horizontal alignment due to conditions found in the field, or similar unforeseen circumstances.

Concrete masonry units will conform to the requirements for concrete masonry units for catch basins and manholes, ASTM C139.

Concrete brick will conform to the requirements for concrete building brick, ASTM C55, Grade N-1.

Plastic coated manhole steps will be injection molded of copolymer, polypropylene, encapsulating a 1/2 inch grade 60 steel reinforcing bar. Plastic-coated manhole steps will meet the performance test described in ASTM C-478, Paragraph ll, and will have an impact resistance of 300 ft.-lbs. with only minor deflection and no cracking or breaking. The steps will resist pull out forces of 1,500 lbs.

Backfill will be MDOT class II granular material only and will be compacted to 95% of its maximum unit weight in maximum 10-inch lifts.

Structures will be precast reinforced concrete sections of the type specified in the details shown on the plans.

Leaching base aggregate will be 6A and meet the requirements of section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Geotextile separator will meet the requirements of section 910 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Geogrid will be triaxle type and suited for use with 6A aggregate.

d. Construction. The Contractor will construct drainage structures in accordance with Section 403.03 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as specified herein.

Excavation will be carried to the depth and width required to permit the construction of the required base, including aggregate. The excavation width will be greater than the base. The bottom of the excavation will be trimmed to a uniform horizontal bed and be completely dewatered before any aggregate or concrete is placed therein.

The Contractor will install geogrid and geotextile separator in a layer that spans the extents of the base, install 24 inches of aggregate base in a uniform layer that spans the extents of the base, and top the aggregate base with a second layer of geogrid and geotextile separator. The geogrid and geotextile layers will be flush with the subgrade and aggregate base.

Circular precast manhole sections will be constructed in accordance with the details as shown on the plans. Manhole stack units will be constructed on precast concrete bases or precast concrete bottom sections. Bases or bottom sections will be perforated to permit exfiltration into aggregate base.

Precast cone sections will be constructed in accordance with the details as shown on the plans. These units will be eccentric for all manholes, precast or block. All structures will be topped with a minimum of one, and a maximum of three, 2" tall, brick or precast adjustment courses.

Manholes, inlets, and structures will be constructed within 2-1/2 inches of plumb. Frames and covers will be set in full mortar beds and pointed on the structure interior to a smooth, brushed finish. The covers will be set flush with sidewalk, roadway pavement, or ground surfaces. The Engineer will be notified prior to the final paving to allow inspection of the final casting adjustments for all utility structures.

Sewer pipes will extend into structures a minimum of 1/2 inch and a maximum of 3 inches.

The excavation will be kept in a dry condition.

All necessary adjustments for new structures will be included in the cost of the structure.

Manhole steps, installed where required, will be spaced 16 inches.

The Contractor will backfill drainage structures only after the exterior mortar coating has cured and approved by the Engineer.

The Contractor will ensure that the completed drainage structure is clean and free of any debris from construction activities.

The Contractor will furnish and install structure covers in accordance with the details on the plans the City of Ann Arbor 2025 Public Services Standard Specifications.

The Contractor will install external seals on all manhole chimneys.

Compaction of 6A Aggregate

The Contractor will compact 6A aggregate layers to a minimum of 95% of the maximum density. If the aggregate cannot be accurately tested with a nuclear gauge, then the Engineer will develop a procedural specification at the time of construction utilizing a required number of passes based on the Contractor's compaction equipment and visual movement of the aggregate.

e. Measurement and Payment. The completed work, as described, will be paid at the contract unit price for the following contract items (pay items):

Pay Item	**Pay Unit**
DS_Storm Manhole, 48 In. Dia., with Leaching Base (0-8’ deep).....	Each

Payment for **DS_Storm Manhole, 48 In. Dia., with Leaching Base (0-8’ deep)** will be paid by each complete unit installed and will include all costs for labor, materials, and equipment required for all necessary excavation, disposing of surplus excavated materials, frame and cover, backfilling, adjusting frame and cover to finished elevation, and constructing the complete structure with sump and leaching base, regardless of depth, pipe connections, and structure cleaning.

Measurement and payment for internal and external chimney seals will be paid for separately.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
4 IN. _ ° DIP BEND

WT:MHM 1 of 1 11/3/2025

a. Description. This work will consist of providing all labor, material, and equipment required to furnish and install 4-inch ductile iron pipe bends where shown and as detailed on the plans in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein, or as directed by the Engineer.

b. Materials. Pipe fittings will meet the requirements of the City of Ann Arbor 2025 Public Services Standard Specifications, including the following:

ASTM/AWWA C110/A21.10 or C153/A21.53 with:

1. Cement mortar lining with seal coat per ANSI/AWWA C104/A21.4
2. Outisde coating per ANSI/AWWA C151/A21.51
3. Polyethylene wrap meeting the requirements of ANSI/AWWA C105/A21.5
4. Restrained push-on rubber gasket joints per ANSI/AWWA C111/A21.11 (unless otherwise required)

c. Construction. The Contractor will install pipe fittings in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications.

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

Pay Item	**Pay Unit**
DS_4 In. 45° DIP Bend	Each

Payment for **DS_4 In. 45° DIP Bend** will be measured by each unit completely installed and will include all costs for labor, material, and equipment required to complete the work, including furnishing and installing fittings, thrust blocks, joints, and polywrap.

Payment for excavation and backfill will be included in payment for other water main pay items.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
GATE VALVE IN BOX, 4 IN.

WT:MHM 1 of 1 11/3/2025

a. Description. This work will consist of providing all labor, material, and equipment require to furnish and install 4-inch gate valve in box where shown and as detailed on the plans in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein, or as directed by the Engineer.

b. Materials. Gate valves will be resilient wedge type, operate right with a 2-inch square opening nut, push-on by push-on only with restrained gaskets and meet the requirements of the City of Ann Arbor 2025 Public Services Standard Specifications, including AWWA C509 or C515.

Approved gate valves are as follow:
1. American Flow Control Series 2500 Single Resilient Wedge with push-on ends
2. Clow Model 2638 Resilient Wedge Valve, F-6112
3. EJIW FlowMaster Resilient Wedge Valve, Tyton x Tyton
4. Mueller Series A-2361-61 Resilient Wedge Valve SL x SL for Field Lok gaskets
5. US Pipe USP1-61 Resilient Wedge Valve SLxSL for Field Lok gaskets

Valves boxes will be size D, screw type 3-piece, 5-1/4-shaft and a #6 base and meet the requirements of the City of Ann Arbor 2025 Public Services Standard Specifications.

Approved valves boxes are as follow:
1. EJ 8560 Series
2. Tyler Union 6860, 32U (Heavy Duty)

c. Construction. The Contractor will install pipe fittings in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications.

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

Pay Item	**Pay Unit**
DS_Gate Valve in Box, 4 In.	Each

Payment for **DS_Gate Valve in Box, 4 In.** will be measured by each unit completely installed and will include all costs for labor, material, and equipment required to complete the work, including furnishing and installing gate valve and box with cover and adjusting the box and cover to final grade.

Payment for excavation and backfill will be included in payment for other water main pay items.

CITY OF ANN ARBOR

DETAILED SPECIFICATON

FOR

WATER MAIN INSULATION

a. Description. This work shall consist of furnishing all labor, tools, equipment, and material to insulate shallow water main pipes in accordance with 2024 Public Services Standard Specifications Article 3 and Article 10 as shown on the plans, and as specified herein.

All pipes shall be laid to depths shown on contract drawing, which shall normally be 5.5 feet of cover from finished grade to top of pipe. Where conflict with other utilities prevent 5.5 feet of cover, insulation shall be placed in locations as shown on the plans or as directed by the Engineer.

b. Materials. Insulation shall be closed-cell extruded polystyrene boards (blue boards) with minimum dimensions of 2 inches thick and 2 feet wide (4 feet wide for pipe diameters greater than 12") where water main cover is between 3 ½ to 5 feet. A minimum of two layers shall be used, 4 inches total thickness.

Insulating concrete shall consist of 1 part Portland cement and eight (8) parts of perlite or vermiculite aggregate by volume. Clean water shall be added to the mixture in sufficient quantity to permit the mix to be workable with as little water as possible.

c. Construction. Insulate water main wherever cover over water main is less than 5 feet. Prior to placement of the polystyrene boards, bedding material shall be placed to a height of 6 inches over the top of the pipe, leveled, and compacted. The insulating boards shall be placed on the cover material with the long side parallel to the centerline of the water main for a minimum width of 0.0. + 24 inches. The boards shall be placed in a staggered arrangement to eliminate continuous transverse joints. Each layer should be placed to cover the joints, of the layer immediately below.

The first lift of backfill material shall consist of 6 inches of bedding material which shall be end or side dumped onto the insulation board and spread in such a manner that construction equipment does not operate directly on the insulation. Once this layer has been compacted to the specified density, the remaining layers of backfill may be constructed utilizing conventional procedures.

Insulating concrete shall be used to insulate the water main wherever water main cover is less than 3 ½ feet. Insulating concrete shall be placed around the entire main above the bedding material to a minimum thickness of 6 inches.

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

Pay Item	**Pay Unit**
DS_Water Main Insulation	Foot

Payment for **DS_Water Main Insulation** will be measured by the linear foot for completely installed water main insulation board and/or concrete as specified and will include all costs for labor, material, and equipment required to complete the work, including furnishing and installing the insulation boards or concrete.

Payment for excavation and backfill, and all other water main components will be included in payment for other water main pay items.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
WATER SERVICE, 6 IN., DRILLED

a. Description. The work consists of providing all labor, materials, and equipment required to utilize trenchless technology to install a 6-inch HDPE SDR 11 water main service pipe in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, the University of Michigan Master Specifications, except as modified herein, or as directed by the Engineer.

b. Materials.

Pipe material will be 6-inch HDPE SDR 11.

Tracer wire will meet the requirements of the City of Ann Arbor 2025 Public Services Standard Specifications.

Fused on mechanical coupling will be in accordance with the University of Michigan Master Specifications.

Link-Seal will be Enpro Industries or approved equal in accordance with the University of Michigan Master Specifications.

End cap will be compatible with mechanical coupling.

Masonry units will be in accordance with the University of Michigan Master Specifications.

Mortar will be in accordance with the University of Michigan Master Specifications.

Paint will be in accordance with the University of Michigan Master Specifications and match the existing in kind.

Backfill will be MDOT Class II Granular Material in accordance with Section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

c. Construction.

The Contractor will install water service pipe and tracer wire utilizing directional drill methods to include a wall penetration, including Link-Seal, and install a fused on mechanical coupling at the termination of the pipe inside the building. The wall where the penetration is made will be restored to match the interior existing surface and will be restored to be flush and smooth and will be painted.

The Contractor will not make final connections inside the building unless directed by the Engineer.

Removals for the wall penetration will be sawcut and removed in a manner which leaves a clean edge in the existing wall to remain in place.

Link-Seal and fused on mechanical coupling will be installed according to the manufacturer's instructions.

The Contractor will backfill trenches, pits, and other excavations with class II granular material installed in maximum 12-inch lifts compacted to 95% of its maximum dry density as measured by the AASHTO T-180 test.

The Contractor will exhaust all means necessary to protect the existing wall, mechanical equipment, pipes, and other existing facilities. Any damage identified by the Engineer as a result of this construction will be repaired by the Contractor at no cost to the Owner.

Following testing, the Contractor will protect the interior and end of the pipe utilizing an Engineer approved means, and cap it at the coupling at the direction of the Engineer.

Coordination with University of Michigan Personnel

The Contractor will coordinate with University of Michigan personnel to identify the location of the penetration, restoration requirements, the extents of the pipe into the building, when the work is completed, and assist with final connections. The Contractor will clearly mark the location for record by the Engineer prior to commencing construction.

Claims and extensions of time shall not be approved due to delays caused in whole or in part resulting from the coordination, mobilization, and completion of work by University of Michigan personnel.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Items (Pay Items)	**Pay Unit**
DS_Water Service, 6 In., Drilled	Foot

The unit price for **DS_Water Service, 6 In., Drilled** will be paid for by linear foot of service pipe installed, and will include all costs for labor, material, and equipment required to complete the work as described herein and the following:

1. Excavation required for drilling.
2. Drilling.
3. Providing and drilling HDPE SDR 11 piping, fittings, Link-Seal, and connections.
4. Disinfecting.
5. Backfilling.
6. Miscellaneous material, equipment, or operations required to complete the work.

If the Engineer directs coring for the wall penetration, the Contractor will core the wall to

the diameter directed utilizing an Engineer approved coring machine and operation. Payment for this work will be included in the unit price for DS_Water Service, 6 In., Drilled.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PAVT MRKG, POLYMER CEMENT SURFACE

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install wet night retroreflective (WR) beads and/or elements, liquid applied pavement marking materials, and Endurablend Polymer Cement Surfacing bike lane pavement markings.

All work will be in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as specified herein.

b. Materials. Wet Night Retroreflective Beads and/or Elements. Select WR beads and/or elements from one of the Approved Manufacturers or a Department approved alternative that meets the requirements in Table 1.

Table 1

Average Initial Retroreflectivity at 30-meter geometry in mcd/lux/m²		
Test Method	Color	
	White	Yellow
Dry (ASTM E 1710)	700	500
Wet Recovery (ASTM E 2177)	250	200

Approved Manufacturers:

3M Corporation
Potter's Industries
Swarco
Flex-o-Lite

Ship the material to the job site in sturdy containers marked in accordance with subsection 920.01.A of the Standard Specifications for Construction.

Submit to the Engineer prior to the start of work:

a. The Manufacturer's recommended application rate of the beads/elements and the liquid applied pavement marking binder to be used on the project. If the Manufacturer's recommended application rate differs from the specified rate in Table 811-1 of the Standard Specifications for Construction, the Manufacturer's recommended rate supersedes the table values.

b. Certification from the manufacturer that when applied according to their application recommendation the beads and/or elements meet the requirements shown in Table 1.

Binder. Provide a liquid pavement marking product of the binder type specified in the contract documents from section 811 of the Qualified Products List or as specified by special provision, or use an alternative binder as approved by the Engineer.

The Endurablend bike lane pavement marking material must be comprised with green pigment and anti-skid abilities. The polymer cement surfacing will be manufactured by Pavement Surface Coatings of Hanover New Jersey, and no material substitutions will be allowed.

1. Pigmented Resin. Transpo Color-Safe Bike Lane Green must be used as the pigment or approved equal. The approved color pigmented resin will comply with FHWA green color guidelines for bike lanes.
2. Anti-Skid Aggregate. Anti-skid aggregates will be provided by the pavement marking supplier. Aggregate will have a minimum Hardness of 7.0 per MohsScale.

c. Construction. Place the binder and beads and polymer surface coatings in accordance with the Manufacturers' recommendations and sections 811 and 920 of the Michigan Department of Transportation 2020 Standard Specifications for Construction except as noted above.

Construction of bike lane pavement markings will be in accordance with manufacturer application and installation procedures, Michigan Department of Transportation 2020 Standard Specifications for Construction, and Engineer.

All pavement marking areas will be laid out by the contractor and then reviewed by the Engineer. Marking layout will be approved by the Engineer prior to placement of material.

Surface preparation will include cleaning of the pavement surface using high pressure water, compressed air or sandblasting and will conform to ASTM D4263. All surface damage will be corrected by the Contractor at the Contractor's expense, as directed by the Engineer. Manufacturer recommended pavement and air temperatures must be followed.

All markings on concrete surfaces will receive a base coat application and will be included in the pay item. Marking layout, material mixing, base coat application, and pigmented coat application will comply with the manufacturer's installation procedures.

The Contractor will protect the pavement markings from damage and allow them to fully cure prior to allowing traffic to drive over markings. Any damage will be corrected by the Contractor at the Contractor's expense.

d. Measurement and Payment. The completed work, as described, will be

paid for at contract unit prices for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Pavt Mrkg, Polymer Cement Surface, Bike Lane, Green	Square Foot
DS_Pavt Mrkg, Polymer Cement Surface, Bus Lane, Red	Square Foot
DS_Pavt Mrkg, Polymer Cement Surface, Bike Thru Arrow Sym	Each
DS_Pavt Mrkg, Polymer Cement Surface, Bike, Small Sym	Each
DS_Pavt Mrkg, Polymer Cement Surface, Bus	Each
DS_Pavt Mrkg, Polymer Cement Surface, Only	Each
DS_Pavt Mrkg, Polymer Cement Surface, Sharrow Sym	Each
DS_Pavt Mrkg, Polymer Cement Surface, Merge Left Arrow	Each

Payment for **DS_Pavt Mrkg, Polymer Cement Surface, _, _** will be measured by the square foot for areas installed and will include all costs for labor, materials, and equipment costs required to perform all the work described herein.

