

SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR

VILLAGE OF LAKE ORION

PARK AVENUE RETAINING WALL REPLACEMENT



BIDS DUE:

July 30, 2024

Time: 2:00 p.m.

Village Clerk's Office

21 E. Church St.

Lake Orion, MI 48362

ENGINEER

NOWAK & FRAUS ENGINEERS

48680 VAN DYKE, SUITE 200

SHELBY TOWNSHIP, MI 48317

(248) 332-7931

NFE Job No. M718

CONTRACT DOCUMENTS

PARK AVENUE RETAINING WALL REPLACEMENT

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**VILLAGE OF LAKE ORION
ADVERTISEMENT FOR BIDS**

Notice to Contractors

Sealed proposals will be received at the office of the Village Clerk, 21 E. Church St., Lake Orion, Michigan 48362, until **2:00 p.m., local time, Tuesday, July 30, 2024**, at which time the bids will be publicly opened and read by the Clerk and the amounts of the bids noted for the:

PARK AVENUE RETAINING WALL REPLACEMENT

The Village of Lake Orion is seeking bids for replacing a retaining wall at the north end of Park Avenue. Work includes removal of an existing retaining wall, guardrail and pavement, and replacement with a gravity block retaining wall, new asphalt pavement and guardrail. An alternate cold mill and resurface of pavement extending southerly from the removal pavement will be considered for this project.

The estimated quantities involved in this work consist principally of the following:

<u>Description</u>	<u>Unit</u>
1) Removal of existing timber retaining wall	1 LS
2) Construction of Block Retaining Wall	1 LS
3) 2" MDOT 4EML, Base	55 SY
4) 2" MDOT 5EML, Wearing	55 SY
5) Aggregate Base, 6", 21AA	55 SY
ALTERNATE	
6) Cold Mill 2" Asphalt	52 SY
7) 2" MDOT 5EML, Wearing	52 SY

A certified check or a satisfactory surety bid bond for a sum not less than five (5) percent of the amount of the proposal will be required with each proposal as a guarantee of good faith and same to be subject to the conditions stipulated in the Instructions to Bidders.

The bidder will be required to comply with Michigan statutory prohibitions against discrimination in employment and with employment opportunities for Village of Lake Orion residents.

No proposal once submitted may be withdrawn for at least 90 days after the actual opening of the bids.

The right to accept any proposal, to reject any or all proposals, and to waive defects in proposals, is reserved by the Village.

**BY THE ORDER OF:
DARWIN McCLARY, VILLAGE MANAGER
VILLAGE OF LAKE ORION**

**WESLEY SANCHEZ, DPW DIRECTOR
VILLAGE OF LAKE ORION**

INSTRUCTIONS TO BIDDERS

1. PROPOSALS TO BE RECEIVED

Sealed Bids or proposals for the:

PARK AVENUE RETAINING WALL REPLACEMENT

will be received at the office of the Village Clerk of the Village of Lake Orion, Michigan until **2:00 p.m., local time, on Tuesday July 30, 2024**, and immediately thereafter will be publicly opened and read.

Each BID must be submitted in a sealed envelope, addressed to the Village Clerk of the Village of Lake Orion. Each sealed envelope containing a BID must be plainly marked on the outside as:

“PARK AVENUE RETAINING WALL REPLACEMENT PROJECT”

and the envelope should bear on the outside the name of the BIDDER, his address, his license number (if applicable) and the name of the project for which the BID is submitted. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the Village Clerk, Village of Lake Orion, 21 E. Church St., Lake Orion, MI 48362.

Bids will be received during regular business hours at the place and up to the time stated in the Advertisement or up to the time extended by official notification. Bids may be delivered in person or mailed, but their delivery is the bidder's entire responsibility. Any bid received after the stated hour, even through the mail, will be returned unopened to the bidder.

No bidder may withdraw a bid within 90 days after the actual date of the opening thereof. Should there be reason why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Village of Lake Orion, herein after also referred to as the Village, and the BIDDER.

2. LOCATION OF THE WORK

The location of the work is at the northern end of Park Avenue, Southeast ¼ of Section 3, Village of Lake Orion.

3. INSPECTION OF THE SITE

It is expected that each bidder will make a personal examination of the entire site of the proposed work and of its surroundings. It will be assumed that each bidder, before offering his proposal, has obtained firsthand information concerning any probable interference and the available facilities for transporting, handling, and storing construction equipment and materials, and concerning other conditions which may affect his work.

4. CONFORMITY TO PLANS, SPECIFICATIONS AND CONTRACT DOCUMENTS

Proposals must be made in full conformity to all the conditions as set forth in the Plans, Specifications, and any Addendum for the work now on file in the office of the Village Manager. The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the Village or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

5. BASIS ON WHICH PROPOSALS ARE SOLICITED

A. PROPOSAL SOLICITATION

Proposals may be solicited on the basis of unit prices, lump sum, or a combination of both. The proposal will clearly state which basis is used.

The lump sum price, when applied to the project, or the unit prices, when applied to the several demolition or salvage items, are to make up the total price for the entire work, exclusive of those things which are to be done or furnished by the Village, finished and complete in every particular, according to the Plans and Specifications appertaining to such work, which have been approved by the Village Council and are now on file in the office of the village Manager.

Where Proposals are solicited on the basis of unit prices for certain construction units, which are clearly set forth in the Form of Proposal, the Bidder shall state a unit price for each and every item listed in the Proposal and such prices shall be extended and totaled. If during the review of the Proposals, the Village finds any errors in any extension or total, the Village will make the necessary corrections and award the Contract on the basis of such corrections, since the unit prices shall govern. Any proposal which does not contain a unit price for each item listed will be deemed incomplete and will not be considered in the award of the Contract.

The unit price for each of the several items in the Proposal shall be such that the whole of the unit prices will represent a balanced bid. Any Proposal, in which the unit prices bid for any of the several items are deemed by the Village to be manifestly unbalanced, will be subject to instant rejection.

B. STATEMENT OF QUANTITIES

The quantities indicated in the proposal show the Engineer's estimate of the construction quantities involved in the job, and bids will be computed, tested, and compared by the quantities given in the proposal. Although estimated carefully and with as much accuracy as is practicable beforehand, these quantities are not to be taken as defining or limiting the amount of work to be done under the Contract, but rather as information furnished to bidders concerning the approximate extent of the several items and as a basis for comparing bids.

The Village may increase or decrease the original contract price without renegotiation of the Unit Prices.

C. MATERIALS TO BE FURNISHED BY THE VILLAGE

The Village will furnish to the Contractor, delivered at the site: **NONE**. The Contractor will receive and be responsible for all these materials from the time of their delivery to him until the time when they are received back by the Village as part of the completed and accepted structure.

D. EXTRA WORK

All extra work that may be required of the Contractor will be estimated and paid for under provisions of the General Conditions, contained within this document, which govern such work.

E. ALTERNATES

When the Proposal so provides, a price shall be stated for each listed alternate. Unsolicited alternates are not to be submitted and, if so, will not be considered in the award of the Contract and may cause the entire bid to be rejected.

Selection of whether to award the Contract on the basis of the Base Bid or utilizing one or more of the Alternates will be made on the basis of value engineering and the Village's need to keep project costs within the project budget. The Village reserves full right to make this selection. After making such selection, the award shall be made on the basis of the lowest responsive bid utilizing the Alternates selected, and evaluated in accordance with the provisions of the Purchasing Ordinance of the Village, in accordance with Article 15 of the Instructions to Bidders.

F. LEGAL CONDITIONS

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the contract throughout.

G. PERMITS AND LICENSES

Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS.

H. UTILITIES

Unless otherwise provided in these Specifications, the Contractor shall make his own arrangements for electricity, gas, water and sewer services for use during the construction of the work and shall pay for all connections, extensions, and services.

6. FORM OF PROPOSALS

All proposals must be made in the form attached hereto. Additional copies of this proposal form for the bidder's files may be obtained on request at the office of the Village of Lake Orion Department of Public Works.

All prices stated in the Proposal must be plainly expressed in figures only, and in the proper space or spaces provided. Prices shall be filled in, in ink or typewritten. Any corrections shall be initialed by the Bidder.

All information called for on the Proposal must be furnished to enable a fair comparison of the bids to be made.

The place of residence and phone number of each bidder, or the official address and phone number in the case of a firm or company, with County and State, must be given with the signature.

When bidder's drawings and/or specifications are required to be submitted, they shall be in sufficient detail to fully and distinctly show and describe the equipment which the bidder proposes to furnish, including the kind and quality of the material and workmanship that will be used in the various parts. If any general drawings, specifications, catalogs or any other literature are submitted which contain information or data not pertaining to the particular equipment proposed to be furnished, appropriate notations to that effect must be made.

Any stipulation or qualification contrary to the Contract requirements made by the bidder in or accompanying his proposal as a condition for the acceptance of the Contract will not be considered in the award of the Contract and may cause the rejection of the entire Proposal.

7. LEGAL STATUS OF BIDDER

The legal status of the bidder, that is, as a corporation, a partnership, or an individual, must be stated in the proposal. A corporation bidder must name the state in which its articles of incorporation are held, and must give the title of the official having authority under the by-laws to sign contracts. A partnership bidder must give the full names and addresses of all partners.

8. AGENCY

Anyone signing a proposal as agent of another or others must submit with the proposal legal evidence of his or her authority to do so.

9. BID DEPOSIT

When the Advertisement states that security is required with the Proposal to ensure the acceptance and execution of the Contract and Bonds, no bid will be considered complete unless so guaranteed.

Each proposal must be accompanied by a certified check of guaranty or a bid bond in an amount not less than five percent (5%) of the total price, drawn upon a solvent bank to the order of the Village of Lake Orion, or if a bond, executed by a surety company acceptable to

the Village, as a guarantee of good faith on the part of the bidder and subject to the conditions stipulated in the proposal form.

A single certified check or guaranty (bidder's) bond may serve to cover two or more alternative proposals when such alternative proposals are submitted by the same bidder.

10. STATEMENT OF BIDDER'S QUALIFICATIONS

It is the intention of the Village to award the Contract for this job to a Contractor whose construction skill and financial resources are fully equal to the task of prosecuting the work in a satisfactory manner and of bringing it to completion within the time limit specified. With this end in view, the Form of Proposal may call for a statement of bidder's experience and ability in this particular class of work, and for references concerning his/her business standing and capacity. Contractor shall list the names, addresses and phone numbers of references. The mere ability to offer bonds will not be taken as sufficient evidence of responsibility on the part of the bidder. If Contract is awarded to a foreign company, a certificate of authority to do business in this State must accompany the executed Contract.

The low BIDDER shall supply the names, addresses and phone numbers of major material SUPPLIERS and SUBCONTRACTORS when requested to do so by the VILLAGE.

11. PAYMENTS

Partial payments will be made to the Contractor during the satisfactory progress of the work, calculated at the rate of ninety percent (90%) of the dollar amount of the work completed, until fifty percent (50%) of the established contract amount is in place. After fifty percent (50%) of the work is in place, additional retainage shall not be withheld unless the Contractor's progress is unsatisfactory, all in accordance with Article 13 of the General Conditions hereof and Act 524 of 1980.

12. TIME OF COMPLETION

This work to be done under the proposed Contract is to begin on or before the date stipulated in the Notice to Proceed and must be completed within **90 calendar days**, unless the date for completion is extended by the Contract Documents. Time shall be considered to be of the essence of this Contract.

13. RIGHT TO ACCEPT, TO REJECT, AND TO WAIVE DEFECTS

The Village reserves the right to accept any proposal, to reject any or all proposals, and to waive any defect or irregularity in any proposal if it appears advantageous to the Village to do so. In particular, any alteration, erasure, or interlineation in the Form of Contract in the Specifications which are attached hereto and made a part, specifically, of these Instructions, or of the Form of Proposal, shall render the accompanying proposal irregular and subject to rejection by the Village of Lake Orion. In case any explanations, additions or alterations are to be offered, they shall be indicated on separate sheets attached to the proposal and referred to therein. Proposals which are clearly unbalanced will also be considered as irregular, and will be subject to instant rejection by the Village of Lake Orion.

14. AWARD OF CONTRACT

The Contract will be awarded to the qualified Bidder submitting the lowest responsive Bid complying with the conditions of the Invitation for Bids. The Bidder's qualification and responsiveness shall be determined by the Village of Lake Orion. The Bidder to whom the award is made will be notified at the earliest possible date. The Village reserves the right to reject all bids and not award the Contract, at its sole discretion.

15. OBLIGATION TO EXECUTE CONTRACT

The Bidder whose proposal is accepted will be required to execute the Contract, in the form attached hereto, and to furnish sureties as hereafter specified, within ten days (Sundays and legal holidays excepted), after receiving notice of acceptance of bid and preparation Contract forms is completed, and in case of the successful bidder's refusal or failure to do so, shall be considered to have abandoned all their rights and interests in the award, and their certified check or guaranty (bidder's) bond may be declared to be forfeited to the Village as liquidated damages and not a penalty, and the Contract may be awarded to another.

16. BONDS

The successful bidder will be required to execute surety bonds, with sureties acceptable to the Village. One such bond shall be a Performance Bond in the amount of 100 percent of the Contract Price on the form attached as pages 25 and 26 of the specifications. Another such bond shall be a Labor and Material Bond in the amount of 100 percent of the Contract Price on the form attached as pages 27 and 28 of the specifications. The Contractor shall also provide a Maintenance Bond in the amount of 100 percent of the Contract Price on the form attached as pages 29 and 30 of the specifications.

17. INDEMNIFICATION AND INSURANCE

To the fullest extent permitted by law, the successful bidder agrees to defend, pay on behalf of, indemnify, and hold harmless the VILLAGE OF LAKE ORION, its elected and appointed officials, employees, consultants, and volunteers and others working on behalf of the VILLAGE OF LAKE ORION, against any and all claims, demands, suits, or loss, including all costs connected therewith, and for any damages which may be asserted, claimed or recovered against or from the VILLAGE OF LAKE ORION, its elected and appointed officials, employees, consultants, volunteers or others working on behalf of the VILLAGE OF LAKE ORION, by reason of personal injury, including bodily injury and death, and/or property damage, including loss of use thereof, which arises out of or is in any way connected or associated with this contract.

The successful bidder shall purchase and maintain in a company or companies licensed to do business in the State of Michigan, such insurance as will protect him from claims set forth below which may arise out of or result from the contractor's operations under the contract, whether such operations be by himself or any subcontractor or by anyone directly or indirectly employed by any of them, or by anyone whose acts are associated with the project by any of them, may be liable.

a. Workers Compensation Insurance: The contractor shall procure and maintain during the life of the contract, Workers Compensation Insurance, including Employer's Liability Coverage, in accordance with all applicable statutes of the State of Michigan.

b. Commercial General Liability Insurance: The contractor shall procure and maintain during the life of this contract, Commercial General Liability Insurance on an "Occurrence Basis" with the limits of liability not less than **\$2,000,000**, per occurrence and/or aggregate combined single limit, Personal Injury, Bodily Injury and Property Damage. Coverage shall include the following extensions: (1) Contractual Liability; (2) Products and Completed Operations; (3) Independent Contractors Coverage; (4) Broad Form General Liability Extensions or equivalent; and (5) Deletion of all Explosion, Collapse and Underground (XCU) Exclusions, if applicable.

c. Motor Vehicle Liability: The contractor shall procure and maintain during the life of the contract, Motor Vehicles Liability Insurance, including Michigan No-Fault coverage, with limits of not less than **\$2,000,000**, per occurrence combined single limit Bodily Injury and Property Damage. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles.

d. Additional Insured: Commercial General Liability and Motor Vehicle Liability Insurance, as described above, shall include an endorsement stating the following shall be **"Additional Insured"**. *"THE VILLAGE OF LAKE ORION, INCLUDING ALL ELECTED AND APPOINTED OFFICIALS, ALL EMPLOYEES AND VOLUNTEERS, ALL BOARDS, COMMISSIONS AND/OR AUTHORITIES AND THEIR BOARD MEMBERS, EMPLOYEES AND VOLUNTEERS" AND NOWAK & FRAUS ENGINEERS, the project consultant.* (This coverage shall be primary to the Additional Insured, and not contributing with any other insurance or similar protection available to the Additional Insureds, whether said other available coverage be primary, contributing or excess.)

e. Cancellation Notice: Workers Compensation Insurance, Commercial General Liability Insurance, and Motor Vehicle Insurance, as described above, shall include an endorsement stating the following: ***"IT IS UNDERSTOOD AND AGREED THAT THIRTY (30) DAYS ADVANCE WRITTEN NOTICE OF CANCELLATION, NON-RENEWAL, REDUCTION AND/OR MATERIAL CHANGE SHALL BE SENT TO: VILLAGE OF LAKE ORION, DEPARTMENT OF PUBLIC WORKS, 21 EAST CHURCH STREET., LAKE ORION, MICHIGAN, 48362"***.

f. Owner's and Contractor's Protective Liability: The contractor shall procure and maintain during the life of this contract, a separate Owner's and Contractor's Protective Liability insurance coverage of not less than **\$2,000,000**, per occurrence and/or aggregate, combined single limit, Personal Liability, Bodily Injury, and Property Damage. The Village of Lake Orion shall be "Named Insured" on said coverage. Thirty (30) days Notice of Cancellation shall apply to this policy.

