

FOURTH AVENUE RECONSTRUCTION CONSTRUCTION CONTRACT

THIS AGREEMENT is made on the 17th day of March, 2026, between the ANN ARBOR DOWNTOWN DEVELOPMENT AUTHORITY, a public corporation organized and existing pursuant to the authority of Act 197, Public Acts of Michigan, 1975, MCL 125.1651 et seq., 415 N 5th Ave, Ann Arbor, MI 48104 (“DDA”) and Fonson Company, Inc., (“Contractor”) a Michigan corporation with its address at 7644 Whitmore Lake Rd, Brighton, MI 48116.

Based upon the mutual promises below, the Contractor and the DDA 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 RFP No. 2026-02 Fourth Avenue Reconstruction in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, all of which are incorporated as part of this Contract:

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

ARTICLE II - Definitions

Administering Service Area/Unit means **Ann Arbor DDA**

Project means **Fourth Avenue Reconstruction Project (RFP #2026-02)**

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: **Amber Miller, Capital Projects and Planning Manager**, or their designee. 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 DDA.

- (B) The entire work for this contract shall be completed in accordance with the Detailed Specification for Progress Clause.
- (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 DDA, as liquidated damages and not as a penalty, an amount equal to \$3,000 for each calendar day of delay in the completion of the work. If any liquidated damages are unpaid by the contractor, the DDA shall be entitled to deduct these unpaid liquidated damages from the monies due to the Contractor.

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

ARTICLE IV - The Contract Sum

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

Five million seven hundred forty three thousand five hundred thirty nine dollars and 61/100 Dollars (\$5,743,539.61)

- (B) The amount paid shall be equitably adjusted to cover changes in the work ordered by the Supervising Professional but not required by the Contract Documents. Increases or decreases shall be determined only by written agreement between the DDA and Contractor.

ARTICLE V - Assignment

This Contract may not be assigned or subcontracted any portion of any right or obligation under this contract without the written consent of the DDA. Notwithstanding any consent by the DDA 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 DDA.

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 DDA 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

DDA. Nothing contained in this Contract shall be deemed to constitute any other relationship between the DDA 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 DDA for any Contract, debt, or any other obligation to the DDA including real or personal property taxes. The DDA shall have the right to set off any such debt against compensation awarded for services under this Contract.

The City of Ann Arbor is a third-party beneficiary of 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 DDA, City of Ann Arbor and their 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 DDA and City of Ann Arbor for losses or damages caused by or resulting from the DDA or City of Ann Arbor'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 DDA 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 DDA and the Contractor.

ARTICLE XI – Electronic Transactions

The DDA 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]

FONSON COMPANY, INC.

ANN ARBOR DDA

By: _____

Name: _____

Title: _____

Date: _____

By: _____

Name: Amber Miller

Title: Capital Projects Manager

Date: _____

By: _____

Name: Maura Thomson

Title: Executive Director

Date: _____

By: _____

Name: Jerold Lax

Title: Attorney

Date: _____

(Signatures continue on following page)

PERFORMANCE BOND

- (1) Fonson Company Inc. of 7644 Whitmore Lake Rd, Brighton, MI 48116 (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 Ann Arbor Downtown Development Authority (referred to as "DDA"), for five million seven hundred forty three thousand five hundred thirty nine dollars and 61/100 Dollars (\$5,743,539.61), 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 DDA entitled Fourth Avenue Reconstruction Construction Contract, for RFP No. 2026-02 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 DDA 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 DDA 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 DDA, 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 DDA 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 DDA agree that signatures on this bond may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

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

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

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

Approved as to form:

Name and address of agent:

DDA Attorney

LABOR AND MATERIAL BOND

- (1) Fonson Company Inc. of 7644 Whitmore Lake Rd, Brighton, MI 48116 (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 Ann Arbor Downtown Development Authority (referred to as "DDA"), 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 five million seven hundred forty three thousand five hundred thirty nine dollars and 61/100 Dollars (\$5,743,539.61), 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 DDA entitled Fourth Avenue Reconstruction Construction Contract, for RFP No. 2026-02; 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 DDA agree that signatures on this bond may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

SIGNED AND SEALED this _____ day of _____, 202_

(Name of Surety Company)

By _____
(Signature)

Its _____
(Title of Office)

Approved as to form:

_____, DDA Attorney

(Name of Principal)

By _____
(Signature)

Its _____
(Title of Office)

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 DDA 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 DDA 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 DDA, 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 DDA 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 DDA-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 DDA 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 DDA 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 DDA, 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, as well as the provisions of the federal Immigration Reform and Control Act of 1986, 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 DDA harmless from loss on account of infringement except that the DDA shall be responsible for all infringement loss when a particular process or the product of a particular manufacturer or manufacturers is specified, unless the DDA 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 DDA 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 DDA. The Contractor shall obtain and maintain sufficient insurance to cover damage to any DDA 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 DDA 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 DDA 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 DDA 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 DDA or of its employees or by other Contractors employed by the DDA;
- (5) Delay due to an act of Government;
- (6) Delay by the Supervising Professional in the furnishing of plans and necessary information;
- (7) Other cause which in the opinion of the Supervising Professional entitles the Contractor to an extension of time.

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

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

Section 15 - Claims for Extra Cost

If the Contractor claims that any instructions by drawings or other media issued after the date of the Contract involved extra cost under this Contract, it shall give the Supervising Professional written notice within 7 days after the receipt of the instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property. The procedure shall then be as provided for Changes in the Work-Section I3. No claim shall be valid unless so made.

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

- (1) The Contractor shall be reimbursed for all reasonable costs incurred in doing the work, and shall receive an additional payment of 15% of all the reasonable costs to cover both its indirect overhead costs and profit;
- (2) The term "Cost" shall cover all payroll charges for employees and supervision required under the specific order, together with all worker's compensation, Social Security, pension and retirement allowances and social insurance, or other regular payroll charges on same; the cost of all material and supplies required of either temporary or permanent character; rental of all power-driven equipment at agreed upon rates, together with cost of fuel and supply charges for the equipment; and any costs incurred by the Contractor as a direct result of executing the order, if approved by the Supervising Professional;
- (3) If the extra is performed under subcontract, the subcontractor shall be allowed to compute its charges as described above. The Contractor shall be permitted to add an additional charge of 5% percent to that of the subcontractor for the Contractor's supervision and contractual responsibility;
- (4) The quantities and items of work done each day shall be submitted to the Supervising Professional in a satisfactory form on the succeeding day, and shall be approved by the Supervising Professional and the Contractor or adjusted at once;
- (5) Payments of all charges for work under this Section in any one month shall be made along with normal progress payments. Retainage shall be in accordance with Progress Payments-Section 16.

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

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

Section 16 - Progress Payments

The Contractor shall submit each month, or at longer intervals, if it so desires, an invoice covering work performed for which it believes payment, under the Contract terms, is due. The submission shall be to the DDA's Accounts Payable. 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 DDA will retain a percentage of the estimate in accordance with Act 524, Public Acts of 1980. The DDA will then, following the receipt of the Supervising Professional's Certificate, make payment to the Contractor as soon as feasible, which is anticipated will be within 15 days.

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

In the case of Contracts which include only the Furnishing and Delivering of Equipment, the payments shall be; 60% of the Contract Sum upon the delivery of all equipment to be furnished, or in the case of delivery of a usable portion of the equipment in advance of the total equipment delivery, 60% of the estimated value of the portion of the equipment may be paid upon its delivery in advance of the time of the remainder of the equipment to be furnished; 30% of the Contract Sum upon completion of erection of all equipment furnished, but not later than 60 days after the date of delivery of all of the equipment to be furnished; and payment of the final 10% on final completion of erection, testing and acceptance of all the equipment to be furnished; but not later than 180 days after the date of delivery of all of the equipment to be furnished, unless testing has been completed and shows the equipment to be unacceptable.

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

Section 17 - Deductions for Uncorrected Work

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

Section 18 - Correction of Work Before Final Payment

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

If the Contractor does not remove the condemned work and materials within 10 days after written notice, the DDA 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 DDA 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 DDA 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 DDA 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 DDA within 30 days after the date of the final certificate.

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

- (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 DDA 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 DDA 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 DDA 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 DDA to the Contractor to do so. The DDA 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 DDA 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 DDA'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 DDA 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 DDA 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 DDA for any excess cost to the DDA. If the Contractor's right to proceed is terminated, the DDA 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 DDA, 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 DDA 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 DDA for any excess cost incurred. The expense incurred by the DDA, 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 DDA, terminate this Contract and recover from the DDA payment for all acceptable work executed plus reasonable profit.

Section 23 - DDA'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 DDA, 3 days after giving written notice to the Contractor and its surety may, without prejudice to any other remedy the DDA 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 DDA, shall promptly remove any part or all of its equipment and supplies from the property of the City of Ann Arbor/DDA, failing which the DDA 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 DDA and, if all costs of removal and storage are not paid by the Contractor within 10 days of invoicing, the DDA 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 DDA for damages to materials and equipment from any cause except negligence or willful act of the DDA. 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 DDA 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 DDA, the Supervising Professional shall issue to the Contractor a certificate of partial completion, and immediately the DDA 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 DDA 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 DDA 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 DDA which will protect the DDA 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 DDA and the City of Ann Arbor 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 DDA documentation satisfactory to the DDA, 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. 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 DDA and 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/DDA'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 DDA and City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements that diminish the DDA's and 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 DDA or City of Ann Arbor may possess, including any self-insured retentions the DDA or City of Ann Arbor may have; and any other insurance the DDA or City of Ann Arbor 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 DDA or City for any insurance listed herein.

- (3) Insurance companies and policy forms are subject to approval of the DDA 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 DDA and 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 DDA, in its sole discretion; (c) that the policy conforms to the requirements specified Contractor shall furnish the DDA 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 DDA. 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 DDA.
- (5) The DDA 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 Ann Arbor DDA for the amount of the bid(s) accepted;
- (2) A Labor and Material Bond to the Ann Arbor DDA for the amount of the bid(s) accepted;
- (3) A 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.

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

Section 30 - Damage Claims

The Contractor shall be held responsible for all damages to property of the DDA, 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 DDA.

Section 33 - Rights of Various Interests

Whenever work being done by the DDA's or 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 DDA. The approval will not be given until the Contractor submits to the DDA a written statement concerning the proposed award to the subcontractor. The statement shall contain all information the DDA may require.

The Contractor shall be as fully responsible to the DDA 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 DDA 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 DDA.

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 DDA 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 DDA 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 DDA, 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 DDA/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 DDA 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 DDA and City of Ann Arbor approval) will be permitted except in the case of an emergency and then only to the extent absolutely necessary. The DDA and City of Ann Arbor 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 DDA is exempt from the assessment of State Sales Tax on its direct purchases. Contractors who acquire materials, equipment, supplies, etc. for incorporation in DDA 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 Fourth Avenue Reconstruction Construction Contract, for which I shall ask, demand, sue for, or claim compensation or extension of time from the DDA, except as I hereby make claim for additional compensation or extension of time as set forth on the attached itemized statement. I further declare that I have paid all payroll obligations related to this Contract that have become due during the above period and that all invoices related to this Contract received more than 30 days prior to this declaration have been paid in full except as listed below.

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

Contractor

Date

By _____
(Signature)

Its _____
(Title of Office)

Past due invoices, if any, are listed below.

STANDARD SPECIFICATIONS

All work under this contract shall be performed in accordance with the City of Ann Arbor 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

DETAILED SPECIFICATION
FOR
PROGRESS CLAUSE

WT:CGT

1 of 5

12/14/25

a. Description.-

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

This Contract requires water main, storm sewer, electrical and telecom, concrete curb and gutters, concrete sidewalks, bituminous paving, signal work, street lighting, bus shelters and associated work on Fourth Avenue from East William Street to East Liberty Street.