CITY OF ANN ARBOR
DETAILED SPECIFICATION
FOR
BRICK PAVERS, SIDEWALK, REM AND SALV

a. Description This work will consist of removing and salvaging brick pavers in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein, or as directed by the Engineer.

b. Construction. The Contractor will remove and return to owner existing brick pavers, including base materials, to the specified depth required for construction of new surfaces. Upon removal, the Contractor will return the brick pavers to the City's Public Works facility at the Wheeler Center (4251 Stone School Road, Ann Arbor MI, 48108).

c. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Brick Pavers, Sidewalk, Rem and Salv	Square Foot

All saw-cutting required for removals will be included in the appropriate item of work and will not be paid for separately.

Payment for **DS_Brick Pavers, Sidewalk, Rem and Salv** will be measured by the square foot for brick pavers removed and will include all costs for labor, material, and equipment required to remove and return to owner existing brick pavers, regardless of thickness and type of material and will excavate and furnish and place compacted granular material to establish the subgrade elevations required to accommodate the proposed cross section, install utilities, or as approved by the engineer.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PARKING METER POST, INSTALL

a. Description. This work consists of providing all labor, material, and equipment required to install parking meter posts in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, the Michigan Department of Transportation 2020 Standard Specifications for Construction, as shown on the plans, as specified herein, and as directed by the Engineer.

b. Materials. Parking standards (posts) will be supplied by the City. Standards are 2-inch square steel tubes 60 to 63-inch-long.

Concrete will be MDOT grade 3500, which meets the requirements of Section 1004.

c. Construction. The City will stake the locations for new meter standards. The locations will be approximately 18 to 24 inches from the back of curb.

The Contractor will be responsible for ensuring the protection of meter standards until the concrete foundation has cured. If the standard is not plumb following curing, then the Contractor will remove and reset the standard at no additional cost to the City. The Contractor will use plastic drums, caution tape, “Wet Paint” signs, or other methods to protect the standards.

a. The Contractor will core a full-depth 8-inch diameter hole in existing concrete for parking standard locations where concrete is not called out to be removed and replaced as part of the project. After coring through existing concrete, excavate 30-inches deep, with an 8-inch diameter opening and tapering outward to 10 inches at the bottom of the excavation.

   Set the standards into the concrete filled holes with the reamed end to the top and weep hole on the lower end facing the street. The meter standard will project 37 inches above the finished sidewalk surface. Standards will be set plumbed and elevations will be set uniform with existing parking meter standards in both directions. The Contractor will confirm elevations and make adjustments as required to ensure all posts are level and plumbed.

b. The Contractor will set standards in soils following removals but before new concrete is poured where concrete is called out to be removed and replaced as part of the project. Excavate 30-inches deep, with an 8-inch diameter opening and tapering outward to 10 inches at the bottom of the excavation.

   Set the standards into the concrete filled holes with the reamed end to the top and weep hole on the lower end facing the street. The meter standard will project 37

inches above the finished sidewalk surface. Standards will be set plumbed and elevations will be set uniform with existing parking meter standards in both directions. The Contractor will confirm elevations and make adjustments as required to ensure all posts are level and plumbed.

Meter heads will be installed by the City. The Contractor will coordinate with and provide access for City personnel.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	Unit
DS_Parking Meter Post, Install	Each

Payment for **DS_Parking Meter Post, Install** will be measured by each for units completely installed in the field, and includes all costs for labor, material, and equipment required to install parking meter standards, including excavation, coring, haul away and disposal of concrete and excavation spoils, furnishing and placing concrete, and protection measures as shown on the plans and as specified herein.

CITY OF ANN ARBOR

DETAILED SPECIFICAITON
FOR
QWICK KURB SIGN

WT:AJK 1 of 1 1/22/2026

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install Qwick Kurb Sign in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, the Michigan Department of Transportation 2020 Standard Specifications for Construction, as shown on the plans, as specified herein, and as directed by the Engineer.

b. Materials. The Contractor will furnish materials in accordance with the following sections of the Michigan Department of Transportation Standard Specifications for Construction, except where otherwise noted below:

Anchor bolts, nuts, and washer materials will meet follow the manufacturer's recommendations or meet the requirements specified in Section 908, for materials for which there is no manufacturer's recommendation.

Qwick Kurb Sign will be manufactured by Qwick Kurb, Inc, model number L60 in yellow or white color to match pavement markings where installed in roadway. End sections shall be model number L61. The assembly shall include L65 reflective arcs, a reboundable flex boot with bolt in construction, with a 224 sq. in. reflective crosswalk marker panel MDOT sign R1-6. All pavement mounting hardware shall be stainless steel meeting the dimensional and strength capacity of the manufacturer's recommendation.

c. Construction. The Contractor will furnish and install Qwick Kurb Sign, supports, and hardware inaccordance with Section 810 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	Unit
DS_Qwick Kurb Sign	Each

Payment for **DS_Qwick Kurb Sign** and associated hardware will be measured by each for units completely installed in the field, and will include all costs for labor, material, and equipment required to complete the work as shown on the plans and as specified herein.

CITY OF ANN ARBOR

DETAILED SPECIFICAITON
FOR
REFLECTIVE PANEL FOR PERMANENT SIGN SUPPORT, 3 FOOT, MODIFIED

WT:AJK 1 of 1 1/22/2026

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install reflective panels for permanent sign supports in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, the Michigan Department of Transportation 2020 Standard Specification for Construction, as shown on the plans, as specified herein, and as directed by the Engineer.

b. Materials. The Contractor will furnish materials in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Anchor bolts, nuts, and washers will meet the requirements of Section 908.

Reflective panels will meet the requirements of Section 919.

c. Construction. The Contractor will furnish and install reflective panels and hardware in accordance with Section 810 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	Unit
DS_Reflective Panel for Permanent Sign Support, 3 foot, Modified	Each

Payment for **DS_Reflective Panel for Permanent Sign Support, 3 foot, Modified** will be measured by each for units completely installed in the field, and includes all costs for labor, material, and equipment required to furnish and install reflective panels and hardware as shown on the plans and as specified herein.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
MAINTENANCE GRAVEL

WT:AJK 1 of 1 9/21/2025

a. Description. This work consists of providing all labor, materials, and equipment required to furnish, install, and remove maintenance gravel in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein, and as directed by the Engineer.

b. **Materials.** The Contractor will furnish 21AA aggregate materials that meet the requirements of section 902 MDOT 2020 Standard Specifications for Construction.

c. **Construction.** The Contractor will install and maintain maintenance gravel in accordance with Section 306 of the MDOT 2020 Standard Specifications for Construction.

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

Contract Item (Pay Item)	**Pay Unit**
DS_Maintenance Gravel	Ton

Payment for **DS_Maintenance Gravel** will be measured by the ton for maintenance gravel installed, maintained, and removed and will include all costs for labor, materials, and equipment costs to perform the work as described herein.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PERFORATED STEEL SQUARE TUBE BREAKAWAY SYSTEM, MODIFIED

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install perforated steel square tube breakaway system in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, the Michigan Department of Transportation 2020 Standard Specifications for Construction, as specified herein, and as directed by the Engineer.

b. Materials. The Contractor will furnish materials in accordance with the following sections of the Michigan Department of Transportation Standard Specifications for Construction, except where otherwise noted below:

Anchor bolts, nuts, and washer materials will meet the requirements specified in Section 908.

All materials for Perforated Steel Square Tube Breakaway System, Modified will follow MDOT Standard Detail SIGN-207-D, and as noted below for the post, concrete base mount, and anchor. The following materials shall be Unistrut or approved equal and shall include the following:

1. Post: exterior dimensions measure 2” x 2” square x 10’, 14 gauge with 7/16” pre-punched holes, corner welded. Square tubing to allow for mounting on all four sides. Steel to conform to ASTM A1011 Grade 50, galvanizing to meet ASTM A-653. Must be able to mount signs with drive rivets to provide tamper resistance. Provide a smooth unbroken appearance for posts and anchors. Inline zinc coating to comply with AASHTO M-120 standard. Breakaway installation to meet FHWA approval standard.

2. Concrete Mount Base: interior dimensions measure 2” x 2” square x 6”, 12 Gauge sleeve welded to 6”x6” square, ¼” thick plate with four ¾” holes. Centerpoint of each hole shall be 7/8” from each side of the plate. Edge of each hole shall be ½” from each side of plate.

3. Anchor: exterior dimensions measure 2” x 2” square x 3’, 7 Gauge sleeve.

c. Construction. The Contractor will install perforated steel square tube breakaway system, base mount, and hardware in accordance with Section 810 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	Unit
DS_Perforated Steel Square Tube Breakaway System, Modified	Each

Payment for permanent **DS_Perforated Steel Square Tube Breakaway System, Modified** will be measured by each unit completely installed in the field, and will include all costs for labor, material, and equipment required to furnish and install post, concrete mount base, anchors, and hardware.

CITY OF ANN ARBOR

DETAILED SPECIFICAITON
FOR
BIKE HOOP, SURFACE MOUNTED

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install surface mounted bike hoops in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, Ann Arbor DDA detail SD-DDA-10, as shown on the plans, as specified herein, and as directed by the Engineer.

b. Materials. The Contractor will furnish materials in accordance with City of Ann Arbor 2025 Public Services Standard Specifications and as approved by the Engineer.

Bicycle hoops will have a 1-foot radius and will be 2-inch outer diameter powder-coated black galvanized steel tube. The finished elevation will measure 3 feet from the top of the finished mounting surface to the top of the outer diameter of the hoop.

Anchor bolts and washers will be 1/2-inch x 4-inch stainless steel and tamper proof.

Surface mount unit will measure 6 x 6 inches and will be 3-1/2-inch x 6-inch stainless steel or powder-coated galvanized.

c. Construction. The Contractor will install surface mounted bike hoops according to Ann Arbor DDA detail SD-DDA-10 following surface material cure and at the authorization of the Engineer only.

Bike hoops will be mounted on clean surfaces only. The Contractor will clean all surfaces to the satisfaction of the Engineer.

The Contractor will set bike hoops as a mockup layout for review and approval of the Engineer and adjust the layout at the direction of the Engineer.

Once approved by the Engineer, the Contractor will drill and install bike hoops to be plumbed, flush with mounting surface, and free of sideways movement. The Contractor will cleanup any debris generated from the installation.

The Contractor will exercise care when handling bike hoops and surface mount units to prevent deformation and surface blemishes. The Contractor will remove and replace dissatisfactory bike hoops and surface mount units as directed by the Engineer at no additional cost to the City.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	Unit
DS_Bike Hoop, Surface Mounted	Each

Payment for DS_Bike Hoop, Surface Mounted and associated hardware will be measured by each for units completely installed in the field, and will include all costs for labor, material, and equipment required to complete the work as shown on the plans and as specified herein.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
CONCRETE FIBERMESH SIDEWALK AND RAMPS

a. Description. This work consists of providing all labor, materials, and equipment required to construct fibermesh concrete sidewalk, sidewalk ramps, and raised sidewalk where indicated and detailed on the plans in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein, or as directed by the Engineer.

b. Materials. The materials will meet the requirements as specified in Section 802.02 of the Michigan Department of Transportation 2020 Standard Specifications and as specified herein.

All concrete furnished will be grade 4000 with 6AA coarse aggregate. The Contractor may elect to add GGBFS to 4000 mixtures in accordance with the requirements of the contract documents. No additional payment will be made for concrete mixtures containing GGBFS.

All concrete mixtures will contain 6AA coarse aggregates which are either natural or limestone and meet the requirements of Section 902**.**

It will be the Contractor's sole responsibility to propose specific concrete mix designs which meet the requirements of this Special Provision and the contract documents.

Fibermesh reinforced concrete will have monofilament non-metallic polypropylene fibrillated fibers added at a rate of 1.5 pounds per cubic yard. The fibers will meet the requirements of ASTM C1116/C1116M, Type III, 1/2 to 1-1/2 inches long. The concrete will be thoroughly mixed for a minimum of 5 minutes after the addition of the fibers to assure uniform distribution throughout the concrete.

Curing compound for all concrete, except Planter Curb, will be "clear" type waterborne, membrane-forming curing compound in accordance with ASTM C309, Type 1, Class B, dissipating or waterborne, membrane-forming curing and sealing compound in accordance with ASTM C1315, Type 1, Class A.

<u>Concrete Mixing:</u>

Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94 and ASTM C 1116/C1116M (for fiber reinforced concrete) and furnish batch ticket information.

When material temperature exceeds 90 deg F, material is unsuitable for installation and will be rejected.

c. Construction. Expansion joints of the thickness shown on the details will be placed as directed by the Engineer.

The concrete items being placed will not be opened to construction or vehicular traffic until such time as the concrete has reached the required flexural strength. The Contractor will cast beams in accordance with Section 603.03.B.10, and as approved by the Engineer, and obtain concrete flexural strength in accordance with the requirements of Section 104.11, Table 104-2. Beams cast for open to traffic determinations will be cured in the same manner and environment as the concrete itemswhich they represent.

d. Inspection. Notify Owner's Representative 48 hours before placing concrete. Do not place concrete before Architect has approved completed reinforcement installation.

e. Formwork Installation. Design, construct, erect, brace, and maintain formwork according to ACI 301.

Provide chamfer strips in the corners of concrete forms to produce beveled corners on walls and columns which will be exposed to view in finished construction.

f. Formwork Removal. Forms may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.

Do not remove formwork until cylinder break or beams break test indicates concrete has reached 2500 psi strength.

g. Joints. Construct joints true to line with faces perpendicular to surface plane of concrete.

Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness, as follows:

Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces. Exterior exposed concrete slab on grade pavement contraction joints will be hand tooled/grooved, unless otherwise indicated.

Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.

h. Concrete Placement. Comply with ACI 301 for placing concrete.

Do not add water to concrete during delivery, at Project site, or during placement.

Consolidate concrete with mechanical vibrating equipment according to ACI 301.

Application of Bonding Agent: Clean existing surfaces free of dirt, oil, grease and cleaning agents. Apply bonding agent in accordance with manufacturer's directions. Do not allow bonding agent to puddle in low spots. Place new concrete within time limits recommended by bonding agent manufacturer.

i. Formed Surfaces. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

j. Concrete Protecting and Curing. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 308, ACI 306.1 for cold-weather protection and with ACI 305 for hot-weather protection during curing.

Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods:

Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.

Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

k. Concrete Surface Repairs. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

l. Field Quality Assurance. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

Tests: Perform according to ACI 301. Obtain at least one composite sample for each 100 cubic yard or fraction thereof of each concrete mixture placed each day.

m. Concrete Washout. Do Not Discharge concrete/grout washout into storm drains, catch basins, the sanitary sewer system, ditches, or surface waters. Perform washing of concrete trucks and materials clean-up in designated areas or an approved off site location. Use as little water as necessary.

n. Measurement and Payment. The completed work, as described, will be paid for at the contract unit prices for the following contract items (pay items):

Contract Item (Pay Item)	Pay Unit
DS_Conc, Sidewalk, Fibermesh, 8 In.	Square Foot
DS_Conc, Sidewalk Ramp, Fibermesh, 8 In.	Square Foot
DS_Conc, Sidewalk, Fibermesh, 9 In., Raised	Square Foot

Payment for **DS_Conc, Sidewalk, Fibermesh, 8 In, Conc, DS_Sidewalk Ramp, Fibermesh, 8 In.,** and **DS_Conc, Sidewalk, Fibermesh, 9 In., Raised** will be measured by the square foot for units in place and will include all costs for labor, materials, and equipment required to complete this work, including furnishing, installing, and finishing concrete, admixtures, and curing compound.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
MOUNTABLE CURB AND GUTTER

WT:MHM 1 of 1 11/3/2025

a. Description. This work consists of providing all labor, materials, and equipment required to construct mountable curb and gutter where indicated and as detailed on the plans in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein, or as directed by the Engineer.

b. Materials. The Contractor will furnish materials in accordance with City of Ann Arbor 2025 Standard Specifications.

c. Construction Methods. The Contractor will construct mountable curb and gutter in accordance with City of Ann Arbor 2025 Public Services Standard Specifications for concrete curb and gutter construction.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit prices for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Mountable Curb and Gutter	Foot

Payment for **DS_Mountable Curb and Gutter** will be measured by the foot for complete work in place and will include all costs for labor, materials, and equipment required to complete this work described herein, including furnishing, placing, and finishing concrete and curing compound.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PERFORATED CONCRETE BASE, 6 IN.

a. Description. This work consists of providing all labor, materials, and equipment required to construct perforated concrete base for brick paver areas where shown and as detailed on the plans in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein, or as directed by the Engineer.

b. Materials. Subbase Material – granular material Class II which meets the requirements of section 902 of the Michigan Department of Transportation 2020 Standard Specifications.

Weep Hole Fill – coarse aggregate 9A which meet the requirements of the City of Ann Arbor 2025 Public Services Standard Specifications.

Concrete Base – concrete Grade 3500 as specified in section 1004 of the Michigan Department of Transportation 2020 Standard Specifications.

