

MANHOLE REHABILITATION 2024 CONTRACT

Manhole Rehabilitation 2024 Contract (the “**Contract**”) is entered between the Village of Buffalo Grove (hereinafter the “**Village**” or “**Owner**”), an Illinois home-rule unit of government, and National Power Rodding Corp. an (hereinafter the “**Contractor**”) on this 17th day of June, 2024 (the “**Effective Date**”). The Village and the Contractor are hereinafter sometimes collectively referred to as the “**Parties**” and individually as a “**Party**”.

RECITALS

WHEREAS, the Village has solicited bids for the Work (defined below), Contractor has submitted a bid for the Work and Village has selected Contractor for the Work based on their bid; and

WHEREAS, the Contractor wishes to enter into this Contract with the Village and the Village wishes to enter into this Contract with the Contractor for the Work;

NOW THEREFORE, for and in consideration of the mutual covenants and promises herein contained, the adequacy and sufficiency of which are hereby acknowledged by the Parties, it is agreed as follows:

ARTICLE I - WORK TO BE DONE BY THE CONTRACTOR

The Village does hereby hire and contract with the Contractor to provide all the labor, equipment, materials and/or services described more thoroughly on Contract **Exhibit A** (the “**Work**”) which is incorporated into the Contract by this reference.

ARTICLE II - CONTRACT DOCUMENTS

The following exhibits are attached hereto and incorporated herein by this reference:

- Contract Exhibit A – Description of Work**
- Contract Exhibit B – Schedule of Prices**
- Contract Exhibit C – Performance Bond**
- Contract Exhibit D – Partial Lien Waiver**
- Contract Exhibit E – Final Lien Waiver**

If any term or provision of this Contract shall conflict with any term or provision of the exhibits referenced above, the terms and provisions of the exhibit shall control.

ARTICLE III - CONTRACT AMOUNT

The Village agrees to pay the Contractor for the proper and timely performance of the Work in strict accordance with this Contract as detailed in **Contract Exhibit B** (the “**Schedule of Prices**”) Unless explicitly provided otherwise in this Contract, the detailed sums shall be the full and exclusive compensation owed to the Contractor for the Work; and Contractor may not seek additional payments from the Village.

The Village of Buffalo Grove reserves the right to reject a proposed price increase and terminate the Contract.

ARTICLE IV – APPLICATION FOR PAYMENT

The Contractor shall be paid at most once a month and only after providing the Village the following:

1. An executed and notarized Contractor’s Sworn Statement in a form similar to AIA G702 or AIA G703;
2. Either a partial or final lien waiver from every subcontractor, sub-subcontractor, or materialman in substantially the same form as attached here as **Contract Exhibit D** and **Contract Exhibit E**;
3. Certified payroll necessary for the Prevailing Wage Act; and

All payments under this Contract must be approved by the Village’s Board at regularly scheduled meetings. The Village reserves the right to request any receipts, invoices, proof of payments as the Village, in its sole discretion, may deem necessary to justify the payment requested *prior* to paying the requested payment. The Contractor shall furnish with his

final application for payment a Final Lien Waiver from itself and, if not already provided, from every subcontractor and materialman of the Work.

The Contractor acknowledges that the Village is a unit of local government and that all payments under the Contract are subject to the Local Government Prompt Payment Act, 50 ILCS 505 et seq. To that extent, the Village shall have forty-five calendar (45) days from receipt of a bill or invoice to pay the same before it is considered late under the Contract. Interest, if any, charged for any late payments will be subject to the interest rate caps specified in the Prompt Payment Act.

ARTICLE V – CONTRACT TIME

The Contractor shall fully, and not substantially, complete all the Work and the Work shall be accepted by the Director of Public Works, provided that acceptance by the Director of Public Works shall not be unreasonably delayed, on or before October 3, 2024.

If the Contractor shall fail to complete the work within the Contract Time which shall include any proper extension granted by the Village, the Contractor shall pay to the Village an amount equal to Seven Hundred Fifty dollars (\$750) per calendar day for each day past the Contract Time until final acceptance by the Village as liquidated damages and not as a penalty.