The successful bidder shall not commence work until he has obtained the insurance required under this section, nor shall the successful bidder permit any subcontractor to commence work on his subcontract until the insurance required of the subcontractor has been obtained.

Certificates of Insurance, along with copies of original policies where applicable, acceptable to the Village, shall be filed with the Village of Lake Orion, Department of Public Works, ten (10) days prior to commencement of the contract.

18. NON-DISCRIMINATION PROVISION

Pursuant to the requirements of 1976, P.A. 453 (Michigan Civil Rights Act) and 1976, P.A. 220 (Michigan Handicapped Rights Act), the bidder and any subcontractors agree not to discriminate against any employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status, or due to a handicap that is unrelated to the person's ability to perform the duties of a particular job or position. The Bidder must include this provision in any subcontracts associated with the project work.

CONTRACTOR: _____

BID PROPOSAL

Date: _____

To the Honorable Village Manager
Village of Lake Orion, Michigan

Ladies and Gentlemen:

Having carefully examined the site of the proposed work, and being fully informed in regard to the conditions to be met in the prosecution and completion of the work, and having read and examined the Instructions to Bidders, Agreement, Bonds, General Conditions, Plans and Specifications pertaining to this work, and agreeing to be bound accordingly, the undersigned proposes to furnish all the materials, labor, tools, power, transportation and construction equipment necessary for the satisfactory and complete construction of the **PARK AVENUE RETAINING WALL REPLACEMENT Project** in full accordance with and conformity to the specifications for this work now on file in the office of the Village Department of Public Works at and for the following named prices, to wit:

Item No.	Description	Quantity	Unit	Unit Price	Bid Amount
DEMOLITION					
1	MOBILIZATION (3% max)	1	LS	\$	\$
2	PAVEMENT REMOVAL	55	SY	\$	\$
3	REMOVE EX. WOOD RETAINING WALL	1	LS	\$	\$
4	REMOVE GUARDRAIL	14	LF	\$	\$
5	REMOVE, SALVAGE AND REPLACE BLOCK RETAINING WALL	1	LS	\$	\$
6	2.0" MDOT 5EML HMA Wearing	55	SY	\$	\$
7	2.0" MDOT 4EML HMA Leveling	55	SY	\$	\$
8	6" 21AA AGGREGATE BASE	55	SY	\$	\$
9	GRAVEL SHOULDER	4	CY	\$	\$
10	TYPE A GUARDRAIL	39	LF	\$	\$
11	NYLOPLAST DRAIN BASIN	1	EA	\$	\$
12	4" HDPE SUBGRADE UNDERDRAIN WITH FILTER SOCK	13	LF	\$	\$
13	POP-UP DRAINAGE EMITTER	1	EA	\$	\$
14	BLOCK RETAINING WALL INC. 6A, GEOTEX. FABRIC & UNDERDRAIN	1	LS	\$	\$

15	SOIL EROSION AND SEDIMENTATION CONTROL	1	LS	\$ _____	\$ _____
16	FINAL RESTORATION AND CLEANUP	1	LS	\$ _____	\$ _____
TOTAL BASE BID AMOUNT					\$ _____

Bid Alternate: Cold Mill and Resurface

Item					
No.	Description	Quantity	Unit	Unit Price	Bid Amount
BID ALTERNATE					
1	COLD MILL HMA SURFACE (2")	52	SY	\$ _____	\$ _____
2	2.0" MDOT 5EML HMA Wearing	52	SY	\$ _____	\$ _____
3	SUBGRADE UNDERCUT	2	Cy	\$ _____	\$ _____
TOTAL BID ALTERNATE					\$ _____

TOTAL BASE BID: \$ _____

TOTAL BASE BID WITH BID ALTERNATE: \$ _____

The Village of Lake Orion reserves the right to increase or decrease any quantity or delete any item(s) of work as it deems in the best interest of the Village, there will be no adjustments to unit prices in the event of increase, decrease or deletions.

Contractor acknowledges receipt of the following Addendum(s):

Addendum No.: _____ Dated: _____

Addendum No.: _____ Dated: _____

The Contractor acknowledges that he has not received nor relied upon any representations or warranties of any nature whatsoever from the Village of Lake Orion its officers, employees or agents and that if he is awarded this contract, he shall enter into this Contract solely as the result of his own independent business judgment.

The undersigned acknowledges that he has made his own independent investigation and has satisfied himself as to the conditions of the work, including soil and subsurface conditions.

The undersigned agrees that, in case any additions, deductions or deletions in the amount of work contemplated are made, the above named unit prices for the various classes of work shall be used to allow for such additions, deductions or deletions.

The undersigned hereby agrees that if this Proposal shall be accepted by the said Village of Lake Orion, he will, within ten days after receiving notice of such acceptance and delivery of Contract forms thereof at the address given below (Sundays and legal holidays excepted), enter into contract, in the attached form, to construct the said work according to said plans and specifications and to furnish therefor all necessary equipment, tools and building appliances, materials, labor, power and transportation as aforesaid at and for the prices named in the foregoing paragraph; to furnish to the said Village and to the State of Michigan such sureties for the faithful performance of such Contract and for the payment of all materials used therein and for all labor expended thereon as shall be approved and accepted by the said Village; and to furnish to the said Village of Lake Orion a Maintenance Bond.

The undersigned attaches hereto a (certified check), (bidder's bond), in the sum of:

Dollars (\$ _____) as required in the Instructions to Bidders. And the undersigned hereby agrees that, in case he shall fail to fulfill his obligations under the foregoing proposal and agreement, the said Village of Lake Orion may, at its option, determine that the undersigned has abandoned his rights and interests in such contract and that the certified check or bidder's bond accompanying this proposal has been forfeited to the said Village as liquidated damages and not as a penalty; but, otherwise the said certified check or bidder's bond shall be returned to the undersigned upon the execution of such contract and the acceptance of Bonds.

Dated and signed at _____, MI on _____
(City) (Date)

Name of Bidder: _____

Address of Bidder: _____

By: _____

Title: _____

Telephone#: _____ Email: _____

Federal Tax I.D. Number (_____)

Unique Entity ID (_____)

CERTIFICATIONS

IF A CORPORATION

I, _____, certify that I am the _____ of the corporation named as Contractor herein; that _____, who signed this Agreement on behalf of the Contractor, was then _____ of said corporation; that said Agreement was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Corporate Seal

Signature

IF A PARTNERSHIP

I, _____, certify that I am a partner in the partnership named as Contractor herein, and that I have authority to sign for and on behalf of this partnership consisting of the following partners:

NAME AND ADDRESS:

Signature

IF A SOLE PROPRIETORSHIP

I, _____, certify that I am the sole owner and proprietor.

Signature

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____
_____ as Principal,
and _____ as Surety, are hereby
held and firmly bound unto the Village of Lake Orion, Michigan, as OWNER in the penal sum
of:

_____ Dollars (\$ _____)

for the payment of which, well and truly to be made, we hereby jointly and severally bind
ourselves, successors and assigns. Signed, this _____ day of _____, 20 _____.

The Condition of the above obligation is such that whereas the Principal has submitted to the
Village of Lake Orion, Michigan, a certain BID, attached hereto and hereby made a part hereof
to enter into a contract in writing, for the

PARK AVENUE RETAINING WALL REPLACEMENT

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in
the Form of Contract attached hereto (properly completed in accordance with said BID)
and shall furnish a BOND for his faithful performance of said contract, and for the
payment of all persons performing labor or furnishing materials in connection therewith,
and shall in all respects perform the agreement created by the acceptance of said BID,
then this obligation shall be void, otherwise the same shall remain in force and effect; it
being expressly understood and agreed that the liability of the Surety for any and all
claims hereunder shall, in no event, exceed the penal amount of this obligation as herein
stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety
and its BOND shall be in no way impaired or affected by any extension of the time within which
the OWNER may accept such BID; and said Surety does hereby waive notice of any such
extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____(L.S)
Principal

_____(L.S.)
Surety

By:_____

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 540 as amended) and be authorized to transact business in the State of Michigan.

CERTIFICATION REGARDING DEBARMENT, SUSPENSION. & OTHER RESPONSIBILITY MATTERS

The prospective participant certifies, to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in transactions under federal non-procurement programs by any federal department or agency.
2. Have not, within the three-year period preceding the proposal, had one or more public transactions (federal, state, or local) terminated for cause or default, have ever been on the Prevailing Wage Violator's Registry or are currently being investigated under current name or any DBA's, corporate names, subsidiaries or other business entities under which you have operated in the last three years; and
3. Are not presently indicted or otherwise criminally or civilly charged by a government entity (federal, state, or local) and have not, within the three-year period preceding the bid, been convicted or had a civil judgment rendered against it.
 - a. For the commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public transaction (federal, state, or local) or a procurement contract under such a public transaction.
 - b. For the violation of federal or state antitrust statutes, including those proscribing price fixing between competitors, the allocation of customers between competitors, or bid rigging, or
 - c. For the commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

I understand that a false statement on this certification may be grounds for the rejection of this proposal or the termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to five years, or both.

Name/Title of Authorized Representative

Signature of Authorized Representative

Name of Participant Agency or Firm _____

Date: _____

UEI Number _____

☐ I am unable to certify to the above statement. Attached is my explanation.

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 20__, by and between the Village of Lake Orion, Oakland County, Michigan, party of the first part, hereafter called the Village, and _____, Michigan, party of the second part, hereinafter called the Contractor:

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR shall commence and complete the construction of:

in full conformance with the Contract Documents as enumerated in Article 6 of this Agreement.

2. The CONTRACTOR shall furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein, excepting those things which are specifically stipulated in the contract documents to be furnished or done by the Village.

3. The CONTRACTOR shall commence the work required by the CONTRACT DOCUMENTS on or before the date stipulated in the NOTICE TO PROCEED and will complete the same within **90 calendar days**, unless the date for completion is extended otherwise by the CONTRACT DOCUMENTS. Time shall be considered to be of the essence of this Contract.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the contract price of:

(\$XX,XXX.00)

unless the contract price is duly changed by the contract documents.

5. The VILLAGE shall pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

6. The term "CONTRACT DOCUMENTS" means and includes the following:

- A. AGREEMENT
- B. BID BOND
- C. PERFORMANCE BOND
- D. LABOR AND MATERIAL BOND
- E. MAINTENANCE BOND
- F. CHANGE ORDER (Pursuant to General Conditions, Section 9)
- G. ADDENDA:

No. _____, dated _____, 20____ .

No. _____, dated _____, 20____ .

No. _____, dated _____, 20____ .

H. ADVERTISEMENT

I. INSTRUCTIONS TO BIDDERS

J. BIDDER'S PROPOSAL (Incl. final Compliance Plan as accepted by OWNER)

K. GENERAL CONDITIONS (Incl. SUPPLEMENTAL GENERAL CONDITIONS and SPECIAL CONDITIONS (if any))

L. SPECIFICATIONS (Incl. SUPPLEMENTAL SPECIFICATIONS and SPECIAL PROVISIONS (if any))

M. PLANS (As listed in Schedule of Drawings)

N. NOTICE OF AWARD

O. NOTICE TO PROCEED

This agreement, together with other documents enumerated in this ARTICLE 6, which said other documents are as fully a part of the Contract as if hereto attached or herein repeated, forms the Contract between the parties hereto. In the event that any provision in any component part of this Contract conflicts with any provision of any other component part, the provision of the component part first enumerated in this ARTICLE 6 shall govern, except as otherwise specifically stated.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in three (3) copies, each of which shall be deemed an original, on the date first above written.

CONTRACTOR:

In witness whereof, the parties have executed this agreement the day and year last written below.

WITNESSES:

1) _____

By: _____

2) _____

Its: _____

VILLAGE OF LAKE ORION

WITNESSES:

1) _____

2) _____

WITNESSES:

1) _____

2) _____

VILLAGE MANAGER

By: _____
Darwin D P McClary Date

CLERK

By: _____
Sonja Stout Date
Clerk / Treasurer

CERTIFICATIONS

IF A CORPORATION

I, _____, certify that I am the _____ of the corporation named as Contractor herein; that _____, who signed this Agreement on behalf of the Contractor, was then _____ of said corporation; that said Agreement was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.*

Corporate Seal

Signature

* Attach copy of corporate resolution verifying authorization of individuals named above.

IF A PARTNERSHIP

I, _____, certify that I am a partner in the partnership named as Contractor herein, and that I have authority to sign for and on behalf of this partnership consisting of the following partners:

NAME AND ADDRESS:

Signature

IF A SOLE PROPRIETORSHIP

I, _____, certify that I am the sole owner and proprietor.

Signature

BOND FOR FAITHFUL PERFORMANCE

KNOW ALL MEN BY THESE PRESENTS, That_____

_____ as principal, and

_____, as surety, are held and firmly bound unto
the Village of Lake Orion, Michigan, a Municipal Corporation, in the sum of:

good and lawful money of the United States of America, to be paid to said Village of Lake Orion, its legal representatives and assigns, for which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, and each and every one of them, jointly and severally, firmly by these presents.

Sealed with our Seals and dated this _____ day of _____ A.D. 20 _____.

WHEREAS, the above named principal has entered into a certain written contract with the Village of Lake Orion, dated this _____ day of _____ A.D. 20 _____, wherein the said principal covenanted and agreed as follows, to-wit:

TO COMMENCE AND COMPLETE the:

PARK AVENUE RETAINING WALL REPLACEMENT

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS such that if the above named principal or their legal representatives or successors, shall in all things well and truly keep and perform the covenants, conditions, and agreements in the manner and form and at the time agreed upon to be kept and performed as provided by said contract, and plans, drawings, and specifications, referred to in said contract, and as may be required by the changes, alterations, and modifications thereof, as provided in said contract, then the above obligation shall be void; otherwise to remain in full force and effect.

This bond is given upon the express condition that any changes, alterations, or modifications that may be hereafter ordered or made in the construction and complete installation of the work herein referred to, or the placing of an inspector or superintendent thereon by the Village of Lake Orion shall not operate to discharge or release the surety or sureties thereon.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be
executed by their respective authorized officers this _____ day of _____ A.D.

20 _____.

Signed, Sealed and Delivered in the Presence of:

_____(L.S.)

_____(L.S.)

_____(L.S.)

**LABOR AND MATERIAL BOND TO THE
VILLAGE OF LAKE ORION, MICHIGAN**

KNOW ALL MEN BY THESE PRESENTS, That_____

_____ as principal, and _____

_____, as surety, are held and firm bound unto the
Village of Lake Orion, Michigan, a Municipal Corporation, in the sum of:

good and lawful money of the United States of America, pursuant to Michigan State Public Act 213 of 1963, to be paid to the Village of Lake Orion, Michigan, for the use and benefit of all subcontractors, and persons, firms and corporations who shall furnish materials, supplies and perform labor entering into the work of:

PARK AVENUE RETAINING WALL REPLACEMENT

for which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, and each and every one of them jointly and severally, firmly by these presents.

Sealed with our Seals and dated this _____ day of _____ A.D. 20____.

WHEREAS, the above named principal has entered into a certain written contract with the Village of Lake Orion, dated this _____ day of _____ A.D. 20____, wherein the said principal covenanted and agreed as follows, to wit:

TO COMMENCE AND COMPLETE the: **PARK AVENUE RETAINING WALL
REPLACEMENT**

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above named principal, legal representatives, or successors shall pay or cause to be paid to all subcontractors, persons, firms, and corporation, as the same may become due and payable, all indebtedness which may arise from said principal to a subcontractor or party performing labor or furnishing materials and supplies, or any subcontractor to any person, firm or corporation on account of any labor performed or materials and supplies furnished in connection with the

contract, construction and work herein referred to, then this obligation shall be void; otherwise to remain in full force and effect.

This bond is given upon the express condition that any changes, alterations, or modifications that may be hereafter ordered or made in the construction and complete installation of the work herein referred to, or the placing of an inspector or superintendent thereon by the Village of Lake Orion shall not operate to discharge or release the surety or sureties thereon.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be
executed by their respective authorized officers this _____ day of _____ A.D.
20 _____.

Signed, Sealed and Delivered in the Presence of:

_____	_____ (L.S.)
_____	_____ (L.S.)
_____	_____ (L.S.)

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That _____

_____ as principal, and _____

_____, as surety, are held and firm bound unto the Village of Lake Orion, Michigan, a Municipal Corporation, in the sum of:

_____ good and lawful money of the United States of America, pursuant to Michigan State Public Act 213 of 1963, to be paid to the Village of Lake Orion, Michigan, for the use and benefit of all subcontractors, and persons, firms and corporations who shall furnish materials, supplies and perform labor entering into the work of:

PARK AVENUE RETAINING WALL REPLACEMENT

for which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, and each and every one of them jointly and severally, firmly by these presents.

Sealed with our Seals and dated this _____ day of _____ A.D. 20 _____.