Geotextile – provide geotextile fabric which meets the requirements of the City of Ann Arbor 2025 Public Services Standard Specifications for brick pavers, or as directed by the engineer.

Dowels – provide 18-inch-long ½-inch epoxy coated steel dowel which meet the requirements of the City of Ann Arbor 2025 Public Services Standard Specifications.

Curing compound - provide curing compound which meets the requirements of the City of Ann Arbor 2025 Public Services Standard Specifications.

c. Construction. The Contractor will construct concrete base in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein.

After existing base materials are removed through other operations, the Contractor will allow the Engineer time to inspect the existing subbase for reuse.

The Contractor will excavate and install subbase material as directed by the Engineer at a minimum of 6-inches-thick compacted to at least 95% of the maximum unit weight.

The Contractor will pour a 6-inch thick concrete base. The Contractor will perforate the concrete base with 2-inch diameter weep holes which extend to a depth to the surface of the subbase. Install perforations 4 foot on center. Fill Weep holes to the top with 9A.

Install geotextile on top of cured concrete base before restoring brick pavers.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit prices for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Perforated Concrete Base, 6 In.	Square Foot

Payment **DS_Perforated Concrete Base, 6 In.** will be measured by the square foot for units in place and will include all costs for labor, materials, and equipment required to complete this work, including furnishing, installing, and finishing concrete (including perforations), dowels, curing compound, coarse aggregate, granular material, and geotextiles.

Payment for existing base removals and excavation will be included in payment for other pay items.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
TACTILE DIRECTIONAL INDICATOR

WT:MHM 1 of 1 11/3/2025

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install Armor-Tile Detectable Directional Tiles according to the manufacturer's instructions.

b. Materials. Tactile Direction Indicators will be Armor-Tile ADD-504 colored Federal Yellow, #33538 as found at https://armor-tile.com/assets/add-504-6x48.pdf

Embedment anchors and hardware will be as noted on the plans.

c. Construction. The Contractor will install Tactile Direction Indicators in areas indicated on the plans or at the direction of the Engineer according to the manufacturer's specifications for installation.

The installer will be well-qualified and experienced who has successfully completed tile installations similar in material, design, and extent to what is required for this work.

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

Contract Item (Pay Item)	**Pay Unit**
DS_Tactile Directional Indicator	Foot

Payment for **DS_Tactile Directional Indicator** will include all costs for labor, materials, and equipment costs to perform the work as described herein. The completed work will be measured by the foot, taken at the mid-point of the tile, following the arc of the tiles if placed in a radius.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
SCARIFICATION, FOR POLYUREA SPEC MRKG

WT:MHM 1 of 1 11/3/2025

a. Description. This work consists of providing all labor, materials, and equipment required to scarifying to prepare pavement surfaces for new pavement markings where shown and detailed on the plans in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein, or as directed by the Engineer.

b. Materials. None.

c. Construction. The Contractor will scarify pavement surfaces in accordance with section 811 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Scarification, for Polyurea Spec Mrkg	Square Foot

Payment for **DS_Scarification, for Polyurea Spec Mrkg** will be measured by the square foot for areas completely scarified for the installation of polyurea special markings based on MDOT's Pavement Marking Standard Plans and will include all costs for labor, material, and equipment required to complete the work, including preparing the pavement surface via shot blasting or grinding with non-milling teeth and cleaning of generated debris in advance of installing pavement markings.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
BIKEWAY DELINEATOR POST

WT:MHM 1 of 1 11/3/2025

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install bikeway delineator posts in accordance with the Section 810 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, as shown on the plans, and as specified herein.

b. Materials. The Contractor will furnish materials in accordance with Section 807 of the Michigan Department of Transportation Standard Specifications for Construction, except where otherwise noted below.

All materials for Bikeway Delineator Post will be manufactured by Pexco. Model will be 28-inch City Post Surface Mount Model SM, 3" OF Flexible, Bolt-Down Anchor. Color will be black with white sheeting where white edgeline is indicated on the plans or yellow post with yellow sheeting where yellow edgeline is indicated on the plans.

c. Construction. Bikeway Delineator Post will be laid out for approval by the Engineer prior to installation. Install Bikeway Delineator Post per manufacturer's recommendations. Bikeway Delineator Posts are to be installed in a line parallel to the street markings and curb, with no elements being more than 2 inches from a straight-line end to end.

Evenly space delineator posts as the dimensions noted on the plans. Bikeway Delineator Posts must be installed plumb and in line with each other and will be firmly connected to the anchor system.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Bikeway Delineator Post	Each

Payment for **DS_Bikeway Delineator Post** will be measured by each complete unit installed and will include all costs for labor, materials, and equipment required for furnishing and installing the post, base, and associated mounting hardware materials as shown on the plans and as specified herein.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
DETECTABLE WARNING SURFACE, TEMP

a. Description. This work will consist of furnishing and installing temporary detectable warning units in accordance with the Americans with Disability Act (ADA). All work will be in accordance with Section 812 of the MDOT 2020 Standard Specifications for Construction, MDOT Standard Detail R-28 Series as indicated on the plans, and as modified herein.

b. Related Documents. Americans with Disabilities Act (ADA) Title 49 CFR Transportation, Part 37.9 Standards for Accessible Transportation Facilities, Appendix A, Section 4.29.2 Detectable Warnings on Walking Surfaces

c. Submittals. Submit manufacturer's literature describing products, installation procedures and maintenance instructions. Provide temporary detectable surface applications and accessories as produced by a single manufacturer.

Samples for Verification Purposes: Submit two (2) tile samples minimum 6" x 8" of the kind proposed for use. Samples will be properly labeled and will contain the following information: Name of Project; Submitted by; Date of Submittal; Manufacture's Name; Catalog No.; and Date of Fabrication.

Material Test Reports: Submit current test reports from a qualified, independent, testing laboratory indicating that materials proposed for use are in compliance with requirements and meet the properties indicated. The required tests listed elsewhere in this Special Provision will be performed by a certified and qualified independent testing laboratory on a cast-in-place tactile warning system. All test reports submitted will be certified by the testing laboratory and will clearly state that all tests were completed within 5 years of the date of the submittal. The manufacturer will certify in writing that the materials provided to the project are manufactured with the same materials and manufacturing procedures as those used in the materials on which the test were performed.

c. Criteria. The temporary detectable warning surfaces will meet the following material properties, dimensions, and tolerances using the most current test methods:

1. Water Absorption: Not to exceed 0.35% when tested in accordance with ASTM-D570

2. Slip Resistance: 0.80 minimum combined wet/ dry static coefficient of friction on top domes and field area, when tested in accordance with ASTM C1028.

3. Compressive Strength: 18,000 psi minimum, when tested in accordance with ASTM D695.

4. Chemical Stain Resistance: No reaction to 1% hydrochloric acid, urine, chewing gum, soap solution, motor oil, bleach, calcium chloride, when tested in accordance with ASTM D543 or D1308.

5. Wear Depth: 300 minimum, when tested in accordance with ASTM C501.

6. Flame Spread: 25 maximum, when tested in accordance with ASTM E84.

7. Gardner Impact: 50 in.-lbs. minimum, when tested in accordance with Geometry "GE" of ASTM D5420.

8. Salt and Spray Performance of Tile and Adhesive System when tested to ASTM-
B117 not to show any deterioration or other defects after 100 hours of exposure

d. Materials. The following are acceptable products for Temporary Detectable Warning Surfaces. If at any time, the surface shows damage, it must be replaced at the Contractor's expense.

- RediMat by Detectable Warning Systems
- Self-Adhesive Truncated Domes Mats for Asphalt or Concrete by ADA Sign Depot

e. Construction Methods. Installer's Qualifications: Engage an experienced Installer who has successfully completed tile installations similar in material, design, and extent to that indicated for this Project.

The contractor will follow manufacturer specifications for installation.

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

Contract Item (Pay Item)	**Pay Unit**
DS_Detectable Warning Surface, Temp	Square Foot

Payment for **DS_Detectable Warning Surface, Temp** will be measured by the square foot for units installed and will include costs for all labor, materials, and equipment required to install, maintain, restore, and remove the temporary detectable warning surface and disposal of all associated materials throughout the life of the contract.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
CONCRETE PAVEMENT JOINTS

WT:MHM 1 of 1 11/3/2025

a. Description. This work consists of providing all labor, materials, and equipment required to construct concrete pavement joints where shown and as detailed on the plans in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein, or as directed by the Engineer.

b. Materials. Hot-poured joint sealant will meet the requirements of section 914.04.A of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Backer rod will meet the requirements of section 914.04.B of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Dowel bars will meet the requirements of section 914.07 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

Tie bars will be epoxy coated and meet the requirements of section 914.08 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

c. Construction. The Contractor will construct concrete pavement joints in accordance with section 602 of the Michigan Department of Transportation 2020 Standard Specifications Construction and MDOT standard plans R-39-K, R-40-I, and R-44-G.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Joint, Contraction, Cp	Foot
DS_Joint, Contraction, Crg	Foot

Payment for **DS_Joint, Contraction, _** will be measured by the foot for units completely installed and will include all costs for labor, material, and equipment required to complete the work, including sawcutting, drilling, furnishing and installing load transfer assemblies, dowels, tie bars, backer rod, and hot poured sealant.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
HANDRAIL

a. Description. This work consists of providing all labor, materials, and equipment required to install a handrail as shown on the plans or as directed by the Engineer in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein.

b. Materials. The Contractor will furnish the following materials as specified:

Handrail will be 2-inch O.D. stainless steel pipe rail meeting the requirements of ASTM A554 with type 316 plate and oil ground, uniform 180 grit texture AISI No. 4 finish. Welds will be fusion welded and will not show on the finished handrail. Spans will be maximum 48-inches on center. End sections will extend a maximum of 12 inches from the nearest anchored column. Height will be 42 inches from the finished grade.

Escutcheons will be stainless steel and the finish will match the handrail.

If anchoring with embedded sleeves and grout, grout will be epoxy non-shrink type, such as SIKA-31 Mod Gel or approved equal.

If anchoring with surface mount flanges, flanges will be 3/16-inch stainless steel.

c. Submittals. The Contractor will submit shop drawings that detail the handrail and escutcheons, including height from finished grade, mount type, fasteners, length of spans, diameter of type, and all material types for approval.

d. Materials Inspection. The Contractor will not install materials that are tarnished, scratched, scuffed, deformed, or bear any other defects identified by the Engineer. The Contractor will ensure that the Engineer has inspected and approved the material to be installed on site prior to installation. If the material is not free from defects, the Contactor will replace the materials to the satisfaction of the Engineer.

e. **Construction.** The Contractor will erect handrails to be plumb, level, and parallel to the finished grade with a uniform height measured from the finished grade, and according to the manufacturer's instructions.

Handrails will be adequately anchored to be used as permanent facilities that are safe and sound for pedestrian use.

The Contractor will protect grout mounted handrails until the grout is completely cured according to the manufacturer's instructions.

f. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Handrail	Foot

Payment for **DS_Handrail** will be measured in the field by the linear foot for handrail completely installed and will include all costs for labor, materials, and equipment required to install the handrail, including coring of pavements and protective measures.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
HMA, TEMP PAVT

WT:AJK:MHM 1 of 1 12/20/2024

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install temporary hot mix asphalt pavement where shown and detailed on the plans in accordance with the City of Ann Arbor 2025 Public Services Standard Specifications and the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein, or as directed by the Engineer.

b. Materials. All materials will meet the requirements of section 501.02 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

HMA mixtures, aggregates, and mineral filler will meet the requires of section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, except that aggregate containing crushed concrete and/or furnace slag may not be used.

Bond coat, anti-foaming agent, and asphalt binders will meet the requires of section 904 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

c. Construction.

The Contractor will construct HMA, Temp Pavt in accordance with City of Ann Arbor 2025 Public Services Standard Specifications for HMA construction and section 501 of the Michigan Department of Transportation 2020 Standard Specifications Construction.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Unit**
DS_HMA, Temp Pavt	Ton

Payment for **DS_HMA, Temp Pavt** will be measured by the ton for units completely installed and will include all costs for labor, material, and equipment required to complete the work, including providing contractor quality control services, furnishing and applying prime and bond coat, compacting the mixture, protection of existing improvements from damage during placement and compaction operations, and protecting installed pavement until it has cooled.

CITY OF ANN ARBOR

DETAILED SPECIFICAITON
FOR
HOT MIX ASPHALT (HMA) APPLICATION ESTIMATE

WT:MHM 1 of 1 11/3/2025

a. Description. This work will be done in accordance with the requirements of Division 5 of the Michigan Department of Transportation 2020 Standard Specifications for Construction, the Hot Mix Asphalt (HMA) Paving Special Provision, and as specified herein.

b. Materials. The materials will meet the requirements of the 2020 Michigan Department of Transportation Standard Specifications for Construction Sections 501, 902, and 904.

c. Construction. The Contractor will construct HMA mats at thicknesses specified in the table below in accordance with the Hot Mix Asphalt Paving (HMA) Special Provision.

Course	Pay Item	HMA Mixture	Application Rate	Estimated Thickness	Performance Grade Binder	AWI (Min)
Top	HMA, 5EML	5EML	220 lb/Syd	2.0”	PG 58-28	260
Leveling	HMA, 4EML	4EML	220 lb/Syd	2.0”	PG 58-28	N/A
Base	HMA, 3EML	3EML	330 lb/Syd	3.0”	PG 58-28	N/A
Temp. Pavt	HMA, Temp Pavt	13A/LVSP or as directed by engineer	165 lb/Syd	1.5”	PG 58-28	260
All	Hand Patching	5EML (top) 4EML (leveling) 3EML (base)	110 lb/in/Syd	As Directed	PG 58-28	260 N/A N/A

d. Measurement and Payment. The work will be measured and paid for in accordance with the City of Ann Arbor 2025 Standard Specifications.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
AGGREGATE BASE

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and place compacted aggregate base (including temporarily) in accordance with City of Ann Arbor 2025 Public Services Standard Specifications and the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein, or as directed by the Engineer.

b. Materials. Aggregate base will be limestone 21AA in accordance with Section 902 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

c. Construction. Prior to the placement of aggregate base course, the Contractor must obtain a "Permit to Place" from the Engineer. This "Permit to Place" will be issued once the grade of the underlying layer has been compacted and graded and approved by the Engineer.

The base course will be shaped to the specified crown and grade and maintained in a smooth condition. If the Contractor's equipment should cause any rutting or other damage in the base, subbase or subgrade, the equipment will be immediately restricted from the grade and the Contractor will restore the area to the satisfaction of the Engineer at the Contractor's expense.

The base course material will be placed in uniform layers to such a depth that when compacted, the material will have the grade and cross section as shown on the Plans or as determined by the Engineer. The loose measure of any layer will not be more than 9 inches nor less than 4 inches.

The aggregate base course will not be placed when there are indications that the mixture may become frozen before the specified density is obtained. At no time will the material be placed on frozen subbase or subgrade.

All materials will be handled and/or stockpiled on-site in a manner that minimizes segregation. Base course aggregate will be deposited from trucks or through a spreader in a manner approved by the Engineer that will minimize segregation of material. Should it be necessary, the Contractor may be required to wet the materials prior to and/or during placement to minimize segregation and to aid in compaction of the material.

The aggregate base will be placed and rough-graded with the use of tracked equipment. Fine grading may be performed with the use of either tracked equipment or a rubber-tired blade grader. The finished aggregate base will be constructed to the grade and cross section as shown on the Plans or determined by the Engineer. A tolerance that allows for

gradual, isolated variations of the top surface of no more than ¼ inch above or ½ inch below the specified grade will be allowed. The aggregate base will be compacted to 98% of its maximum unit weight as determined by the AASHTO T 180 test.

Manholes, valve boxes, monument boxes, inlet structures and curbs will be protected from damage. All utility structures of any type will be properly covered at all times during the construction. All inlet structures will have inlet filters installed and properly maintained. Upon completion of each days' work, any extraneous material in manholes, water valve boxes, inlets, catch basins or any other utility structure resulting from the Contractor's operations will be removed and properly disposed of. The Contractor may be charged for cleaning and damages resulting from accumulated construction debris in the utility structures.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Aggregate Base, _ In., 21AA, Modified	Square Yard
DS_Aggregate Base, 17 In., 21AA, Modified (Temporary)	Square Yard

Payment for **DS_Aggregate Base, _ In., 21AA, Modified** and **DS_Aggregate Base, 17 In., 21AA, Modified (Temporary)** will be measured by the square yard for areas installed and will include all costs labor, material and equipment required to furnish, place, and compact the aggregate base course or surface course material to the thickness designated on the plans.