The entire work under this Contract shall 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 review, on or before **February 26, 2026**. DDA Board review and approval of the Contract is expected on **March 4, 2026**, and City Council approval of the Cost Share Agreement is expected on **March 16, 2026**. The Notice of Award would be provided after the Council approval. The final version of the contract is expected to be provided on **March 17, 2026**. The Contractor shall electronically execute the Contract and return it, with the required Bonds and Insurance Certificate, to the DDA within **fourteen (14) days**. The Contractor shall 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 shall only begin the work of this project upon receipt of the fully executed Contract and Notice to Proceed, which is anticipated to be on or before **May 4, 2026**. Appropriate time extensions shall 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.

DETAILED SPECIFICATION
FOR
PROGRESS CLAUSE

WT:CGT

2 of 5

12/14/25

3. The contractor is responsible for coordinating with the following parties during and prior to construction.
 1. DTE Gas for the installation of a new 12" gas main in 4th Avenue (complete limits are from Packard Ave to Ann St):
 - a. Contractor may begin work after Notice to Proceed, with the understanding that DTE will be in the project area installing a new 12" gas main and relocation of existing 3" gas main (anticipated timeframe May to June). Contractor is expected to coordinate with DTE and work concurrently to achieve phasing and milestone dates as outlined herein. Traffic control requirements as outlined in the contract documents must be met and coordinated with DTE as applicable.
 2. DTE Gas for the installation of a new temporary and new permanent gas services to 350 South Fifth from the 3-inch gas main on Fourth Ave.
 3. DTE Lighting for the removal of existing DTE lights as shown on the contract documents. The contractor shall coordinate with DTE at or before the beginning of the project to schedule the removal of their lights. Contractor shall remove foundations per contract documents.
 4. DTE Electric for the provision of a new service for the proposed electrical service for the proposed construction as shown on the plans.
 5. Related Midwest for the construction of a development at 350 South Fifth (directly adjacent to the project area) which is anticipated to be occurring simultaneously.
 - a. It is anticipated that this site will be accessed from East William and South Fifth, however when necessary, construction access to 350 South Fifth shall not be unreasonably withheld and shall be coordinated with the development contractor to the extent feasible
 - b. The approximate location of the construction fence for the 350 South Fifth development is shown on the Contract Drawings. Any work that requires the relocation of the Developer's construction fence and limits must be coordinated with reasonable advance notice to Related Midwest and their contractor.
 6. City of Ann Arbor Building Department for the application, review, approval and inspection (including permit fees to be paid for by the Contractor) of the proposed bus shelters.

All above work must be coordinated such that any new improvements installed with this project are not disturbed after installation (for example, underground infrastructure cannot be installed after new pavement is placed). Current contact information is provided in the Coordination Clause and will be updated at the Preconstruction Meeting as applicable.

7. **Project Work** – All project work shall be completed in its entirety and open to traffic by **November 6, 2026**. All landscaping shall be in place and approved by

DETAILED SPECIFICATION
FOR
PROGRESS CLAUSE

WT:CGT

3 of 5

12/14/25

the Engineer by **July 1, 2027**. Project work is subject to the restrictions as outlined below:

- a. **Staging Limits** – The project area is defined generally by the pavement and sidewalk removal limits as shown on the Contract Drawings. Construction staging may occur only within those limits unless approved by the Engineer in writing. E Liberty St and E William St to the east and west of the project area may not be used for staging or storage and must be safely blocked off from construction to accommodate A2 Summer Streets (outdoor dining and retail).
- b. **Lighting** – Lighting at intersections shall not be removed until absolutely necessary to facilitate construction.
- c. **E. William St. Lane Shift and Cycle Track Closure** – work within E. William St. and the associated lane shifts and cycle track provisions may not begin until after the end of Art Fair (July 20, 2026).
- d. **Downtown July Events (July 10, 2026 – July 26, 2026)** - The intersection of E Liberty St and Fourth Ave shall not be closed. The intersection shall be left in a clean, safe and orderly condition and all equipment and stored material shall be relocated out of the intersections. Prior to work stoppage, safe and ADA compliant pedestrian access through the intersection in both directions and to all businesses must be in place. All equipment and stored materials will be relocated out of the intersections, E Liberty St and E William St shall have a temporary HMA surface as necessary, and all unnecessary barricades shall be removed.
- e. **Ann Arbor Art Fair Week (July 16, 2026 – July 18, 2026)** - This project falls within the vicinity of the Ann Arbor Art Fair. No work is allowed from July 12, 2026, to July 19, 2026. The project area must be maintained in the following conditions during this week:
 - i. The intersections of E Liberty St and Fourth Ave and E William St and Fourth Ave shall be left in a clean, safe and orderly condition and all equipment and stored material shall be relocated out of the intersections. Prior to work stoppage, safe and ADA compliant pedestrian access through the intersection in both directions and to all businesses must be in place. All equipment and stored materials will be relocated out of the intersections, E Liberty St and E William St shall have a temporary HMA surface as necessary, and all unnecessary barricades shall be removed.
 - ii. Traffic shifts and cycle track closures may not be in place on E William St (Phase 1 or 2)
 - iii. The project site between E Liberty St and E William St must be safely secured and no work shall take place. No trenches shall

DETAILED SPECIFICATION
FOR
PROGRESS CLAUSE

WT:CGT

4 of 5

12/14/25

remain open. Pedestrian access as outlined in the contract documents and the Maintenance of Traffic and Sequence of Construction Detailed Specification must remain safely maintained.

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

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

The City selected contractor will provide written weekly construction updates to the Ann Arbor DDA, City of Ann Arbor and Ann Arbor DDA, Ann Arbor Area Transportation Authority, and the Engineer.

The Engineer may delay or stop the work due to threatening and/or inclement weather conditions. The Contractor shall 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 shall not work in the dark except as approved by the Engineer and only when lighting for night work is provided as detailed elsewhere in this Contract. The Engineer may stop the work or may require the Contractor to defer certain work to another day, if, in the Engineer's opinion, the work cannot be completed within the remaining daylight hours, or if inadequate daylight is present to either properly perform or inspect the work. The Contractor will not be compensated for unused materials or downtime, when delays or work stoppages are directed by the Engineer for darkness and/or inadequate remaining daylight reasons. The Contractor is solely responsible for 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 dark.

DETAILED SPECIFICATION
FOR
PROGRESS CLAUSE

WT:CGT

5 of 5

12/14/25

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

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.

DETAILED SPECIFICATION
FOR
PROJECT COORDINATION

WT:CGT

1 of 2

12/14/25

The Contractor is hereby notified that there will be coordination efforts that will need to occur as part of the Fourth Avenue Reconstruction 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 shall verify any other projects within the local vicinity that may impact this project.

- DTE Gas for the installation of a new 12" gas main on S Fourth Ave from Packard Ave to Ann St (Contact: Eric Janness, eric.janness@dteenergy.com)
- DTE Gas for the relocation of a section of 3" gas main on S Fourth Ave (Contact Eric Janness, eric.janness@dteenergy.com)
- DTE Gas and Related Midwest for the installation of a new temporary gas service to 350 S 5th from S Fourth Ave (Contact Yan Ji, yan.ji@dteenergy.com, 734.822.9222)
- DTE Gas and Related Midwest for the installation of a new permanent gas service to 350 S 5th from S Fourth Ave (Contact Yan Ji, yan.ji@dteenergy.com, 734.822.9222)
- DTE Outdoor Lighting for the removal of existing DTE lights along S Fourth Ave (Contact Terence Cherry, terence.cherry@dteenergy.com, 313.320.1022)
- DTE Electric for the new electrical service for the project (Contact Lorne Cook, lorne.cook@dteenergy.com)
- Related Midwest for the construction of a development at 350 South Fifth Ave, including (Contact Denise Hall, dhall@relatedmidwest.com, 312.617.8800):
 - Site access
 - Construction fence limits
 - Improvement extents
- A2 Summer Streets (outdoor dining and retail Thursdays 4PM thru Sunday)
- Ann Arbor Art Fair (July 12 to July 19, 2026)
- Main Street Area Association, specifically during the month of July as outlined in the Progress Clause, but also for any other events in the area
- City of Ann Arbor Building Department for application, review, approval and inspection for the proposed bus shelters (including permit fee)
- City of Ann Arbor Departments for their work as shown on the plans (Signs and Signals, DPW, etc)
- Doan Construction Company and the DDA for retractable bollard installation at 4th and Liberty intersection. (Contact Amber Miller, amiller@a2dda.org)
- Pullman Services and the DDA for east façade and structural improvements to the 4th and William DDA Parking Structure. This work is intended to be completed in early Spring 2026. However, any weather delays may extend this work into the subject project's schedule. (Contact Nick Poddam, npoddam@pullman-services.com, 734.775.9181)

DETAILED SPECIFICATION
FOR
PROJECT COORDINATION

WT:CGT

2 of 2

12/14/25

The Contractor shall 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.

DETAILED SPECIFICATION
FOR
MAINTAINING TRAFFIC AND SEQUENCE OF CONSTRUCTION

WT:CGT

1 of 6

12/14/25

a. Description. Traffic shall 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, and herein included Michigan Department of Transportation (MDOT) Maintaining Traffic Typical 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 shall furnish, erect, maintain and, upon completion of the work, remove all traffic control devices and barricade lights 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 shall meet the requirements specified in the corresponding sections of the MDOT 2020 Standard Specifications for Construction and the 2011 MMUTCD.

All signs shall be of sizes shown on the plans, unless otherwise directed by the Engineer. Install temporary signs that are to remain in the same place for 14 days or more on driven posts. Install all other temporary signs on portable supports. All signs shall have a minimum bottom height of 7.0 feet.

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

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

c. Maintenance of Local Traffic. Local access shall be maintained at all times for emergency vehicles (24 hours), refuse pick-up and mail delivery, business deliveries, and ingress/egress to public and private properties. Specific access shall be maintained as described below:

DETAILED SPECIFICATION
FOR
MAINTAINING TRAFFIC AND SEQUENCE OF CONSTRUCTION

WT:CGT

2 of 6

12/14/25

- Ingress and egress vehicular access to the surface parking lot at 308 S. Fourth Ave
- Deliveries for Ruth's Chris (as coordinated with the business owner)
- Ingress and egress pedestrian access from the William St Parking Deck (115 E William St) and Ruth's Chris (314 S. Fourth Ave)
- Emergency egress from 200 E Liberty St, including from the parking lot

The following assumptions can be made about other access coordination:

- Vehicular access to the William St Parking Deck (115 E William St) will be maintained on William, and closed on S Fourth Ave;
- Ann Arbor Area Transportation Authority buses will not be using the Blake Transit Center (331 S Fourth Ave) or S Fourth Avenue during construction

Contractor must accommodate the safe access to the buildings and businesses located within construction area. Unless approved in writing to the Engineer, pedestrian access to all buildings must be maintained throughout the construction period. Wherever pedestrian access is maintained, it must have an ADA compliant sidewalk width and shall be lined with continuous pedestrian barricades between the pedestrian path and work zone. When it is necessary and approved to close a section of sidewalk, temporary pedestrian ramps and pathways shall be implemented to maintain continuous and safe pedestrian access along the corridor. Pedestrian ramp crossings at intersections shall always be maintained at three of four corners. Only one corner of an intersection can be closed at a time. All pedestrian access shall be ADA compliant. For work affecting pedestrian crossings, use the included staging sheets and typical details to maintain pedestrian traffic.

Pedestrian building entrances shall not be blocked without written authorization from the Engineer and arrangements are made with the affected property owner(s). When it becomes necessary to temporarily block building entrances, the Contractor shall notify the Engineer seventy-two (72) hours in advance of any work planned on or near business entrances, and when possible, stage sidewalk work so that it is constructed part-width. The Engineer will not allow the Contractor to prohibit access to businesses during any phase of construction, unless agreed upon with the property owner(s) and authorized in writing by the Engineer.