WHEREAS, the above named principal has entered into a certain written contract with the Village of Lake Orion, dated this _____ day of _____ A.D. 20 _____, wherein the said principal covenanted and agreed as follows, to wit:

TO COMMENCE AND COMPLETE construction of:

PARK AVENUE RETAINING WALL REPLACEMENT

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that by and under said contract, the above named principal has agreed with the Village of Lake Orion that for a period of **TWO** year(s) from the date of payment of Final Estimate, to keep in good order and repair all the work, done under said contract, excepting only such part or parts of said work as may have been disturbed without the consent or approval of the principal after the final acceptance of the work, and that whenever directed so to do by the Village Engineer of the Village of Lake Orion by notice served in writing, either personally or by mail, on the principal at:

_____ or _____ legal

representative, or successors, or on the surety at: _____

_____ WILL PROCEED at once to make such repairs as directed by said Village Engineer; and in case of failure so to do within one week from the date of service of such notice, or within reasonable time not less than one week, as shall be fixed in said notice, then the Village of Lake Orion shall have the right to purchase such materials and employ such labor and equipment as may be necessary for the purpose, and to undertake, do and make such repairs, and charge the expense thereof to, and receive same from said principal or surety. If any repair is necessary to be made at once to protect life and property, then and in that case, the Village may take immediate steps to repair or barricade such defects without notice to the contractor. In such accounting the Village shall not be held to obtain the lowest figures for the doing of the work or any part thereof, but all sums actually paid therefore shall be charged to the principal or surety. In this connection the judgment of the Village Engineer is final and conclusive. If the said principal for a period of **TWO** year(s) from the date of payment of Final Estimate, shall keep said work so constructed under said contract in good order and repair, excepting only such part or parts of said work which may have been disturbed without the consent or approval of said principal after the final acceptance of the same, and shall, whenever notice is given as hereinbefore specified, at once proceed to make repair as in said notice directed, or shall reimburse said Village of Lake Orion for any expense incurred by making such repairs, should the principal or their surety do so as hereinbefore specified, then the above obligation shall be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their respective authorized officers this _____ day of _____ A.D. 20 ____.

Signed, Sealed and Delivered in the Presence of:

_____	_____ (L.S.)
_____	_____ (L.S.)
_____	_____ (L.S.)

GENERAL CONDITIONS

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GENERAL CONDITIONS

Article 1 - DEFINITIONS

- 1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:
- 1.2 ADDENDA - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS by additions, deletions, clarifications or corrections.
- 1.3 BID - The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed. (See 1.8)
- 1.4 BIDDER - Any person, firm or corporation submitting a BID for the WORK.
- 1.5 BONDS - Bid, Performance, Labor and Material, and Maintenance Bonds and other instruments of security, furnished by the CONTRACTOR and their surety in accordance with the CONTRACT DOCUMENTS.
- 1.6 CHANGE ORDER - A written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.
- 1.7 VILLAGE/OWNER - The Village of Lake Orion, Michigan, or its properly authorized representatives; and whenever the term "Village Council", "Village Clerk", "Director of Finance", "Village Engineer", or "Engineer", is used, it shall be understood to mean the Council, Village Manager, Clerk, Director of Finance, or Engineer of the said Village.
- 1.8 LEFT BLANK INTENTIONALLY
- 1.9 CONTRACT DOCUMENTS - The Contract, including ADVERTISEMENT, INSTRUCTIONS TO BIDDERS, FORM OF PROPOSAL, BID BOND, AGREEMENT, LABOR & MATERIAL BOND, PERFORMANCE BOND, MAINTENANCE BOND, GENERAL CONDITIONS, SUPPLEMENTAL GENERAL CONDITIONS, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, PLANS, SPECIFICATIONS, ADDENDA, and any other documents specifically set forth in the Agreement.
- 1.10 CONTRACT PRICE - The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

- 1.11 CONTRACT TIME - The number of calendar days or the completion date stated in the CONTRACT DOCUMENTS for the completion of the WORK in the CONTRACT DOCUMENTS; or the number of calendar days from the date established in the NOTICE TO PROCEED to the DATE stated in the CONTRACT DOCUMENTS for the completion of all of the WORK of the TOTAL CONTRACT; or both.
- 1.12 CONTRACTOR - The person, firm or corporation with whom the VILLAGE has executed the Agreement, or its legal representatives.
- 1.13 ENGINEER - The Village Engineer and/or the person, firm or corporation named as such in the CONTRACT DOCUMENTS.
- 1.14 FIELD ORDER - A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.
- 1.15 NOTICE OF AWARD - The written notice of the acceptance of the BID from the VILLAGE to the successful BIDDER.
- 1.16 NOTICE TO PROCEED - Written communication issued by the VILLAGE to the CONTRACTOR authorizing them to proceed with the WORK and establishing the date of commencement of the WORK in accordance with the CONTRACT DOCUMENTS.
- 1.17 OPEN TO TRAFFIC - That date as certified by the ENGINEER, when the WORK (PROJECT) or any section thereof is in a suitable condition for safe travel. The term "SUITABLE CONDITION FOR SAFE TRAVEL" shall be construed to mean that all work, INCLUDING the Leveling Course of Bituminous Material and all Concrete Work are complete. The PROJECT, or any portion thereof may be designated as "Accepted for Traffic" prior to completion of the whole project, and shall be opened to traffic as may be directed by the ENGINEER. In general, the term "OPEN TO TRAFFIC" shall be in accordance with Section 107.21 of the MDOT 2020 Standard Specifications for Construction.
- 1.18 **THIS SECTION IS LEFT INTENTIONALLY LEFT BLANK.**
- 1.19 PROJECT - The undertaking to be performed as provided in the CONTRACT DOCUMENTS.
- 1.20 RESIDENT PROJECT REPRESENTATIVE - The authorized representative of the VILLAGE who is assigned to the PROJECT site or any part thereof.
- 1.21 SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the

WORK shall be fabricated or installed.

- 1.22 SPECIFICATIONS - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship (may include SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS).
- 1.23 SUBCONTRACTOR - An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.
- 1.24 SUPPLIER - Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.
- 1.25 WORK - All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.
- 1.26 WORK ORDER - A written order to the CONTRACTOR causing a change in WORK involving the authorization to undertake additional work at existing contract unit prices or at new contract unit prices for new items of work.
- 1.27 WRITTEN NOTICE - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at their last given address, or delivered in person to said party or their authorized representative on the WORK.

Article 2 - PLANS AND SPECIFICATIONS

The location of the structures, roads, systems, utilities, appurtenances and improvements which are to be built, reconstructed, rehabilitated or made under this Contract, and the character, form and dimensions of their various parts, are shown in the accompanying drawings, specifications and details in the Contract Document entitled:

PARK AVENUE RETAINING WALL REPLACEMENT

These drawings constitute the Plans according to which the work of this Contract is to be done. Additional drawings may be prepared by the Village Engineer and supplied to the Contractor during the progress of the work, as the Village Engineer may deem to be necessary or expedient. All such additional drawings, made in elaboration or explanation of the original drawings, are to be considered as part and parcel of the Plans and shall be respected and followed as such by the Contractor.

The Plans are supplemented and explained by a set of technical specifications, which are appended hereto, and which describe and define the quality of materials and the character of workmanship which are to enter into the work of this Contract. These are the Specifications which are referred to in Article 1, and elsewhere in this Contract. Additional specifications in further elaboration or explanation of the work to be done may be prepared by the Village Engineer and supplied to the Contractor during the progress of the work, as the Village Engineer may deem to be necessary or expedient. Such additional specifications are to be considered as part and parcel of the specifications under this Contract, and shall be respected and followed as such by the Contractor.

Both Plans and Specifications are considered as essential parts of this Contract, and are intended to be cooperative. They shall be construed as supplementary each to the other, and any work called for in the Plans and not particularly mentioned in the Specifications, or described in the Specifications and not specially shown on the Plans, is to be regarded as included under this Contract the same as if fully set forth in the Specifications and exhibited on the Plans. Wherever figures or definite dimensions are given on the Plans or in the Specifications, these shall have precedence over dimensions taken by scaling.

In case any inconsistency, omission, or conflict shall be discovered in the Specifications or Plans, or if in any place the meaning of either or both shall be obscure or uncertain or in dispute, the Village Engineer shall decide as to the true intent and the Village Engineer's decision shall be final and binding. Any such inconsistencies, omissions, or conflict noted should be called to the attention of the Engineer, and a decision on the same obtained in advance.

Article 3 – PRE-CONSTRUCTION MEETING

A pre-construction meeting may be held prior to the beginning of any work. The Engineer will schedule the meeting as soon as possible after acceptable executed contract documents are received from the Contractor.

Notice of the meeting will be made to the Owner, the Contractor, and to the following entities, contingent upon their interest in the project:

- a) Utility Companies
- b) County Road Commission
- c) Michigan Dept. of Transportation
- d) Michigan Dept. of Labor - Safety Division
- e) Other State, Local and County Agencies

The purpose of the pre-construction meeting is to discuss particular procedures and potential problem areas. The Contractor is given updates on the conditions of the proposed construction and what is expected as to proper notification in the event of damage to existing utilities.

The Contractor shall submit in writing at the pre-construction meeting the following information:

- a) Schedule of Construction

- b) Sources of Materials-Additions or Changes from Original Submission
- c) List of Sub-Contractors-Additions or Changes from Original Submission
- d) The Designated Safety Officer on the Job including all Phone Numbers
- e) Superintendent for the Project including all Phone Numbers
- f) Foreman in Charge on the Job Site including all Phone Numbers
- g) Emergency Phone Numbers for Contractor

As noted above, the Contractor is required to submit an outline of the proposed order of work and to indicate the schedule for completion of the major categories of the work consistent with the period of time specified under Time of Completion.

Approval by the Engineer and Owner of any construction schedule indicating completion of the work in less time than allotted by the Contract shall not be construed as an acknowledgment, either express or implied, that the work can be completed within the time shown on this schedule and shall not under any circumstances give rise to a cause of action for damages by the Contractor.

The Contractor's schedule of construction shall indicate a critical path for completing the work consistent with the period of time specified under Time of Completion. The schedule shall indicate the numbers and types of crews that will be employed at various times on the project.

Article 4 – TESTING AND SAMPLING

- a) Where called for in the specifications, samples of materials in the quantity named shall be submitted to Engineer for approval. Where tests are required, they shall be made at the expense of the Contractor, except as otherwise called for in the specifications. For materials covered by ASTM or Federal Specifications, or with the specifications of well known or recognized technical and/or trade organizations, unless otherwise stipulated, required tests are to be made by the manufacturer, and their certificate therefore submitted to the Engineer.
- b) The Engineer and/or the Owner shall determine which materials are required by the specifications to be factory inspected or to have chemical or physical analysis or other inspection or test. The Contractor shall furnish to the Engineer and/or Owner two copies of orders for all materials requiring such inspection or test as soon as placed. Such orders shall contain complete information, including that as to quantity, quality, dimensions, sizes, capacities and types, and shall contain proper reference to the applicable specifications by title, number and paragraph, and shall show the name and address of the producing factory but need not contain prices or contractual terms.
- c) All materials and workmanship (if not otherwise designated by the specifications) shall be subject to inspection, examination and test by the Engineer and/or Owner at any and all times during the manufacture or construction, and at any and all places where such manufacture or construction is carried on. The Engineer and/or Owner shall have the right to reject defective material and workmanship or require its

correction. Rejected workmanship shall be satisfactorily corrected, and rejected material shall be satisfactorily replaced with proper material without charge therefore, and Contractor shall promptly segregate and remove the rejected material from the premises by the contractor who was responsible for the defects in the material. If Contractor fails to proceed at once with replacement of rejected material and correction of defective workmanship, the Owner may, by contract or otherwise, replace such material and correct such workmanship and charge the cost thereof to the Contractor, or may immediately terminate the contract.

- d) The Contractor shall furnish promptly, without additional charge, all reasonable facilities, labor and materials necessary for the safe and convenient conduct of all inspections and tests that may be required by the Engineer. All inspections and tests by the Engineer and/or Owner shall be performed in such a manner as not to delay the work unnecessarily. Special, full size, and performance tests shall be as described in the specifications. Contractor shall be charged with any additional cost of inspection when material or workmanship is not ready at the time inspection is requested by the Contractor.
- e) Should it be considered necessary or advisable by the Engineer and/or Owner any time before final acceptance of the entire work to make an examination of work already completed, by removing or tearing out same, the Contractor shall on request promptly furnish all necessary facilities, labor and material. If such work is found to be defective or nonconforming in any material respect, due to the fault of the Contractor or their subcontractor, Contractor shall defray all the expenses of such examination and of satisfactory reconstruction, and be responsible for any resulting delay. If, however, such work is found to meet requirements of the contract, the actual cost involved in the examination and replacement shall be allowed the Contractor, and they shall, in addition, if completion of the work has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.
- f) Inspection of material and finished articles to be incorporated in the work at the site may be made at place of production, manufacture or shipment stated in the specifications; and such inspections and acceptance, unless otherwise stated in the specifications, shall be final, except as regards latent defects, departures from specific requirements of the contract and the specifications and drawings made a part thereof, damage or loss in transit, fraud or such gross mistakes as amount to fraud. Subject to requirements contained in the preceding sentence, inspection of material and workmanship for final acceptance as a whole or in part shall be made at the site.

Article 5 - SHOP DRAWINGS

- 5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER's approval of any SHOP DRAWINGS shall not release the CONTRACTOR from

responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.

5.2 When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that they have reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

5.3.1 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

Article 6 – ERRORS AND CORRECTIONS IN DRAWINGS AND SPECIFICATIONS

Contractor shall examine and check all drawings and specifications furnished by Owner for dimensions, quantities, and coordination with other parts of the work on this or related contracts and shall notify the Engineer, in writing, of any and all errors, omissions or discrepancies they may discover by examining and checking of same. Contractor shall not be allowed to take advantage of any such error, omission or discrepancy, as full instructions will be furnished by the Engineer, and Contractor shall carry out such instructions as if originally specified. In no case shall Contractor proceed with the work in uncertainty, and any work done by Contractor after discovery of any error, omission or discrepancy, until authorized, will be at the Contractor's risk and responsibility. The work is to be made complete and to the satisfaction of the Engineer, notwithstanding any minor omissions in the specifications or plans.

Article 7- MATERIALS AND WORKMANSHIP

It is mutually understood that all materials and workmanship furnished under this Contract shall be of the highest quality, to the end that a good and substantial and workmanlike job may be produced. The Contractor shall bring only first class materials to the work, and they shall furnish suitable tools and equipment and shall employ competent labor to perform the work to be done. Any materials or labor or tools or equipment that shall not, in the judgment of the Engineer, be suitable or competent to produce the desired result, may be ordered from the work by the Engineer, and such materials or labor or tools or equipment shall be promptly substituted therefor by the Contractor as will meet with the approval of the Engineer. Wherever a brand or name is given, it is for the purpose of defining or establishing a type or quality of material only.

7.1 Defective Materials

Any materials or fabricated articles furnished by the Contractor to be used in this work which shall not, in the judgment of the Engineer, be equal to the requirements of the Plans and Specifications, may be rejected by the Engineer; and such rejected materials

or articles shall not be used, but shall be immediately removed by the Contractor from the site of the work.

7.2 Stored Materials

Materials and equipment distributed, stored or placed upon or near the site of the work shall be at all times so disposed as not to interfere with work being prosecuted directly by the Village or by other Contractors the Village employs or with street drainage, or with fire hydrants or with access thereto, and not to unreasonably inconvenience the public from access to or use of their property.

7.3 Property Rights in Surplus Materials

All excess materials excavated during the progress of the work and not required for backfilling, all timber except tree stumps cut from the right-of-way, and all other materials which have been encountered and handled during construction operations, and which constitute a disposable surplus at the end of the construction period, shall be the property of the Contractor, unless otherwise directed by the Village or its Engineer. Such materials shall be hauled and neatly piled, or hauled and dumped at the places designated by the Engineer, at no extra compensation.

7.4 Water Supply

Water for construction purposes may be taken from the Village water system from a hydrant approved by the Village and subject to the rules of the Oakland County Water Resources Commissioner's office.

Article 8 - SUPERINTENDENCE BY CONTRACTOR

8.1 Except where the Contractor is an individual and gives their personal superintendence to the work, the Contractor shall provide a competent superintendent, satisfactory to the Village and the Engineer, on the work at all times during working hours with full authority to act for the Contractor. Any orders by the Engineer given to and received by said superintendent shall be deemed to have been given to and received by the Contractor. The Contractor shall also provide an adequate staff for the proper coordination and expediting of their work. The Contractor shall maintain a complete set of plans and specifications at the site.

8.2 The Contractor may set up and establish an office on or near the site. On certain large projects, the Engineer may direct the Contractor to set up an office.

8.3 The Contractor shall lay out their own work and they shall be responsible for all work executed by them under the Contract. They shall verify all figures and elevations before proceeding with the work and will be held responsible for any error resulting from their failure to do so.

8.4 Disorderly Employees

Disorderly, intemperate, or incompetent persons must not be employed, retained, or allowed upon the work site. Any foreman or workman who refuses or neglects to comply with the directions of the Engineer in the matter of personal conduct shall, at the request of the Engineer, be promptly discharged and shall not thereafter be re-employed without the consent of the Engineer.