Extension: The Village reserves the right to extend this contract for one (1) year. Written requests for price revisions after the first-year contract period shall be submitted at least thirty (30) calendar days prior to when the contract was executed. Requests must be based upon and include documentation of the actual change in the cost of the components involved in the Contract and shall not include overhead, or profit. In any case requests for price revisions shall not exceed the most recent 12-month Consumer Price Index (CPI-All Urban Consumers, Chicago) or 3% whichever is less.

The Village reserves the right to reject a proposed price increase and terminate the Contract.

For any year beyond the initial year, this Contract is contingent upon the appropriation of sufficient funds by the Village Board; no charges shall be assessed for failure of the Village to appropriate funds in future contract years.

Termination of Contract. The Contract may be terminated, in whole or in part, by either party if the other party substantially fails to fulfill its obligations under the Contract through no fault of the terminating party; or the Village may terminate the Contract, in whole or in part, for its convenience. However, no such termination may be affected unless the terminating party gives the other party: (1) not less than thirty (30) calendar days written notice by certified mail of intent to terminate, and (2) an opportunity for a meeting with the terminating party before termination.

ARTICLE VI – PERFORMANCE and PAYMENT BOND

The Contractor shall provide the Village with a performance bond in substantially the same form as on **Contract Exhibit C** (the “**Performance Bond**”) prior to Contractor beginning any Work and within 10 calendar days of the Notice of Award sent to the Contractor.

ARTICLE VII – ACCIDENT PREVENTION

The Contractor shall exercise every precaution at all times to protect itself, the property of the Village and the property of others. The safety provision of all applicable laws and ordinances shall be strictly observed by the Contractor at all times. Any practice deemed hazardous or dangerous by the Director of Public Works or his authorized representatives shall be immediately discontinued by the Contractor upon receipt of instructions from the Director of Public Works or his authorized representatives. To the fullest extent permitted by law, the Contractor shall be solely responsible for all safety-related matters.

ARTICLE VIII – INDEMNIFICATION

To the fullest extent permitted by law, the Contractor agrees to defend, pay on behalf of, indemnify, and hold harmless the Village, its elected and appointed officials, agents, employees and volunteers and others working on behalf of the Village 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, its elected and appointed officials,

agents, employees and volunteers and others working on behalf of the Village, by reason of personal injury, including bodily injury and death, and/or property damage, whether damage to property of the Village or of a third party, including loss of use thereof, which arises out of or is in any way connected or associated with the Contract and the Work.

ARTICLE IX – CONTRACTORS INSURANCE

Contractor shall procure and maintain, for the duration of the Contract and any maintenance period, insurance against claims for injuries to persons or damages to property, which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors.

A. Minimum Scope of Insurance: Coverage shall be at least as broad as:

Insurance Services Office Commercial General Liability occurrence form CG 0001 with the Village of Buffalo Grove named as additional insured on a primary and non-contributory basis. This primary, non-contributory additional insured coverage shall be confirmed through the following required policy endorsements: ISO Additional Insured Endorsement CG 20 10 or CG 20 26 and CG 20 01 04 13

1. Insurance Services Office Commercial General Liability occurrence form CG 0001 with the Village named as additional insured, on a form at least as broad as the ISO Additional Insured Endorsement CG 2010 and CG 2026
2. Insurance Service Office Business Auto Liability coverage form number CA 0001, Symbol 01 "Any Auto."
3. Workers' Compensation as required by the Labor Code of the State of Illinois and Employers' Liability insurance.

B. Minimum Limits of Insurance: Contractor shall maintain limits no less than:

1. Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. The general aggregate shall be twice the required occurrence limit. Minimum General Aggregate shall be no less than \$2,000,000 or a project/contract specific aggregate of \$1,000,000.
2. Business Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage.
3. Workers' Compensation and Employers' Liability: Workers' Compensation coverage with statutory limits and Employers' Liability limits of \$500,000 per accident.

C. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the Village. At the option of the Village, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as it respects the Village, its officials, agents, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigation, claim administration and defense expenses.