At times, when it becomes necessary to temporarily obstruct local traffic during the performance of the work, the Contractor shall provide traffic regulator control in conformance with Chapter 6E of the MMUTCD, Sections 6E.01 thru 6E.08. A minimum of two traffic regulators are required. The cost of traffic regulator control shall be included in the Contract pay item "Minor Traffic Control, Max \$105,000".

DETAILED SPECIFICATION
FOR
MAINTAINING TRAFFIC AND SEQUENCE OF CONSTRUCTION

WT:CGT

3 of 6

12/14/25

A lane-closure permit shall be obtained by the Contractor from the City of Ann Arbor Engineering Unit, at least 48 hours in advance of any proposed lane or street closing. No lane closures shall be permitted during the following weekends, 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, 2025 – 7:00 AM Monday, July 6, 2025)
- Labor Day (3:00 PM Friday September 4, 2026 – 7:00 AM Tuesday, September 8, 2026)
- The intersection of E Liberty St and Fourth Avenue and the intersection of E William St and Fourth Avenue during the Ann Arbor Art Fair (July 12 – July 19).
- Saturday's of home University of Michigan football games.
- If the project is delayed, no work or lane closures shall be performed during:
 - University of Michigan home football games
 - Thanksgiving Day (3:00 PM Wednesday, November 25, 2026 – 7:00 AM Monday, November 30, 2026).

All streets and sidewalks that can be open shall be open to motorized and non-motorized traffic.

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

The hours of work on all Local streets are 7:00 a.m. to 8:00 p.m., Monday through Saturday, or as specified on the lane-closure permit. No equipment will be allowed in the street before or after these hours. Local streets may only be closed to through traffic (local access only) with written authorization of the Engineer. Work must be completed each day such that all streets are re-opened to through traffic by 8:00 p.m. unless otherwise specified, directed, or authorized in writing by the Engineer. All major changes in traffic control shall 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 shall temporarily cover conflicting traffic and/or parking signs when directed by the Engineer included in the pay item "Minor Traffic Control, Max \$105,000".

The Contractor shall use quantities of dust palliative, maintenance aggregate, and cold patching/HMA mixtures for use as temporary base, surfacing, and dust control at utility crossings, 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 dust palliative, maintenance aggregate, cold patch and/or hot mix asphalt mixtures, as required and directed by the Engineer for maintenance of traffic and local access, shall be included in

DETAILED SPECIFICATION
FOR
MAINTAINING TRAFFIC AND SEQUENCE OF CONSTRUCTION

WT:CGT

4 of 6

12/14/25

Contract pay item "General Conditions, Max \$530,000", and it will not be paid for separately.

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 Control, Max \$105,000".

Mail and paper delivery shall not be interrupted during the construction. Upon completion of the construction, all mailboxes and newspaper boxes, including their supports, shall be repositioned in their permanent locations as approved by the Engineer. This work shall be included the Contract unit price for the Contract pay item "General Conditions, Max \$530,000", when applicable, and it will not be paid for separately.

The Contractor shall perform the work of this Contract while maintaining traffic in accordance with the Contract Documents as specified herein. No traffic shall 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 shall be equipped with at least one approved flasher light which shall be mounted on the equipment so as to give a warning signal ahead and behind.

The Contractor shall 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 shall include the area from POB to POE within the Right-of-way of S. Fourth Avenue, E. Liberty St and E. William St as shown in the plans. The CIA shall include the affected portions of the driveways along and contiguous with these roadways.

In addition, the CIA shall 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 shall notify local police, fire departments and emergency response units a minimum of three business days (72 hours) prior to the closure of any roads, or traffic shifts causing restricted movements of traffic or restricted access.

DETAILED SPECIFICATION
FOR
MAINTAINING TRAFFIC AND SEQUENCE OF CONSTRUCTION

WT:CGT

5 of 6

12/14/25

f. 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. Signal Modifications. Any signal timing and phasing modifications shall be coordinated with the City ahead of any decided changes in the traffic control.

h. Sign Reinstallation. As necessary during construction, the Contractor shall 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 shall 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 shall 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 shall be completed by the City of Ann Arbor Signs and Signals Unit.

i. Project Schedule Milestones

In general, the project shall be completed in a single phase starting on or before **May 4, 2026** with the following restrictions:

- No work will be allowed during the Ann Arbor Art Fair Week. S Fourth Avenue secured as outlined in the Detail Specification Progress Clause;
- E. Liberty St shall be opened up as outlined in the Progress Clause during July downtown events (**July 10th to July 26th**)
- E. William St. Lane Shift and Cycle Track Closure (Phase 1 or 2) cannot occur until after the end of Art Fair (**July 20, 2026**)
- E. William St Lane Shift and Cycle Track Closure Phase 2 may not be closed for longer than a period of 1 week

DETAILED SPECIFICATION
FOR
MAINTAINING TRAFFIC AND SEQUENCE OF CONSTRUCTION

WT:CGT

6 of 6

12/14/25

The project shall be completed in its entirety and open to traffic by **November 6, 2026**. All landscaping shall be in place and approved by the Engineer by **July 1, 2027**.

j. 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:

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
DS_Sign Cover.....	Ea
DS_Pavt Mrkg, Type NR, Paint, Lane.....	Ea
DS_Pavt Mrkg, Type NR, Paint, BUS.....	Ea
DS_Portable Water Filled Barrier, Furn.....	Foot
DS_Portable Water Filled Barrier, Oper.....	Foot

The unit price for these items 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.

DETAILED SPECIFICATION
FOR
PEDESTRIAN PATH, TEMP

WT:VCM/CEW:MHM

1 of 2

01/28/19
REV. 12/20/2024

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):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
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.

DETAILED SPECIFICATION
FOR
RECTANGULAR RAPID FLASHING BEACON

WT:JNB:CGT

1 of 5

1/13/26

a. Description. This work consists of furnishing and installing wireless solar-powered, Rectangular Rapid Flashing Beacon (RRFB) assemblies at the locations shown in the plans. Each RRFB assembly includes lightbar(s), solar panel(s), battery(s), controller enclosure, control circuit, on-board user interface, wireless communication, pedestal, pole, pushbutton, signs, stainless steel mounting hardware, and all associated material required to complete the work. RRFBs shall be bi-directional (two-sided) unless otherwise specified on the plans.

b. Materials. Provide materials conforming to Buy America provisions and in accordance with sections 918 and 921 of the current MDOT Standard Specifications for Construction and the following requirements of this special provision:

1. Furnish an RRFB from one of the following manufacturers:
 - A. Carmanah
 - B. TAPCO
2. Controller Enclosure
 - A. Construction shall be NEMA 3R aluminum housing with lockable tamperproof hinged door.
 - B. Solar batteries, on-board user interface, and wireless communications shall be housed within the enclosure.
3. On-board User Interface (OBUI)
 - A. The OBUI shall have an adjustable auto-scrolling LED display, and include the following selectable features:
 - (1) Flash duration, adjustable from 10 – 60 seconds, in one-second increments
 - (2) Ambient auto-adjust
 - (3) Night time dimming
 - (4) Update configuration settings to other units in the system.

- (5) Channel Selection
 - (6) System test, status, and fault detection
 - (7) Activation data reporting
4. Lightbar. Provide materials meeting the following requirements:
- A. Lightbar housing must be black powder-coated aluminum, measuring 24" x 4.5" x 1.5"
 - B. A lightbar shall consist of two forward-facing primary beacons:
 - (1) Each beacon must have an array of eight amber LEDs, each array measuring 7" x 3"
 - (2) Beacons must meet SAE J595 Class 1 intensity, and SAE J578 chromaticity
 - (3) LEDs must meet 90% lumen maintenance (L90) based on IES LM-80
 - C. The lightbar must include side-mounted pedestrian amber LED beacons which flash concurrently with the primary beacons.
 - D. The mounting assembly shall allow the lightbars to pivot 40 degrees horizontally in order to aim the lightbar independent of the wire hole location on the pole.
 - E. A bi-directional RRFB shall consist of two lightbars mounted back to back, which can pivot independently from each other.
 - F. The lightbar assembly shall open for access to the wiring connections for the LED modules. LED modules shall be rated to MIL-STD-810F, Method 506.4 for ingress protection.
5. Beacon operation. Provide beacon operation meeting the following requirements:
- A. The RRFB is dark until pedestrian actuation.
 - B. Initiate operation upon pedestrian actuation and cease operation at a predetermined time after actuation. Set this predetermined duration of operation as indicated in the plans or as determined by the Engineer.

- C. Simultaneously begin (upon actuation) and end (after the predetermined duration) the operation of all RRFB's associated with a given crosswalk within 150 milliseconds of activation.
6. Solar/battery system. Provide solar power system meeting the following requirements:
 - A. Underwriters Laboratories Incorporated (UL) approved solar panel, solar engine, and battery system. Solar panel and battery system sized for use north of the 40th parallel, including the state of Michigan.
 - B. The system shall include one 50-watt solar panel supplied with mounting hardware. The controller enclosure shall house one 35 Ah sealed valve- regulated lead-acid battery. The battery shall be readily available from multiple suppliers and non-proprietary. Solar panel and battery system shall be 12 Volt DC (nominal).
 7. Pushbutton and Signs
 - A. The pushbutton housing shall be cast aluminum with a yellow powder coat finish, with watertight o-ring seals. The housings shall be a minimum 14"H, 5½"W, 2 ½"D and contain the sign, arrow, speaker and LED's.
 - B. The pushbuttons shall be provided with a two inch diameter adjustable arrow indication to indicate the direction of travel.
 - C. The signs shall include the following:
 - (1) One pushbutton housing sign, "Push Button to Turn on Warning Lights".
 - (2) One W11-2, measuring 36" x 36".
 - (3) One W16-7PL, measuring 24" x 12".
 - (4) One W16-7PR, measuring 24" x 12".
 - D. The pushbuttons shall be ADA compliant, with visual LED, audible location tone, and an audible voice message.
 - E. The message shall be repeatable while the crosswalk lights are active. The pushbuttons shall be provided with a standard message "Cross street with caution, vehicles may not stop" or a custom message as required by the engineer.

- F. Each pushbutton shall be provided with a locating tone with a selectable repeat rate. The locating tone and message shall be capable of having maximum and minimum limits set.
- G. Each pushbutton shall be provided with an automatic volume adjustment to compensate for changes in ambient noise levels.
- H. The pushbutton shall come complete with the sign, mounting hardware and control unit for mounting on the pedestal and pole.

8. Pedestals and Poles.

- A. Pedestal bases shall aluminum square conforming to the following specifications. Bases shall accommodate bolt circles from 12 inches to 14 ½ inches. The bases shall be designed to accommodate (4) four anchor bolts from 5/8 inch to 1 inch in diameter. There shall be slots in the bottom of each base to allow adjustment for anchor bolt placement.
- B. The bases shall be fabricated from aluminum, nominally 15 inches tall by 14 inches square. The bases shall be provided with an accessible hand-hole opening and a cast aluminum door with one stainless steel set screw. The collar of the base shall be provided with a stainless steel hex head bolt.
- C. Poles shall consist of 6061-T6 aluminum alloy, poles textured for a uniform rough grain pattern that is perpendicular to the axis of the pole for the full length of the pole. The poles shall have a length of 14-feet, wall thickness of .237 inches, and an O.D. of 4.5 inches. The poles shall be provided with four inches of NPT (National Standard Taper Pipe Thread).
- D. The threaded end of the poles shall have a protective cap installed to prevent thread damage. A cardboard sleeve shall cover the entire length of the shaft to protect the surface finish during shipment.