8.5 Relation to Other Contractors

The Contractor shall so conduct their operations as not to interfere with or injure the work of other Contractors or work personnel employed by the Village on adjoining or related work, and they shall promptly make good any injury or damage which may be done to such work by them or their employees or agents. Should a contract for adjoining work be awarded to another Contractor, and should the work on any one of these contracts interfere with that of the other, the Engineer shall decide which Contractor shall cease work for the time being and which shall continue or whether the work on both contracts shall continue at the same time and in what manner. In case the territory of one contract should be the necessary means of access to another contract, the Engineer shall have power to grant reasonable privileges with respect to the transportation or movement of men, animals, appliances or materials as they may adjudge to be necessary or expedient and in the best interests of the Village. Any decision which the Engineer may make as to the method and time of conducting work or the use of territory shall not be made the basis of any claim for damages, but an extension of time may be claimed, if justified by the circumstances, the same as in the case of other delays caused by the acts of the Village. Any difference of opinion or conflict of interest which may arise between this Contractor and other Contractors or work personnel of the Village in regard to adjoining work shall be determined and adjusted by the Engineer.

8.6 Time and Sequence of Work

In general, it is the intention and understanding that the Contractor shall have control over the sequence or order of execution of the several parts of the work to be done under this Contract, and over the methods of accomplishing the required results, except as some particular sequence or method may be distinctly demanded by the Plans and Specifications or by the express provisions of this Contract; the Engineer may, however, make such reasonable requirements as may, in their judgement, be necessary for the proper and effective protection of work partially or wholly completed, and to these requirements, the Contractor shall strictly conform.

8.7 Sunday, Holiday, Night Work and Hours of Operation

No Sunday or Holiday work shall be done except in case of emergency or to protect from damage or injury any work that has already been done, and then only with the

written consent of the Engineer, and only to such an extent as he may judge to be necessary.

Ordinarily, no night work shall be carried on which will require the presence of the Engineer or an inspector, except with the written permission of the Engineer. Night work is permissible in an emergency to the extent required to meet the emergency, but the Contractor shall notify the Engineer, as far as possible in advance, of their intentions to carry on such emergency work and of the time and place of doing it.

Work hours of operation will be in accordance with Village ordinances.

Article 9 - ENGINEERING SUPERVISION

The work covered by this Contract will be executed under the engineering supervision of the Village Engineer, who shall have authority to inspect all materials and workmanship entering into the work, to furnish all instructions and information regarding the Plans and Specifications that may be necessary, to supply supplementary or additional plans or specifications as they may deem expedient, and to point out to the Contractor any disregard of any of the provisions of the Contract; but the right of final acceptance or condemnation of the work will not be waived at any time during its progress.

The Engineer will set suitable stakes and marks showing the locations and elevations of various parts of the work and the Contractor shall provide such labor and assistance as the said Engineer may require in setting the same. The Contractor shall take due and proper precautions for the preservation of these stakes and marks, and shall see to it that the work at all times proceeds in accordance therewith. The Engineer may provide for the inspection of any or all materials or workmanship used or intended to be used under this Contract, by assistants under their direction or otherwise, as they may deem to be advisable or expedient; but no inspection shall relieve the Contractor of their fundamental obligation to fully respect all the requirements of their Contract. Such inspection may cover any or all parts of the work, and may extend to and include the preparation or manufacture of any materials or fabricated articles intended to be incorporated in the work. The Contractor shall furnish, upon request therefor by the Engineer, such samples for examination or testing as the Engineer may prescribe. The Contractor shall furnish such labor and assistance as may be necessary for the proper handling of materials in all inspections and tests that may be required.

The Engineer and their duly authorized agents and employees may, at any time and for any purpose, enter upon the work and upon the premises occupied by the Contractor, and the Contractor shall provide proper and safe facilities by which the Engineer may have access to such parts of the work as may be required.

Article 10 - VILLAGE'S RIGHT TO COMPLETE; SUSPENSION OR TERMINATION

It is agreed that the Village has the right, when it shall become satisfied that the work provided for in this Contract will not be completed within the time limit, to furnish additional labor and material if necessary and render such other assistance as it may deem advisable, for the

completion of said Contract, at the expense of the Contractor, and may retain the same out of the Contract price, or recover the same by legal proceedings.

It is agreed that the Village Manager has the right to determine finally all questions as to proper performance of this Contract, or any part or portion thereof, and in case of improper, dilatory or imperfect performance thereof, to suspend the work at any time and to order the partial or entire reconstruction of the same, and if at any time the said Contractor shall abandon the work of this Contract or become habitually negligent of their obligations under it, or shall fail to prosecute the work with reasonable diligence, so that the time of final completion of the work shall be unnecessarily and intolerably delayed, or if they shall violate any of the provisions of the Contract, then and in such case the Village Manager may declare this Contract forfeited and may, at address given in the proposal, notify them to discontinue all work under this Contract, or any part thereof, and thereupon they shall discontinue such work, or such part thereof, and shall cease to have any right to the possession of the ground; and the Village shall thereupon have the right to complete the work or any part thereof by Contract or otherwise, as it may elect, and for that purpose to take possession and make use of such materials, tools, building appliances, and equipment as may be found upon the work, and to charge the expense thereof to the Contractor. Power is hereby given the Village Manager to determine all such questions under this Contract, according to the true intent and meaning thereof.

All expenses charged under this provision shall be deducted and paid by the Village of Lake Orion out of any monies then due to the Contractor under this Contract, or any part thereof, and in such accounting the Village of Lake Orion shall not be held to obtain the lowest figures for the work of completing the contract, or any part thereof, or for insuring its proper completion, but all sums actually paid therefor shall be charged to the Contractor and in case such expenses shall exceed the said sums, the Contractor shall pay the amount of the excess to the Village of Lake Orion.

Article 11 - ASSIGNMENT OF CONTRACT

It is agreed that the Contractor shall not assign or transfer this Contract, or subcontract any part of the work embraced in it, except with the written consent of the Village Manager to do so.

It is further agreed that all parts of the work which may be performed by a subcontractor shall conform to the Plans and Specifications and be subject to all provisions of this Contract exactly as if performed by the Contractor and their immediate employees and work personnel. No such letting of the work shall, in any way, diminish or weaken the responsibility of the Contractor for all parts of the work or lessen their obligation under this Contract.

It is likewise agreed that the Contractor shall not assign, either legally or equitably, any of the monies payable to him under this Contract, or his claim thereto, except with the written consent of the Village Manager.

Article 12 - EXTRA WORK AND MODIFICATION

It is agreed that the said Contractor shall do such incidental or extra work in connection with this Contract as the Village Manager may especially order in writing. If such extra work or any

part thereof be of such character that it may be definitely covered by construction items for which unit prices are named in the proposal of this Contract, then and in that case the Village will pay, and the Contractor will accept as full compensation for such extra work, or such part thereof, the amount computed by applying the unit prices to the quantities of extra work falling under the several items. Also, such extra work may be paid for at prices mutually agreed upon at the time by the Village and the Contractor. But if such extra work, or any part thereof, be of a kind which may not be definitely covered by the regular pay items of this contract, and if no price therefor has been mutually agreed upon in advance, or if the work is of such a nature that it cannot be estimated with fair exactness in advance, then the Village will pay, and the Contractor will accept as full compensation for such, an amount equal to the actual and necessary net cost in money to the Contractor for labor and materials actually used therein or expended thereon, plus fifteen percent (15%) of such net cost for superintendence, power, the use of tools, and plant, liability insurance, and all overhead and incidental expenses.

During the progress of any extra work which is to be paid for on the basis of net cost plus fifteen percent (15%), the Contractor will furnish to the Village Engineer, at the end of each day, suitable time slips showing the name of and the number of hours worked by each work person employed thereon, the nature of work performed by them, and their rate of pay, together with suitable and adequate memoranda of the materials used therein, showing the character and amount of each such material, the source from which it was purchased, and the price paid or to be paid therefor.

The Village may, at its discretion, furnish to the Contractor any materials or supplies or transportation required for extra work, and the Contractor shall not be entitled to any allowance or percentage on account of materials or supplies or transportation so furnished.

It is agreed that all extra work that may be ordered and performed under the provisions of this article shall be done by the Contractor in an effective and workmanlike manner, and shall be subject to the same restrictions and liabilities as those which apply to the general work of this Contract; and the Contractor will be responsible for the maintenance and protection of such extra work until the time of the final acceptance of the entire job by the Village.

And it is further agreed that no claim against the Village on account of extra work shall be valid unless such extra work has been previously ordered in writing by the Village Manager, and unless such claim has been presented for payment as soon as practicable after the completion of such extra work and before the making up of the final estimate.

When it becomes necessary in the prosecution of any work or improvement under contract to make minor alterations or modifications of such contract or the plans and specifications thereof, such alterations, changes or modifications shall be made only on the written order of the Village Manager.

No such order shall be made until the price to be paid for the work or material or both and the credits, if any, to be allowed by the Village under the altered and modified Contract shall have been agreed upon in writing and signed by the Contractor and by the Village Manager.

Article 13 - DISPUTED CLAIMS FOR EXTRA COMPENSATION

If any inconsistency, omission, or conflict is discovered in either the plans or the specifications, or if in any place the meaning of either the plans or the specifications, or both, is obscure, or uncertain, or in dispute, the Engineer will decide as to the true intent.

In case the Contractor deems extra compensation is due for work or materials not clearly covered in the contract, or not ordered by the Engineer as extra work, or due to changed or altered conditions, the Contractor shall notify the Engineer in writing of the Contractor's intention to make claim for such extra compensation before beginning work on which the Contractor intends to base a claim and shall afford the Engineer every facility for keeping actual cost of the work. The Contractor and the Engineer shall compare records and bring them into agreement at the end of each day. Failure on the part of the Contractor to give such notification or to afford the Engineer proper facilities for keeping strict account of actual cost will constitute a waiver of the claim for such extra compensation except that consideration will be given to claims to the extent that they are substantiated by Village records. The determination of extra compensation made by the Village, where the Contractor has failed to give proper notice of their claim for extra compensation as provided herein or has failed to afford the Engineer proper facilities for keeping strict account of actual costs, shall be final and binding on the Contractor. The filing of such notice by the Contractor and the monitoring of cost by the Engineer for said notice of claim, shall not in any way be construed to establish the validity of the claim. When the extra work in question has been completed, the Contractor shall file the claim for extra compensation with the Engineer.

Such claims shall be filed with the Engineer in accordance with the MDOT 2020 Standard Specifications for Construction. A written decision will be given to the Contractor in a timely manner, regarding the approval, partial approval, or disapproval of the Contractor's claim for extra compensation. The Village will determine procedures for reviewing the Contractor's claim.

Article 14 - EXTENSION OF TIME

It is agreed that if the Contractor shall be unavoidably delayed in beginning or fulfilling this Contract by reason of excessive storms or floods, or by acts of Providence, or by general strikes, or by court injunction, or by stopping of the work by the Village because of any emergency or public necessity, or by reason of extra work ordered by the Village Engineer, or by any act, neglect, delay, or default on the part of the Village, the Contractor shall have no valid claim for damages on account of any such cause or delay, but he shall be, in such case, entitled to such extensions or advancement of the time period specified in the Agreement as the Village Engineer shall adjudge to be just and reasonable; provided, however, that formal claim for such extension shall be made in writing by the Contractor within a week after the date upon which such alleged cause of delay shall have occurred. The closing down of the work during the winter season on account of cold weather shall not be taken as entitling the Contractor to any extension of time within the meaning of this Article.

In case the Contractor shall be delayed in the fulfillment of his obligations under this Contract, from any cause whatsoever, and in case the Village shall acquiesce in the Contractor's

prosecution and completion of the work, or any part of it, after the date at which it should have been finished, such acquiescence shall not operate as a waiver of any of the Village's rights under this Contract, nor shall it invalidate or in any way weaken the Contractor's bonds.

Article 15 - LIQUIDATED DAMAGES

It is expressly covenanted and agreed by and between the parties hereto that time is and shall be considered as of the essence of the Contract, and in the event that said Contractor shall fail in the due performance of the entire work to be performed under this Contract, by and at the time herein mentioned and referred to in the Agreement, or within some other certain date subsequent to this to which the time limit for completion of the work may have been advanced under provisions of Article 11, the said Contractor shall pay unto the Village as and for liquidated damages, and not as a penalty, the sum of **One Thousand Dollars (\$ 1,000.00)** for each and every calendar day that the said Contractor shall be in default.

Said sum of **One Thousand Dollars (\$ 1,000.00)** per day, in view of the difficulty of estimating such damages with exactness, is agreed upon as the damages which will be suffered by the Village by reason of such default. It is also understood and agreed by the parties to this Contract that the liquidated damages hereinbefore mentioned are in lieu of the actual damages arising from such breach of this Contract; which said sum the Village shall have the right to deduct from any monies in its possession, otherwise due, or to become due to said Contractor, or to sue for and recover compensation for damages for non-performance of this Contract at the time stipulated herein and provided for. (See also any Special Provisions for Liquidated Damages.)

Said liquidated damages are in addition to any actual damages which the Village may recover under the provisions of the contract and are assessed in accordance with Section 108.10 of the MDOT 2020 Standard Specifications for Construction.

Article 16 - PAYMENTS TO THE CONTRACTOR

16.1 Contractor's Obligation Prior to Payment

It is agreed that before the Contractor shall demand partial or final estimates or payments, the Village may require them to furnish the Village satisfactory evidence that all persons that have supplied labor or materials for the work embraced under this Contract have been fully paid for the same; and that in case such evidence be not furnished as aforesaid, such sums as the Village may deem necessary to meet the lawful claims of the persons aforesaid be retained by the Village from any monies that may be due or become due to them under this Contract until such liabilities shall be fully discharged and evidence thereof be furnished to the Village. The Contractor agrees to make prompt settlement for all repair expenses made by the Village as a result of the Contractor's work. Consent of the Contractor's surety will be required prior to final payment.

16.2 Village's Obligation to Pay

It is agreed that, in consideration of the faithful and entire performance by the Contractor of their obligations under this Contract, the Village shall pay to them, at the times and in the manner stipulated, the total sum as determined by calculations from the unit prices in the proposal, but diminished by such amount as the Village may lawfully retain as liquidated damages under the provisions of Article 12 herein; and the Contractor shall accept the payment of such sum as full compensation for their work under this Contract.

16.3 Progress Estimates and Payments

Progress payments shall comply with Act No. 524 Public Acts of 1980. At about the first of each month, during which satisfactory progress has been made toward the final completion of the work, the Engineer will make up an estimate of the amount and value of the work which has been done under this Contract since the date of the last preceding estimate, and will report such estimate in writing to the Village Director of Finance. Such estimates shall not be required to be made by strict measurements, or with exactness, but may be made either wholly or in part by appraisement or estimation or by a consideration of accounts for labor and materials, and it shall be sufficient if it is approximate only. Any error or inaccuracy which may occur in any progress estimate may be allowed for or corrected in any subsequent estimate.

Following the rendering of such estimate by the Engineer, and as soon as practicable thereafter, the Village will pay to the Contractor on account a sum equal to ninety percent (90%) of the Contract price of such work. The remaining ten percent (10%) will be retained until work is fifty percent (50%) in place. After the work is fifty percent (50%) in place, additional retainage shall not be withheld unless the Village determines that the Contractor is not making satisfactory progress, or for other specific cause relating to the Contractor's performance under the Contract. If the Village so determines, the Village may retain not more than ten percent (10%) of the dollar value of work more than fifty percent (50%) in place.

The Director of Finance may require the Contractor, before the payment of any estimate, to file an affidavit showing the unpaid bills for materials or supplies of any kind furnished for this work.

The progress estimates and payments thus provided for will include all extra work which may be done under the provisions of this Contract on the same basis as other work is included, all such extra work being regarded herein as essentially a part of this Contract, and not merely supplementary to it.

Disputes under this provision may be submitted to the decision of an agent, at the option of the Village, pursuant to Section 4 of Act 524 of 1980. (MCLA 125.1564).

16.4 Measurement

Due and proper measurements will be taken by the Engineer during the progress of the work, and their estimates, based upon such measurements, shall be final and conclusive evidence of the amount of work performed under this Contract.

16.5 Final Estimate and Payment

As soon as practicable after the satisfactory completion of all the work included under this Contract, the Engineer will make final inspection of all the work and will make up a final estimate of the amount due to the Contractor under the terms of this Contract. At this time the Contractor shall file with the Director of Finance an affidavit stating that all bills have been paid in full for all materials, supplies and labor of every kind that have been furnished for this work, or stating the balance due for such materials, supplies and labor (See sample on Page 52). The Contractor shall file with the Village Engineer the Contractor's Declaration found on Page 51, stating that all claims for extra payments have been satisfactorily settled and there will be no further claims. Consent of the Contractor's surety shall also be filed. The Engineer will then certify this estimate to the Village Director of Finance and the Contractor will be paid the amount of said estimate, less the amounts previously paid; excepting that the Village may, at its option, reserve such amount as it may deem necessary to meet the undischarged obligations of the Contractor for materials or labor expended upon this work until such obligation shall have been paid.