D. Other Insurance Provisions

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverages:
 - a. The Village, its officials, agents, employees and volunteers are to be covered as insureds as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, leased or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Village, its officials, agents, employees and volunteers.
2. The Contractor's insurance coverage shall be primary and non-contributory as respects the Village, its officials, agents, employees and volunteers. Any insurance or self-insurance maintained by the Village, its officials, agents, employees and volunteers shall be excess of Contractor's insurance and shall not contribute with it.
3. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Village, its officials, agents, employees and volunteers.
4. The Contractor's insurance shall contain a Severability of Interests/Cross Liability clause or language stating that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

5. If any commercial general liability insurance is being provided under an excess or umbrella liability policy that does not “follow form,” then the Contractor shall be required to name the Village, its officials, employees, agents and volunteers as additional insureds
6. All general liability coverages shall be provided on an occurrence policy form. Claims-made general liability policies will not be accepted.
7. The contractor and all subcontractors hereby agree to waive any limitation as to the amount of contribution recoverable against them by the Village. This specifically includes any limitation imposed by any state statute, regulation, or case law including any Workers’ Compensation Act provision that applies a limitation to the amount recoverable in contribution such as Kotecki v. Cyclops Welding

E. All Coverages:

1. No Waiver. Under no circumstances shall the Village be deemed to have waived any of the insurance requirements of this Contract by any act or omission, including, but not limited to:
 - a. Allowing work by Contractor or any subcontractor to start before receipt of Certificates of Insurance and Additional Insured Endorsements.
 - b. Failure to examine, or to demand correction of any deficiency, of any Certificate of Insurance and Additional Insured Endorsement received.
2. Each insurance policy required shall have the Village expressly endorsed onto the policy as a Cancellation Notice Recipient. Should any of the policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

F. Acceptability of Insurers

Insurance is to be placed with insurers with a Best's rating of no less than A-, VII and licensed to do business in the State of Illinois.

G. Verification of Coverage

Contractor shall furnish the Village with certificates of insurance naming the Village, its officials, agents, employees, and volunteers as additional insured's and with original endorsements, affecting coverage required herein. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements are to be received and approved by the Village before any work commences. The Village reserves the right to request full certified copies of the insurance policies and endorsements.

The Certificate of Insurance shall state the Village of Buffalo Grove has been endorsed as an “additional insured” by the Vendor’s insurance carrier. Specifically, this Certificate must include the following language: **“The Village of Buffalo Grove, and it’s respective elected and appointed officials, employees, agents, consultants, attorneys and representatives, are, and have been endorsed, as an additional insured under the above reference policy number on a primary and non- contributory basis for general liability and automobile liability coverage for the duration of the agreement term.”**

H. Subcontractors

Contractor shall include all subcontractors as insured's under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage's for subcontractors shall be subject to all of the requirements stated herein.

I. Assumption of Liability

The contractor assumes liability for all injury to or death of any person or persons including employees of the contractor, any subcontractor, any supplier or any other person and assumes liability for all damage to property sustained by any person or persons occasioned by or in any way arising out of any work performed pursuant to the Contract.

J. Workers' Compensation and Employers' Liability Coverage

The insurer shall agree to waive all rights of subrogation against the Village of Buffalo Grove, its officials, employees, agents and volunteers for losses arising from work performed by Contractor for the municipality.

K. Failure to Comply

In the event the Contractor fails to obtain or maintain any insurance coverage's required under this contract, The Village may purchase such insurance coverage's and charge the expense thereof to the Contractor.

ARTICLE X – CERTIFICATE OF AUTHORITY AND SURETY CERTIFICATE

The Contractor shall furnish the Village with a current Certificate of Authority or Surety Certificate issued by the Illinois Department of Insurance for the bonding company and insurance company they are using. In lieu of a Certificate of Authority of Surety Certificate, the Contractor may provide certificate of good standing from the Illinois Department of Insurance's website.