9. Warranty.

- A. Provide a manufacturer's warranty, transferable to City of Ann Arbor, that the supplied materials are free from all defects in material and workmanship. Furnish the warranty, other

applicable documents from the manufacturer, and a copy of the invoice showing date of shipment to the Engineer prior to acceptance.

c. Construction. Complete this work in accordance with sections 819, 820, and 919 of the current MDOT Standard Specifications for Construction, as shown the plans, and per this special provision.

1. Obtain shop drawing approval from the Engineer prior to installation of units.
2. Set the predetermined duration of operation of the RRFBs as indicated in the plans or as specified by the Engineer.
3. Mount the RRFB assemblies per manufacturer’s requirements and as specified, in locations directed by the Engineer.

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:

<u>Pay Item</u>	<u>Pay Unit</u>
DS_Rectangular Rapid Flashing Beacon Assembly.....	Each

Rectangular Rapid Flashing Beacon Assembly includes all labor, equipment, and materials required to furnish and install a new Rectangular Rapid Flashing Beacon as specified herein.

DETAILED SPECIFICATION
FOR
POST, FLEXIBLE, DELINEATOR

WT:CGT:VCM:AJK

1 of 1

11/24/2024

a. Description. This work consists of providing all labor, materials, and equipment required to furnish flexible 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 shall 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 Post, Flexible, Delineator shall be manufactured by Pexco. Model shall be 28-inch City Post Surface Mount Model SM, 3" OF Flexible, Bolt-Down Anchor. Color shall 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. Post, Flexible, Delineator shall be laid out for approval by the engineer prior to installation. Install Post, Flexible, Delineator per manufacturer's recommendations. Post, Flexible, Delineators 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. Post, Flexible, Delineator must be installed plumb and in line with each other and shall 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):

<u>Contract Item (Pay Item)</u>	<u>Unit</u>
DS_Post, Flexible, Delineator	Each

Payment for **Post, Flexible, Delineator** will be measured by each complete unit installed and will include all costs for labor, materials, and equipment required for furnishing and installing the materials as shown on the plans and as specified herein.

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

DETAILED SPECIFICATION
FOR
CONCRETE SIDEWALK, DRIVE APPROACHES, AND SIDEWALK RAMPS

SG:LAF

1 of 3

12-18-25

a. Description. This work consists of providing all labor, materials, and equipment required to construct concrete sidewalk, sidewalk ramps, and drive approaches where indicated and detailed on the plans in accordance with City of Ann Arbor 2025 Standard Specifications, except as modified herein, or as directed by the Engineer.

b. Materials. The materials will meet the requirements as specified in Article 5 of the City of Ann Arbor 2025 Standard Specification, except as herein modified.

1. Fiber Mesh Reinforcement. Concrete shall have monofilament non-metallic polypropylene fibrillated fibers added at a rate of 1.5 pounds per cubic yard. The fibers shall meet the requirements of ASTM C1116/C1116M, Type III, 1/2 to 1-1/2 inches long. The concrete shall be thoroughly mixed for a minimum of 5 minutes after the addition of the fibers to ensure uniform distribution throughout the concrete.

2. Exposed Aggregate Finish. Aggregates for concrete mix shall be selected, hard, and durable; washed; free of materials with deleterious reactivity to cement or that causes staining; from a single source with gap-graded coarse aggregate. Aggregate source, shape and color to be selected and approved by the Engineer.

3. Curing Compound. Concrete curing material shall conform to MDOT Specifications, Section 903 Admixtures and Curing Materials for Concrete. Clear curing compound shall be utilized.

4. Submittals. Submit the following documents to the Engineer for review and approval prior to proceeding with construction of sidewalks: concrete mix design, exposed aggregate, curing method and materials, joint sealant and color samples.

c. Construction.

1. Slope sidewalks as shown on plans and details. Construct concrete pavements to ADA slope requirements where located as an ADA accessible path.

2. Joints. Concrete pavement joints shall be constructed as located and shown on the plans. Notify Engineer of any jointing layout discrepancies prior to proceeding with construction. Install sidewalk joints per City of Ann Arbor Standard Detail SD-DS-4. Exposed aggregate pavement shall have decorative 2x2 foot jointing as shown on the plans. All joints shall be troweled.

3. Broom Finish. Provide a light broom finish without chips, marks, and holes across float-finished concrete surface perpendicular to predominant direction of pedestrian travel. Confirm direction of broom finish with Engineer prior to proceeding with finish.

4. Exposed Aggregate Finish. Expose aggregate in paving surface in areas indicated on the plans as follows:

Perform sand blasting at least 72 hours after placement of concrete. Coordinate with formwork construction, concrete placement schedule, and formwork removal to ensure that surfaces to be blast finished are blasted at the same age for uniform results. Determine type of nozzle, nozzle pressure, and blasting techniques required to match the mock-up control samples. Perform sand blasting finishing in as continuous an operation as possible, utilizing the same work crew to maintain continuity of finish on each surface or area of work. If determined to be beneficial to the concrete curing process, the Engineer may require a reapplication of curing compound to the sidewalk surface following sand blasting, at no additional cost to the project.

Abrasive blast corners and edge of patterns carefully, using back-boards, to maintain uniform corner or edge line. Corners shall be free of defects caused by sandblasting. Provide protection to prevent damage to adjacent improvements, public and private property and to prevent injury to other personnel. Repair or replace other work damaged by finishing operations at no additional cost.

Maintain control of concrete chips, dust, and debris in each area of work. Clean up and remove such material at the completion of each day of operation. Prevent migration of airborne materials by use of tarpaulins, wind breaks, and similar containing devices.

Use of chemical retarder to create the exposed aggregate finish may be allowed ONLY with prior approval by Engineer. Masking, plastic sheeting, sealing laps with tape and other necessary protection measures shall be provided if a chemical retarder is used. Damage, blemishes, staining, etc. to adjacent pavement finishes outside of sandblast finish areas will require removal and replacement of concrete pavement to the nearest expansion joints at no additional cost.

5. Sidewalk Mockup. Construct a mock-up sample of the sidewalk concrete with exposed aggregate finish large enough to demonstrate the sandblast finish and decorative 2x2-foot jointing. Mock-up sample shall be constructed to indicate the jointing, texture and finish, and curing compound in actual construction. Mockups will be redone as required until acceptance by the Engineer. The location of the mockup shall be approved by the Engineer prior to proceeding with the mockup. The cost for construction of the mock-up samples shall be included in the unit prices for the respective concrete sidewalk pay item and no additional

compensation shall be provided for additional samples. Consider the approved mock-ups as a standard of workmanship to be matched throughout the Project. The sample may NOT be constructed as part of the project. Remove samples which fail to meet the Engineer's approval. The approved samples shall remain in place during the complete duration of construction and shall be removed and disposed of by the contractor at the completion of the project. Contractor to schedule and construct mock-up within appropriate timeframe to accommodate the review and approval process as well as the potential need for subsequent mock-up samples to obtain approval prior to the scheduled time to commence construction of the concrete sidewalks per the approved project schedule.

6. Restore area disturbed beyond proposed concrete pavement to pre-construction conditions or as shown on plans. No separate payment will be made for such restoration but is considered part of this work item.

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):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
DS_Conc, Sidewalk, 6 In., DDA	Square Foot
DS_Conc, Sidewalk, Drive Approach or Ramp, 8 In., DDA.	Square Foot
DS_Conc, Sidewalk, 6 In., Exposed Aggregate.....	Square Foot
DS_Conc, Sidewalk, 8 In., Exposed Aggregate.....	Square Foot

Payment for **DS_Conc, Sidewalk, 6 In., DDA, DS_Conc, Sidewalk Drive Approach or Ramp, 8 In., DS_Conc, Sidewalk, 6 In., Exposed Aggregate** 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, jointing, and finishing concrete.

DETAILED SPECIFICATION
FOR
TROLLEY TRACK, REMOVE

AA:JKA
WT:AJK:CGT:MHM

1 of 2

12/20/2024

a. Description. This work shall 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 shall 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 shall work together to identify and field measure all items to be removed. The Engineer shall approve of all removal limits prior to any removals being performed by the Contractor.

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

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

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

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

Removed or excavated materials which are not incorporated into the work shall become the property of the Contractor and shall 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 shall 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 for at the contract unit price for the following contract items (pay items):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
DS_Trolley Track, Remove.....	Square Yard

All saw cutting required for removals shall 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 shall 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

DETAILED SPECIFICATION
FOR
BRICK PAVER PAVT, REM

WT:BLA

1 of 1

11/21/2025

a. Description

This work shall consist of removing 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 shall remove, haul away, and dispose of existing brick pavers, including base materials, to the specified depth required for construction of new surfaces. Upon removal, the Contractor shall assume possession of the brick pavers and shall dispose of them in an approved manner.

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):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
DS_Brick Paver Pavt, Rem.....	Square Foot

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

Payment for **DS_Brick Paver Pavt, Rem** will be measured by the square yard for brick pavers removed and will include all costs for labor, material, and equipment required to remove and dispose of existing brick pavers, regardless of thickness and type of material and shall 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.

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

WT:MHM

1 of 1

11/3/2025

a. Description. This work shall 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 shall meet the gradation of MDOT Class II granular material in accordance with Section 902 of the 2020 MDOT Standard Specifications for Construction.

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

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

The Contractor shall remove, salvage, and return the markers and kiosks to the Wheeler Center located on Stone School Road.

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 shall 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:

<u>Pay Item</u>	<u>Pay Unit</u>
DS_Parking Kiosk, Rem, Salv	Each
DS_Parking Markers, Rem, Salv	Each

Payment for **DS_Parking Kiosk, Rem, Salv** and **DS_Parking Markers, Rem, Salv** 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.

DETAILED SPECIFICATION
FOR
BUS SHELTER, REM

SG:LAF

1 of 1

01/13/2026

a. Description. Work consists of removal and disposal of AAATA bus shelters in accordance with the City of Ann Arbor 2025 Standard Specifications, except as modified herein, or as directed by the Engineer.

b. Materials. Provide necessary materials for stockpiling, loading, transporting, unloading, and any temporary storage of bus shelters.

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

c. Construction. Remove and dispose of bus shelters as indicated on the plans. The specific items and limits of removal to be field verified and approved by the Engineer prior to removal activities. Complete all work as required by state and local regulations and as directed by the Engineer. Verify any electrical wiring is de-energized prior to removals.

Any materials and/or portions of materials identified by the Engineer that do not need to be salvaged shall become the property of the contractor and shall be disposed of by legal means off-site as part of the respective pay item identified herein at no additional cost.

Backfill and restore all disturbed areas with Class II Granular Material or Engineer approved backfill.

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

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
Bus Shelter, Rem	Each

DS_Bus Shelter, Rem shall be paid in full for each bus shelter removed, hauled away, and disposed of, including associated lighting, benches, signage, and footings. The cost and installation of the backfill material is included as part of **Bus Shelter, Rem** pay item.

DETAILED SPECIFICATION
FOR
INFILTRATION TRENCH

WT:AJK

1 of 3

01/15/2025

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 fill 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 of the diameter per plan, perforated high-density polyethylene (HDPE) and meet the requirements of AASHTO M-294.

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 inches of 6A aggregate compacted to the satisfaction of the engineer.
6. Install pipe and drainage structures. Install perforated pipe of the specified diameter, 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, 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.

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.

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

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
DS_Infiltration Trench, 12 In.	Foot
DS_Infiltration Trench, 24 In.	Foot

Payment for **DS_Infiltration Trench, 12 In.** and **DS_Infiltration Trench, 24 In.** 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 pipe of the size specified on the plan, and furnishing, installing, and compacting granular material and aggregate, wrapped with geotextile.

Drainage structures and subgrade undercutting will be paid for separately.