Article 17 - WARRANTY MAINTENANCE

If, at any time during a two-year period from the date of payment of the final estimate, the need of any repair or replacement becomes apparent, the Village will at once notify the Contractor in writing, either personally or by mail at the address given in the proposal; and if within one week after such notification the Contractor has not made the necessary repairs, the Village may proceed to do the required work and to charge the cost thereof against the Contractor, excepting that in the case of a repair necessary to be made at once to protect life and property, then and in that case the Village may take immediate steps to repair or barricade such defects without notice to the Contractor.

Following the performance of any such repair work by the Village, and as soon as practicable thereafter, an itemized statement of the cost of such work will be sent to the Contractor by the Village. In such accounting the Village shall not be held to obtain the lowest figures for the doing of the work or any part thereof, but all sums actually paid therefor shall be charged to the Contractor.

Article 18 - MICHIGAN NON-DISCRIMINATION STATUTE

It is agreed that the Contractor and their subcontractors will not discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions or privileges of employment, or a matter directly or indirectly related to employment, because of

race, color, religion, national origin, age, sex, height, weight, or marital status; or because of a handicap that is unrelated to the individual's ability to perform the duties of a particular job or position. Breach of this covenant may be regarded as a material breach of the Contract.

Article 19 - LABOR LAWS AND ORDINANCES

The Contractor shall obey and abide by all laws of the State of Michigan relating to the employment of labor on public work, and all the charter provisions and ordinances of the Village of Lake Orion regulating or in respect to public improvements.

Article 20 - PATENTS, PATENT RIGHTS, AND TRADEMARKS

The Contractor shall indemnify, protect, defend and save the Village of Lake Orion, including all elected and appointed officials, all employees and volunteers, all boards, commissions and/or authorities and their board members, employees, volunteers and others working on behalf of the Village, harmless against all claims or actions brought against the Village by reason of any actual or alleged infringement upon patent, trademark or service mark right in any article, material, process, machine or appliance used by him in this work.

Article 21 - WORK WITHIN RAILROAD, PRIVATE, STATE OR COUNTY RIGHTS-OF-WAY

All construction work within railroad, private, State or County highway rights-of-way shall be performed by the Contractor in accordance with the requirements of the rights-of-way agreement and of the railroad or highway department having jurisdiction; including procedures of excavating, backfilling, removing and replacing pavement, maintaining and safeguarding traffic, inspection procedures of jacking pipes and encasing pipes under railroads and highways, etc. All required construction permits and surety bonds shall be furnished by the Contractor before commencing work. At the conclusion of the work, the Contractor shall furnish a written statement from the railroads and highway departments that work in rights-of-way under their jurisdiction has been completed to their satisfaction.

Article 22 - PROTECTION AND SAFETY

22.1 Protection Against Accident

The Contractor shall put up and shall maintain during the continuance of the work such barriers, lights and other protective devices and watchmen, when necessary, as will effectively prevent any accident in consequence of their work, and they shall be liable for all accidents and damages occasioned in any way by their acts or neglect, or by the acts or neglect of their agents, employees, or workmen.

22.2 Responsibility for Damage to Work

The Contractor shall assume full responsibility for loss or damage to the work during the entire construction period resulting from caving earth and from storms, floods, frosts, and other adverse weather conditions, and from all other causes whatsoever not

directly due to the acts or neglect of the Village, and shall turn the finished work over to the Village in good condition and repair at the time of the final estimate. This responsibility of the Contractor shall cover all these elements included as extra work under this Contract in exactly the same manner as the regular work is covered.

22.3 Responsibility for Adjoining Structures

The Contractor shall have full responsibility for the protection of all property, driveways, buildings, fences, and other structures, and their foundations, along (or near) the line of the work, and shall indemnify, defend and save harmless the Village of Lake Orion, including all elected and appointed officials, all employees and volunteers, all boards, commissions and/or authorities and their board members, employees, volunteers and others working on behalf of the Village, against all damages or alleged damages to any such structure arising out of their work.

No driveway shall be entirely closed to travel, even temporarily, except with the written consent of the Engineer, previously obtained. Highways must be suitably posted during the period in which construction work is in progress in them, and the Contractor shall be responsible for this precaution. Suitable bridges must be built across trenches at highway crossings to facilitate travel, and this same requirement shall apply likewise to private roadways.

22.4 Responsibility for Water Courses

The Contractor shall maintain in continuous and effective service all drains and water courses touched during the progress of the work. If it should become necessary, temporarily, to divert or obstruct the flow of any such water course or drain, written consent must first be obtained from the Engineer, and the Contractor shall assume full responsibility for the consequences.

22.5 Responsibility for Utilities

Certain underground structures and utilities have been shown as an aid to the Contractor, but the Village does not guarantee their location or that other underground structures or utilities may not be encountered. It shall be the responsibility of the Contractor to make all arrangements with the owners of the respective utilities for the establishment of their location, prior to beginning the construction.

The Contractor shall assume full responsibility for the protection of all utilities, water, sewer, gas, telephone, or any other, either public or private, along or near the line of work, and will be held responsible for any damages to such utilities arising from their operations. If for the Contractor's convenience they desire that any portion of the utilities be moved to facilitate their operations, they shall make all necessary arrangements with the owner of the respective utilities, and pay all costs resulting from this work.

In cases where utilities, water, sewer, gas, telephone or any other, either public or private, are directly in the line of the structures being constructed, such as those being within the permissible limits of a sewer excavation or pavement excavation, and the Village deems it necessary that the said utility be moved, the said company or companies, agents or superintendents will be notified by the Village Engineer to remove the same within a specified time. The Contractor shall not interfere with said utility or any portion thereof until the expiration of the time specified in said notice. The Contractor will not be held responsible for any costs resulting from this work.

In all cases where there is a dispute between the Contractor and the owner of the respective utility as to necessity of moving or repairing same within Village-owned right of way, the Village Engineer shall make the final decision in the matter, which decision shall be binding on the respective parties, and order the respective parties to proceed accordingly.

22.6 Protection of Trees and Shrubbery

The Contractor shall take ample precautions to protect all trees and ornamental shrubbery from injury by work personnel, teams, or other agencies connected with their work. Such trees or shrubbery shall be surrounded by protective posts or fencing before construction work begins if, in the judgment of the Engineer, such precautions are necessary.

22.7 Protection of Reference Points

The Contractor shall carefully preserve monuments, bench marks, reference points and stakes and, in case of willful or careless destruction, they shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

22.8 Removal of Water

The Contractor shall provide all necessary pumps, pipes, drains, ditches, dikes, and other means for adequately protecting the work from damage by water, and he shall so protect it during the entire construction period. No direct payment will be made to the Contractor for removing or pumping water, or for any of the means employed in protecting the work against damage by water, but compensation therefor shall be considered as being included in the unit prices fixed in this Contract for the several structures.

Water pumped or delivered from trenches and excavations shall be disposed of in such manner as will not injure the public health, nor damage public or private property, nor injure any work complete or in progress.

22.9 Dust Control

The Contractor shall apply water or dust palliative, or both, for the alleviation or prevention of dust nuisance caused by their operations. Dust control operations shall be performed by the Contractor at the time ordered by the Engineer, but failure of the Engineer to issue such order will not relieve the Contractor of their responsibility.

Such dust control materials shall be applied as often as is necessary to control the dust. The use of road oils and waste oils to control dust is prohibited unless authorized by the Engineer.

No direct payment will be made for any such work performed or material used to control dust under this Contract.

22.10 Control of Noise

The Contractor shall eliminate noise to as great an extent as possible at all times. Air compressors shall be equipped with silencers, and the exhaust of all gasoline motors and other power equipment shall be provided with mufflers. In the vicinity of hospitals, libraries and schools, special precautions shall be taken to avoid noise and other nuisance, and the Contractor shall require strict observances of all pertinent ordinances and regulations. Any blasting permitted in such locations shall be done with reduced charges.

22.11 Erosion Control

The Contractor shall comply with the Soil Erosion and Sedimentation Control Act, Act 347 of 1972, as amended by Act 197, Public Acts of 1974 and local Village or County soil erosion control programs. Also, should the local agency determine that the construction operation is in violation of the act and cites the Village, the Contractor shall take immediate action, as directed by the Village, to insure compliance with the Act.

22.12 First Aid

The Contractor shall at all times provide a satisfactory first aid kit at the job site. Emergency phone numbers for police, doctors, and emergency vehicles shall also be kept in the first aid kit.

22.13 Ventilation and Safety in Gas

Positive and approved means shall be provided by the Contractor for the detection of gas in existing sewers. If gas is encountered and cannot be removed by natural ventilation, then ventilating equipment of sufficient capacity and suitable type to adequately and quickly dilute the gas shall be promptly installed and operated. In all work where gas is present, no flame or other open light shall be used on the work.

The Contractor shall be required to enforce a "no smoking" ban on all work-personnel present.

22.14 Sanitary Regulations

The Contractor shall provide for their employees an abundant and convenient supply of drinking water, taken from the Village water system or from some other safe and wholesome source, and shall give orders against the use for drinking purposes of any other water in the neighborhood known to be prejudicial to the health of the workers.

The Contractor shall provide at convenient points, properly secluded from observation, a sufficient number of sanitary conveniences, and shall maintain them strictly without nuisance and without offense to the public or to residents in the vicinity of the work. The number, location, character and conditions of maintenance of these utilities must at all times be such as will meet the approval of the Engineer.

Article 23 - "OR EQUAL" CLAUSE

Whenever, in any of the Contract Documents an article, material, or equipment is defined by describing a proprietary product or by using the name of a manufacturer or vendor, the term "or equal", if not inserted, shall be implied. The specific article, material or equipment mentioned shall be understood as indicating the type, function, minimum standard of design, efficiency and quality desired, and shall not be construed in such manner as to exclude manufacturers' products of comparable quality, design and efficiency. The Contractor shall comply with the requirements of the Contract Documents relative to an Owner's approval of material and equipment before they are incorporated in the work.

Article 24 - CLEANING UP

Upon completion of the actual work of construction, the Contractor shall clean up and leave in neat condition all the premises which they have occupied during the construction period. Before the time of the final estimate, the Contractor shall remove from the premises all surplus excavation, debris, and rubbish, and all unused materials, together with all tools and equipment, or shall deposit them at such points and in such manner as the Engineer may require.

Before leaving the grounds, they shall replace or put in good repair all fences, telephone poles and lines, roadways, and other property that may have been damaged by them during the progress of the work. Damage to crops within the limits of the right-of-way or street will be paid by the Village, but the Contractor must assume responsibility for all damages outside of this right-of-way.

Article 25 – USE OF COMPLETED PORTIONS OF THE WORK

The Owner may, at any time during the progress of the work, after written notice to the Contractor, take over and place in service any completed portions of the work which are ready for service, although the entire work of the Contract is not fully completed, and notwithstanding

the time for completion of the entire work or such portions may not have expired. In such event, the Contractor will be relieved of maintenance of said portion, except as covered by his guarantee of same. The use of any portion of the work by the Owner under the provisions of this section, shall not constitute final acceptance of the work and shall not be construed to be a final estimate for such work, the date of final estimate shall be the date of final estimate for the entire project covered under this Contract.

Article 26 – CONTRACTOR’S RIGHT TO STOP WORK

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 them, or if the Owner should fail to pay to the Contractor within sixty days of its maturity and presentation any sum certified by the Engineer, provided no appeal is taken, the Contractor may, upon seven days' written notice to the Owner and the Engineer, stop work or terminate this contract, and shall receive from the Owner payment in full for all the work executed, as determined from the prices contained in the approved detailed estimate as computed by the Engineer, but no claim for extra compensation or damages shall be made or allowed because of such termination of the contract.

Article 27 – NO WAIVER OF CONTRACT

Neither acceptance of the whole or any part of the work by the Owner or their Engineer, or any of its agents, nor any order, measurements or certificate by the Engineer, nor any order by Owner for payment of money, nor any payment for the whole or any part of the work by Owner, nor any extension of time, nor any possession taken by the Owner or its agents, shall operate as a waive for any portion of the contract or any power therein provided; nor shall any waiver of any breach of contract be held to be a waiver of any other or subsequent breach.

Article 28 – BONDS & INSURANCE

Bonds

Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor’s obligations under the contract Documents. These bonds shall remain in effect until two years after the date when final payment becomes due except as provided otherwise by Laws of regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

All bonds shall be in the form prescribed by the contract documents except as provided otherwise by Laws or Regulations and shall be executed by such sureties as are named in the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent’s authority to act. Additionally, the bonds shall be executed by sureties with an A.M. Best rating of “A” or better.

If the surety on any bond furnished by contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the project is located or it ceases to meet the requirements above, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements above.

Permit bonds, as required by the Village, may be executed on documents other than AIA forms that are acceptable to the Village Board or the Village Engineer.

Insurance

The Contractor shall not commence work or continue work, nor shall he allow any subcontractor to commence or continue to work under this contract, until all insurance policies or certificates of insurance required under this paragraph have been submitted to the Owner and approved by the Owner. The insurance policies must be through and insurance carrier with a current rating no less than A by A.M. Best Company and must be an admitted carrier.

The Contractor, at his option shall, either, (1) require each of his subcontractors to procure and maintain during the life of his subcontract, Worker's Compensation Insurance, Subcontractor's Public Liability and Property Damage Insurance, Subcontractor's Motor Vehicle Bodily Injury and Property Damage Insurance, Owner's and Contractor's Protective Public Liability and Property Damage Insurance of the types and in the amounts as specified for the Contractor, or (2) insure the activities of his Subcontractors in his own policies.

The Owner and Nowak & Fraus Engineers, shall be listed as co-insured.

(a) Commercial Liability Insurance

The Contractor shall procure and maintain during the life of this Contract, commercial liability insurance in the name of the Owner and Nowak & Fraus Engineers. The insurance shall be in the amount no less than the following:

Occurrence Form

Limits: \$1,000,000 each occurrence (Bodily Injury and Property Damage)

\$2,000,000 general aggregate

\$1,000,000 personal & advertising injury

\$1,000,000 products/completed operations aggregate

\$ 500,000 fire damage to real property

\$ 5,000 medical payments

Coverage shall not exclude contractual liability, explosion, collapse, or underground hazards.

(b) Commercial Automobile Liability Insurance

(1) The Contractor shall procure and shall maintain during the life of this Contract, Commercial Automobile Insurance in an amount not less than the following:

Commercial Automobile Liability

Limits: \$1,000,000 combined single limit

Michigan No Fault as specified by law

Commercial automobile liability coverage must include coverage for all autos, owned, non-owned, and hired.

(c) Owner's and Contractor's Protective Liability Insurance

The Contractor shall procure and shall maintain during the life of this Contract, Owner's and Contractor's Liability Insurance in an amount not less than the following:

Occurrence Form

Limits: \$1,000,000 each occurrence

\$2,000,000 general aggregate

(d) Umbrella Liability

Limits: \$2,000,000 each occurrence

\$2,000,000 general aggregate

Coverage should be umbrella form and not excess insurance. Maximum Self-Insured Retention Limit: \$10,000.

(e) Pollution Insurance

Pollution insurance may be required for some projects based on the type of work being performed and at the discretion of the Village Board or the Village engineer.

Pollution Liability

Occurrence or Claims Made Forms are acceptable.

Limits: \$1,000,000 each claim/occurrence

\$2,000,000 general aggregate/per project

Coverage shall include clean-up costs, on and off the site, and liability to third parties. Licensed and unlicensed insurers must maintain an A.M. Best rating of A.

(f) Railroad Protective Liability Insurance

When the contract work includes construction crossing railroads, insurance in the name of the railroad shall protect against claims for damages because of bodily injury

or death and for property damage caused by the Contractor or his subcontractors. The form of the policy and the amount of the liability coverage shall be determined by the railroad involved, and the insurance provided shall be acceptable to the railroad. The policy shall be issued in the name of the railroad.

(g) Builders Risk/Installation – Material Coverage Insurance

Contractor shall maintain property insurance for 100% of the completed value of any structure or 100% of the materials being used in the installation. If the Village of Lake Orion maintains an interest in any building materials or installation materials, the Village shall be named as a Lenders Loss Payee.

(h) Worker's Compensation Insurance

The Contractor shall procure and shall maintain during the life of this Contract Worker's Compensation Insurance as required by Michigan State law for all of his employees to be engaged in work on the project under this Contract; and in case any such work is sublet, the Contractor shall require the subcontractor similarly to provide Worker's Compensation Insurance for all of the latter's employees to be engaged in such work.

In case any class of employees engaged in hazardous work under this Contract is not protected under the Worker's Compensation statute, the Contractor shall provide and shall cause each Subcontractor to provide adequate Employer's Liability Insurance for the protection of the employees not so protected. Workers compensation including Employers Liability Statutory coverage must be in an amount not less than the following:

Employers Liability Limits: \$500,000 each accident
\$500,000 policy limit
\$500,000 each employee

If work involves exposure to Federal Waterway, workers compensation coverage shall include coverage for Longshoreman's & Harbor Worker's Act and Maritime Liability.