ARTICLE XI – COPYRIGHTS AND LICENSES

The Contractor agrees that all documents of any kind whatsoever, and in whatever medium expressed, prepared by the Contractor and the Contractor's consultants in connection with the Work (collectively, the "Documents") or otherwise pursuant to this Contract and all rights therein (including trademarks, trade names, rights or use, copyrights and/or other proprietary rights) shall be and remain the sole property of the Village (regardless of whether the Village or the Contractor terminates this Contract for any reason whatsoever). The Contractor hereby agrees that the Documents are or shall be deemed to be "Works for Hire" within the meaning of Section 101 of the Copyright Act, and the Contractor hereby assigns to the Village all right, title and interest therein. Notwithstanding, the Contractor shall indemnify and hold harmless the Village, its appointed and elected officials, employees, agents and volunteers from and against all claims, damages, losses, and expenses (including attorneys' fees and court and arbitration costs) arising out of any infringement of patent rights or copyrights incident to the Documents and the Work.

ARTICLE XII – NOTICE

All notices, demands, requests, consents, approvals and other communications required or permitted to be given hereunder (a "Notice") shall be in writing and shall be deemed effective three (3) business days after mailing if mailed by certified mail with return receipt requested and immediately if served personally, and shall be addressed to the following:

IF TO THE VILLAGE:	Village of Buffalo Grove 50 Raupp Blvd Buffalo Grove, IL 60089 Dbragg@vbg.org ATTN: Village Manager
WITH COPIES TO:	Cc: pbrankin@schainbanks.com Cc: Ckrase@vbg.org
IF TO THE CONTRACTOR:	_____ _____ _____ _____ ATTN: _____

ARTICLE XIII – CHANGE ORDERS

If the Village requests any change to the Work the Village shall do so by delivering Notice of the same to the Contractor and the change requested by the Village shall be effective upon receipt of the Notice by the Contractor. The Contractor may propose a change to the Work by delivering Notice of the proposed change along with a description of the changes full effect on the Work to the Village; provided, such requested change shall not be deemed accepted until the Village has delivered to the Contractor Notice of the same. Prior to approving a proposed change to the Work by the Contractor, the Village may request such additional documentation as it deems necessary to investigate the proposed

change. The Contractor shall be responsible for informing all its employees and subcontractors of any changes to the Work, whether such change is requested by the Contractor or the Village.

ARTICLE XIV – NOTICE OF STARTING WORK

The Contractor shall provide Notice to the Village prior to the Contractor, or its employees or subcontractors, starting the Work or any phase of the Work.

ARTICLE XV – SEQUENCE OF THE WORK

The Director of Public Works shall have the power to direct the order and sequence of the Work. On any major portion of the Work, all accessories shall be set coincident with the main construction. Payment for major portions of the Work may be withheld until proper completion of accessories.

ARTICLE XVI – SUPERVISION

The Director of Public Works shall have override power to superintend and direct the Work, and the Contractor shall perform all of the Work herein specified to the satisfaction, approval and acceptance of the Police Chief. The Contractor shall have at all times a competent foreman or superintendent at the Work's site, who shall have full authority to act for the Contractor and to receive and execute orders from the Police Chief, and any instructions given to such superintendent or person, executing work for the Contractor, shall be binding on the Contractor as though it was personally given to the Contractor.

ARTICLE XVII – STANDARD OF WORK AND WORKERS

The Contractor shall employ competent staff and shall discharge, at the request of the Police Chief, any incompetent, unfaithful, abusive or disorderly workers in its employ. Where experts or skilled workers must be employed, only expert or skilled workers shall be employed.

ARTICLE XVIII – CONDITIONS OF THE WORK SITE

The Contractor shall provide and maintain such sanitary accommodations for the use of its employees as may be necessary to comply with the State and local Board of Health requirements. Public nuisances will not be permitted. The Contractor shall leave said Work's site(s) in the best possible condition to the complete satisfaction of the Police Chief. No vehicles of any kind shall be placed, parked, or operated upon any grass areas at any time except as authorized by the Director of Public Works or his authorized representative. Further, the Contractor shall exercise every precaution for the protection of all persons and all property. The safety provisions of all-applicable laws and ordinances shall be strictly observed. Any practice hazardous in the opinion of the Director of Public Works or his authorized representatives shall be immediately discontinued by the Contractor upon his receipt of instructions from the Director of Public Works or his authorized representative. To the maximum extent permitted by law, the Contractor shall be responsible for all safety-related matters.