DETAILED SPECIFICATION
FOR
STORM CONTROL STRUCTURE, __ IN. DIA., (0-8' DEEP)

WT:AJK

1 of 4

10/18/2024

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 II, 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 where applicable, 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 Contractor 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):

<u>Pay Item</u>	<u>Pay Unit</u>
DS_ Storm Control Structure, 48 In. Dia., (0-8' deep).....	Each
DS_ Storm Control Structure, 60 In. Dia., (0-8' deep).....	Each

Payment for **DS_Storm Control Structure, 48 In. Dia., (0-8' deep)** and **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
STORM PRETREATMENT STRUCTURE, _

WT:BLA

1 of 6

01/19/2026

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 Type S Mortar

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 minimum 4 inches of 21AA or 6A stone, or as directed by the Engineer 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 be 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^o 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 21AA or 6A stone, or as directed by the Engineer 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%.

Type S Mortar 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 Type S Mortar 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.

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

<u>Pay Item</u>	<u>Pay Unit</u>
DS_Storm Pretreatment Structure, Inlet.....	Each
DS_Storm Pretreatment Structure, Solid.....	Each

Payment for **DS_Storm Pretreatment Structure**, _____ 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.

DETAILED SPECIFICATION
FOR
SEWER, CI E, 12 INCH, TR DET B

WT:MH

1 of 1

12/22/2025

a. Description. This work consists of furnishing and installing storm sewer 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. Provide materials in accordance with sections 402 of the MDOT 2020 Standard Specifications for Construction.

c. Methods of Construction. The construction methods used for Sewer, CI E, 12 inch, Tr Det B shall conform to sections 402 of the MDOT 2020 Standard Specifications for Construction.

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

<u>Pay Item</u>	<u>Pay Unit</u>
DS_Sewer, CI E, 12 inch, Tr Det B	Foot

Payment for storm sewer includes all labor, material, and equipment required for furnishing and installing the storm sewer as shown on the plans and as specified herein.

DETAILED SPECIFICATION
FOR
4 IN. 45° DIP BEND

WT:AJK

1 of 1

12/20/24

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. Outside 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:

<u>Pay Item</u>	<u>Pay Unit</u>
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.

DETAILED SPECIFICATION
FOR
GATE VALVE IN BOX, 4 IN.

WT:AJK

1 of 2

12/20/24

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:

<u>Pay Item</u>	<u>Pay Unit</u>
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.

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):

<u>Contract Item (Pay Item)</u>	<u>Unit</u>
DS_HMA, Temp Pavt (4EML).....	Ton

Payment for **DS_HMA, Temp Pavt (4EML)** 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.

DETAILED SPECIFICATION
FOR
DETECTABLE WARNING SURFACE, TEMP

WT:CGT:MHM

1 of 2

12/20/2024

a. Description. This work shall consist of furnishing and installing temporary detectable warning units in accordance with the Americans with Disability Act (ADA). All work shall 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 shall be properly labeled and shall contain the following information: Name of Project; Submitted by; Date of Submittal; Manufacturer'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 shall be performed by a certified and qualified independent testing laboratory on a cast-in-place tactile warning system. All test reports submitted shall be certified by the testing laboratory and shall clearly state that all tests were completed within 5 years of the date of the submittal. The manufacturer shall 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 shall 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

b. 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

d. 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 shall follow manufacturer specifications for installation.

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

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
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.

DETAILED SPECIFICATION
FOR
TACTILE DIRECTIONAL INDICATOR

SG:LAF

1 of 1

12-18-25

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 shall be Cast-In-Place Replaceable Directional Bar Tile by ADA Solutions as found at www.adatile.com. The Tactile Direction Indicator shall be Federal Yellow, Federal Standard Color No. 33538. Tiles shall be 6" x 24" or 6" x 48" in size.

c. Construction. The Contractor shall 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 shall 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:

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
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.

DETAILED SPECIFICATION
FOR
PLANTER CURBS

SG:LAF

1 of 1

12-18-25

a. Description. This work consists of furnishing all labor, equipment, materials, required to furnish and planter curbs 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 curb 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 curb 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 curbs (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:

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
DS_Planter Curb, 4 In.....	Foot
DS_Planter Curb, 6 In.....	Foot
DS_Planter Curb, 8 In.....	Foot

Payment for **DS_Planter Curb, ____** 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
TREE GRATE

SG:LAF

1 of 2

12-18-25

a. Description. This work consists of furnishing all labor, equipment, materials, required to furnish and install tree grates in the areas 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. Provide tree grate materials as shown on the plans and approved by the Ann Arbor Downtown Development Authority. Provide iron castings conforming to section 908 of the Michigan Department of Transportation Standard Specifications for Construction that come with a 10-year warranty against breakage. All materials to have a galvanized finish per the manufacturer's specifications. Ensure all anchoring bolts, nuts, washers, and all other hardware for installation meet the manufacturer's recommendation. Notch grate in underside ribs or ease of expanding the tree opening. Tree grates and frames are to be the sizes and configurations as shown on the plans. Furnish certification and product shop drawings regarding the compliance of materials incorporated in the work for approval by Engineer prior to construction.

1. Tree Grate. Furnish the following tree grate or approved equal by the Engineer:

<u>Product Name</u>	<u>Supplier</u>	<u>Contact</u>
48" Square Jamison	Urban Accessories	urbanaccessories.com

c. Construction.

1. Fabrication. Ensure all tree grates are manufactured true to pattern and component parts fit together in a uniform manner. Ensure all castings are free of defects and cleaned by shot blasting. Contractor shall coordinate fabrication and delivery of frames with the concrete installer so that frames can be installed during paving operations.

2. Frames. Square up frame sections and bolt together. Install the tree grate frame flush and on a plane with the proposed surrounding slope, prior to casting the concrete around it.

3. Tree Grates. Set the grates flush with the top of the frame and ensure that the grate does not rock in the frame. Securely bolt grates together on the underside. Clean any foreign matter from the tree pits and grates prior to setting.

4. Ensure that top of frame and tree grate is not greater than 1/8 inch or higher or lower than adjacent pavement surfaces and meets ADA requirements for public sidewalks. Ensure space between adjacent grates does not exceed 1/4 inch.

5. Spot weld the grates to the frame sections upon placement. Provide a 1 inch

weld

6. If the Engineer believes the product of installation has resulted in either a poorly fitted grate and frame, an unsafe walking surface, the Engineer may reject the installed product and require new materials and/or installation.

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:

Pay Item	Pay Unit
DS_Tree Grate	Each

Payment for **DS_Tree Grate** will include all costs for labor, materials, and equipment costs to perform the work as described herein, including thickened concrete edge, frames, grates, and hardware. The completed work will be measured by each complete unit installed.

DETAILED SPECIFICATION
FOR
PAVT MRKG, POLYMER CEMENT SURFACE

SG:OJK
WT:AJK:MHM

1 of 3

10/10/2022
REV. 12/20/2024

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 bus lane pavement markings.

All work shall be in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction and the City of Ann Arbor 2025 Standard Specifications, 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/m ²		
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 bus lane pavement marking material must be comprised with red pigment and anti-skid abilities. The polymer cement surfacing shall be manufactured by Pavement Surface Coatings of Hanover New Jersey, and no material substitutions will be allowed.

1. Pigmented Resin. Transpo Color-Safe Bus Lane Red must be used as the pigment or approved equal. The approved color pigmented resin shall comply with FHWA red color guidelines for transit lanes.
2. Anti-Skid Aggregate. Anti-skid aggregates shall be provided by the pavement marking supplier. Aggregate shall 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 bus lane pavement markings shall be in accordance with manufacturer application and installation procedures, Michigan Department of Transportation 2020 Standard Specifications for Construction, and Engineer.

All pavement marking areas shall be laid out by the contractor and then reviewed by the Engineer. Marking layout shall be approved by the Engineer prior to placement of material.

Surface preparation shall include cleaning of the pavement surface using high pressure water, compressed air or sandblasting and shall conform to ASTM D4263. All surface damage shall 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 shall receive a base coat application and shall be included in the pay item. Marking layout, material mixing, base coat application, and pigmented coat application shall comply with the manufacturer's installation procedures.

The Contractor shall protect the pavement markings from damage and allow them to fully cure prior to allowing traffic to drive over markings. Any damage shall 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):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
DS_Pavt Mrkg, Polymer Cement Surface, Bus Lane, Red	Square Foot
DS_Pavt Mrkg, Polymer Cement Surface, Bus	Each
DS_Pavt Mrkg, Polymer Cement Surface, Only	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.

DETAILED SPECIFICATION
FOR
PERMANENT PAVEMENT MARKINGS

WT:VCM/CEW

1 of 3

12/17/25

a. Description. This work consists of providing and placing permanent pavement markings in accordance with the Michigan Manual of Uniform Traffic Control Devices (MMTUTCD), latest version published at time of advertisement. Provide pavement markings that conform to the Plans, the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, MDOT Pavement Marking Standard Plans, City of Ann Arbor Special Details, and as specified herein.

b. Materials. Provide materials in accordance with section 811 and 920 of the MDOT 2020 Standard Specifications for Construction. Provide the Material Safety Data Sheets to the Engineer for required materials and supplies. Dispose of unused material and containers in accordance with the Federal Resource Conservation Recovery Act (RCRA) of 1976 as amended, and 1994 PA 451, Part 111 Hazardous Waste Management. Provide samples of permanent marking materials upon request.

Wet Night Retroreflective Beads and/or Elements. Select WR beads and/or elements from one of the following Manufacturers or a Department approved alternative that meets the requirements in Table 1:

- 3M Corporation
- Potter's Industries
- Swarco
- Flex-o-Lite

Table 1: WR Markings

Average Initial Retroreflectivity at 30 meter geometry in mcd/lux/m ²		
Test Method	Color	
	White	Yellow
Dry (ASTM E 1710)	700	500
Wet Recovery (ASTM E 2177)	250	200

Ship the material to the job site in sturdy containers marked in accordance with subsection 920.1.A of the Standard Specifications for Construction. Submit to the Engineer prior to the start of work:

- i. 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

DETAILED SPECIFICATION
FOR
PERMANENT PAVEMENT MARKINGS

WT:VCM/CEW

2 of 3

12/17/25

recommended rate supersedes the table values.

- ii. Certification from the Manufacturer that when applied according to their application recommendations the beads and/or elements meet the requirements shown in Table 1 above.

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.

c. Construction. The preparation and placement of permanent markings shall conform to section 811 of the MDOT 2020 Standard Specifications, the Plans, and as specified herein.

Place the binder and beads and polymer surface coatings in accordance with the Manufacturers' recommendations and sections 811 and 920 of the Standard Specifications for Construction except as noted above.

All pavement marking areas shall be laid out by the contractor and then reviewed by the Engineer. Marking layout shall be approved by the Engineer prior to placement of material.

Surface preparation shall include cleaning of the pavement surface using high pressure water, compressed air or sandblasting and shall conform to ASTM D4263. All surface damage shall 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 shall receive a base coat application and shall be included in the pay item. Marking layout, material mixing, base coat application, and pigmented coat application shall comply with the manufacturer's installation procedures.

The Contractor shall protect the pavement markings from damage and allow them to fully cure prior to allowing traffic to drive over markings. Any damage shall be corrected by the Contractor at the Contractor's expense.

DETAILED SPECIFICATION
FOR
PERMANENT PAVEMENT MARKINGS

WT:VCM/CEW

3 of 3

12/17/25

d. Measurement and Payment. Completed work, as described, will be measured and paid for at Contract Unit Prices for the following Contract (Pay) Items:

<u>Contract Item (Pay Item)</u>	<u>Unit</u>
DS_Pavt Mrkg, Polyurea, 6 inch, White "X"	Foot
DS_Pavt Mrkg, Polyurea, 18 inch, White	Foot

The unit prices for these items of work shall include all labor, material, and equipment costs to perform all the work specified in the MDOT 2020 Standard Specifications for Construction and as modified by this Detailed Specification.