(i) Certificates of Insurance

Contractor shall furnish to the Village and Engineer certificates of insurance evidencing the above coverages. Each policy and certificate shall grant a 30 day notice of intent to cancel or change any such insurance. The Cancellation Clause of the Certificate of Insurance shall strike the words "endeavor to", and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents, or representatives."

Certificates of Insurance shall be furnished to the Village prior to commencement of any project, and the certificate shall verify that coverage is in effect until the Village approves

and accepts the work performed by Contractor. If the project continues beyond the expiration date of Contractors Insurance, a renewal certificate must be proving continuous coverage.

(j) Additional Named Insured

Insurance coverage shall include the Owner and Nowak & Fraus Engineers. as additionally insured.

(k) Indemnification Clause

The Contractor shall indemnify and save harmless the Owner and all Additional Named Insured for and from all claims, demands, payments, suits, actions, recoveries and judgments, of every name and description, brought or recovered against them or either or any of them for or on account of any personal injuries or damages to property received or sustained by any person or persons whomsoever by reason of any act or omission of said Contractor, his agents, servants or his contractors in the performance of said work, or by or in consequence of any negligence or carelessness in connection with the same or on account of the death of or injuries to persons who shall be engaged in or about the work to be performed under this contract and on account of liability or obligation imposed directly or indirectly upon the Owner, and all Additional Named Insured, by reasons of any law of the State of Michigan or the United States, now existing or which shall hereafter be enacted imposing any liability of obligation, or providing for compensation of any person or persons on account of, or arising from the death of, or injuries to, employees. Said Contractor shall pay settle, compromise and procure the discharge of any and all claims and all such losses, damages, expenses, liabilities and obligations, and shall defend at his own cost and expense any and all claims, demands, suits and actions made or brought against the Owner, and all Additional Named Insured, for or upon any such claim. In case said Contractor shall fail, neglect or refuse to comply with any of the provisions of this paragraph, the Owner may, in order to protect himself and all Additional Named Insured from liability, defend any such claims, demand suits or actions and pay, settle, compromise and procure the discharge thereof, in which case the said Contractor shall repay the Owner any and all such loss, damage and expense, including attorneys' fee paid, suffered or incurred by the Owner and all Additional Named Insured, in so doing.

So much of the monies due, or to become due to said Contractor under this agreement as shall be deemed necessary by the Owner shall or may be retained by the Owner until every and all such claims, demands, suits, actions, recoveries, judgments, liabilities and obligations have been settled and discharged and evidence to that effect furnished the Owner, or the Owner may collect the same in whole or in part in any lawful manner from said Contractor. The Contractor shall provide adequate insurance until his work is completed, with a responsible insurance company which meets the approval of the Owner, covering liability to the public for loss resulting from injury to persons or damage to property arising out of, or caused by, his operations, acts or omissions, or those of his Subcontractors, agents or employees in procuring work for the Owner. Such insurance coverage shall be in such amounts as are provided in the public liability and property damage section herein, provided,

however, that such insurance coverage shall include an endorsement providing that the contractual exclusion shall be removed or, in the alternative, contractual insurance shall be afforded. If the former, such endorsement shall contain specific language as follows:

“It is hereby agreed that the contractual exclusion does not apply to the contract entered into between the insured and the Owner, and each Additionally Named Insured, as their interests may appear for the project work. Such insurance coverage shall also contain an endorsement guaranteeing that thirty (30) days’ notice to the Owner and each Additional Named Insured shall be given in writing prior to the cancellation of, or change in, any such insurance.”

Article 29 - PROGRESS SCHEDULE

The CONTRACTOR shall submit a Progress Schedule to the Village for review and approval prior to the pre-construction meeting.

CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period of _____
to _____ A.D., 20 _____, performed any work, furnished
any material, sustained any loss, damage or delay for any reason, including soil conditions
encountered or created, or otherwise done anything for which I shall ask, demand, sue for, or
claim compensation from the Village of Lake Orion or his agents, in addition to the regular items
set forth in the contract named or numbered **PARK AVENUE RETAINING WALL**
REPLACEMENT and dated _____ A.D., 20 _____, for _____

executed between myself and the Village of Lake Orion, and in the Change Orders for work
issued by the Village in writing as provided thereunder, except as I hereby make claim for
additional compensation and/or extension of time as set forth on the itemized statement attached
hereto.

There (is) (is not) an itemized statement attached.

Date: _____

By: _____

Title: _____

CONTRACTOR'S AFFIDAVIT

STATE OF MICHIGAN)
)SS
COUNTY OF)

The undersigned _____, hereby represents that on _____, he (it) was awarded a contract by the Village of Lake Orion, hereinafter called the Owner, to _____

_____ in accordance with the terms and conditions of Contract **PARK AVENUE RETAINING WALL REPLACEMENT** and the undersigned further represents that the subject work has now been accomplished and the said contract has now been completed.

The undersigned hereby warrants and certifies that all of his (its) indebtedness arising by reason of the said contract has been fully paid or satisfactorily secured; and that all claims from subcontractors and others for labor and material used in accomplishing the said project, as well as all other claims arising from the performance of the said contract, have been fully paid or satisfactorily settled. The undersigned further agrees that, if any such claim should hereafter arise he (it) shall assume responsibility for the same immediately upon request to do so by the Owner.

The undersigned, for a valuable consideration, the receipt of which is hereby acknowledged, does further hereby waive, release and relinquish any and all claims or right of lien which the undersigned now has or may hereafter acquire upon the subject premises for labor and material used in accomplishing said project owned by the Owner.

This affidavit is freely and voluntarily given with full knowledge of the facts, on this _____ day of _____ A.D. 20 ____.

Contractor: _____

By: _____

Title: _____

Subscribed and sworn and to before me, a Notary Public in and for _____ County, Michigan, on this _____ day of _____ A.D. 20 ____.

Notary Public
My Commission expires: _____

**NOTICES TO BIDDERS,
SPECIFICATIONS
AND
SPECIAL PROVISIONS**

GENERAL

All work performed under this Contract shall be constructed in accordance with, and by means and methods outlined in the 2020 Michigan Department of Transportation (MDOT) Standard Specifications for Construction except as otherwise modified herein.

The special provisions set-forth hereinafter are intended to supplement or take precedence over the MDOT General Conditions, General Specifications, or Open-Cut Specifications contained in the referenced MDOT Standards. Unless a Special Provision is provided hereafter, all work shall be performed, and all materials and equipment utilized on this Project shall meet the requirements of the current Standard Specifications for Construction.

All traffic control measures, such as plastic drums, type III barricades, and temporary signage shall be in accordance with the 2011 Michigan Manual of Uniform Traffic Control Devices (MMUTCD).

SCOPE OF THE PROJECT

The area of work is located at the north end of Park Avenue. Work is to be performed in the right of way of Park Avenue and on Parcels 09-03-432,001, 09-03-432-002 and 09-03-432-004.

The work to be performed under this contract consists of the removal of an existing retaining wall, guardrail and pavement, and replacement with a gravity block retaining wall, new asphalt pavement and guardrail. An alternate cold mill and resurface of pavement extending southerly from the removal pavement will be considered for this project. This also includes all other associated work required including any additional work, labor, material, and equipment required to complete the job according to the project plans and specifications.

PROJECT SCHEDULE AND OWNER'S INTENT

Contractor is responsible for allowing safe and adequate access routes for residents during all construction. This may require temporary walkways or paths to keep pedestrians safe and away from construction. Costs for any temporary walkways or paths are considered incidental and should be included with other project costs. Residents will park offsite during construction at an area designated by the Village.

UTILITY COORDINATION

The Contractor shall cooperate and coordinate construction activities with the Owners of utilities as stated in Section 104.08 of the 2020 MDOT Standard Specifications for Construction. In addition, for the protection of underground utilities, the Contractor shall follow the requirements in Section 107.12 of the 2020 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 108.09 of the 2020 MDOT Standard Specifications for Construction.

The following public utilities may have facilities located within the right-of-way:

Electric - Distribution:

DTE Energy
1530 Trombly Street
Detroit, MI 48211
Contact: Laura Toporowski 630-336-2020

Telephone:

AT&T
54 N. Mill Street
Pontiac, MI 48342
Contact: Matt Silwa 248-877-0762

Gas:

Consumers Energy
4600 Coolidge Hwy

Cable Television:

Comcast Cable
25626 Telegraph Rd

Royal Oak, MI 48073
Contact: Ernie Martyniuk 248-433-5868

Southfield, MI 48033
Contact: Michael Marlow 248-809-2765

Water Main & Sanitary Sewer:

Village of Lake Orion DPW
21 E. Church St.
Lake Orion, MI 48362
Contact: Wes Sanchez 248-693-8391
Ext. 106

Oakland County W.R.C.
1 Public Works Dr
Waterford, MI 48328
Contact: Rick DeVisch 248-858-4939

Contractor shall dial 1-800-482-7171 or 811 a minimum of three full working days, excluding Saturdays, Sundays, and holidays prior to beginning each excavation in areas where public utilities have not been previously located. Members will thus be routinely notified. This does not relieve the Contractor of the responsibility of notifying utility Owners who may not be a part of the "Miss Dig" alert system.

The Owners of Public Utilities will not be required by the Village to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Engineer that such poles or structures constitute a hazard to the public or are extraordinarily dangerous to the Contractor's operation.

The structure and utility information shown on the plans indicate approximate locations and type of facilities as disclosed by the various utility company records. No guarantee is given or implied to the completeness or accuracy thereof.

It shall be the Contractor's responsibility to locate and determine the exact depth of existing utilities and building services prior to construction. Said utility information shall be supplied to the Owner, Engineer, and/or utility companies involved.

There will be no compensation for delays in construction due to the failure of the Contractor to properly coordinate conflicts with utility companies.

Determining the existence and location of underground and overhead utilities and their protection shall be the responsibility of the Contractor. The Contractor shall call MISS DIG. No guarantee is made by the Owner or Engineer as to the completeness and/or accuracy of utility information shown on the plans. Information is from available records and is approximate only.

PROGRESS CLAUSE

Allowable work hours will be controlled by local ordinances and are from 7:00 AM to 7:00 PM. Work hours may only be extended with the prior approval of the Owner. No work shall be performed on Sundays and holidays, unless special permission is granted by the Owner.

The awarded Bidder for the work covered by this Proposal will be required to meet with the Engineer and Owner for a preconstruction conference. The scheduled date for this preconstruction conference will be set after the bid is awarded.

PUBLIC RELATIONS

Every effort shall be made by the Contractor to minimize inconvenience to the local residents and to provide for safe access to all areas. Cost for maintaining safe access shall be incidental to the project.

The Contractor shall insure that all workmen are courteous to the public and shall refrain from using any private property or water for any reason without the owner's written permission.

EXISTING WATER MAINS AND SEWERS

The Contractor will be responsible for any damage caused by the Contractor to existing water mains, sanitary and storm sewers, and structure covers that are not called for removal, during the construction of all improvements on this Project.

TRAFFIC CONTROL

Traffic signs and control devices shall be in conformance to the Michigan Manual of Uniform Traffic Control Devices, current issue.

This item of work shall include any and all traffic control and warning devices provided and/or rented to complete the proposed work. No consideration shall be given to any attempt or request to include any other items of work other than traffic control and warning devices.

The Contractor shall furnish, erect, maintain and remove all traffic control devices, including lights, signs, plastic drums, lighted arrow boards (type B solar) and barricades required to protect the construction area and the public.

Maintaining traffic within the right-of-way(s) shall conform to all requirements of the Village of Lake Orion.

The cost of all work for warning signs and barricades shall be incidental to the project.

TREE REMOVAL & TREE PROTECTION

All trees shall be protected from damage during construction. Any tree or branch damaged by the Contractor during the progression of work shall be neatly trimmed and painted with an approved pruning dressing to prevent long-term damage. There will be no separate measurement and payment for all work required to protect trees and/or branches from damage, or to trim and dress those branches damaged during construction.

PAVEMENT REMOVAL

Description. This work shall be done in accordance with Section 204 of the 2020 MDOT Standard Specifications, except as herein provided.

Construction. This item of work will be used for removal and disposal of existing material within the proposed limits to allow for the construction of the retaining wall and the proposed pavement section to be constructed as noted on the plans or as directed by the engineer. Any damage to such structures not a part of the work shall be repaired and/or replaced at the Contractor's expense.

Measurement and Payment. Payment for this contract item includes saw cutting, and removal/disposal of all pavement and soil as described above and at the depth and locations noted on the plans or as directed by the Engineer. This item is also to include any tree root trimming necessary to install proposed pavement and base. Pay item shall include labor, materials and necessary equipment.

Pay Item	Pay Unit
Pavement Removal.....	Square Yard

Acceptance. The subbase shall achieve a compacted density of at least 95% of the maximum unit weight at a moisture no greater than optimum for aggregate base under proposed pavement section. The contractor is responsible to perform this testing and demonstrate that the required density is achieved in a submittal.

MOBILIZATION

Description. The item "Mobilization" shall consist of the costs of preparatory work and operations for the Project as outlined in Section 150 of the MDOT 2020 Standard Specifications for Construction and any other incidental project-specific costs that are not covered in other pay items. Each Bidder shall enter, in the "Unit Price" column of the Proposal, his Lump Sum bid amount for this item, up to a maximum amount equal to three percent (3%) of the Total Base Bid.

Measurement and Payment. Payment for mobilization will be made as a lump sum amount. The bid amount for this item will be included in the first monthly payment to the Contractor.

Pay Item	Pay Unit
Mobilization, Max 3%.....	Lump Sum

FULL DEPTH SAWCUTTING

Where existing pavement is designated for removal the concrete or HMA shall be saw cut full depth prior to removal. If the pavement is found to have not been saw cut full depth, the contractor shall saw cut full depth a new joint beyond the limits of the previous saw cut joint and remove and replace the additional concrete at the contractor's expense. All saw cutting to be cut in a wet condition to eliminate airborne dust. Contractor shall wash down the pavement to remove the saw cut slurry in walkway and roads used by the public.

Payment for this item shall be included in Pavement Removal items.

SOIL EROSION AND SEDIMENTATION CONTROL

Description. Prior to beginning any work, the Contractor shall provide and maintain throughout the duration of the project, soil erosion and sedimentation control (SESC) measures as provided in these specifications and accompanying drawings, or in the absence of specific requirements he shall provide soil erosion and sedimentation control measures in accordance with Part 91 of Act 451 of the Public Acts of 1994, as amended, and the Oakland County Water Resources Soil Erosion Department.

Payment. Payment for these items shall be as described below. As is implied in the item description, this shall cover costs of labor, materials and equipment required to install, repair and maintain any SESC throughout the project duration as well as costs of applying for and submitting a permit.

Pay Item	Pay Unit
Soil Erosion and Sediment Control.....	Lump Sum

FINAL RESTORATION AND CLEANUP

Description. Site shall be restored to pre-construction conditions, where applicable and otherwise as designated on the plans. All disturbed areas shall be restored to a condition equal to, or better than that preceding construction.

Construction. Restoration for this Site will encompass restoration related to all components that were disturbed or moved to complete the project. This includes the following but is not limited to:

- i. Pavement restoration as applicable
- ii. Restore/Replace any components removed to perform pavement work such as boulders, landscaping components, parking/bumper blocks
- iii. Temporary removal and/or protection of boulders and other landscaping features at the Site as shown on the drawings and subsequently restoring the landscape features to pre-construction conditions. This temporary removal is solely for the purpose of

performing removal and construction work on the HMA pavement. Contractor is responsible for staging the items at appropriate locations. Any landscaping features that were previously in good condition but are damaged during construction will be replaced at the contractor's expense.

- iv. Removal of trash/debris generated during the work
- v. Restoration of any necessary vegetation such as disturbed earthwork for installation of silt fence or other SESC measures. Restoration of disturbed earthwork shall include 3 inches of topsoil followed by hydroseeding.
- vi. Other miscellaneous activities.

Payment. Payment for this item of work shall be paid at a lump sum price.

Pay Item	Pay Unit
Final Restoration and Cleanup.....	Lump Sum

PERMITS

The Contractor shall be responsible for securing all the necessary Permits for work to be performed under this Contract. All associated costs for such permits shall be considered to have been included in the unit bid prices for the affected Contract Items (Pay Items) of work.

STREET CLEANLINESS – DUST CONTROL

The Contractor shall clean and keep clean the street, the work area and public or private property occupied by him, from waste materials, refuse, mud, etc., resulting from his operations. Trucks hauling excavated materials, cement, sand, stone or other loose materials from or to the site shall be tight so that no spillage will occur on adjacent streets. Before trucks start away from the site, their loads shall be trimmed. Should the Contractor be negligent of his duties in maintaining the proper street cleanliness, the Owner will take necessary steps to perform such cleaning and shall charge the Contractor for all the costs.

Dust control shall be included as a part of Street Cleanliness and shall mandate the use of calcium chloride, water wagons or power vacuums, or combinations of these efforts. Such dust control shall apply directly to the work site and any other thoroughfare used by the Contractor's or his supplier's hauling operations. The Owner, or Engineer, may direct that affected streets shall be power vacuumed once a day with all costs for such vacuuming and other dust control measures hereinbefore described to be considered incidental and included in unit costs bid for the major items of work.