Removal of DS_Aggregate Base, 17 In., 21AA, Modified (Temporary) will be included and paid for as part of DS_Machine Grading, Modified.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
CONDUIT, SCHEDULE _ PVC, _ IN.

a. Description. This work consists of providing all labor, materials, and equipment required to install polyvinyl chloride (pvc) piping for streetlights owned by the University of Michigan in accordance with City of Ann Arbor 2025 Public Services Standard Specifications and the University of Michigan Master Specifications, except as modified herein, and as directed by the engineer.

b. Materials. Conduit will be Schedule 40 or 80 PVC where specified on the plans with matching fittings. Fittings will be the same type and from the same manufacturer as the conduit. Conduit will be UL labeled for 90 degrees C cables. Cantex, Carlon, or National Pipe & Plastic.

c. Construction. Build straight conduit runs. If the contract requires sweeps, use the largest radius that will fit the work space available for each sweep. No sweep will be less than 20 feet. Provide conduit fittings and use methods of joining conduits, including conduit cement, in accordance with current NEC methods. If the NEC does not clearly describe the method, install the conduits in accordance with the manufacturer's recommendation. Obtain the Engineer’s approval of installation methods before beginning work. Attach end bells on the ends of conduits entering handholes to prevent damage to the cable. Install continuous coilable conduit between handholes.

Verify that new conduit inserted into existing manholes or handholes does not interfere with racking, training of cables, or both. Do not disturb existing cables.

Bend conduit to the radii specified in the current NEC. For conduit entering foundations or cable pole envelopes, provide conduit with factory bends.

Excavate the conduit trench to provide an earth cover of at least 30 inches over the finished conduit.

Grade the trench to provide drainage to handholes. Stake conduit grades at no greater than 50-foot intervals or as directed by the Engineer. Create a grade that slopes at least 4 inches over 100 feet to the lowest manhole or handhole or from the middle of the conduit run toward both holes.

Backfill. Tamp the bottom of the trench to produce a smooth, flat, or gently sloping surface before placing the conduit. Backfill trenches outside the roadbed with excavated material, suitable for backfill, as determined by the Engineer. If excavated material is unsuitable, backfill the trenches with Class II granular material in accordance with section 204. Backfill trenches within the limits of the roadbed with Class II granular material in accordance with section 204 of the 2020 MDOT Standard Specifications for Construction.

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

Contract Item (Pay Item)	Pay Unit
DS_Conduit, Schedule 80 PVC, 2 In..	Foot
DS_Conduit, Schedule 80 PVC, 3 In.	Foot

Payment for **DS_Conduit, Schedule 80 PVC, 2 In.** and **DS_Conduit, Schedule 80 PVC, 3 In.** will be measured by the foot for conduit installed and includes all costs for all labor, materials, and equipment required to install the conduit.

DETAILED SPECIFICATION
FOR
LIGHT POLE, 30' STANDARD, 2 LUMINAIRES

a. Description. This work consists of providing all labor, materials, and equipment required to furnish and install standard 30' light posts with two luminaires, where shown and detailed on the plans in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, the manufacturer's instructions, except as modified herein, and as directed by the Engineer.

This work will consist of furnishing all labor, tools, equipment, and material to install a light post, two luminaires, and extension arms.

b. Materials. The Contractor will furnish materials which meet the requirements of the City of Ann Arbor, IEEE, NEMA, ANSI Standards and as specified in the sections of the Michigan Department of Transportation 2020 Standard Specifications for Construction listed below except where otherwise noted.

Contractor will submit product data sheets for all poles, extension arms, luminaires, wiring, covers, and all associated materials.

c. Construction. All electrical work will be completed in accordance with all national, state, and local electric codes by a licensed electrician.

The Contractor will obtain all permits required by the City of Ann Arbor to complete this work.

The Contractor will de-energize and/or energize, disconnect and/or connect to any circuits under the expressed consent of the City of Ann Arbor only. The Contractor will not work on live circuits and will de-energize the luminaire via the circuit protection device nearest the luminaire along the electrical path and will ensure that only the minimum number of luminaires and circuits are de-energized to complete this work.

The Contractor will coordinate with city personnel and inspectors to identify all work which requires electrical inspection and to schedule all required inspection in advance and in a timely manner to complete this work. The Contractor will not be entitled to any compensation due to delays caused by electrical inspection and/or associated personnel.

The Contractor will size conductors and grounds to the appropriate size for the load and size conduits to the appropriate size for the cables, grounds, and conductors used. All

splices of electrical wiring will be in City of Ann Arbor approved boxes with City approved wire splicing devices.

The Contractor will use all new anchoring hardware to attach the pole to new or existing foundations.

d. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Unit**
DS_Light Pole, 30' Standard, 2 Luminaires	Each

Payment for **DS_Light Pole, 30' Standard, 2 Luminaires** will be paid for at the contract unit price each and will include all labor, material and equipment costs including but not limited to: luminaire-supporting structure with dual extension arms, including tower used for large-area illumination; any other materials required for complete installation of light pole on the existing or proposed foundation; all required testing; and placing pole assemblies into service, as shown on the plans and as detailed in the Specifications, or as directed by the Engineer. This item will also include all labor, materials, and equipment necessary to reinstall all signs, electrical cabinets, or other objects attached to the pole.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
TURF ESTABLISHMENT, PERFORMANCE

a. Description. This work consists of providing all labor, materials, and equipment required to perform turf establishment in accordance with Section 816 of Michigan Department of Transportation 2020 Standard Specifications for Construction, except as modified herein, and as directed by the Engineer.

b. Contractor's Responsibility for the Work. This modifies subsection 107.11 of the Michigan Department of Transportation 2020 Standard Specifications for Construction to require that the Contractor repair turf establishment work damaged by storm events up to 3 inches of rain in a 24-hour period as documented by local meteorological data submitted to the Engineer for review and approval.

c. Materials. The materials will meet the requirements specified in the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as specified herein.

Topsoil will be furnished from an approved source or salvaged from the site as approved by the Engineer and blended with compost that will support vigorous growth. Topsoil will be humus bearing and screened to be free of stones and undesirable materials.

Seed mixtures will be composed of four or more species of perennial grass that are legally saleable in Michigan, suited to the site use and conditions, salt tolerant, does not contain more than 10 percent inert minerals, comes from an MDOT certified source, and guaranteed to be hardy for southeast Michigan.

Recommended species of perennial grasses include Kentucky Bluegrass, Perennial Ryegrass, Hard Fescue, Creeping Red Fescue, Chewings Fescue, Turf-type Tall Fescue, Buffalo grass, and Alkaligrass-Fults Puccinellia distans. Select cultivars or varieties of grasses that are disease and insect resistant and of good color. Ensure no one species in the mixture is less than 5 percent or more than 25 percent of the mixture by weight. Do not select grass species considered noxious or objectionable, such as Quack Grass, Smooth Brome, Orchard Grass, Reed Canary Grass and others.

Herbicides will comply with all federal, state, and local laws. As part of the MDA weed control application, the Contractor is required to make proper notifications and/or postings as per label and MDA requirements for all locations that will be sprayed. Notify the Engineer at least 48 hours prior to any applications being made. Furnish and apply herbicide(s) needed. It is the Contractor's responsibility to select the herbicide(s) and the rate at which it is used. Obtain the Engineer's approval of work methods and herbicide(s) selected prior to the application of the herbicide(s). Complete a spray log and submit to the Engineer each day an application is made.

Fertilizers. Furnish and apply fertilizer(s) as needed. It is the Contractor's responsibility to select the fertilizer(s) and the rate at which it is used. The use of phosphorus is strongly discouraged and is only allowed only when required by soil conditions. Obtain the Engineer's approval of work methods and fertilizer(s) prior to the application of the fertilizer(s).

Water will come from a source approved by the Engineer. Do not draw water from any waterway (i.e. river, ditch, creek, lake etc.) located on state, county or municipal right-of-way, for mixing with herbicides.

The Contractor will ensure all plant materials comply with ANSI Z60.1 (American Standard for Nursery Stock) and will ensure that plant materials are grown in USDA hardiness zones 5 and/or 6 and are sound, healthy, and free from plant diseases, pests, and eggs.

All plant materials will be subject to final approval by the Engineer. The Contractor will furnish in writing a list of the proposed sources of nursery stock. The Engineer may reject a proposed source at no additional cost to the project.

The Contractor will provide the Engineer a Michigan Department of Agriculture and Rural Development certificate of inspection to assure that the materials supplied fully comply with these Specifications.

Artificial mulch will not be approved for use.

Any plant listed on the City of Ann Arbor invasive plants list found at https://www.a2gov.org/departments/Parks-Recreation/NAP/Pages/InvasivePlants.aspx will not be approved for use.

d. Construction. Turf Establishment construction activities will be performed by the Contractor in accordance with Subsections 816.03 of the Michigan Department of Transportation 2020 Standard Specifications for construction, except as modified herein.

The Contractor is responsible for all work and all construction methods used in completing this work. Implementation of any part of the standard specifications or standard plans by the Contractor does not relieve the Contractor of responsibility for acceptability of the construction methods or for the quality of the work.
The Contractor will restore all lawn areas disturbed by construction, where indicated on the plans, or at the direction of the engineer to a condition equal to their original condition or better. Restoration will also include the replacement of any brickwork, decorative stone, or other adjacent materials.

The Contractor will select, provide, and implement proven turf establishment industry practices utilizing turf establishment materials to establish a vigorous, permanent, weed-free, mature perennial turf and will be responsible for the performance and quality of turf

growth in the areas indicated on the plans and as directed by the Engineer. Comply with all local, state, and federal laws when completing this work.

The Contractor will provide the Engineer with credentials for the contractor performing the turf establishment work which document that they either have a degree or certificate in turf management, horticulture, or a related field or that they employ at least one person assigned to the jobsite who has at least five years of experience in turf establishment and native plantings or both.

The Contractor will prepare the existing earth bed will be graded such that the placement of topsoil will meet the final Plan grades. Grading, soil preparation, and removal and disposal of excess or unsuitable materials will be considered as part of the restoration work. All rocks larger than 1-inch will be removed from the seed bed. All lumps and clods greater than 1-inch will be pulverized and raked into the seed bed before planting.

The Contractor will ensure that earth beds are prepared in advance of all work including ensuring weed control is applied 7 to 10 days before sowing seed and is performed by a commercial herbicide applicator, licensed by the State of Michigan and certified by the Michigan Department of Agriculture in the appropriate category to apply herbicides.

The Contractor will place a minimum of 4 inches of topsoil in all areas that are to be restored with seeding or sodding.

The Contractor will moisten all prepared areas before planting if soil is dry. Surface will be watered thoroughly and allowed to dry before planting. Muddy soil will not be created. Before planting, the Engineer’s acceptance of finish grading will be obtained. Planting areas will be restored if eroded or otherwise disturbed after finish grading.

Restoration must be performed upon the completion of each stage of work, to prevent erosion, and not as one single operation at the completion of the entire project.

The Contractor will water turf establishment areas as necessary to establish lush growth. The Engineer recommends that the Contractor water at a rate of 3.5 gallon per square yard at least twice per day through the months of June, July, and August and at least once per day during all other months for at least two weeks after sowing seed or until lush growth is established in all turf establishment and swale areas.

Seed will be sown at the rate of 250 lbs/acre with spreader or seeding machine. Seeds will not be broadcast or dropped when wind velocity exceeds 5 mph. Seed will be evenly distributed by sowing equal quantities in two directions at right angles to each other.

The Contractor will ensure that seed is set into soil and will not broadcast seed without a means of covering it in the soil.

Seeded areas with slopes exceeding 1:4 will be protected with erosion-control blankets installed and stapled according to manufacturer's written instructions.

The Contractor will mow the turf to maintain visual appeal and will not allow the grass to grow more than 8 inches in height at any time prior to the acceptance by the Engineer.

The Contractor will ensure that the established turf is free of weeds. Weeds must be controlled to less than 10 percent of the turf establishment area at all times prior to acceptance.

e. Maintenance and Acceptance. The Contractor will ensure the establishment of a uniform, dense, vigorous, and weed-free stand of specified grasses and will maintain all lawn areas until they have been accepted by the Engineer. Lawn maintenance will begin immediately after the grass seed or sod is in place and will continue until final acceptance.

Maintenance includes but is not limited to: deposition of additional topsoil; reseeding; watering; fertilizing; mowing, and any other work as required to correct all settlement, erosion, germination, and establishment issues until final acceptance and payment is made.

If, in the judgment of the Engineer, adequate site restoration efforts are not being expended, then the City will take the necessary steps to perform such restoration and will charge the Contractor for all the costs until restoration is completed satisfactorily.

Damage to seeded areas resulting from erosion will be repaired by the Contractor at the Contractor's expense. Scattered bare spots in seeded areas will not be allowed over 3 percent of the area, nor greater than four square inches in size.

Any portion of a seeded area that fails to show a uniform germination will be reseeded. Such reseeding will be at the Contractor's expense and will continue until a dense weed-free lawn is established in a growing and vigorous condition.

When the above requirements have been fulfilled, the Engineer will accept the lawn.

f. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Pay Item	**Pay Unit**
DS_Turf Establishment, Performance	Square Yard

Payment for **DS_Turf Establishment, Performance** will be measured by the square yard for units in place and will include all costs for labor, materials, and equipment required to furnish and install Engineer approved topsoil, approved seed mixtures, hydroseeding, watering, warranty, weed control, fertilizer and mulch, including grading of the area to receive the topsoil, preparing the earth bed, spreading and raking the topsoil to provide a uniform surface free of large clods, lumps, rocks, brush, roots, or other deleterious materials, as determined by the Engineer.

After the Contractor restores restoration areas with topsoil and seed, fifty percent of all quantities measured in place will be paid. Payment for the remaining fifty percent of all quantities measured will be paid only after the Contractor establishes lush turf growth in those areas and the Engineer has accepted the established turf.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PLANTER WALL

SG:DMS 1 of 1 1-23-26

a. Description. This work consists of furnishing all labor, equipment, materials, required to furnish and planter walls as shown on the plans. All work must be conducted in accordance with the plans and specifications, the 2020 Michigan Department of Transportation Standard Specifications for Construction, and the 2025 City of Ann Arbor Standard Specifications.

b. Materials. Planter wall materials shall meet the requirements of Article 5 (Streets) of the 2025 City of Ann Arbor Standard Specifications.

c. Construction. The Contractor shall install planter wall in accordance with Section III.I of Article 10 (Construction Specifications) of the 2025 City of Ann Arbor Standard Specifications.

All exposed portions of the planter walls (including exposed backs) shall have a medium broom finish without imperfections, marks, and holes. Broom finish to be provided parallel with length of curb.

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

Contract Item (Pay Item)	**Pay Unit**
DS_Planter Wall, 12 In	Cubic Yard
DS_Planter Wall, 24 In	Cubic Yard

Payment for **DS_Planter Wall, ____** will include all costs for labor, materials, and equipment costs to perform the work including, but not limited to: 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.

DETAILED SPECIFICATION
FOR
PLANTING

a. Description. This work consists of furnishing all labor, equipment, materials, required to furnish and install trees plant material as shown on the plans. All work must be conducted in accordance with the plans and specifications, the 2020 Michigan Department of Transportation Standard Specifications for Construction, and the 2025 City of Ann Arbor Standard Specifications.

b. Materials. Furnish and install plants as shown on the plans and approved by the City of Ann Arbor. The materials shall include plants, planting mixture, mulch, and other materials required for installation in accordance with the plans and specifications and per the manufacturer's recommendations.

1. Planting Mixture. Planting mixture for all plant beds shall be 2 parts pre-approved off-site topsoil, thoroughly blended with 1-part pre-approved compost.

Topsoil shall be a fertile, friable, sandy loam or loam surface soil without admixture of subsoil and screened to be free of stones, stumps, roots, trash, debris, and other materials deleterious to plant growth. The pH range shall be 6.5 to 8.0. Soil pH shall be tested in accordance with ASTM D4972. Organic content shall not be less than 4 percent and not greater than 20%. Test for organic material by using ASTM D2974. Clay content determined by Bouyoucous Hydrometer Test: between 5 percent and 15 percent. Base percentages on dry weight of the sample. Conduct and submit topsoil testing for imported topsoil from off-site sources. Conduct topsoil testing for a minimum of 3 samples for each off-site source. Conduct topsoil sampling and testing and submit for approval prior to proceeding with acquisition and/or delivery of topsoil. The testing laboratory shall be an independent laboratory or university, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in the types of tests to be performed. Submit all test reports for approval. Provide 1 quart sample in sealed plastic bag for approval by Engineer.

Compost shall be a mature/stabilized, humus-like material derived from the aerobic decomposition of yard clippings or other compostable materials. Compost shall have a dark brown or black color, be capable of supporting plant growth without ongoing addition of fertilizers or other soil amendments and shall not have an objectionable odor. The compost shall be free of plastic, glass, metal and other physical contaminants, as well as viable weed seeds and other plant parts capable of reproducing (except airborne weed species). Compost shall be visually inspected and approved by the Engineer for physical contaminants. The compost moisture content shall be such that no visible free water or dust is produced when handling it.