ARTICLE XIX – WARRANTY PERIOD

All material and workmanship shall be warranted and guaranteed according to manufacturer's recommendation after inspection and approval by the Director of Public Works or his designated representative. All work performed by the Contractor shall be warranted by the Contractor following completion and final acceptance of the Work for a period of twelve (12) months from the date of final, and not substantial, completion.

ARTICLE XX – ACCIDENTS

In the event of any accident of any kind that involves the general public or property of the Village or a third party, the Contractor shall immediately notify the Director of Public Works by phone as well as provide Notice of the same. The Notice shall include a full accounting of all details of the accident. The Contractor shall furnish the Village with copies of all reports of such accidents at the same time that the reports are forwarded to any other interested parties.

ARTICLE XXI – NO ASSIGNMENT

If the Contractor sublets or assigns any part of the Work then the Contractor shall not under any circumstances be relieved of its liabilities hereunder. All transactions of the Village shall be with the Contractor. Subcontractors shall be recognized only in the capacity of employees or workmen and shall be subject to the same requirements as to character and competence. The Contractor shall not assign, transfer, convey, sell or otherwise dispose of the whole or any part of this Contract to any person, firm or corporation without written consent of the Director of Public Works or his authorized representative.

ARTICLE XXII – DEFAULT

The following shall constitute a default an “**Event of Default**” by the Contractor under this Contract:

- A. If the Contractor shall fail to strictly observe or perform one or more of the terms, conditions, covenants and agreements of this Contract;
- B. If there shall be placed on any property owned by the Village any mechanics’, materials’ or suppliers’ lien;
- C. If there shall be instituted any proceeding against the Contractor seeking liquidation, dissolution or similar relief and the same shall not be dismissed within forty-five (45) calendar days;
- D. If there shall be appointed any trustee, receiver or liquidator of the Contractor and such appointment shall not have been vacated within forty-five (45) calendar days; and
- E. If the Contractor fails to maintain or obtain any and all permits, licenses and the like, if any, required by the Village, State or Federal governments for the Work.

Upon any Event of Default the Village shall have the option of (i) terminating the Contract; (ii) pursuing any remedy available to it at law or in equity; or (iii) pursuing both simultaneously. In addition, upon an Event of Default, the Village may withhold payments due to the Contractor until it has hired a replacement of the Contractor and deducted all costs of hiring a replacement.

ARTICLE XXIII – DELAYS

The Contractor shall not be liable in damages for delays in performance when such delay is the result of fire, flood, strike, acts of God, or by any other circumstances which are beyond the control of the Contractor; provided, however, under such circumstances the Village may, at its option, cancel the Contract.

ARTICLE XXIV – COMPLIANCE WITH LAWS

The Contractor shall comply with all applicable laws, regulations and rules promulgated by any federal, state, local, or other governmental authority or regulatory body pertaining to all aspects of the Work, now in effect, or which may become in effect during the performance of the Work. The scope of the laws, regulations, and rules referred to in this paragraph includes, but is in no way limited to, the Illinois Human Rights Act, Illinois Equal Pay Act of 2003, Occupational Safety & Health Act along with the standards and regulations promulgated pursuant thereto (including but not limited to those safety requirements involving work on elevated platforms), all forms of traffic regulations, public utility, Interstate and Intrastate Commerce Commission regulations, Workers’ Compensation Laws, Public Construction Bond Act, Public Works Preference Act, Employment of Illinois Workers on Public Works Act, USA Security Act, federal Social Security Act (and any of its titles), and any other law, rule or regulation of the Illinois Department of Labor, Department of Transportation, Illinois Environmental Protection Act, Illinois Department of Natural Resources, Illinois Department of Human Rights, Human Rights Commission, EEOC, and the Village of Buffalo Grove. Notwithstanding the following, the Contractor shall particularly note that:

A. NO DISCRIMINATION – The Contractor shall comply with the provisions of the Illinois Public Works Employment Discrimination Act and the Illinois Human Rights Act/Equal Opportunity Clause which, pursuant to Illinois law, are deemed to be part of this Contract.