REMOVE EXISTING RETAINING WALL

Description. This item of work shall consist of all labor, materials and equipment necessary to remove the existing retaining wall according to the plans and soils investigation. The materials must be removed from the site and disposed of accordingly.

Payment. Payment for this item of work shall be paid at a lump sum price.

Pay Item	Pay Unit
Remove Existing Retaining Wall.....	Lump Sum

BLOCK RETAINING WALL

Description. This item of work shall consist of all labor, materials and equipment necessary to construct the proposed retaining wall according to the plans and soils investigation. All work shall include, but not be limited to the block retaining wall, 6A, Geotextile Fabric and Underdrain.

Payment. Payment for this item of work shall be paid at a lump sum price.

Pay Item	Pay Unit
Block Retaining Wall, Inclusive.....	Lump Sum

COLD MILL HMA SURFACE

Description. This item includes all labor, materials, and equipment necessary to cold mill the asphalt pavement to the depth (s) specified on the plans or directed by the Engineer and up to 1 inch into underlying concrete pavement. Sweeping of the milled surface, dust control, ramping of driveways, butt joints and disposal of the milling material shall be considered as included in the work. All utility castings that are to be adjusted or removed and replaced shall be location marked and temporarily lowered and plating prior to milling.

Cold milling HMA surface shall be measured in place by area in square yards (SY). The area determination shall be based upon the average length and width dimensions of the milled area as measured in the field by the Engineer.

Payment. Payment for these items shall be as described below.

Pay Item	Pay Unit
Cold Mill HMA Surface.....	Square Yard

REMOVE, SALVAGE AND REPLACE EXISTING BLOCK WALL

Description. This item includes all labor, materials, and equipment necessary to temporarily remove the existing block retaining wall on 365 Park Ave. (approximately 50 SFF) for the purpose of the removal of the existing wood retaining wall and construction of the block retaining wall. This work shall also include the removal and replacement of the existing deck railing.

Payment. Payment for this item of work shall be paid at a lump sum price.

Pay Item	Pay Unit
Remove, salvage and replace Existing Block Wall.....	Lump Sum

DR STRUCTURE, 48 INCH DIA, MODIFIED

Description. This item of work shall consist of placing 48-inch drainage structures over existing sewer as indicated on the Engineering Plans.

Materials. All materials used for this work shall be in accordance with Section 403 of the 2020 MDOT Standard Specifications for Construction and as described herein.

Construction. This item of work shall be performed in accordance with Section 403 of the 2020 MDOT Standard Specifications for Construction. Where called for on the plans or directed by the Engineer, a proposed drainage structure shall be constructed over or around an existing storm sewer. Drainage structures shall have a 2-foot sump as shown on the Engineering Plans. Shop drawings for all precast structures must be submitted to the Engineer for approval. This pay item includes excavating down to, around and below the existing storm sewer, placing a pre-cast concrete base under the existing storm sewer, constructing drainage structure to diameter called for on the plans using precast concrete sections, placing brick/block and mortar to close off gaps between the structure and pipes, saw cut and remove existing storm sewer inside the drainage structure and maintaining flow in the existing storm sewer at all times.

New drainage structures shall be furnished with Ecorse preferred structure covers. New castings shall be included under this pay item.

SPECIAL PROVISIONS

NFE M718

Page 7

Measurement and Payment. The completed work, as described, will be measured and paid for per each using the following pay item:

Pay Item	Pay Unit
Dr Structure, 48 inch dia, Modified.....	Each



Report of Geotechnical Investigation

Park Ave Retaining Wall Park Avenue Lake Orion, Michigan

Prepared for:

Nowak & Fraus Engineers
46777 Woodward Avenue
Pontiac, Michigan 48342

G2 Project No. 213502
January 12, 2024



January 12, 2024

Mr. Chad Findley, PE, PS
Nowak & Fraus Engineers
46777 Woodward Avenue
Pontiac, Michigan 48342

Re: Report of Geotechnical Investigation
Park Ave Retaining Wall
Park Avenue
Lake Orion, Michigan
G2 Project No. 213502

Dear Mr. Findley:

We have completed the geotechnical investigation for the proposed retaining wall replacement to be performed at the end of Park Avenue in Lake Orion, Michigan. This report presents the results of our observations and analyses, our recommendations for earthwork operations and construction considerations, and possible design alternatives for the proposed retaining wall.

We appreciate the opportunity to be of service to you and look forward to discussing the recommendations presented. In the meantime, if you have any questions regarding our report or any other matter pertaining to the project, please contact us.

Sincerely,

G2 Consulting Group, LLC

Michael L. Evans, P.E.
Project Engineer

Zachery R. Lilly, E.I.T.
Staff Engineer

MLE/ZRL/mle

EXECUTIVE SUMMARY

We understand the project will include replacing an existing timber lagging retaining wall at the end of Park Avenue in Lake Orion, Michigan. We understand that multiple replacement options are being considered. We also understand that consideration is being given to only replacing a portion of the existing timber wall.

We drilled a total of six (6) hand-auger borings around the existing retaining wall. Approximately 5 to 16 inches of topsoil are present at the ground surface of the hand-auger borings. Very loose to compact gravelly sand, silty sand, and clayey sand fill underlie the topsoil in soil borings HA-1 through HA-3 and HA-5. The granular fill extends to an approximate depth of 5-1/2 feet below the ground surface in boring HA-5 and to the explored depths ranging from 2-3/4 feet to 9 feet in borings HA-1 through HA-3. Native very loose to medium compact sand, silty sand, and sandy silt underlie the topsoil and granular fill soils in borings HA-4 through HA-6 and extend to the explored depths ranging from 5-1/2 to 9-1/2 feet below the ground surface. Groundwater was observed in borings HA-2, HA-4, and HA-5 at depths ranging from 2-1/2 to 9 feet below the existing ground surface both during and upon completion of the drilling operations. No groundwater was encountered within hand-auger borings HA-1, HA-3, or HA-6 either during or upon completion of the drilling operations.

The existing retaining wall consists of timber beams with timber deadmen. The wall appears to have reached the end of its design life. The wall is showing signs of rot and has a moderate bow between the deadmen indicating a potential internal stability issue. The existing wall has retained heights ranging from approximately 1 to 6 feet. Ground surface elevations at the top of the wall range between approximately 996 and 997 feet. The ground surface elevations in front of the wall range between approximately 991 and 996 feet. The grade in front of the retaining wall slopes downward toward Lake Orion. A second retaining wall, with an approximate retained height of 2 to 3 feet, is present in front of the eastern portion of the wall to be replaced.

We understand that the new retaining wall will generally follow the same alignment as the existing wall. The ground surface elevation at the top of the new wall will range from 993.5 feet to 996.5 feet. The ground surface elevation in front of the wall will range from 989 feet to 996.5 feet. New bituminous pavement, along with a guard rail, will be constructed at the top of the new wall. We understand that the existing lower timber lagging wall will remain in-place.

The proposed structure could consist of a gravity segmental retaining wall (SRW) composed of prefabricated inter-locking concrete blocks. We recommend the front face of the new wall be set a minimum of 6 feet from the back of the existing lower wall to mitigate the tiered retaining wall effect. Our analysis indicates that a SRW would consist of one (1) 60-inch wide blocks, one (1) 41-inch wide blocks, and three (3) 28-inch wide blocks.

Alternatively, the replacement retaining wall could consist of a traditional reinforced concrete retaining wall or a reinforced segmental retaining wall. However, both a concrete retaining wall and a reinforced SRW retaining wall would require a much larger excavation in order to construct. In addition, both of these wall options would require that the entire wall be replaced. This is due to interference between the geogrid and the existing deadman and the difficulty associated with abutting the concrete retaining wall next to the existing timber retaining wall. For these reasons, we do not recommend a reinforced concrete retaining wall or a reinforced segmental retaining wall be constructed to replace the existing timber lagging retaining wall.

Do not consider this summary separate from the entire text of this report, with all the conclusions and qualifications mentioned herein. Details of our analysis and recommendations are discussed in the following sections and in the Appendix of this report.

PROJECT DESCRIPTION

We understand the project will include replacing an existing retaining wall at the end of Park Avenue in Lake Orion, Michigan. The existing retaining wall consists of timber lagging with deadman anchors. The retained height of the wall ranges from approximately 1 to 6 feet. The grade in front of the retaining wall slopes downward toward Lake Orion. A second retaining wall is present in front of the eastern portion of the wall. Based on the distance between the two retaining walls, they appear to be acting as a tiered system of retaining walls. We understand that the lower wall will not be part of the proposed project. The upper retaining wall is showing signs of rot and appears to have exceeded its design life. We understand that multiple replacement options are being considered. We also understand that consideration is being given to only replacing a portion of the existing timber wall.

SCOPE OF SERVICES

The field operations, laboratory testing, and engineering report preparation were performed under the direction and supervision of a licensed professional engineer. Our services were performed according to generally accepted standards and procedures in the practice of geotechnical engineering. Our scope of services for this project is as follows:

1. We drilled a total of six (6) hand-auger borings. Three (3) hand-auger borings were performed at the top of the existing retaining wall. The borings were evenly spaced and extended to depths ranging from 2-3/4 to 9 feet below the ground surface. The remaining borings were performed in front of the existing retaining wall and extended to depths ranging from 5-1/2 to 9-1/2 feet below the ground surface.
2. We performed laboratory testing on representative samples obtained from the soil borings. Laboratory testing included visual engineering classification.
3. We prepared this engineering report. Our report includes our observations and analyses of the existing conditions at select locations along the proposed retaining wall and possible retaining wall design alternatives.

FIELD OPERATIONS

Nowak & Fraus Engineers, in conjunction with G2 Consulting Group, LLC (G2), selected the number, depth and location of the hand-auger borings. A G2 representative determined the boring locations in the field by measuring from existing site features and landmarks using conventional taping methods. The approximate boring locations are shown on the Boring Location Plan, Plate No. 1. Ground surface elevations at the boring locations were approximated from the Topographic Survey provided by Nowak & Fraus.

Hand-auger soil borings were performed using a 3-inch diameter solid-stem hand auger. Soil samples were obtained at 2-1/2-foot intervals or at soil transitions. Dynamic Cone Penetrometer (DCP) tests were performed within the granular soils in order to evaluate the consistency of the in-situ soil. DCP testing involves driving a 1-1/2-inch diameter cone with a 45° vertex angle into the ground using a 15-pound weight dropped 20 inches after the cone is seated into the bottom of the hand-auger borehole. The DCP is driven for 1-3/4 inches. The blow counts are presented on the individual hand-auger borings. The reported blow count is assumed to be equivalent to the Standard Penetration Test N-value.

The soil samples were placed in sealed containers in the field and brought to our laboratory for testing and classification. During hand-auger operations, a G2 representative maintained logs of encountered subsurface conditions, including changes in stratigraphy and observed groundwater levels of the soil borings to be used in conjunction with our analysis of the subsurface conditions. The final logs are based on the field logs supplemented by laboratory soil classification and test results. After completion of drilling operations, the boreholes were backfilled with excavated material.

LABORATORY TESTING

We subjected representative soil samples to laboratory testing to determine soil parameters pertinent to retaining wall design and site preparation. An experienced geotechnical engineer classified the soil samples in general accordance with the G2 General Notes Terminology.

The results of the laboratory testing are shown on the individual hand auger boring logs at the depths the samples were taken. We will hold the soil samples from our current investigation for a period of 60 days following the issuance of this report after which they will be discarded. If you would like to have the soil samples, please let us know.

SITE CONDITIONS

The existing retaining wall to be replaced is located at the end of Park Avenue in Lake Orion, Michigan. The existing wall has retained heights ranging from approximately 1 to 6 feet. Ground surface elevations at the top of the wall range between approximately 996 and 997 feet. The ground surface elevations in front of the wall range between approximately 991 and 996 feet. The grade in front of the retaining wall slopes downward toward Lake Orion. A second retaining wall, with an approximate retained height of 2 to 3 feet, is present in front of the eastern portion of the wall to be replaced.

The existing retaining wall consists of timber beams with timber deadmen. The wall appears to have reached the end of its design life. The wall is showing signs of rot and has a moderate bow between the deadmen indicating a potential internal stability issue.



At the Approximate Center of the Retaining Wall - Looking West



SUBSURFACE CONDITIONS

Approximately 5 to 16 inches of topsoil are present at the ground surface of the hand-auger borings. Gravelly sand, silty sand, and clayey sand fill underlie the topsoil in soil borings HA-1 through HA-3 and HA-5. The granular fill extends to an approximate depth of 5-1/2 feet below the ground surface in boring HA-5 and to the explored depths ranging from 2-3/4 feet to 9 feet in borings HA-1 through HA-3. Native sand, silty sand, and sandy silt underlie the topsoil and granular fill soils in borings HA-4 through HA-6 and extend to the explored depths ranging from 5-1/2 to 9-1/2 feet below the ground surface.

The granular fill soils are very loose to compact in relative density with DCP N-values ranging from 3 to 45 blows per 1-3/4 inches of penetration. The native granular soils are very loose to medium compact in relative density with DCP N-values ranging from 3 to 23 blows per 1-3/4 inches of penetration.

Groundwater was observed in borings HA-2, HA-4, and HA-5 at depths ranging from 2-1/2 to 9 feet below the existing ground surface both during and upon completion of the drilling operations. No groundwater was encountered within hand-auger borings HA-1, HA-3, or HA-6 either during or upon completion of the drilling operations.

The stratification depths shown on the hand-auger boring logs represent the soil conditions at the boring locations. Variations may occur between borings. Additionally, the stratigraphic lines represent the approximate boundaries between soil types. The transition may be more gradual than what is shown. We have prepared the boring logs based on the laboratory classification and testing, as well as field logs of the soils encountered.

The Boring Location Plan, Plate No. 1, and Hand-Auger Boring Logs, Figure Nos. 1 through 6, are presented in the Appendix. The soil profiles described below are generalized descriptions of the conditions encountered at the boring locations. General Notes Terminology defining the nomenclature used on the boring logs and elsewhere in this report are presented on Figure No. 7.

Fluctuations in groundwater levels should be anticipated due to seasonal variations and following periods of prolonged precipitation. It should be noted that groundwater observations made during drilling operations in predominantly cohesive soils are not necessarily indicative of the static groundwater level. This is due to the low permeability of such soils and the tendency of drilling operations to seal off the natural paths of groundwater flow.

RETAINING WALL RECOMMENDATIONS

We understand that the new retaining wall will generally follow the same alignment as the existing wall. The ground surface elevation at the top of the new wall will range from 993.5 feet to 996.5 feet. The ground surface elevation in front of the wall will range from 989 feet to 996.5 feet. New bituminous pavement, along with a guard rail, will be constructed at the top of the new wall. We understand that the existing lower timber lagging wall will remain in-place. We also understand that consideration is being given to only replacing a portion of the existing timber lagging wall.

The proposed structure could consist of a gravity segmental retaining wall (SRW) composed of prefabricated inter-locking concrete blocks. We recommend the front face of the new wall be set a minimum of 6 feet from the back of the existing lower wall to mitigate the tiered retaining wall effect. As such, the SRW alignment would be slightly south of the existing alignment, and the retained heights would range between approximately 1 and 7 feet. We analyzed the retaining wall assuming that the proposed pavement and traffic surcharge load will be placed at the backside of the blocks.

Our analysis indicates that a SRW would consist of one (1) 60-inch wide blocks, one (1) 41-inch wide blocks, and three (3) 28-inch wide blocks. The blocks should be a minimum of 18 inches high and have a minimum unit weight of 120 pounds per cubic foot. The blocks should be supported on a leveling pad a minimum of 12 inches thick by 6-1/2 feet wide consisting of MDOT 21AA dense graded aggregate or

MDOT 6A coarse aggregate.

Based on the observed subsurface conditions, the bearing soils will consist of native sand and silty sand. A net allowable soil bearing pressure of 2,000 pounds per square foot can be used to design foundations bearing within these native soils. Prior to constructing the leveling pad, the exposed subgrade should be visually evaluated by a qualified engineering technician. Any unstable or unsuitable areas should be densified or removed and replaced with engineered fill. We recommend the use of fill soil meeting the requirements of MDOT Class II or III granular soil. Engineered fill should be free of organic matter, frozen soil, clods, or other harmful material.

At boring location HA-2, groundwater was encountered at a depth of 2-1/2 feet below the ground surface. This water appears to be perched within the fill soils behind the existing retaining wall. The contractor should anticipate encountering perched groundwater during excavation operations. The contractor should be prepared to install a series of sumps, as necessary, in order to remove the ground water and prevent an unstable excavating.

Our analysis assumes that free-draining granular soils with less than 10 percent finer than the No. 200 sieve would be used as backfill within the influence of the retaining wall in order to maintain drained conditions behind the wall. A lateral equivalent fluid pressure of 35 pounds per cubic foot could be used for design of a retaining with backfill meeting this requirement. We assumed that the granular fill soils would be compacted to 95 percent of the maximum dry density as determined by the modified proctor test method (ASTM D1557) and that relatively small compaction equipment be used to compact the retaining wall backfill. Finally, we assumed that weep holes, or other drainage measures, would be constructed behind the wall to allow the backfill behind the wall to drain.