2. Plant Material. Provide plant material as specified by the 2025 City of Ann Arbor Standard Specifications and as noted on plans. Provide photographs of each tree for approval by the Engineer.

3. Mulch. Organic mulch shall be well-composted, finely shredded processed hardwood bark, free from foreign material and fragments in excess of 2 inches in any dimension. Dyed red or colored mulch will not be accepted. Provide 1 quart sample in sealed plastic bag for approval by Engineer.

4. Drainage Aggregate to be MDOT 6A drainage stone. Provide 1 quart sample in sealed plastic bag for approval by Engineer.

5. Geotextile separator will be non-woven and meet the requirements of section 910.03.C of the Michigan Department of Transportation 2020 Standard Specifications for Construction. Provide product submittal for approval by the Engineer.

6. 4” Drainage Tile shall be flexible, perforated pipe. Provide photograph and product submittal to the Engineer for approval by the Engineer.

c. Construction.

1. Preparation. Contractor shall verify the acceptability of the project site and notify the Engineer of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected or resolved. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by planting operations.

2. Utilities. Have all underground utilities located by servicing agencies. Hand-excavate in the vicinity of utilities to minimize possibility of damage.

3. Excavation. Excavate planting beds to the depth shown on the plans and replace with specified planting mixture. Remove excavated material from the site.

4. Fertilizing. Prior to or during planting, amend planting mix by incorporating fertilizer at rates specified by soil test reports.

5. Finish Grading. Grade planting areas to a smooth, uniform surface with loose, uniformly fine texture.

6. Mulching. Uniformly install mulch on all plant beds to a 2-inch depth within 48 hours of planting. Keep mulch off the crowns of shrubs and perennials, at least 3 inches from all tree trunks, and off sidewalks and roadways.

7. Restoration. When planting is completed, clear the site of all debris, stockpiles, and materials. Protect plantings and materials from damage due to construction. Treat, repair, or replace damaged landscape work as directed.

d. Landscape Maintenance and Warranty

1. Substantial Completion. Following the inspection for substantial completion, the Engineer will issue a punch list identifying all work requiring completion, replacement or correction. Following this inspection complete all punch list items within two (2) weeks of its issuance except for plant replacements. All repairs and plant replacements shall occur at no additional cost. After receiving a Notice of Substantial Completion, maintain all plantings in a vigorous, well-kept condition until Final Acceptance.

2. Final Acceptance. Approximately 2 weeks prior to the expiration of the maintenance period, the Engineer will conduct an inspection of all plantings, seeding and irrigation systems and review all previously submitted maintenance report forms to verify all completed maintenance activities. There shall be clear evidence through factual reporting by the contractor and field observations made by the Engineer that the specified maintenance has occurred. Following the inspection, the Engineer will issue a punch list identifying all work requiring completion, replacement or correction.

3. Replacements. Prior to and during the maintenance period, replace any plants that are damaged, dead, or, in the opinion of the Engineer, are unhealthy, or have lost more than 25% of their natural shape due to dead branches, excessive pruning or improper maintenance. Rejected plant materials shall be removed from the site immediately after being rejected and legally disposed off-site. Replacement plants shall be installed within 30 days following the inspection unless otherwise agreed to in writing by the Engineer. Make replacements in accordance with the original specifications, plant list, and notes. Fully restore areas damaged by replacement operations to their original and specified condition.

4. Provide all equipment, materials, labor and services to maintain the landscape beginning immediately after each plant is installed and continuing until Final Acceptance and the end of the maintenance period. Perform all work under the direct supervision of a technician trained to recognize and treat conditions affecting the established and growth of the plants.

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

Contract Item (Pay Item)	**Pay Unit**
DS_Tree, B&B	Each
DS_Shrub,#5 Cont.	Each
DS_Perennial, #2 Cont.	Each
DS_Perennial, Quart Cont.	Each
DS_Perennnial, Bulb	Each
DS_Annuals, Owner Selected.	Each
DS_Planting Mix.	CY
DS_Landscape Maintenance and Warranty.	LS

Payment for **DS_Tree, B&B, DS_Shrub, #5 Cont., DS_Perennial, #2 Cont.**, and **DS_Plant, Bulb** shall be paid for at the contract unit price of each plant installed following acceptance of the work by the Engineer. The unit price shall include plant material, submittals, material supply, installation, backfill, root barrier, staking, tree anchors, initial watering, mulch, trunk wrap, and any other necessary components specified herein or shown on the plan required to install the plants.

DS_Planting Mix shall include all labor, materials, and equipment necessary to supply, mix, and install planting mix as shown on the plans and details. The pay quantity will be determined by field measurement of the area installed in cubic yards.

DS_Landscape Maintenance and Warranty, 1 Year shall be paid for at the contracted lump sum price for all maintenance work specified herein and as requested by the Engineer. The contracted lump sum price shall include all specified maintenance functions including but not limited to maintenance schedule submittal, inspections, report forms, watering, cultivation, weed and litter control, fertilizing, pest controls, dead heading, dead plant removal and replacement, staking removal and re-mulching at the end of the maintenance period.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
IRRIGATION, REMOVE AND REPLACE

a. Description. This work consists of providing all labor, materials, and equipment required to remove existing irrigation systems and install proposed irrigation systems as shown on the plans or as directed by the Engineer in accordance with City of Ann Arbor 2025 Public Services Standard Specifications, except as modified herein.

b. Materials. The Contractor will furnish the following materials:

1. Pipe, Sleeving, and Fittings:
    a. Pipe sizes and type will conform to those shown on the drawings. No substitutions of smaller pipe sizes will be permitted, but substitutions of larger size may be approved. All pipe damaged or rejected because of defects will be removed from the site at the time of said rejection.
    b. Provide PVC pipe continuously and permanently marked with manufacturer's name or trademark, size schedule and type of pipe working pressure at 73 degrees F. and National Sanitation Foundation (NSF) approval.
    c. Saddle and cross fittings are not permitted. Use male adapters for plastic to metal connections. Hand-tighten male adapters plus one turn with a strap wrench.
    d. Refer to plans for PVC mainline and sleeving size and pipe type.
    e. PVC pipe fittings will be solvent weld, schedule 80 PVC.
    f. All above grade pipe will be hard copper. Fittings will be cast brass or wrought copper.

2. Quick Coupling Valves:

    a. Quick coupler valves will be as noted in the irrigation legend.
    b. Quick couplers will have one piece body and stabilizer and 36” re-rod to stabilize quick coupler and prevent movement during quick coupler activation.
    c. Furnish to the City, four (4) valve keys with hose swivels.
    d. Prior to initiating work, obtain Owner approval of all valve locations to prevent conflicts with plant material and planting bed cultivation methods.

3. Valve Boxes:

    a. Valve access boxes will be manufactured by Carson, Pentek, NDS, or Rainbird and be of locking type including locking bolt.
    b. Valve Access Boxes to be tapered enclosure of rigid plastic material comprised of fibrous components chemically inert and unaffected by moisture corrosion and temperature changes.

c. Valve box sizes will be as indicated in the irrigation details for the specific valve.
d. Provide locking lid of same material black in color.
e. Provide and install bolt on all boxes to facilitate locking the valve box lid.
f. Boxes to be of minimum size required to permit access to the valve. Side walls to extend at least 2" below the bottom of valve body; use extension as necessary.
g. Valve access boxes will have rot proof landscape filter fabric liner 3/4” washed crushed stone sump.

4. Accessories:

a. Drainage fill: 3/4" crushed stone to 6” below bottom of box.
b. Fill will be clean soil free of stones larger than 2" diameter, foreign matter, organic material and debris.
c. Provide imported fill material as required to complete the work. Obtain rights and pay all costs for imported materials.
d. Suitable excavated materials removed to accommodate the irrigation system work may be used as fill material subject to the Owner’s review and acceptance.

5. Backflow Prevention Device:

a. Backflow preventer will be FEBCO 825YA RPZ backflow preventer.
b. Provide and install the backflow prevention device as noted on plans, including the device enclosure and all accessories and piping.

6. Meter Pit:

a. Meter pit boxes will be 1730C-18 meter boxes manufactured by ej (product number 32417301).
b. Meter box covers will be 1730 meter box covers manufactured by ej (product number 32131750A01).
c. Provide and install the City supplied ¾” meter and meter pit as noted on plans, including the meter enclosure and all accessories and piping.

c. Submittals. The Contractor will provide shop drawings and submittals as follow:

Installer Qualifications: An employer of workers that includes a certified irrigation designer qualified by The Irrigation Association.

Shop Drawings and Equipment Product Information: Submit product information on all sprinklers, controllers, moisture sensors, hydrometers, enclosures, nozzles, swing joints, quick coupling valves, isolation valves, sleeving, control valves, wire conduit, PVC and polyethylene pipe, all pipe fittings, backflow preventer, copper pipe and fittings, wire, two-wire cable, decoders, surge arrestors, rain sensors, grounding rod, grounding plate, wire connectors, solvent and primer for PVC pipe, stainless steel clamps, and valve boxes to be used on the project.

Record Drawings and Instructions: Furnish record drawings showing actual location of all valves, drains, pipe, wiring and controls to scale with dimensions. In addition, submit two bound copies of an owner's manual, each containing operational sheets, maintenance manual, and parts lists covering all system components.

d. Construction. The Contractor will de-energize and remove existing sprinkler systems entirely. Removals will include all existing, pipe, wiring, heads, valves, boxes, fittings, and all appurtenances related to the sprinkler systems.

The Contractor will install sprinkler systems according to the manufacturer's instructions and as follows.

The Contractor will report to the Engineer any deviations between Drawings, Specifications and the site. Failure to do so prior to the installation of equipment and which results in the replacement or relocation of equipment will be at the Contractor's expense.

The Contractor will layout the location of each pipe and two-wire cable runs, sleeve locations, and all sprinkler heads and valves and will obtain approval from the Engineer prior to excavation.

1. Excavating and Backfilling:

    a. Excavating will be considered unclassified and will include all materials encountered, except materials that cannot be excavated by normal mechanical means. Excavate trenches of sufficient depth and width to permit proper handling and installation of pipe and fittings. Excavate to depths required to provide 2" depth of earth fill or sand bedding for piping when rock or other unsuitable bearing material is encountered.

    b. Install sleeves for irrigation piping installed beneath paving. Minimum depth of bury for sleeves beneath roadways and drives to be 24” and 24” beneath walks.

    c. Extend ends of all sleeves 12” beyond back of curbs or walk edges.

    d. Fill to match adjacent grade elevation with approved earth fill material. Place and compact fill in layers not greater than 8" depth.

    e. Provide approved fine-grained earth fill or sand to point 4" above the top of pipe, where soil conditions are rocky or otherwise objectionable.

    f. Fill to within 6” of final grade with approved excavated or borrow fill materials free of lumps or rocks larger than 2” in any dimension.

g. The top 6” of backfill will be topsoil, free of rocks, subsoil or trash. Any special soil mixture will be replaced to the original condition it was prior to irrigation installation.

h. Except as indicated, install irrigation mainline with a minimum cover of 24” based on finished grades. Install irrigation laterals with a minimum cover of 12" based on finished grades.

i. Excavate trenches and install piping and backfill during the same working day. Do not leave open trenches or partially filled trenches open overnight.

2. Copper Pipe, Meter and Backflow Preventer:

a. The Contractor is responsible for scheduling the City’s Public Works Unit to perform the required water main tap, service line and curb stop valve and box installation. The Contractor will perform all necessary excavations for these installations.

b. Following completion of the 1” tap, Type ‘K’ copper water service line and curb stop valve and box by the City Public Works Unit, the Contractor will install the 1” Type ‘K’ water lead, meter horn and backflow preventer as noted on plans, including the device enclosures and all accessories and piping. The City will install the ¾” meter.

c. All work is to be performed by a licensed plumber and will require a plumbing permit and all necessary inspections by the City of Ann Arbor Planning and Development Services Unit. All permits for this work and associated inspections and fees are the responsibility of the Contractor.

3. Plastic Underground Pipe:

a. Install all plastic pipe in accordance with manufacturer's installation instructions as ASTM D- 2274. Provide for thermal expansion and contraction.

b. Saw cut plastic pipe. Use a square-in-sawing vice, to ensure a square cut. Remove burrs and shavings at cut ends prior to installation.

c. Make PVC plastic-to-plastic joints with solvent weld joints. Use only primer and solvent recommended by the pipe manufacturer. Install plastic fittings in accordance with pipe manufacturer's instructions and ASTM D-2855. Contractor will make arrangements with pipe manufacturer for all necessary field assistance.

d. Allow joints to set at least 24 hours before pressure is applied to the system.

e. Maintain pipe interiors free of dirt and debris. Close open ends of pipe by capping, taping or other acceptable method when pipe installation is not in progress.

4. Valve Installation:

a. All quick coupler valves will be enclosed in a valve box.

b. Valve box size will be installed with 10” valve box for quick couplers. Add extensions as required to prevent soil settlement around the valve. Set box flush with finish grade and aligned with adjacent boxes and/or adjoining site-work and at right angles to walks and drives.

c. All valve boxes will have locking bolt-down cover. Include locking bolt with all valve box installations.

d. Install filter fabric inside valve box and install valve boxes on a suitable base of gravel to provide a level foundation at proper grade and to provide drainage of the access box. Support box with block or notch box to protect pipe under box.

e. Provide all quick coupler valves with pre-fabricated three elbow swing joint, schedule 80 PVC.

f. Fittings and pre-fabricated swing joint manufacturers will be Spears, Lasco, or Dura.

5. Flushing and Testing:

a. After all new quick couplers are in place and connected for a given section and all necessary division work has been completed, quick couplers will be opened and a full head of water used to flush out the system. Ensure that all dirt and debris are flushed from piping before attaching hoses, sprinklers and other devices to any quick coupler.

b. Sprinkler mains will be tested under normal water pressure for a period of 12 hours. If leaks occur, repair and repeat the test. Give Owner 24 hours’ notice prior to testing.

c. Testing of the system will be performed after completion of each section or completion of the entire installation; and any necessary repairs will be made, at the Contractor's expense, to put the system in good working order before final payment by the Owner.

d. Adjustment of the equipment will be done by the Contractor upon completion of installation to provide optimum performance. Repairs during the warranty

period are to be performed by the Contractor. All adjustments during the guarantee period will be made by the Owner.

6. Clean Up:

a. Contractor will keep the premises free from rubbish and debris at all times and will arrange his material storage so as not to interfere with the Owner's operation of the job. Contractor will remove and legally dispose of all unused material, rubbish and debris, including unsuitable excavated material from the site.

e. Measurement and Payment. The completed work, as described, will be paid for at the contract unit price for the following contract items (pay items):

Contract Item (Pay Item)	**Pay Unit**
DS_Irrigation, Remove and Replace	Lump Sum

Payment for **DS_Irrigation, Remove and Replace** will be paid by the lump sum for all systems completed removed and all systems completely installed and will include all costs for labor, material, and equipment required to remove, haul away, and dispose of excavation spoils and existing sprinkler systems and appurtenances removed and to furnish, install, and test proposed sprinkler systems, including backfill. Partial payments will not be made for partially completed work.

The water main taps, piping to the curb stop valve & box, curb stop valves & boxes, and meters associated with the Irrigation System will be provided and installed by the City of Ann Arbor.

MATERIALS TESTING CONSULTANTS

GEOTECHNICAL DATA REPORT

STATE STREET AND NORTH UNIVERSITY WATER MAIN AND STREETSCAPE PRJECT

ANN ARBOR, MICHIGAN

Prepared For:

CITY OF ANN ARBOR

Ann Arbor, Michigan

Prepared By:

MATERIALS TESTING CONSULTANTS, INC.

October 2021

MTC Project No. 211279

October 22, 2021
Project No. 211279

City of Ann Arbor – Engineering
c/o Wade Trim
21251 Northline Road
Taylor, MI 48180

Attention: Vaughn Martin, P.E.

Reference: Report of Geotechnical Investigation
State Street and North University Water Main and Streetscape Project
Ann Arbor, Michigan

Dear Mr. Martin:

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 and complete infiltration testing in the vicinity of the proposed construction. This work has been performed as described in our proposal dated July 27, 2021, and in accordance with our active City of Ann Arbor contract for 2021 Geotechnical and Environmental Services.

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

AVAILABLE INFORMATION

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

- An initial boring location map received on July 19, 2021 from Mr. Vaughn Martin, P.E. of Wade Trim.
- Telephone and email conversations with Mr. Vaughn Martin, P.E. and Ms. Carmelle Tremblay, P.E. of Wade Trim regarding the project details and scope of work.
- Email correspondence with Mr. Alex Russeau of SmithGroup regarding infiltration test depths.