DETAILED SPECIFICATION
FOR
RECESSED POLYUREA PAVEMENT MARKINGS

WT:AJK

1 of 2

11/9/2022

a. **Description.** This work consists of providing all equipment and labor required to prepare (grooving) the pavement surface for recessed special pavement markings in accordance with the City of Ann Arbor Permanent Pavement Markings Detailed Specification, the plans, and this detailed specification.

b. **Materials.** None specified.

c. **Construction.** Install a recess (groove) in accordance with the recessed pavement marking material manufacturer's installation instructions. Ensure all recessing configurations are in accordance with the Michigan Manual of Uniform Traffic Control Devices and the Michigan Department of Transportation Pavement Marking Standards.

1. Grooving Concrete and Hot Mix Asphalt Pavement. If there are no markings on the pavement, paint a temporary tracer line (with no beads) exactly where the permanent markings will be placed. Use these lines as a template for the grooving operation.

Use equipment and methods approved by the manufacturer of the recessed pavement marking material to be recessed for forming grooves in pavement surfaces. Dry cut the grooves in a single pass using stacked diamond cutting heads on self-vacuuming equipment capable of producing a finished groove ready for pavement marking material installation.

Ensure that the bottom of the groove has a fine corduroy finish. If a coarse tooth pattern results, increase the number of blades and decrease the spaces on the cutting head until the required finish is achieved.

2. Groove Dimensions. Ensure grooves for recessed pavement markings are in accordance with the following:

Longitudinal Markings

Groove Width: Material width +1 inch, ($\pm 1/8$ inch)
Groove Depth: As recommended by the manufacturer, (± 5 mils)
Groove Position: Center/Lane Lines: 2 inches from joint line, ($\pm 1/8$ inch)

Edge Lines: On lane, 2-4 inches in from the joint line, ($\pm 1/8$ inch)
Edge Lines for 14-foot paved lanes: as directed by the Engineer

Transverse Markings

Groove Width: Material width +1 inch, ($\pm 1/8$ inch)

DETAILED SPECIFICATION
FOR
RECESSED POLYUREA PAVEMENT MARKINGS

WT:AJK

2 of 2

11/9/2022

Groove Depth: As recommended by the manufacturer, (± 5 mils)

Groove Position: In the exact location where the transverse marking (crosswalk or stop bar) will be placed.

Turning Guideline Markings

Groove Width: Material width +1 inch, ($\pm 1/8$ inch)

Groove Depth: As recommended by the manufacturer, (± 5 mils)

Groove Position: In the exact location where the turning guideline markings will be placed.

Placing Recessed Pavement Markings. Place the pavement marking material in the grooves within 24 hours of the grooves being made. Ensure the grooves are clean and dry prior to placing pavement marking material. Locate the groove so the entire marking can be placed within the groove.

d. Measurement and payment.

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

PAY ITEM

PAY UNIT

DS_Recessing for Polyurea Spec MrkgSquare Foot

Pavement marking materials, including retroreflective pavement marking required for traffic control, will be paid for separately using the appropriate pay items.

DETAILED SPECIFICATION
FOR
MONUMENT BOX COVERS

AA:MGN
WT:CGT:VCM:AJK

1 of 1

11/19/15
01/15/2026

- a. **Description.-** This work shall consist of furnishing monument box covers as detailed on the plans and as specified herein.

Type of Casting	MDOT Designation	EJ Casting No.	Neenah Casting No.
Monument Box Assembly	Mon Box	8360Z w/ 8360A3 Cover	N/A

- b. **Materials.-** The materials used for this work shall conform to Section 908.05 of the Michigan Department of Transportation 2020 Standard Specifications for Construction and the City of Ann Arbor 2025 Standard Specifications except as specified herein.
- c. **Construction Methods.-** The construction methods shall be as specified in the related items of work for which the covers are provided.
- d. **Measurement and Payment.-** The completed work as measured shall be paid at the contract unit price for the following contract items (pay items):

<u>(Contract Item) Pay Item</u>	<u>Pay Unit</u>
DS_Monument Box Cover	Each

Payment for this item of work shall include all labor, materials and equipment needed to furnish the structure cover.

DETAILED SPECIFICATION
FOR
LIGHTING AND ELECTRICAL

SG:FD

1 of 2

1/13/26

a. Description. This work consists of furnishing all labor, equipment, materials, required to furnish and install lighting and electrical elements 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. Provide materials as indicated on the plans and as outlined in the 2025 City of Ann Arbor Standard Specifications.

c. Construction. The Contractor shall install lighting and electrical elements as indicated on the plans.

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:

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
DS_Conduit, Rigid, ¾ In.	Foot
DS_Light Fixture, Decorative Globe, Double	Each
DS_Shelters, GFCI Duplex Outlets	Each
DS_Shelters, Sidewalk Lights (SL1)	Each
DS_Shelters, Continuous LED Strip (SL 2)	Each
DS_Shelters, Seating Lights (SL3)	Each
DS_Lighting Control Panel ...	Each
DS_Electrical Cabinet Heater	Each

DS_Conduit, Rigid, ¾ In. will be measured by length in feet and shall include all labor, material and equipment costs required to furnish and install conduit; and shall include, but not be limited to, excavation, backfill, fittings, elbows, sweeps, pull strings, end caps, sleeves, tracer wire, expansion couplings, conduit spacers, concrete, and other work necessary for installation of as shown on the plans or specified..

DS_Light Fixture, Decorative Globe, Double shall be paid for at the contract unit price each and shall include all labor, equipment, and materials, including, but not limited to: all lamps; supports; hangers; brackets; globes and all other parts and devices necessary for complete operation and installation, as shown on the plans and detailed in these specifications, or as directed by the PSAA.

Payment for **DS_Shelters, GFCI Duplex Outlets** will include all costs for labor,

materials, and equipment costs to perform the work as described herein. The completed work will be measured by each unit installed.

DS_Shelters, Sidewalk Lights (SL1), DS_Shelters, Continuous LED Strip (SL 2), DS_Shelters, Seating Lights (SL3) shall be paid for at the contract unit price each and shall include all labor, equipment, and materials, including, but not limited to: all lamps; supports; hangers; brackets; and all other parts and devices necessary for complete operation and installation, as shown on the plans and detailed in these specifications.

Payment for **DS_Lighting Control Panel** will include all costs for labor, materials, and equipment costs to perform the work as described herein. The completed work will be measured by each unit installed.

Payment for **DS_Electrical Cabinet Heater** will include all costs for labor, materials, and equipment costs to perform the work as described herein. The completed work will be measured by each unit installed.

DETAILED SPECIFICATION
FOR
ELECTRICAL AND COMMUNICATION HANDHOLES

WT:VCM

1 of 2

01/24/19

a. Description. This work shall consist of furnishing and installing electrical conduit, both directional bored or direct burial, and handhole assemblies at the locations shown in the Plans, or as directed by the Engineer. All work shall be completed in accordance with the current National Electric Code (NEC), section 819 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, except as specified herein.

The Contractor shall excavate all trenches and pits to the required dimensions; sheet, brace, and properly support the adjoining ground or structures where necessary to comply with MIOSHA, Section 104.07.B of the MDOT 2020 Standard Specifications for Construction, and other relevant safety standards.

The work for all items shall include, but not be limited to; pavement saw-cutting; excavation and disposal of excavated material; the furnishing, installation, and removal of sheeting and/or shoring where needed; all items necessary for the protection of the trench and all persons employed in the work during the work day and "after-hours" periods; the furnishing, placement and compaction of approved bedding and backfill materials; additional labor and equipment costs associated with any required nighttime water main work; and any other required items to complete the work as shown on the plans, as detailed in this Detailed Specification, and as directed by the Engineer.

b. Materials. All materials shall be new and meet the requirements of the current IEEE, NEMA, ANSI Standards as applicable, and as specified herein.

The Contractor shall submit product data sheets for all conduit, handholes, covers and other parts for Engineer approval prior to ordering materials. The manufacturer "Quazite Composolite," referenced below, is located in Lenoir City, Tennessee.

Provide Granular Material, CI II in accordance with section 902 of the MDOT 2020 Standard Specifications for Construction.

Provide Schedule 80 HDPE conduit for directional boring in accordance with sections 918 and 819 of MDOT 2020 Standard Specifications for Construction.

c. Construction. Handholes shall be placed at all junctions of traffic signal or electrical conduit, and as shown on the plans. Maximum distance between any two handholes shall be as shown on the Plans, but in no case shall exceed 500 feet.

Place foundation material consisting of four (4) inches of Granular Material, CI II compacted to 95% of its maximum unit weight.

DETAILED SPECIFICATION
FOR
ELECTRICAL AND COMMUNICATION HANDHOLES

WT:VCM

2 of 2

01/24/19

Set the handhole or stacked units to the proper depth and elevation.

Connect handholes to new and existing conduits, whether shown on the plans or not. All conduits shall be connected to the handholes in accordance with the latest revision of Article 346 of the National Electrical Code (NEC).

Backfill around the perimeter of the handhole with Granular Material, CI II compacted to 95% of its maximum unit weight.

DS_Handhole, Adjust includes Handhole Adjusts for All Sizes including the final adjustment of existing handholes to meet proposed grade elevation, where such change is at least 3", to a maximum of 15". The work shall include all vertical adjustments to the handhole structure, creation of new penetrations into the sidewall of the structure necessary, cleanout of the structure, and placement of aggregate necessary to support and backfill the handhole. Vertical adjustments of less than 3" are considered incidental to the placement of pavement.

Install directional bored conduit in accordance with section 819.03 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 prices for the following pay items:

<u>Pay Item</u>	<u>Pay Unit</u>
DS_Handhole, Adjust	Each

DETAILED SPECIFICATION
FOR
TRAFFIC SIGNAL EQUIPMENT

WT:JNB

1 of 1

11/09/2022

a. Description. This work consists of furnishing and installing traffic signal equipment 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. Provide materials in accordance with sections 918 and 921 of the MDOT 2020 Standard Specifications for Construction.

c. Methods of Construction. The construction methods used for traffic signal equipment shall conform to sections 818 and 820 of the MDOT 2020 Standard Specifications for Construction.

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

<u>Pay Item</u>	<u>Pay Unit</u>
DS_TS, Pedestrian, Bracket Arm Mtd, Rem	Each
DS_TS, Pedestrian, Pedestal Mtd, Rem	Each
DS_Pedestal, Rem	Each
DS_Pedestal Fdn, Rem	Each
DS_TS, Pedestrian, Two Way Pedestal Mtd (LED) Countdown	Each
DS_TS, Pedestrian, One Way Pedestal Mtd (LED) Countdown	Each
DS_Pedestal, Alum.....	Each
DS_Pedestal, Pushbutton, Alum	Each
DS_Pedestal, Fdn.....	Each
DS_Conduit, Schedule 80 PVC, 2 inch.....	Foot

Payment for signal equipment includes all labor, material, and equipment required for furnishing and installing the signal equipment as shown on the plans and as specified herein.

DETAILED SPECIFICATION
FOR
ACCESSIBLE PEDESTRIAN SIGNAL SYSTEM

WT:JB;BLA

1 of 6

12/17/2025

a. Description. This work consists of either furnishing and installing an accessible pedestrian signal system and push button station(s) or removing a system and push button station(s) at locations as shown on the plans.

The following terminology is used in this special provision.