Excavations to construct a SRW should either be sloped back or temporarily shored to prevent instability. We recommend a maximum temporary slope of 1-1/2 horizontal units to 1 vertical unit (1-1/2H:1V) within the existing granular fill soils. Where seepage from excavation cuts is observed, the slopes will need to be flattened sufficiently to achieve stability, but in no case left steeper than 3H:1V at and below the seepage level. All excavations should be safely sheeted, shored, sloped or braced in accordance with MI-OSHA requirements. If material is stored or equipment is operated near an excavation, lower angle slopes or stronger shoring must be used to resist the surcharge loads. Care should be exercised when excavating near existing structures, utilities or roadways to avoid undermining. In no case should excavations extend below the level of adjacent foundations and utilities unless underpinning is planned.

As previously mentioned, we understand that only a portion of the existing retaining wall may be replaced. Excavating behind the existing wall will decrease the resistance provided by the existing deadman anchors and potentially cause instability during construction. Therefore, we recommend placing backfill in front of the wall to provide support and prevent any movement of the existing wall during construction. Also, the new retaining wall would need to abut the existing wall. We recommend an expansion joint and filter fabric be placed between the concrete blocks and the timber lagging boards. This will help prevent soil from migrating through the joint.

Alternatively, the replacement retaining wall could consist of a traditional reinforced concrete retaining wall or a reinforced segmental retaining wall. A traditional retaining wall would have a 3- to 5-foot-wide footing, extending 3-1/2 feet below the ground surface, supporting a 3 to 8 foot tall 9-inch-thick concrete wall. The reinforced segmental retaining wall would consist of 8-inch-tall prefabricated concrete blocks with geotextile reinforcement extending 6 to 10 feet behind the wall. Both a concrete retaining wall and a reinforced SRW retaining wall would require a much larger excavation in order to construct. In addition, both of these wall options would require that the entire wall be replaced. This is due to interference between the geogrid and the existing deadman and the difficulty associated with abutting the concrete retaining wall next to the existing timber retaining wall. For these reasons, we do not recommend a reinforced concrete retaining wall or a reinforced segmental retaining wall be constructed to replace the existing timber lagging retaining wall.



GENERAL COMMENTS

We have formulated the evaluations and recommendations presented in this report relative to the retaining wall design options on the basis of data provided to us relating to the project location, scope, and surface grade for the proposed site. Any significant change in this data should be brought to our attention for review and evaluation with respect to prevailing subsurface conditions. Furthermore, if changes occur in the design, location, or concept of the project, conclusions and recommendations contained in this report are not valid unless G2 Consulting Group, LLC reviews the changes. G2 Consulting Group, LLC will then confirm the recommendations presented herein or make changes in writing.

The scope of the present investigation was limited to evaluation of subsurface conditions for the proposed retaining wall. No chemical, environmental, or hydrogeological testing or analyses were included in the scope of this investigation.

We have based the analyses and recommendations submitted in this report upon the data from hand-auger borings performed at the approximate locations shown on the Soil Boring Location Plan, Plate Nos. 1. This report does not reflect variations that may occur between the actual boring locations and the actual retaining wall location. The nature and extent of any such variations may not become clear until the time of construction. If significant variations then become evident, it may be necessary for us to re-evaluate our report recommendations.

Soil conditions at the site could vary from those generalized on the basis of soil borings and hand-auger borings made at specific locations. It is, therefore, recommended that G2 be retained to provide soil engineering services during the site preparation and slope reconstruction phases of the proposed project. This is to observe compliance with the design concepts, specifications, and recommendations. Also, this allows design changes to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction.

APPENDIX

Boring Location Plan

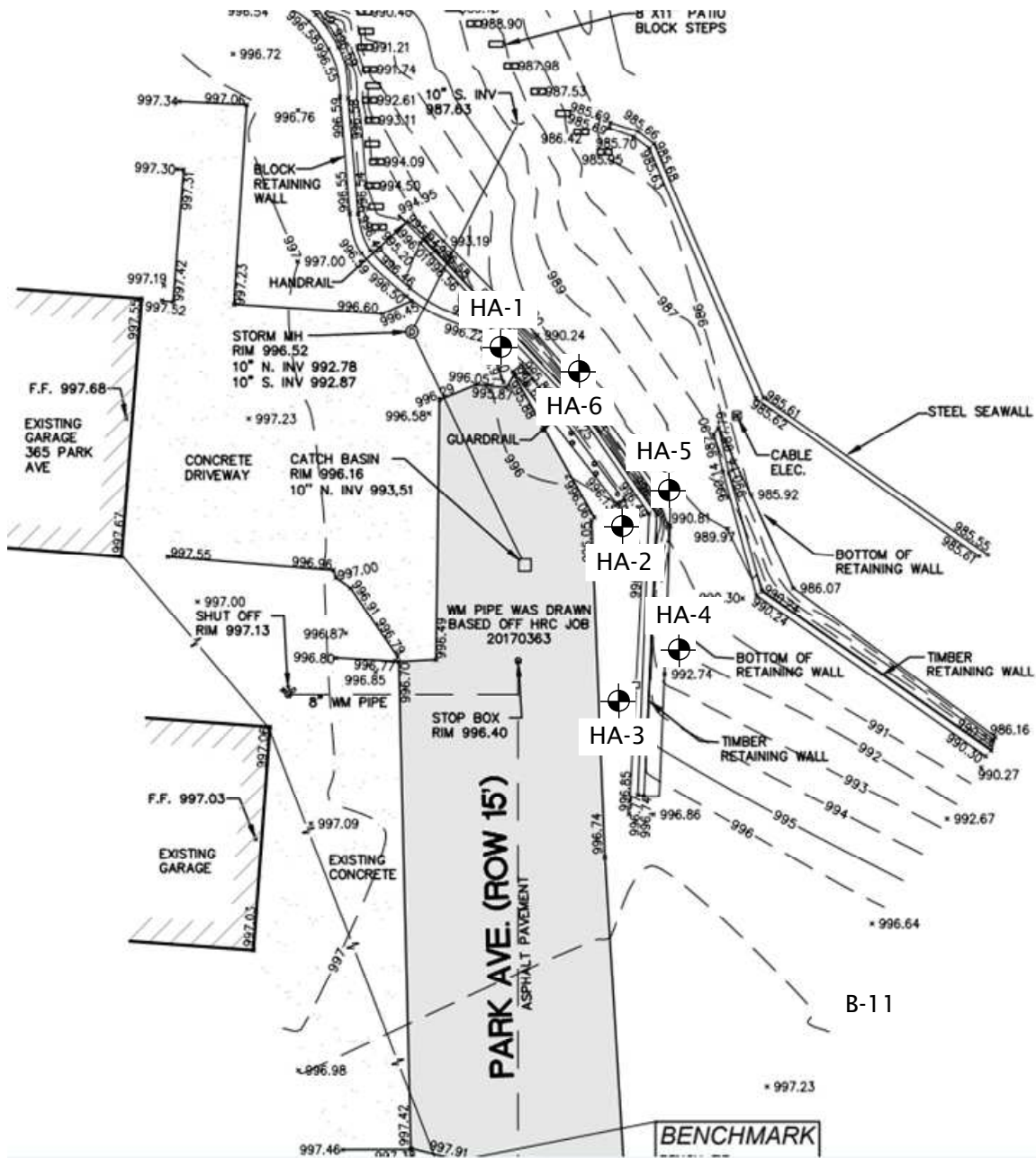
Plate No. 1

Hand-Auger Soil Boring Logs

Figure Nos. 1 through 6

General Notes Terminology

Figure No. 7



Legend



Hand Auger Soil Borings
Performed by G2
Consulting Group, LLC

Boring Location Plan

Park Ave Retaining Wall
Park Avenue
Lake Orion, Michigan



CONSULTING GROUP

Project No. 213502

Drawn by: ZL

Date: 4/30/22

Scale: NTS

Plate
No. 1

Project Name: Park Avenue Retaining Wall

Project Location: Park Avenue
Lake Orion, Michigan

G2 Project No. 213502

Latitude: N/A Longitude: N/A



Soil Boring No. HA-1

CONSULTING GROUP

SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 996.0 ft ±	DEPTH (ft)	SAMPLE TYPE/NO.	DCP BLOWS/ 1.75-INCHES	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCOF. COMP. ST. (PSF)
		Topsoil: Dark Brown Silty Sand (5 inches)	0.4					
		Fill: Compact Brown Gravelly Sand with trace silt; occasional cobbles	2.8	BS-1	45			
		End of Boring @ 2.8 ft, Auger Refusal						
991.0			5					
986.0			10					
981.0			15					

Total Depth: 2.8 ft
Drilling Date: April 17, 2022
Inspector:
Contractor: G2 Consulting Group, LLC
Driller: Zachery Lilly, E.I.T.

Water Level Observation:
Dry During and Upon Completion of Drilling Operations

Excavation Backfilling Procedure:
Auger Trimmings

Drilling Method:
3-Inch Diameter Hand-Auger

Figure No. 1

Project Name: Park Avenue Retaining Wall

Project Location: Park Avenue
Lake Orion, Michigan

G2 Project No. 213502

Latitude: N/A Longitude: N/A



Soil Boring No. HA-2

CONSULTING GROUP

SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 996.5 ft ±	DEPTH (ft)	SAMPLE TYPE/NO.	DCP BLOWS/ 1.75-INCHES	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCOF. COMP. ST. (PSF)
		Topsoil: Dark Brown Silty Sand (5-1/2 Inches)	0.5					
		Fill: Medium Compact Gravelly Sand with trace silt; occasional cobbles		BS-1	13			
		End of Boring @ 3 ft, Auger Refusal	3.0					
991.5			5					
986.5			10					
981.5			15					

Total Depth: 3 ft
Drilling Date: April 17, 2022
Inspector:
Contractor: G2 Consulting Group, LLC
Driller: Zachery Lilly, E.I.T.

Water Level Observation:
2-1/2 Feet During Drilling Operations

Excavation Backfilling Procedure:
Auger Trimmings

Drilling Method:
3-Inch Diameter Hand-Auger

Figure No. 2

Project Name: Park Avenue Retaining Wall

Project Location: Park Avenue
Lake Orion, Michigan

G2 Project No. 213502

Latitude: N/A Longitude: N/A



Soil Boring No. HA-4

CONSULTING GROUP

SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 991.0 ft ±	DEPTH (ft)	SAMPLE TYPE/NO.	DCP BLOWS/ 1.75-INCHES	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCOF. COMP. ST. (PSF)
		Topsoil: Dark Brown Silty Sand with trace gravel (11 Inches)	0.9					
		Very Loose Brown Silty Sand with trace gravel and clay	3.0	BS-1	4			
		Brown Sand with trace silt and gravel	4.0					
986.0			5	BS-2	23			
		Medium Compact Brown Silty Sand with trace gravel		BS-3	21			
			9.0					
		Brown Sandy Silt	9.5	BS-4				
981.0		End of Boring @ 9.5 ft	10					
976.0			15					

Total Depth: 9.5 ft
Drilling Date: April 17, 2022
Inspector:
Contractor: G2 Consulting Group, LLC
Driller: Zachery Lilly, E.I.T.

Water Level Observation:
9 Feet During Drilling Operations; Wet Cave at 9 Feet
Upon Completion

Excavation Backfilling Procedure:
Auger Trimmings

Drilling Method:
3-Inch Diameter Hand-Auger

Figure No. 4

Project Name: Park Avenue Retaining Wall

Project Location: Park Avenue
Lake Orion, Michigan

G2 Project No. 213502

Latitude: N/A Longitude: N/A



Soil Boring No. HA-5

CONSULTING GROUP

SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 990.5 ft ±	DEPTH (ft)	SAMPLE TYPE/NO.	DCP BLOWS/ 1.75-INCHES	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCOF. COMP. ST. (PSF)
		Topsoil: Dark Brown Clayey Sand with trace silt (12 Inches)	1.0					
		Fill: Brown Clayey Sand with trace silt	2.0					
		Fill: Very Loose to Loose Brown Silty Sand with trace clay		BS-1	3			
985.5			5	BS-2	8			
		Light Brown Sand with trace silt and gravel	5.5					
			6.5					
		Loose Brown Silty Sand with trace gravel		BS-3	9			
			8.5					
		End of Boring @ 8.5 ft						
980.5			10					
975.5			15					

Total Depth: 8.5 ft
Drilling Date: April 17, 2022
Inspector:
Contractor: G2 Consulting Group, LLC
Driller: Zachery Lilly, E.I.T.

Water Level Observation:
7 Feet During Drilling Operations; Wet Cave at 8-1/2 Feet
Upon Completion

Notes:
Borehole collapsed at 8-1/2 ft after auger removal

Drilling Method:
3-Inch Diameter Hand-Auger

Excavation Backfilling Procedure:
Auger Trimmings

Figure No. 5

Project Name: Park Avenue Retaining Wall

Project Location: Park Avenue
Lake Orion, Michigan

G2 Project No. 213502

Latitude: N/A Longitude: N/A



Soil Boring No. HA-6

CONSULTING GROUP

SUBSURFACE PROFILE

SOIL SAMPLE DATA

ELEV. (ft)	PRO- FILE	GROUND SURFACE ELEVATION: 993.0 ft ±	DEPTH (ft)	SAMPLE TYPE/NO.	DCP BLOWS/ 1.75-INCHES	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	UNCOF. COMP. ST. (PSF)
		Topsoil: Dark Brown Silty Sand (16 Inches)	1.3					
				BS-1	3			
		Very Loose to Loose Brown Silty Sand with trace gravel; occasional roots						
988.0			5	BS-2	7			
			5.5					
		End of Boring @ 5.5 ft, Auger Refusal						
983.0			10					
978.0			15					

Total Depth: 5.5 ft
Drilling Date: April 17, 2022
Inspector:
Contractor: G2 Consulting Group, LLC
Driller: Zachery Lilly, E.I.T.

Water Level Observation:
Dry During and Upon Completion of Drilling Operations

Excavation Backfilling Procedure:
Auger Trimmings

Drilling Method:
3-Inch Diameter Hand-Auger

GENERAL NOTES TERMINOLOGY

Unless otherwise noted, all terms herein refer to the Standard Definitions presented in ASTM 653.

PARTICLE SIZE

Boulders	- greater than 12 inches
Cobbles	- 3 inches to 12 inches
Gravel - Coarse	- 3/4 inches to 3 inches
- Fine	- No. 4 to 3/4 inches
Sand - Coarse	- No. 10 to No. 4
- Medium	- No. 40 to No. 10
- Fine	- No. 200 to No. 40
Silt	- 0.005mm to 0.074mm
Clay	- Less than 0.005mm

CLASSIFICATION

The major soil constituent is the principal noun, i.e. clay, silt, sand, gravel. The second major soil constituent and other minor constituents are reported as follows:

Second Major Constituent (percent by weight)	Minor Constituent (percent by weight)
Trace - 1 to 12%	Trace - 1 to 12%
Adjective - 12 to 35%	Little - 12 to 23%
And - over 35%	Some - 23 to 33%

COHESIVE SOILS

If clay content is sufficient so that clay dominates soil properties, clay becomes the principal noun with the other major soil constituent as modifier, i.e. sandy clay. Other minor soil constituents may be included in accordance with the classification breakdown for cohesionless soils, i.e. silty clay, trace sand, little gravel.

Consistency	Unconfined Compressive Strength (psf)	Approximate Range of (N)
Very Soft	Below 500	0 - 2
Soft	500 - 1,000	3 - 4
Medium	1,000 - 2,000	5 - 8
Stiff	2,000 - 4,000	9 - 15
Very Stiff	4,000 - 8,000	16 - 30
Hard	8,000 - 16,000	31 - 50
Very Hard	Over 16,000	Over 50

Consistency of cohesive soils is based upon an evaluation of the observed resistance to deformation under load and not upon the Standard Penetration Resistance (N).

COHESIONLESS SOILS

Density Classification	Relative Density %	Approximate Range of (N)
Very Loose	0 - 15	0 - 4
Loose	16 - 35	5 - 10
Medium Compact	36 - 65	11 - 30
Compact	66 - 85	31 - 50
Very Compact	86 - 100	Over 50

Relative Density of cohesionless soils is based upon the evaluation of the Standard Penetration Resistance (N), modified as required for depth effects, sampling effects, etc.

SAMPLE DESIGNATIONS

AS -	Auger Sample - Cuttings directly from auger flight
BS -	Bottle or Bag Samples
S -	Split Spoon Sample - ASTM D 1586
LS -	Liner Sample with liner insert 3 inches in length
ST -	Shelby Tube sample - 3 inch diameter unless otherwise noted
PS -	Piston Sample - 3 inch diameter unless otherwise noted
RC -	Rock Core - NX core unless otherwise noted

STANDARD PENETRATION TEST (ASTM D 1586) - A 2.0 inch outside-diameter, 1-3/8 inch inside-diameter split barrel sampler is driven into undisturbed soil by means of a 140-pound weight falling freely through a vertical distance of 30 inches. The sampler is normally driven three successive 6-inch increments. The total number of blows required for the final 12 inches of penetration is the Standard Penetration Resistance (N).