The areas of investigation are shown on Figure Nos. 1 to 4. The investigation was primarily located on State Street between South University and Washington Street and on North University between State Street and Fletcher Street. We understand the project will consist of a new water main, pavement rehabilitation and streetscape improvements and is a joint venture between the City of Ann Arbor, the Downtown Development Authority and the University of Michigan.

INVESTIGATION METHODOLOGY

Conventional soil test borings and sampling and hand auger borings, along with field engineering reconnaissance were used to investigate the subsurface conditions. Boring locations are shown on Figure Nos. 1 to 4. Investigation procedures, soil classification information and boring logs are provided in the Appendix.

Number of Rig Borings	9
Rig Boring Depth Range, ft.	10.0
Number of Hand Auger Borings	10
HA Boring Depth Range, ft.	3.2 to 5.5

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.

Infiltration tests were performed at Borings B-1, B-3 and B-4 at depths ranging from 7.5 to 7.8 ft below existing grade (els 866.6 to 869.0 ft). Infiltration test locations and depths were chosen in consultation with Wade Trim and SmithGroup. Infiltration tests were performed using the double ring method outlined in the Washtenaw County Water Resource Commissioner's Procedures and Design Criteria for Storm Water Management.

Laboratory – Soil

Soil samples were reviewed by one of our engineers and technically classified according to the methods of ASTM D2488 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)". A summary table of the soil conditions and the estimated resilient modulus for each soil type is contained in the Appendix.

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

INVESTIGATION RESULTS

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

Pavement

Borings B-1, B-2, B-5, B-7 to B-12, B-14 and B-16 generally encountered 6 1/2 to 18 1/2 inches of HMA and 3 to 4 inches of sand base or 8 to 13 inches of natural aggregate base, with the exception of Borings B-2, B-7 and B-10 which encountered no base material, Boring B-14 which encountered 15 inches of crushed limestone aggregate base and Boring B-11 which encountered 3 3/4 inches of HMA millings or deteriorated HMA and 11 inches of natural aggregate base. The natural aggregate base in Borings B-9 and B-16 contained HMA millings.

Several borings encountered brick and/or concrete within the pavement section, as follows:

- Boring B-3: 3 1/2" HMA, 5 1/2" Red Brick
- Boring B-4: 4 1/2" HMA, 8 1/2" Red Brick, 5" Concrete
- Boring B-5A: 4" HMA, 3 3/4" Red Brick, 4" Sand Base with Gravel, 3" Weathered Concrete, 11" Natural Aggregate Base
- Boring B-13: 4" HMA, 4 1/2" Concrete, 6" Crushed Limestone Aggregate Base
- Boring B-15: 4" HMA, 3 1/4" Red Brick, 2" Sand Base, 2 1/2" Concrete, 8" Crushed Limestone Aggregate Base

Borings B-6 to 6-B were drilled in the area of the sidewalk during replacement of the concrete. The borings were drilled prior to concrete placement, and 2 inches of sand base was encountered. After the borings were completed, MTC observed placement of 5 1/2 inches of concrete.

Subgrade Soil

Beneath the pavement section, the borings generally encountered fill, consisting of loose to medium dense brown clayey sand (SC) to depths ranging from 2.2 to 5.5 ft (els 869.7 to 877.0 ft), with the exception of Borings B-8 and B-11 where no fill was encountered. Possible fill, consisting of brown poorly graded sand (SP) was encountered in Boring B-6 at depths ranging from 3.0 to 5.5 ft (els 871.3 to 873.8 ft).

Beneath the fill, the borings generally encountered granular subgrade soil with varying amounts of silty and clayey fines to the explored depths of 3.0 to 10.0 ft (els 864.4 to 875.7 ft). The encountered native granular soil generally exhibited a loose to medium dense relative density based on recorded SPT N-values and Dynamic Cone Penetrometer (ASTM STP 399) readings. Borings B-4 and B-16 encountered very loose poorly graded sand (SP) at a depth 7.5 ft (els 869.0 to 872.4 ft).

Borings B-3, B-4, B-10 and B-12 encountered poor recovery due to possible coarse gravel or cobble at depths of up to 6.0 ft (els 869.2 to 873.1 ft). Hand auger refusal due to possible coarse gravel or cobble was noted in Borings B-5A, B-6B and B-13 at depths ranging from 3.2 to 4.5 ft (els 872.9 ft).

Groundwater was not encountered during the investigation. 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.

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 Test Results

Two concentric rings were used to perform the tests, with a 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 all tests, readings were taken at 10-minute intervals until stabilized infiltration rates were achieved. The Washtenaw County Water Resource Commissioner's Procedures and Design Criteria for Storm Water Management recommends that the Design Infiltration Rate be taken as ½ the Stabilized Infiltration Rate. The individual infiltration test reports are attached.

A summary of the stabilized infiltration rates, average rate, and design rate (safety factor of 2) for each Test Pit are listed in the following table:

Boring	Test Elevation (ft)	Soil Type at Test Elevation	Stabilized Infiltration Rate (in/hr)	Design Infiltration Rate (in/hr)
B-1	866.6	Brown Poorly Graded Sand (SP)	49 1 /2	10*
B-3	867.7	Brown Poorly Graded Sand with Clay (SP-SC)	27	10*
B-4	869.0	Brown Poorly Graded Sand (SP)	10 1/2	5 1/4

* WCWRC Procedures and Design Criteria for Stormwater Management specify a maximum design infiltration rate of 10 in/hr.

CLOSURE

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

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, we remain available to perform additional exploration or provide recommendations as appropriate.

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

Sincerely,

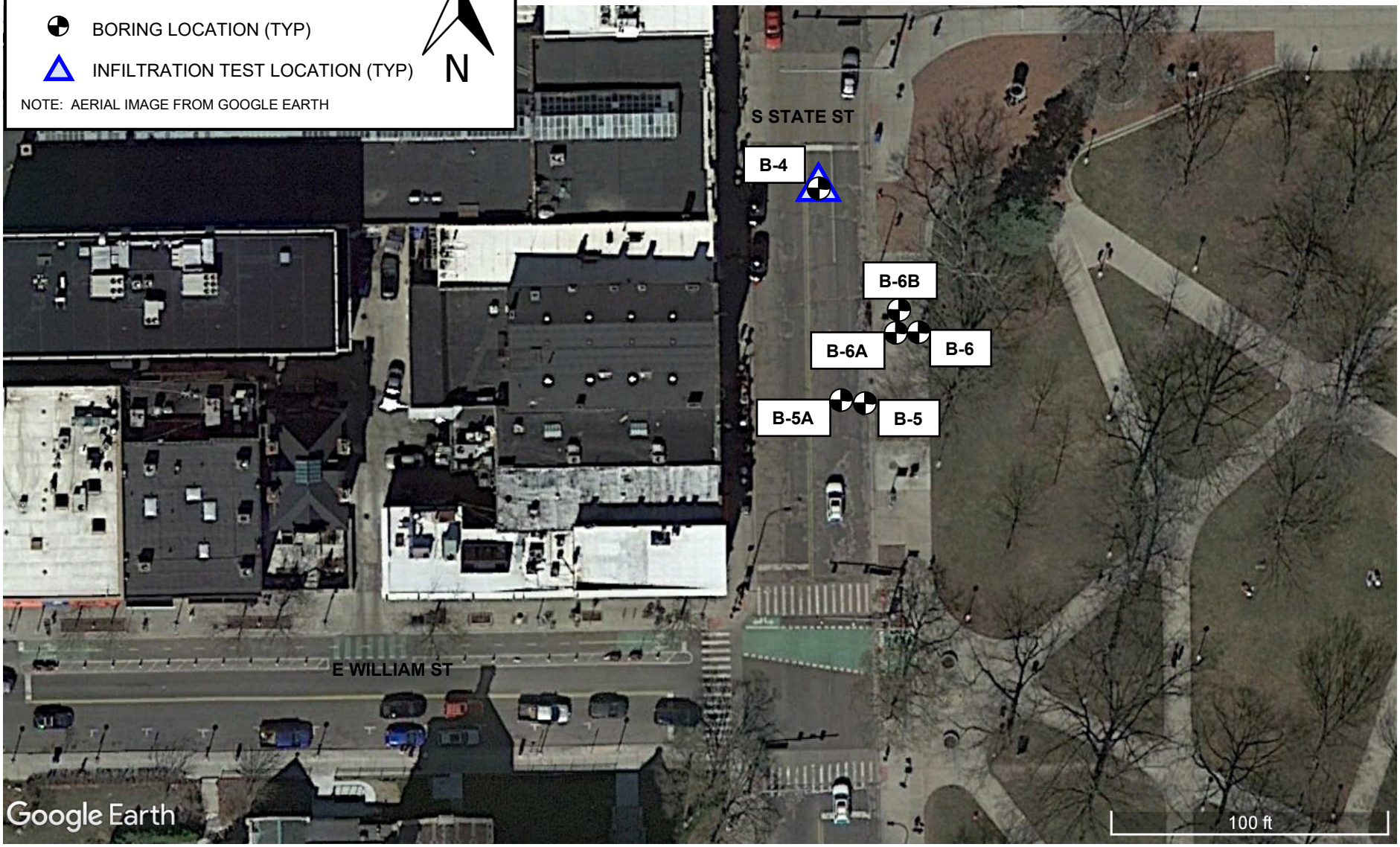
MATERIALS TESTING CONSULTANTS, INC.

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

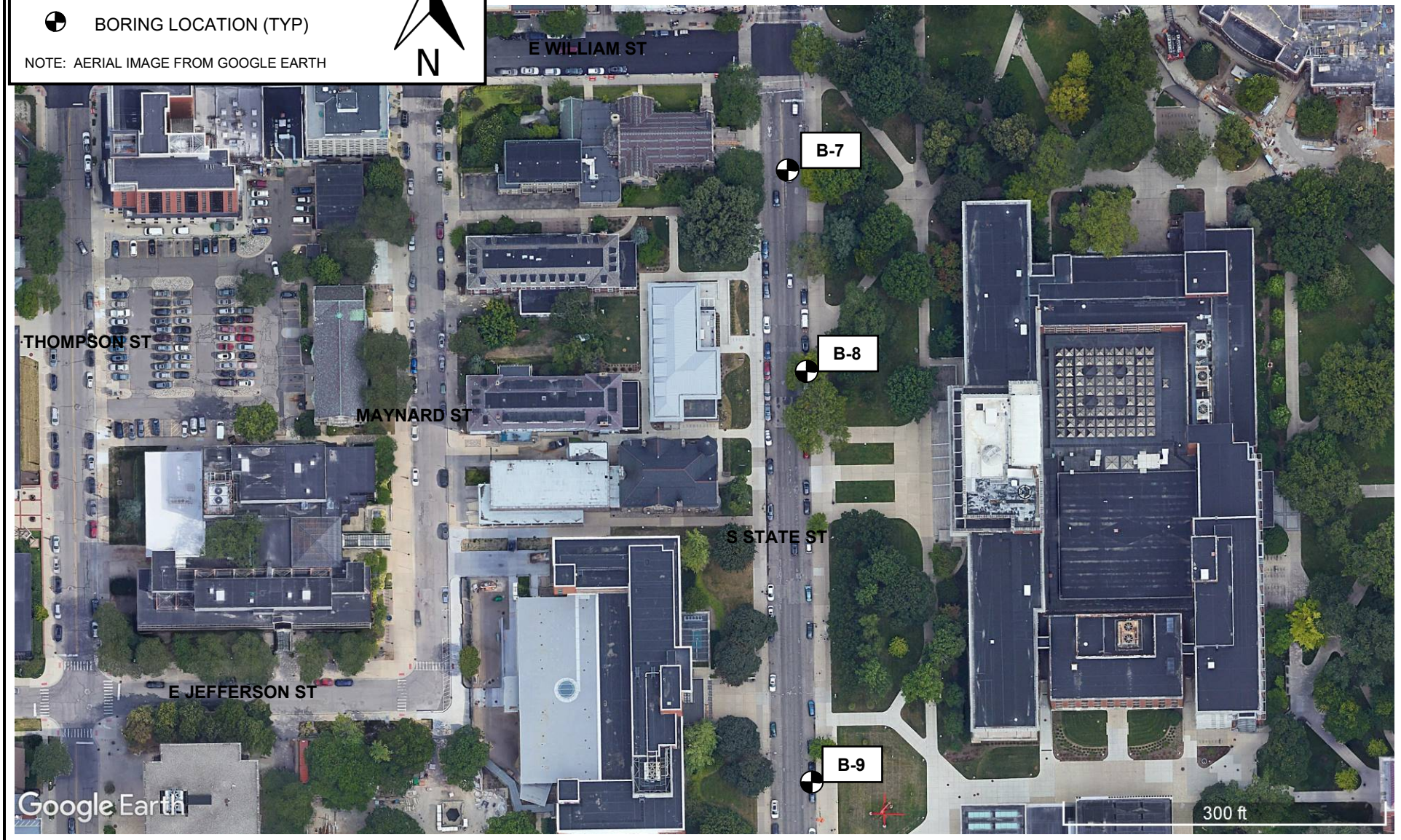
Robert J. Warren, P.E.
Project Manager

Attachments: Figure Nos. 1 to 4 - Boring Location Plan
Table 1 – Summary of Investigation Results
Appendix
- Limitations
- Test Drilling and Sampling Procedures
- Boring Log Terminology and Classification Outline
- Boring Logs
- Infiltration Test Results

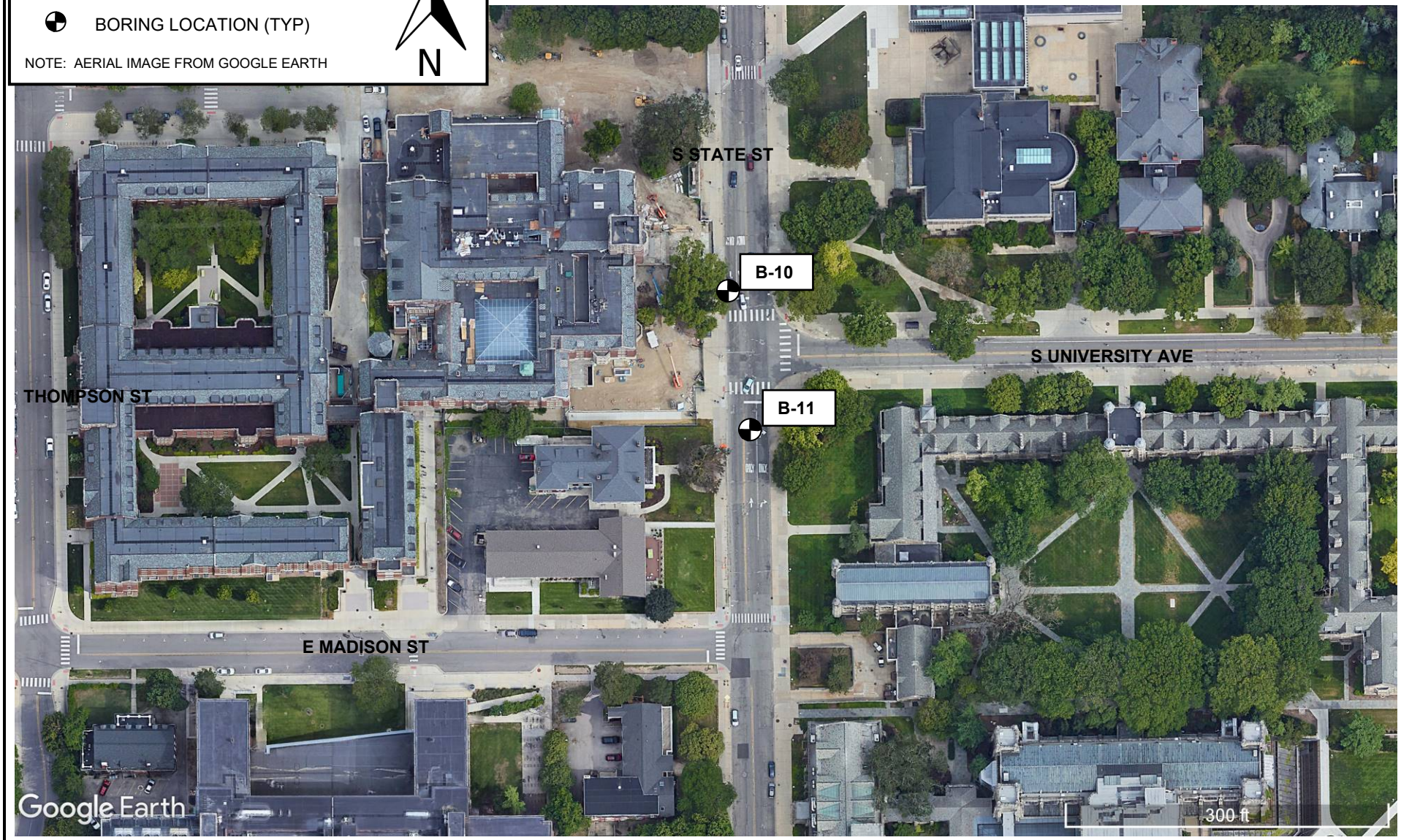
TITLE: BORING LOCATION PLAN		PROJECT: CITY OF ANN ARBOR STATE STREET AND NORTH UNIVERSITY	
SCALE: VISUAL	DATE: 10/22/2021	PROJECT NO.: 211279	MTC MATERIALS TESTING CONSULTANTS
FIG. NO.: 1	DR. BY: KLV	REV. BY: RW	