1. Accessible pedestrian signal system, or system hereafter, refers to central control unit (CCU) and multiple push button stations.
2. CCU, refers to the unit installed in an existing traffic signal controller cabinet, frame, and all required mounting hardware and the configurator. The CCU is the power supply and signaling interface, between the intersection traffic signal controller and the push button stations. Configurator refers to a handheld, password secure, infrared device capable of setting and resetting all push button stations on the intersection from a single push button station (global updating). Each CCU will control multiple push button stations. A complete system includes one CCU.
3. Push button station (PBS), refers to a Public Rights-of-Way Accessibility Guidelines (PROWAG) compliant push button station including signs when specified, installed at crosswalk termini, and all required mounting hardware. A system can include 2 to 12 PBS (maximum of 3 per phase).

b. Materials. Furnish an accessible pedestrian signal system including CCU and PBS meeting the requirements of this subsection. Furnish all hardware and other appurtenant materials in accordance with sections 918 and 921 of the Standard Specifications for Construction and this special provision.

1. Accessible Pedestrian Signal System.
 - A. Furnish an accessible pedestrian signal system from the following list.
 - (1) Polara Navigator.
 - (2) Approved equal (AE). Ensure the AE is evaluated, tested, and approved per the MDOT New Traffic Signal Device Product Review Guidelines. The review time is not justification to delay the project.
2. The system must:
 - A. Furnish various audible features including but not limited to locator tones. All locator tones must emanate from push button stations and be synchronized;

- B. Have multiple language capability, selectable by user, and able to play an emergency preemption message;
 - C. Be able to self-test and report any faults to the traffic controller;
 - D. Furnish the following audible feature, each with a minimum and maximum volume independently settable using the configurator:
 - (1) One locating tone;
 - (2) Five walk sound choices (field selectable);
 - (3) Three pedestrian - clearance sound choices (field selectable) ensuring one of which is an audible countdown;
 - (4) Direction of travel (as standard feature with extended push); and
 - (5) Information message (custom feature with extended push).
 - E. Automatically adjust audible features to ambient noise levels over a 60 decibel (dB) range; and
 - F. Mute sounds on all crosswalks except the activated crosswalk (selectable feature).
3. The CCU must meet the following requirements:
- A. Be compatible with solid-state pre-timed or actuated traffic signal control equipment and cabinet environments;
 - B. Be capable of controlling up to and including 12 PBSs and controlling up to and including 4 pedestrian phases;
 - C. Receive timing from the walk and don't walk signals;
 - D. Have additional advanced configurations available by using general purpose inputs and outputs;
 - E. Ensure full optical isolation of all inputs and outputs and include transient voltage protection as follows:
 - (1) General Purpose Inputs. 10 to 36 VAC/VDC peak with a 10 milli Ampere (mA) maximum.

- (2) General Purpose Outputs and Pedestrian Outputs. 36 VAC/VDC peak, 0.3 Ampere (A) solid state fused contact closure.
 - (3) Fault Output. Normally open and closed relay contacts, 125 VAC/VDC, 1 A maximum.
 - (4) Pedestrian Hand/Walking Person (Walk/Don't Walk) Inputs. 80-150 VAC/VDC, 5 mA maximum.
 - (5) A, B, C, D PBS Power Outputs. Nominal 22 VDC, short circuit protected, auto recovering.
 - (6) Environment Operation and Storage Range. -30 °F to 165 °F (-35 °C to 74 °C), 0 to 100 percent Humidity, Non-condensing.
 - (7) Line Power. 25 Watt (W) to 75 W typical, 120 W peak with 8 PBSs.
- F. Include a 50-pin connector and cable that plugs into the CCU for termination to the traffic signal controller terminal facilities. Ensure the connector is a Positronic MD50F20Z0X or equivalent, provided with 20-24 gauge wire, which complies with the requirements of *UL 1061*.
4. The PBS must meet the following requirements:
- A. Design each PBS in accordance with the following:
 - (1) Produce sounds emanating from the back of the unit via an 8 ohms 15 W, weather-proof speaker protected by a vandal resistant screen;
 - (2) Require only two wires coming from the traffic control cabinet for each phase/crosswalk;
 - (3) Include push buttons which are audibly locatable and equipped with tactile arrows pointing in the same direction as the associated crosswalk;
 - (4) PROWAG compliant, cast aluminum, nickel plated, powder coated with raised tactile arrow on button;
 - (5) Include solid-state switch rated to 20 million activations (minimum); and
 - (6) Include a two inch button with a tactile raised directional arrow on the button that can be changed to one of four directions to coincide with the direction of travel of the associated crosswalk.
 - B. The PBS must include the following standard features:

- (1) The arrow/button must vibrate during the walk period, following a button push;
 - (2) Confirm a button push via a “vibratactile” bounce and a red LED, clearly visible in direct sunlight, which latches ON when the button is pushed;
 - (3) Indicate the direction of travel with extended button push;
 - (4) Transmit a standard locating tone, custom sound, or verbal countdown during pedestrian clearance;
 - (5) Ensure sounds automatically adjust to ambient over 60 dB range;
 - (6) Allow sounds to have minimum and maximum volume set independently;
 - (7) Synchronize all sounds;
 - (8) Extended button push can turn on, boost volumes, and/or mute all sounds except those on activated crosswalk; and
 - (9) Include message to clear the intersection when preemption is activated.
- C. Ensure the PBS is capable of custom message and sound options for the following features:
- (1) Custom locating tone;
 - (2) Custom clearance sound;
 - (3) Custom walk sounds/message;
 - (4) Informational message;
 - (5) Multiple languages (up to three, selected by user); and
 - (6) Street name in Braille on the sign.
- D. Ensure the PBS is fabricated in accordance with the following:
- (1) Available in three standard colors: Black, Green, and Yellow. The default color is yellow unless specified otherwise;
 - (2) Have an operational temperature range of -40 °F to 165 °F (-40 °C to 60 °C);
 - (3) Ensure the housing material is cast aluminum;

- (4) Chemically filmed and powder coated;
 - (5) Face plate constructed of powder coated aluminum with ink marking; and
 - (6) Have pre-drilled mounting holes to hold a 9 inch by 12 inch, R10-3b, 3d, or 3e pedestrian sign.
- E. PBS LED display operational requirements:
- (1) Light when the button is pushed and remain lit until the next walk phase.
 - (2) Luminous intensity greater than 1200 maximum continuous discharge (mcd), sunlight visible, ultra bright red, with a 160 degree viewing angle.
- F. PBS audio operational requirements:
- (1) Audio amplifier power output of 10 W rms into 8 ohms.
 - (2) Volume control automatic adjustment range of 28 dB (maximum).
 - (3) Microphone ambient noise frequency range of approximately 170 Hertz (Hz) to 2.3 Kilo Hertz (kHz).
 - (4) Button tone provides a brief "tick" to confirm each button push.
 - (5) Audible locating tone operates during the pedestrian-clearance and don't walk interval at an 880 Hz plus harmonic, 0.1 second duration, 1 second interval.
 - (6) Audible "chirp" operates only during walk intervals at 2700 Hz to 1700 Hz, 0.2 second duration, 1 second interval.
 - (7) Audible "cuckoo" operates only during walk intervals at 1250 Hz to 1000 Hz, 0.6 second duration, 1.8 second interval.
5. Ensure the configurator meets the following requirements:
- A. Be a handheld, password protected, remote that configures the CCU or an individual PBS;
 - B. Communicate via infrared technology with the CCU and the PBS with an interactive operation to select various configuration options at the intersection(s), by standing adjacent to either the CCU or a PBS;

- C. Feature a LCD display, with two 16-character lines, with backlight and adjustable contrast;
 - D. Be powered by four AA 1.5 Volt cell batteries, include a low battery warning, and have an auto or manual shut-off switch; and
 - E. Have an operating temperature range of 32 °F to 122 °F (0 °C to 50 °C).
6. Warranty. Furnish a manufacturer’s warranty, transferable to the Department or the local agency responsible for the project, that the supplied materials will be free from all defects in materials and workmanship for a 2-year period from the date of shipment. Furnish the warranty and other applicable documents from the manufacturer, and a copy of the invoice showing date of shipment, to the Engineer at the time of delivery.

c. Construction. Complete this work in accordance with sections 818 and 820 of the Standard Specifications for Construction, typical signal construction details, and this special provision.

- 1. Furnish and Install. Furnish and install a system at an intersection as shown on the plans and in accordance with the *MMUTCD*. Ensure that the arrow on the PBS button(s) points in the direction of pedestrian travel for the associated crosswalk.
- 2. Remove. Remove an accessible pedestrian signal system or a PBS and store, as directed by the Engineer, or dispose of all removed materials.
 - A. Where removal of an accessible pedestrian signal system is specified on the plans, remove the CCU, hardware, cable, connectors, and other appurtenant material required to complete the work.
 - B. Where removal of a PBS is specified on the plans, remove the PBS, sign, associated assembly, hardware, cable, connectors, and other appurtenant material required to complete the work.

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

<u>Pay Item</u>	<u>Pay Unit</u>
DS_Pedestrian Signal System, Accessible	Each
DS_Push Button Station and Sign	Each

- 1. **Pedestrian Signal System, Accessible** includes installing the accessible pedestrian signal system at an intersection, including a CCU, configurator,

hardware, fittings, conduit(s), wiring, grounding and ground rod(s), and all appurtenant material required to complete the work.

2. **Push Button Station and Sign** includes installing the push button station, sign (when specified), associated assembly, brackets, hardwire, fittings, conduit(s), cable to controller, wiring, grounding, ground rod(s), and all other appurtenant material required to complete the work.

DETAILED SPECIFICATION
FOR
PLANTING

SG:LAF

1 of 4

12-18-25

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 Ann Arbor Downtown Development Authority. The materials shall include plants, planting mixture, mulch, stakes, anchors, 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. Tree Anchors. Provide manufacturer's information for tree anchoring for approval by Engineer.

4. 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.

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. Demarcation barrier. Install demarcation barrier between existing soils and planting mix as shown on the plans. The placement of the fabric will be tapered around and up to the root ball of trees so that tree roots can penetrate as deeply as possible. Contractor shall provide photographs to document the placement of the demarcation layer.

5. Fertilizing. Prior to or during planting, amend planting mix by incorporating fertilizer at rates specified by soil test reports.

6. Finish Grading. Grade planting areas to a smooth, uniform surface with loose, uniformly fine texture.

7. 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.

8. Staking. Install staking as shown on the detail immediately after planting. Remove and dispose of stakes at the end of the maintenance period.

9. Tree Anchors. Drive steel staples into the soil per manufacturer's instructions. Do not injure tree roots or damage rootball. Anchors shall be permanently left in place.

10. 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:

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
DS_Tree, Large, B&B	Each
DS_Perennial, #1 Cont.	Each
DS_Perennial, Bulb.....	Each
DS_Planting Mix.	CY

DS_Landscape Maintenance and Warranty.LS

Payment for **DS_Tree, Large, B&B, DS_Plant, #1 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.

DETAILED SPECIFICATION
FOR
SITE FURNISHINGS

SG:LAF

1 of 2

12-18-25

a. Description. This work consists of furnishing all labor, equipment, materials, required to furnish and install benches and freestanding planters in the areas 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 freestanding planters and benches as shown on the plans and approved by the Ann Arbor Downtown Development Authority. The materials shall include all anchor bolts, nuts, washers, and all other hardware required for installation in accordance with the plans and specifications and per the manufacturer's recommendations. Shop drawings from the manufacturer shall be submitted to the Engineer for approval prior to fabrication.

1. Bench. Bench design is custom to the project, based on the Rough& Ready product series. Furnish and install the following benches:

Model:	Rough&Ready Crosswise Bench
Manufacturer:	STREETLIFE America, LLC
Phone:	(215) 247-0148
Material:	Powder Coated Steel
Seating Material:	FSC Louro Hardwood
Seating Depth:	16 inches
Lengths:	4 feet 6 feet
Accessories:	Backrest

2. Freestanding Planter. Planters shall be furnished with leveling feet and drainage holes. Furnish the following planters or approved equal by the Engineer:

Model:	Shrubtub Square
Manufacturer:	STREETLIFE America, LLC
Phone:	(215) 247-0148
Material:	Powder Coated Aluminum
Color:	To be determined by Owner
Sizes:	24 x 30 x 30 inches 30 x 30 x 30 inches

c. Construction.