TITLE: BORING LOCATION PLAN		PROJECT: CITY OF ANN ARBOR STATE STREET AND NORTH UNIVERSITY	
SCALE: VISUAL	DATE: 10/22/2021	PROJECT NO.: 211279	MTC MATERIALS TESTING CONSULTANTS
FIG. NO.: 2	DR. BY: KLV	REV. BY: RW	



TITLE: BORING LOCATION PLAN		PROJECT: CITY OF ANN ARBOR STATE STREET AND NORTH UNIVERSITY	
SCALE: VISUAL	DATE: 10/22/2021	PROJECT NO.: 211279	MTC MATERIALS TESTING CONSULTANTS
FIG. NO.: 3	DR. BY: KLV	REV. BY: RW	



TITLE: BORING LOCATION PLAN		PROJECT: CITY OF ANN ARBOR STATE STREET AND NORTH UNIVERSITY	
SCALE: VISUAL	DATE: 10/22/2021	PROJECT NO.: 211279	MTC MATERIALS TESTING CONSULTANTS
FIG. NO.: 4	DR. BY: KLV	REV. BY: RW	

TABLE 1 - SUMMARY OF INVESTIGATION RESULTS

Street Name	Limits	Borings	Asphalt Thickness (inches)	Base Thickness and Description	Subgrade Soils	Estimated Resilient Modulus, psi
State Street	E. Washington St. to N. University Avenue	B-1 to B-3	3 1/2 to 9	B-1: 3" Sand Base B-2: None B-3: 5 1/2" Red Brick	B-1: Poorly graded sand with clay (SP-SC) to 3.0 ft, Poorly graded sand (SP) to 10.0 ft B-2: Clayey sand (SC) to 2.3 ft, Poorly graded sand (SP) to 10.0 ft B-3: Clayey sand (SC) to 5.5 ft, Poorly graded sand with clay (SP-SC) to 10.0 ft	SC: 3,700 - 5,100 SP: 5,500 – 7,500
State Street	N. University Avenue to E Williams St.	B-4 to B-6B	4 to 11, except for B-6 to B-6B where 5 1/2" concrete was observed	B-4: 8 1/2" Red Brick, 5" Concrete B-5: 13" Natural Aggregate Base B-5A: 3 3/4" Red Brick, 4" Sand with Gravel, 3" Weathered Concrete, 11" Natural Aggregate Base B-6, B-6A, B-6B: 2" Sand Base	B-4, B-5: Clayey sand (SC) to 2.7 to 5.5 ft, Poorly graded sand (SP) to 5.0 to 10.0 ft B-5A, B-6A, B-6B: Clayey sand (SC) with gravel to 3.0 to 3.5 ft B-6: Clayey sand (SC) with gravel to 3.0 ft, Poorly graded sand (SP) to 5.5 ft	SC: 3,700 - 5,100 SP: 5,500 – 7,500
State Street	E. Williams St. to E. Madison St.	B-7 to B-11	8 to 18 1/4	B-7, B-10: None B-8: 13" Natural Aggregate Base B-9: 11" Natural Aggregate Base with HMA Millings B-11: 3 3/4" HMA Millings or Deteriorated HMA, 11" Natural Aggregate Base	B-7, B-9, B-10: Clayey sand (SC) to 2.2 to 4.7 ft, Poorly graded sand (SP) to 10.0 ft B-8: Poorly graded sand with silt (SP-SM) and gravel to 5.0 ft B-11: Poorly graded sand with clay (SP-SC) and gravel to 5.0 ft	SC: 3,700 - 5,100 SP: 5,500 – 7,500 SP-SM: 5,900 – 8,100
North University Avenue	State St. to Fletcher St.	B-12 to B-16	4 to 8 1/2	B-12: 4" Sand Base B-13: 4 1/2" Concrete, 6" Crushed Limestone Aggregate Base B-14: 15" Crushed Limestone Aggregate Base B-15: 3 1/4" Brick, 2" Sand Base, 2 1/2" Concrete, 8" Crushed Limestone Aggregate Base B-16: 8" Natural Aggregate Base with HMA millings	B-12, B-14, B-15, B-16: Clayey sand (SC) to 2.9 to 4.6 ft, Poorly graded sand (SP) to 5.0 to 10.0 ft B-13: Poorly graded sand with clay (SP-SC) to 2.8 ft, Poorly graded sand (SP) to 4.5 ft	SC: 3,700 - 5,100 SP: 5,500 – 7,500

PROJECT NO.: 211279

PAGE: 1 OF 1

APPENDIX

- Limitations
- Test Drilling and Sampling Procedures
- Boring Log Terminology and Classification Outline
- Boring Logs
- Infiltration Test Results

LIMITATIONS

Soil Variations

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

Warranties

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

Boring Logs

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

Review of Design Plans and Specifications

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

TEST DRILLING AND SAMPLING PROCEDURES

Test Drilling Methods:

- [X] Hollow stem auger, ASTM D6151
- [ ] Mud rotary, ASTM D5783
- [ ] Casing advancer, ASTM D5872
- [ ] Rock coring, ASTM D2113
- [X] Core/Hand Auger

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

Sampling Methods:

- [X] 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)
- [X] CME 45 Truck
- [ ] Geoprobe Direct Push
- [ ] Geoprobe Rotary Sonic

Boreholes Backfilled With:

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

Sample Handling and Disposition:

- [X] Samples labeled, placed in jars, returned to MTC Laboratory
- [X] Discard after 60 days

BORING LOG TERMINOLOGY AND ASTM D 2488 CLASSIFICATION OUTLINE

TERMS DESCRIBING CONSISTENCY OR CONDITION

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

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

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

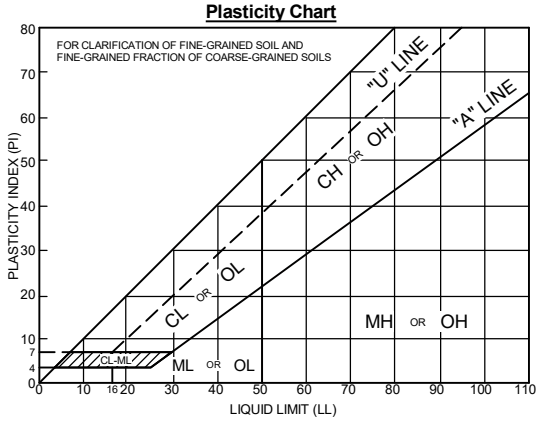
Gravel: $C_U = \frac{D_{60}}{D_{10}}$ greater than 4; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3

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

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

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

Plasticity Chart



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

GENERAL NOTES

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

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

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

GROUNDWATER OBSERVATIONS:

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

SAMPLE TYPES AND NUMBERING

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

MINOR COMPONENT QUANTIFYING TERMS

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

GRAIN SIZE

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

LOG OF BORING

Project No.: 211279
Boring No.: B-1
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: CME 45
Crew Chief: ZM Field Eng.: JS Rev. By: RW
Coordinates: N=284915.3 E=13292708.7 (MI South ift)
Elevation: 874.4 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: 08/26/2021 Date End: 08/26/2021

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	3 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Seepage	
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
873.9	0.5					9" HMA				Fill 0' to 3.0'
873.4	1.0					0.8				
872.9	1.5					3" Sand Base 1.0				
872.4	2.0	S-1	1.5	3-5-7 N=12	SP-SC	Brown poorly graded SAND with clay; mostly coarse to fine sand, little clayey fines, few coarse to fine gravel, moist, Fill with occasional clayey sand lenses				
871.9	2.5									
871.4	3.0					3.0				
870.9	3.5					Brown poorly graded SAND; mostly coarse to fine sand, few coarse to fine gravel, trace clayey fines, moist				
870.4	4.0									
869.9	4.5	S-2	1.5	7-6-7 N=13						
869.4	5.0									
868.9	5.5									
868.4	6.0									
867.9	6.5									
867.4	7.0	S-3	1.5	14-11-9 N=20	SP					
866.9	7.5									
866.4	8.0									
865.9	8.5									
865.4	9.0									
864.9	9.5	S-4	1.5	6-8-7 N=15						
864.4	10.0					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.: 211279
Boring No.: B-2
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: CME 45
Crew Chief: ZM Field Eng.: JS Rev. By: RW
Coordinates: N=284776.2 E=13292714.4 (MI South ift)
Elevation: 874.9 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 3.3 ft.

Date Begin: 08/27/2021 Date End: 08/27/2021

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	3 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Seepage	
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
874.4	0.5					11 1/2" HMA				Fill 0' to 2.3'
873.9	1.0					1.0				
873.4	1.5				SC	Brown clayey SAND; mostly coarse to fine sand, some clayey fines, moist, Fill				
872.9	2.0	S-1	1.5	3-4-5 N=9						
872.4	2.5					2.3				
871.9	3.0					Brown poorly graded SAND with gravel; mostly coarse to fine sand, little coarse to fine gravel, trace clayey fines, moist				
871.4	3.5									
870.9	4.0									
870.4	4.5	S-2	1.5	5-8-10 N=18						
869.9	5.0									
869.4	5.5									
868.9	6.0									
868.4	6.5				SP					
867.9	7.0	S-3	1.5	7-9-9 N=18						
867.4	7.5									
866.9	8.0									
866.4	8.5									
865.9	9.0									
865.4	9.5	S-4	1.5	11-9-9 N=18						
864.9	10.0					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.: 211279
Boring No.: B-3
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: CME 45
Crew Chief: ZM Field Eng.: JS Rev. By: RW
Coordinates: N=284585.5 E=13292721.8 (MI South ift)
Elevation: 875.2 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 2.0 ft.

Date Begin: 09/28/2021 Date End: 09/28/2021

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	3 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Seepage	
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
874.7	0.5					3 1/2" HMA 0.3				Fill: 0' to 5.5'
874.2	1.0					5 1/2" Red Brick 0.8				
873.7	1.5					Brown clayey SAND; mostly coarse to fine sand, some clayey fines, moist, Fill with clay lenses				
873.2	2.0									
872.7	2.5	S-1	1.5	15-10-7 N=17						
872.2	3.0									
871.7	3.5				SC					
871.2	4.0									S-2 and S-3: Poor recovery; possible coarse gravel / COBBLE
870.7	4.5	S-2	0.7	6-11-7 N=18						
870.2	5.0									
869.7	5.5					5.5				
869.2	6.0					Brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, few coarse to fine gravel, moist				
868.7	6.5									
868.2	7.0	S-3	0.3	8-9-10 N=19						
867.7	7.5									
867.2	8.0				SP-SC					
866.7	8.5									
866.2	9.0									
865.7	9.5	S-4	1.5	5-9-10 N=19						
865.2	10.0					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.: 211279
Boring No.: B-4
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: CME 45
Crew Chief: ZM Field Eng.: JS Rev. By: RW
Coordinates: N=284278.6 E=13292742.8 (MI South ift)
Elevation: 876.5 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 3.7 ft.

Date Begin: 08/25/2021 Date End: 08/25/2021

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	3 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Seepage	
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
876.0	0.5					4 1/2" HMA 0.4				Fill 0' to 5.5'
875.5	1.0					8 1/2" Red Brick 1.1				
875.0	1.5					5" Concrete 1.5				
874.5	2.0					Brown clayey SAND; mostly coarse to fine sand, some clayey fines, moist				
874.0	2.5	S-1	0.3	22-5-5 N=10						
873.5	3.0									
873.0	3.5				SC					
872.5	4.0									S-1 and S-2: Poor recovery; possible coarse gravel / COBBLE
872.0	4.5	S-2	1.0	6-4-3 N=7						
871.5	5.0									
871.0	5.5					5.5				
870.5	6.0					Brown poorly graded SAND; mostly coarse to fine sand, few coarse to fine gravel, moist				
870.0	6.5									
869.5	7.0	S-3	1.5	2-1-2 N=3						
869.0	7.5									
868.5	8.0				SP					
868.0	8.5									
867.5	9.0									
867.0	9.5	S-4	1.5	3-3-4 N=7						
866.5	10.0					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.: 211279
Boring No.: B-5
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RW
Coordinates: N=284202.2 E=13292760.9 (MI South ift)
Elevation: 876.0 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 08/01/2021 Date End: 08/01/2021

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

Depth Drilled: 5.0 ft.

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

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

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
875.5	0.5					11" HMA				Fill: 0' to 2.7'
875.0	1.0					0.9				
874.5	1.5	A-1				13" Natural Aggregate Base				
874.0	2.0					1.9				
873.5	2.5	A-2			SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, few coarse to fine gravel, moist, Fill				
873.0	3.0	A-3				2.7				
872.5	3.5					Brown poorly graded SAND; mostly coarse to fine sand, few fine gravel, trace silty fines, moist				
872.0	4.0				SP					
871.5	4.5									
871.0	5.0					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.: 211279
Boring No.: B-5A
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RW
Coordinates: N=284202.5 E=13292751.4 (MI South ift)
Elevation: 876.1 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 08/01/2021 Date End: 08/01/2021

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

Depth Drilled: 3.2 ft.

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

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

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
875.6	0.5					4" HMA (0.3)				Fill: 0' to 3.2'
875.1	1.0					3 3/4" Red Brick (0.7)				
874.6	1.5					4" Sand Base with Gravel (1.0)				
874.1	2.0	A-1				3" Weathered Concrete (1.2)				
873.6	2.5					11" Natural Aggregate Base (2.2)				
873.1	3.0	A-2			SC	Brown clayey SAND with gravel; mostly coarse to fine sand, little clayey fines, little coarse to fine gravel, moist, Fill (3.2)				
						End of Boring				Auger refusal at 3.2' due to possible coarse gravel / COBBLE

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

LOG OF BORING

Project No.: 211279
Boring No.: B-6
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JS Rev. By: RW
Coordinates: N=284227.4 E=13292777.5 (MI South ift)
Elevation: 876.8 ft Datum: NAVD 88 (GPS Observation)
Notes: Boring performed just prior to concrete installation. Concrete thickness was observed during placement
Plugging Record: Backfilled borehole with compacted cuttings.

Date Begin: 08/27/2021 Date End: 08/27/2021

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

Depth Drilled: 5.5 ft.

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

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

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
876.3	0.5					5 1/2" Concrete 0.4				Fill 0' to 3.0'
875.8	1.0					2" Sand Base 0.6				Possible Fill 3.0' to 5.5'
875.3	1.5				SC	Brown clayey SAND with gravel; mostly coarse to fine sand, little clayey fines, little coarse to fine gravel, moist, Fill				
874.8	2.0									
874.3	2.5									
873.8	3.0					3.0				
873.3	3.5				SP	Brown poorly graded SAND; mostly coarse to fine sand, few fine gravel, trace clayey fines, moist, possible Fill with occasional clayey sand lenses				
872.8	4.0									
872.3	4.5									
871.8	5.0									
871.3	5.5					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.: 211279
Boring No.: B-6A
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JS Rev. By: RW
Coordinates: N=284228.4 E=13292772.0 (MI South ift)
Elevation: 876.7 ft Datum: NAVD 88 (GPS Observation)
Notes: Boring performed just prior to concrete installation. Concrete thickness was observed during placement
Plugging Record: Backfilled borehole with compacted cuttings.

Date Begin: 08/27/2021 Date End: 08/27/2021

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

Depth Drilled: 3.0 ft.

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

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

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
876.2	0.5					5 1/2" Concrete 0.4				Fill 0' to 3.0'
875.7	1.0					2" Sand Base 0.6				
875.2	1.5				SC	Brown clayey SAND with gravel; mostly coarse to fine sand, some clayey fines, little coarse to fine gravel, moist, Fill				
874.7	2.0									
874.2	2.5									
873.7	3.0					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.: 211279
Boring No.: B-6B
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JS Rev. By: RW
Coordinates: N=284233.8 E=13292772.0 (MI South ift)
Elevation: 876.4 ft Datum: NAVD 88 (GPS Observation)
Notes: Boring performed just prior to concrete installation. Concrete thickness was observed during placement
Plugging Record: Backfilled borehole with compacted cuttings.

Date Begin: 08/27/2021 Date End: 08/27/2021

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

Depth Drilled: 3.5 ft.

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

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

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
875.9	0.5					5 1/2" Concrete 0.4				Fill 0' to 3.5'
875.4	1.0					2" Sand Base 0.6				
874.9	1.5				SC	Brown clayey SAND with gravel; mostly coarse to fine sand, some clayey fines, little coarse to fine gravel, moist, Fill				
874.4	2.0									
873.9	2.5									
873.4	3.0									
872.9	3.5					3.5				
						End of Boring				Auger refusal at 3.5' on 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.: 211279
Boring No.: B-7
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: CME 45
Crew Chief: ZM Field Eng.: JS Rev. By: RW
Coordinates: N=283992.4 E=13292751.0 (MI South ift)
Elevation: 877.1 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 4.0 ft.

Date Begin: 08/31/2021 Date End: 08/31/2021

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	3 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Seepage	
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
876.6	0.5					14" HMA				Fill: 0' to 4.7'
876.1	1.0					1.2				
875.6	1.5									
875.1	2.0				SC	Brown clayey SAND; mostly coarse to fine sand, some clayey fines, moist, Fill				
874.6	2.5	S-1	1.5	5-5-3 N=8						
874.1	3.0									
873.6	3.5									
873.1	4.0									
872.6	4.5	S-2	1.5	3-4-5 N=9						
872.1	5.0					4.7				
871.6	5.5				SP	Brown poorly graded SAND; mostly coarse to fine sand, few coarse to fine gravel, trace silty fines, moist				
871.1	6.0									
870.6	6.5									
870.1	7.0	S-3	1.5	5-6-7 N=13						
869.6	7.5									
869.1	8.0									
868.6	8.5									
868.1	9.0									
867.6	9.5	S-4	1.5	5-6-7 N=13						
867.1	10.0					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.: 211279
Boring No.: B-8
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RW
Coordinates: N=283804.0 E=13292769.5 (MI South ift)
Elevation: 877.0 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/08/2021 Date End: 09/08/2021

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

Depth Drilled: 5.0 ft.

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

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

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
876.5	0.5					18 1/4" HMA				
876.0	1.0									
875.5	1.5	A-1				1.5				
875.0	2.0					13"Natural Aggregate Base				
874.5	2.5					2.6				
874.0	3.0					Brown poorly graded SAND with silt and gravel; mostly coarse to fine sand, little coarse to fine gravel, few silty fines, moist				
873.5	3.5									
873.0	4.0	A-2			SP-SM					
872.5	4.5									
872.0	5.0					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.: 211279
Boring No.: B-9
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: CME 45
Crew Chief: ZM Field Eng.: JS Rev. By: RW
Coordinates: N=283422.5 E=13292777.2 (MI South ift)
Elevation: 876.1 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 2.7 ft.

Date Begin: 08/26/2021 Date End: 08/26/2021

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	3 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Seepage	
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
875.6	0.5					8" HMA (0.7)				Fill 0' to 2.2'
875.1	1.0					11" Natural Aggregate Base with HMA Millings (1.6)				
874.6	1.5									
874.1	2.0	S-1	1.5	15-5-4 N=9	SC	Brown clayey SAND; mostly coarse to fine sand, trace silty fines, moist, Fill (2.2)				
873.6	2.5									
873.1	3.0					Brown poorly graded SAND; mostly coarse to fine sand, trace silty fines, moist				
872.6	3.5									
872.1	4.0									
871.6	4.5	S-2	1.5	6-7-7 N=14						
871.1	5.0									
870.6	5.5									
870.1	6.0				SP					
869.6	6.5									
869.1	7.0	S-3	1.5	5-7-8 N=15		Grades with few coarse to fine gravel				
868.6	7.5									
868.1	8.0									
867.6	8.5									
867.1	9.0									
866.6	9.5	S-4	1.5	5-8-8 N=16						
866.1	10.0					(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.: 211279
Boring No.: B-10
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: CME 45
Crew Chief: ZM Field Eng.: JS Rev. By: RW
Coordinates: N=283102.6 E=13292750.3 (MI South ift)
Elevation: 874.5 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 5.0 ft.

Date Begin: 09/28/2021 Date End: 09/28/2021

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	3 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Seepage	
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
874.0	0.5					14" HMA				Fill: 0' to 3.2'
873.5	1.0					1.2				
873.0	1.5									
872.5	2.0				SC	Brown clayey SAND; mostly coarse to fine sand, some clayey fines, moist, Fill with clay lenses				
872.0	2.5	S-1	1.5	3-3-3 N=6						
871.5	3.0					3.2				
871.0	3.5									
870.5	4.0				SP	Brown poorly graded SAND; mostly coarse to fine sand, few coarse to fine gravel, trace clayey fines, moist				S-2: Poor recovery; possible coarse gravel / COBBLE
870.0	4.5	S-2	1.0	8-9-11 N=20						
869.5	5.0									
869.0	5.5									
868.5	6.0									
868.0	6.5					Grades with trace coarse to fine gravel and without clayey fines				
867.5	7.0	S-3	1.5	4-5-4 N=9						
867.0	7.5									
866.5	8.0					8.0				
866.0	8.5				SP	Brown poorly graded SAND with gravel; mostly coarse to fine sand, little coarse to fine gravel, moist				
865.5	9.0									
865.0	9.5	S-4	1.5	9-14-9 N=23						
864.5	10.0					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.: 211279
Boring No.: B-11
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RW
Coordinates: N=282927.7 E=13292772.2 (MI South ift)
Elevation: 874.6 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/08/2021 Date End: 09/08/2021

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

Depth Drilled: 5.0 ft.

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

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

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
874.1	0.5					8 7/8" HMA 0.7				
873.6	1.0					3 3/4" HMA Millings or Deteriorated HMA 1.1				
873.1	1.5	A-1				11" Natural Aggregate Bse 2.0				
872.6	2.0	A-2								
872.1	2.5				SP-SC	Brown poorly graded SAND with clay and gravel; mostly coarse to fine sand, little coarse to fine gravel, few clayey fines, moist				
871.6	3.0									
871.1	3.5	A-3								
870.6	4.0									
870.1	4.5									
869.6	5.0					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.: 211279
Boring No.: B-12
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: CME 45
Crew Chief: ZM Field Eng.: JS Rev. By: RW
Coordinates: N=284352.4 E=13292856.6 (MI South ift)
Elevation: 876.6 ft Datum: NAVD 88 (GPS Observation)
Notes:

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

Date Begin: 08/31/2021 Date End: 08/31/2021

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	3 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Seepage	
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
876.1	0.5					6 1/2" HMA (0.5)				Fill: 0' to 4.6'
875.6	1.0					4" Sand Base (0.8)				
875.1	1.5					Brown clayey SAND; mostly coarse to fine sand, some clayey fines, moist, Fill				
874.6	2.0	S-1	1.5	2-3-2 N=5						
874.1	2.5									
873.6	3.0				SC					S-2: Poor recovery; possible coarse gravel / COBBLE
873.1	3.5									
872.6	4.0									
872.1	4.5	S-2	0.4	2-3-3 N=6						
871.6	5.0					(4.6)				
871.1	5.5					Brown poorly graded SAND with gravel; mostly coarse to fine sand, little coarse to fine gravel, moist				Driller noted possible coarse gravel 4.6' to 8.0'
870.6	6.0									
870.1	6.5				SP					
869.6	7.0	S-3	1.5	7-9-8 N=17						
869.1	7.5									
868.6	8.0					(8.0)				
868.1	8.5					Brown poorly graded SAND; mostly coarse to fine sand, few fine gravel, trace silty fines, moist				
867.6	9.0				SP					
867.1	9.5	S-4	1.5	6-7-10 N=17						
866.6	10.0					(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.: 211279
Boring No.: B-13
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RW
Coordinates: N=284405.1 E=13293179.1 (MI South ift)
Elevation: 877.4 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/09/2021 Date End: 09/09/2021

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

Depth Drilled: 4.5 ft.

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

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

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
876.9	0.5					4" HMA 0.3				Fill: 0' to 2.8'
876.4	1.0	A-1				4 1/2" Concrete 0.7				
875.9	1.5	A-2				6" Crushed Limestone Aggregate Base 1.2				
875.4	2.0				SP-SC	Brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, few fine gravel, moist, Fill 2.8				
874.9	2.5									
874.4	3.0	A-3								
873.9	3.5				SP	Brown poorly graded SAND; mostly coarse to fine sand, few coarse to fine gravel, trace silty fines, moist 4.5				
873.4	4.0									
872.9	4.5					End of Boring				Auger refusal at 4.5' due to possible coarse gravel / COBBLE

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

LOG OF BORING

Project No.: 211279
Boring No.: B-14
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RW
Coordinates: N=284367.3 E=13293507.2 (MI South ift)
Elevation: 878.2 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/09/2021 Date End: 09/09/2021

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

Depth Drilled: 5.0 ft.

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

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

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
877.7	0.5					8 1/2" HMA 0.7				Fill: 0' to 2.9'
877.2	1.0	A-1				15" Crushed Limestone Aggregate Base 2.0				
876.7	1.5									
876.2	2.0									
875.7	2.5	A-2			SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, few coarse to fine gravel, moist, Fill 2.9				
875.2	3.0									
874.7	3.5	A-3				Brown poorly graded SAND; mostly coarse to fine sand, few coarse to fine gravel, trace silty fines, moist				
874.2	4.0				SP					
873.7	4.5			20						
873.2	5.0					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.: 211279
Boring No.: B-15
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: JV Rev. By: RW
Coordinates: N=284398.8 E=13293675.4 (MI South ift)
Elevation: 880.7 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 09/09/2021 Date End: 09/09/2021

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

Depth Drilled: 5.0 ft.

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

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

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
880.2	0.5					4" HMA (0.3)				Fill: 0' to 3.9'
879.7	1.0					3 1/4" Red Brick (0.6)				
879.2	1.5	A-1				2" Sand Base (0.7)				
878.7	2.0					2 1/2" Concrete (1.0)				
878.2	2.5	A-2				8" Crushed Limestone Aggregate Base (1.7)				
877.7	3.0				SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, trace coarse to fine gravel, moist, Fill				
877.2	3.5					Grades with few coarse to fine gravel at 3.0'				
876.7	4.0					(3.9)				
876.2	4.5	A-3		5	SP	Brown poorly graded SAND with gravel; mostly coarse sand, little coarse to fine gravel, trace silty fines, moist				
875.7	5.0					(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.: 211279
Boring No.: B-16
Sheet: 1 of 1

Project: City of Ann Arbor - State Street and North University
Client: City of Ann Arbor
Location: Ann Arbor, Michigan
Drill Type: CME 45
Crew Chief: ZM Field Eng.: JS Rev. By: RW
Coordinates: N=284372.9 E=13293670.0 (MI South ift)
Elevation: 879.9 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch. Cave in at 3.6 ft.

Date Begin: 08/31/2021 Date End: 08/31/2021

Tooling	Type	Dia.	Groundwater, ft.	
Casing	HSA	3 1/4"	During	None
Sampler	SPT	2"	End	NA
Core			Seepage	
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
879.4	0.5					8" HMA (0.7)				Fill: 0' to 3.0'
878.9	1.0					8" Natural Aggregate Base with HMA Millings (1.3)				
878.4	1.5	S-1	1.5	3-3-2 N=5	SC	Brown clayey SAND; mostly coarse to fine sand, some clayey fines, moist, Fill (3.0)				
877.9	2.0									
877.4	2.5									
876.9	3.0									
876.4	3.5					Brown poorly graded SAND; mostly coarse to fine sand, few fine gravel, trace silty fines, moist				
875.9	4.0	S-2	1.5	4-4-5 N=9						
875.4	4.5									
874.9	5.0									
874.4	5.5									
873.9	6.0									
873.4	6.5	S-3	1.5	3-2-2 N=4	SP	Grades with trace fine gravel				
872.9	7.0									
872.4	7.5									
871.9	8.0									
871.4	8.5									
870.9	9.0	S-4	1.5	3-4-5 N=9						
870.4	9.5									
869.9	10.0					(10.0)				
						End of Boring				

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

mtc-test.com 800.968.8378

Double Ring Infiltration Test

Client:	Project:
City of Ann Arbor	211279 City of Ann Arbor State Street and North University Various Locations

Activity Information

Weather: Sunny
Low / High Temp, °F: 67 / 87
Activity Date: 08/26/2021
Tested By: Schaap, Jonathan
Test No.: B-1

DOUBLE RING INFILTRATION TEST - SEMCOG METHOD

Pre-Test Soaking Duration (min): 60
Water Level Drop in Last 30 Minutes of Presoak (in): 30
Inner Diameter (in): 4
Outer Diamter (in): 6

Ground Surface Elev. (ft): 874.4
Test Elev. (ft): 866.6
Groundwater Elev. (ft): None

Soil Description: Brown poorly graded SAND

Test Data

Time (min:sec)	Water Drop (in)	Time Interval (min)	Infiltration Rate (inches per hour)
10	8 1/2	10	51
20	8 1/2	10	51
30	8 1/4	10	49 1/2
40	8 1/4	10	49 1/2
50	8 1/4	10	49 1/2

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: 36"

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Double Ring Infiltration Test

Client: City of Ann Arbor

Project: 211279 City of Ann Arbor State Street and North University Various Locations

Activity Information

Weather: Sunny | **Low / High Temp, °F:** 46 / 72 | **Activity Date:** 09/28/2021

Tested By: Schaap, Jonathan | **Test No.:** B-3

DOUBLE RING INFILTRATION TEST - SEMCOG METHOD

Pre-Test Soaking Duration (min): 60
Water Level Drop in Last 30 Minutes of Presoak (in): 14
Inner Diameter (in): 4
Outer Diamter (in): 6

Ground Surface Elev. (ft): 875.2
Test Elev. (ft): 867.7
Groundwater Elev. (ft): None

Soil Description: Brown poorly graded SAND with clay

Test Data

Time (min:sec)	Water Drop (in)	Time Interval (min)	Infiltration Rate (inches per hour)
10:00	4 1/2	10	27
20:00	4 1/2	10	27
30:00	4 1/2	10	27
40:00	4 1/2	10	27

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: 26"

mtc-test.com 800.968.8378

Double Ring Infiltration Test

Client: City of Ann Arbor

Project: 211279 City of Ann Arbor State Street and North University Various Locations

Activity Information

Weather: Sunny
Low / High Temp, °F: 68 / 86
Activity Date: 08/25/2021
Tested By: Schaap, Jonathan
Test No.: B-4

DOUBLE RING INFILTRATION TEST - SEMCOG METHOD

Pre-Test Soaking Duration (min): 60
Water Level Drop in Last 30 Minutes of Presoak (in): 6
Inner Diameter (in): 4
Outer Diamter (in): 6

Ground Surface Elev. (ft): 876.5
Test Elev. (ft): 869.0
Groundwater Elev. (ft): None

Soil Description: Brown poorly graded SAND

Test Data

Time (min:sec)	Water Drop (in)	Time Interval (min)	Infiltration Rate (inches per hour)
10	1 3/4	10	10 1/2
20	1 3/4	10	10 1/2
30	1 3/4	10	10 1/2
40	1 3/4	10	10 1/2

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: 30"

APPENDIX

ATTACHMENT B
GENERAL DECLARATIONS

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

Ladies and Gentlemen:

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

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

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

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

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

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

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

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

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

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

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

SIGNED THIS _____ DAY OF _____, 202_.

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

ATTACHMENT C
LEGAL STATUS OF BIDDER

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

Bidder declares that it is:

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

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

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

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

_____

_____

_____

_____

_____

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

Authorized Official

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

(Print) Name _____ Title _____

Company:

_____

Address:

_____

Contact Phone ( ) _____ Fax ( ) _____

Email _____

ATTACHMENT D
PREVAILING WAGE DECLARATION OF COMPLIANCE

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

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

The Contractor agrees:

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

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

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

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

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

_____
Company Name

_____
Signature of Authorized Representative Date

_____
Print Name and Title

_____
Address, City, State, Zip

_____
Phone/Email address

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

ATTACHMENT E
LIVING WAGE ORDINANCE DECLARATION OF COMPLIANCE

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

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

The Contractor or Grantee agrees:

(a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as $17.08/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 $19.04/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, 2025 - ENDING APRIL 29, 2026

$17.08 per hour
If the employer provides health care benefits*

$19.04 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

ATTACHMENT G

Vendor Conflict of Interest Disclosure Form

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

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

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

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

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

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

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

ATTACHMENT H

DECLARATION OF COMPLIANCE

Non-Discrimination Ordinance

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

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

The Contractor agrees:

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

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

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

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

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

_____
Company Name

_____
Signature of Authorized Representative Date

_____
Print Name and Title

_____
Address, City, State, Zip

_____
Phone/Email Address

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

ATTACHMENT I

CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

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

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

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

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

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

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

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

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

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

MICHIGAN DEPARTMENT OF TRANSPORTATION

CERTIFIED PAYROLL

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

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

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

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

Date _____

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

do hereby state:

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

_____ on the
(Contractor or Subcontractor)

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

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

_____ from the full
(Contractor or Subcontractor)

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

_____

_____

_____

_____

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

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

(4) That:

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

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

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

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

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

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