1. Prior to installation, Contractor shall mark locations of site furnishings for review by Engineer. The Engineer reserves the right to select alternative locations.

2. Bench. Install and anchor the bench on concrete pavement in accordance with the details and the manufacturer's recommendations. The benches must be

level and parallel to the sidewalk. Install in a true, flat plane to prevent rocking.

3. Freestanding Planter. Place planters on sidewalk in accordance with the plans. Planters shall be parallel to sidewalk. Level planters with leveling feet. Contractor shall adjust orientation of planters as necessary if disturbed due to planting or other construction activities.

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:

Pay Item	Pay Unit
DS_Bench, 6 foot.....	Each
DS_Bench, 4 foot.....	Each
DS_Freestanding Planter, 24 In. X 30 In. X 30 In.	Each
DS_Freestanding Planter, 30 In. X 35 In. X 35 In.	Each

Payment for **DS_Bench**, _____ and **DS_Freestanding Planter**, _____ will include all costs for labor, materials, and equipment costs to perform the work as described. The unit price for **DS_Freestanding Planter**, _____ shall include furnishing and installing geotextile and drainage aggregate as specified in Planting.

DETAILED SPECIFICATION
FOR
BIKE HOOP

SG:LAF

1 of 1

12/18/25

a. Description. This work consists of furnishing all labor, equipment, materials, required to furnish and install bike hoops in the areas 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. Provide bike hoop materials as selected and approved by the Ann Arbor Downtown Development Authority. All pipe and anchoring hardware materials shall be made of galvanized steel. The bike hoop pipe shall be schedule 40. Fabricate bike hoops as dimensioned on the plans. The finish of the bike hoops shall be powder coated black.

The materials shall include all anchor bolts, nuts, washers, and other hardware required for installation in accordance with the specifications herein, plans, and per the manufacturer's recommendations. All hardware shall be galvanized steel, finished to match the hoop.

c. Construction. The Contractor shall install bike hoops at proposed locations indicated on the plans. Bike hoop locations shall be laid out for approval by the Engineer prior to installation. Surface mounting is required. Identify each part prior to assembly. Evenly space bike hoops at the dimensions noted on the plans. Bike hoops shall be installed plumb, in line with each other, and firmly connected to the pavement to prevent rocking. Only after final adjustment and leveling, permanently tighten all bolts, nuts, and fasteners.

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:

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
DS_Bike Hoop	Each

Payment for **DS_Bike Hoop** will include all costs for labor, materials, and equipment costs to perform the work as described herein. The completed work will be measured by each complete unit installed.

DETAILED SPECIFICATION
FOR
BUS SHELTER STRUCTURES

SG: RRD

1 of 5

12-19-25

a. Description. This work consists of providing, fabricating, and erecting bus shelter structures as indicated on 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.

1. This section includes the following:
 - a) Structural steel, sloped roof system, monolithic polycarbonate glazing panel system, and accessories as shown in drawings and as specified.
 - b) Factory provided structural steel, anchors, brackets and hardware necessary to complete the assembly and weather tightness performance requirements. All flashing up to but not penetrating adjoining work are also required as part of the system and shall be included according to the approved manufacturer submittal.
2. The manufacturer of the bus shelter structures shall be able to provide proof of at least 10 years of direct experience in the design, fabrication, and installation of substantially similar structures in size, materials, and climate of the location of installation. Submit list of completed projects including project name and location, name and contact data of design professional and owner, and size and materials of project.
3. The plans and details are provided to form the basis of design and are provided to illustrate the aesthetic, performance and functional characteristics only. The dimensions shown are provided to quantify the form and overall scale of the bus shelter structures. The dimensions provided do not indicate the precise sizes of members or assemblies. The contractor is required to provide engineering and structural design as well as all other required components to provide complete and operational bus shelters that match the design illustrated. Modifications to the foundation and other components illustrates on the plans may be necessary.
4. In submitting a bid, the bidder confirms that the design intent, including the materials, size, and specifications (in the plans and herein) of the bus shelters are acceptable and that the bidder can construct the bus shelter structures in conformance to the design documents without significant deviation. Any anticipated deviations from the design documents should be noted in the bid submittal.
5. Submit complete shop drawings showing fabrication, materials, installation details, dimensions, fonts and lettering, finishes, accessories, joints, welds, anchorage, graphic symbols, colors, and other appurtenances required for a complete turn-key installation to the Engineer for review and approval. Final design of the anchorages/fasteners, weather sealing, and structural members to be part of the shop drawings, and the supplier to provide material specifications and information, and structural calculations. Shop drawings shall be approved prior to fabrication.
6. The structures shall be designed to withstand applicable wind and design loads in accordance with the international and Michigan building codes. Design the roof assembly and structural steel framing systems to withstand design loads without deflections greater than the following: Roof framing: Vertical deflection of $1/360$ of the span for live, snow, or

wind loads and 1/240 for total loads of the span. Canopy framing: horizontal deflection of 1/360 of the height for lateral loads and 1/240 for total loads of the height.

7. The bus shelter structures have been designed to accommodate lighting, electrical outlets, and future electronic display signs. This work will be provided by the electrical trades as part of the project, and coordination between the shelter provider and electrical trades is required to provide access to the inside of structure members and assemblies as needed to provide electrical lighting and services.
8. Warranty. Provide a written warranty, executed by the manufacturer, agreeing to repair components of translucent glazing and bus shelter structures that fail in materials or workmanship within the specified warranty period. Failure includes, but are not limited to the following: a) Structural failures, b) Failure of systems to meet performance requirements, c) Deterioration of metals, metal finishes, and other materials beyond normal weathering, d) leakage of roofing systems, and d) Yellowing, delamination, leakage, and breakage of glazing panels due to weather events and aging.

The bus shelter framework and roofing systems shall be warranted for 2 years following final completion of the project. Glazing panels shall be warranted from failure as described above for 5 years following final completion of the project.

9. Construction Permits. The General Contractor shall obtain the appropriate permits to construct the bus shelter structures.

b. Materials. Materials shall be per the Standard Specifications for Construction except as herein modified and as shown on the plans.

1. Concrete for footings / foundations to be Grade 4000 (4000 PSI at 28 days). Aluminum materials to meet or exceed ASTM B209 and ASTM B221.
2. Provide all necessary mounting accessories, fittings, and fastenings. All materials shall be designed and rated for exterior environments. Provide galvanized finished for all steel components.
3. Structural Steel Framing and Connections Materials: Plates, shapes, and bars: ASTM A36. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.
4. Bolts, anchors and other fastening devices shall be as required for the strength of the connections and shall be suitable for conditions encountered. Washers shall be of the same material as the fasteners.
5. Panels shall consist of a polycarbonate resin with a permanent, co-extruded, ultra-violet protective layer. Post applied coatings or films of dissimilar materials are not acceptable. Color change: Per ASTM D 2244. Panel thickness: ¼ inch (.25 inch nominal). Color to be selected by Engineer.
6. Sealants. Single component, non-sag, high performance, non-priming, gun grade sealant furnished by glazing manufacturer. Factory-Applied Sealant: Gunnable, non-hardening, elastomeric sealant. ASTM C 920, Type S, Class 12, Grade NS. Fed Spec

TT-S-1657, Type 1.n. Field-Applied Sealant: Approved by translucent insulated daylighting manufacturer. In system construction, the use of adhesives and sealants are not allowed.

7. Glazing Gaskets shall be elastomeric, having low friction where in contact with the glazing panel and be compatible with the polycarbonate glazing panel.

c. Construction. Install bus shelter structures and footings/foundations as specified herein and shown on the plans.

1. Coordinate and field verify locations and orientations with the Engineer. Verify field conditions and measurements before fabrication and installation. Verify utility lines in the area proposed for the installations. Any damage during installation of the bus shelter structures to utilities will be the responsibility of the contractor to repair at no additional cost.
2. Deposit concrete for footings continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness.
3. Shop fabricate and assemble Architectural Exposed Structural Steel (AESS) and roof assemblies to the maximum extent possible. Locate field joints at concealed locations if possible. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation. Detail assemblies to minimize handling and to expedite erection. Use special care handling and fabricating AESS and roof assemblies before and after shop painting to minimize damage to shop finish.
4. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1mm) unless otherwise indicated on plans. Remove sharp or rough areas on exposed surfaces.
5. Form metal to profiles indicated, in maximum lengths to minimize joints. Produce flat, flush surfaces without cracking or grain separation at bends.
6. Weld components before finishing and in concealed location to greatest extent practical to minimize distortion and/or discoloration.
7. Provide type and alloy of filler metal and electrodes as recommended by producer of metal to be welded or brazed and as necessary for strength, corrosion resistance, and compatibility in fabricated items.
8. Weld corners and seams continuously to comply with the following: use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals; obtain fusion without undercut or overlap; remove welding flux immediately; at exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface. Make intermittent welds appear continuous, using filler or additional welding. Seal weld open ends of hollow structural sections with 3/8-inch closure plates.
9. Align and match abutting member cross sections.

10. Install bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
11. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. All exposed hardware and fasteners shall be vandal/tamper resistant.
12. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
13. Fabricate components to accommodate thermal expansion and contraction, field adjustment and provide minimum clearance and shimming for proper glazing system installation and performance.
14. Fabricate components to properly drain water passing joints; drain condensation and moisture occurring and mitigating within glazing system to the exterior through internal guttering and a weep system.
15. Fabricate components to ensure that glazing is properly isolated for low friction thermal and physical movement within the glazing system.
16. Shop prime iron and steel items unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
17. Exposed Steel to be painted (after galvanizing) as noted herein. Color to be selected by Engineer.
 - a) Surface Prep: Visible deposits of oil, grease, or other contaminants shall be removed as required by SSPC-SP1. Sweep (Abrasive) Blasting per SSPC-SP16 to achieve a uniform anchor profile (1.5 to 2.0 mils). Galvanized surfaces must be clean, dry, and contaminant free prior to application of coatings. Uniformly and thoroughly abrade galvanized surface per manufacturer recommendations.
 - b) Prime Coat: Tnemec Series 104 H.S. Epoxy applied at 4.0-6.0 mils DFT.
 - c) Intermediate Coat: Tnemec Series 104 H.S. Epoxy applied at 4.0-6.0 mils DFT
 - d) Finish Coat: Tnemec Series 1075U Endura-Shield II applied at 2.0-3.0 mils DFT
18. Provide temporary bracing or anchors in formwork for items that are to be built into concrete or similar construction.
19. All bus shelter structures shall be mounted true and level.
20. Protect finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit or provide new units.
21. Cleaning. During installation, protect exposed surfaces against accumulation of paint, caulking, disfiguration and damage. Remove excess joint sealant in accordance with sealant manufacturer's instructions. Clean inside and outside of glazing panels immediately after installation and after joint sealants have cured. Follow panel manufacturer's instructions when cleaning exposed panel surfaces.

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

Pay Item	Pay Unit
Fabricate Bus Shelters	SF
Bus Shelter Foundations	Each
Installation of Bus Shelters	SF

The contract price shall be payment in full for all labor, materials and equipment necessary to fabricate, supply and the installation of, but not limited to, steel panels/structure, reinforcement, structural supports, concrete footings, roof assemblies, translucent panels, anchorages/mounting accessories, fittings, fastenings, rigging, bases, finishes/paint, and miscellaneous hardware. Lighting and electrical work to be paid for separately.

APPENDIX