B. FREEDOM OF INFORMATION - The Contractor agrees to furnish all documentation related to the Contract, the Work and any documentation related to the Village required under an Illinois Freedom of Information Act (ILCS 140/1 et. seq.) (“FOIA”) request within five (5) calendar days after the Village issues Notice of such request to

the Contractor. The Contractor agrees to defend, indemnify and hold harmless the Village, and agrees to pay all reasonable costs connected therewith (including, but not limited to attorney's and witness fees, filing fees and any other expenses) for the Village to defend any and all causes, actions, causes of action, disputes, prosecutions, or conflicts arising from Contractor's actual or alleged violation of FOIA or the Contractor's failure to furnish all documentation related to a FOIA request within five (5) calendar days after Notice from the Village for the same. Furthermore, should the Contractor request that the Village utilize a lawful exemption under FOIA in relation to any FOIA request thereby denying that request, Contractor agrees to pay all costs connected therewith (such as attorneys' and witness fees, filing fees and any other expenses) to defend the denial of the request. This defense shall include, but not be limited to, any challenged or appealed denials of FOIA requests to either the Illinois Attorney General or a court of competent jurisdiction.

C. ILLINOIS WORKERS ON PUBLIC WORKS ACT - To the extent applicable, the Contractor shall comply with the Illinois Workers on Public Works Act, 30 ILCS 570/1 et seq., and shall provide to the Village any supporting documentation necessary to show such compliance.

D. NOT A BLOCKED PERSON - The Contractor affirms and covenants that neither the Contractor nor any individual employed by the Contractor for this Work or under this Contract is a person forbidden from doing business with a unit of local government under Executive Order No. 13224 (Sept 23, 2001), 66 Fed.Reg. 49,079 (Sept 23, 2001) or is a person registered on the Specially Designated Nationals and Blocked Persons List. The Contractor shall indemnify the Village from all costs associated with failure to comply with this paragraph.

E. SUBSTANCE ABUSE PREVENTION ON PUBLIC WORKS ACT - The Contractor knows, understands and acknowledges its obligations under the Substance Abuse Prevention on Public Works Act (820 ILCS 265/1 et seq.), and shall comply and require all subcontractors and lower tiered contractors to comply with the requirements and provisions thereof.

F. PREVAILING WAGE ACT - The Village is an Illinois unit of local government and the Work hereunder is subject to the Illinois Prevailing Wage Act, 820 ILCS 130/0.01, et seq.

Pursuant to PA 100-1177 the Illinois Department of Labor (IDOL) has activated an electronic database (Payroll Portal) capable of accepting and retaining certified payrolls submitted under the State of Illinois Prevailing Wage Act (820 ILCS/130/1). All contractors and subcontractors completing work for the Village of Buffalo Grove pursuant to the Act must submit all certified payroll through the IDOL Payroll Portal.

Consequently, the Contractor and each subcontractor shall submit with their application for payment(s) the email certification received from their IDOL Payroll Portal submittal with each of their pay requests. Any delay in processing the payments due to a lack of aforementioned email certification shall not be an event of default by the Village and shall not excuse any delay by the Contractor who shall proceed with the Work as if no delay in payment has occurred. The Contractor and Village shall agree to take any further steps not outlined above to ensure compliance with the Prevailing Wage Act. Upon two business days' Notice, the Contractor and each subcontractor shall make available to the Village their records to confirm compliance with the Prevailing Wage Act. Finally, to ensure compliance with Prevailing Wage Act, the Contractor and each subcontractor shall keep for a period of not less than 5 years after the Work has been completed records of all laborers, mechanics, and other workers employed by them for the Work; the records shall include each worker's name, address, telephone number, classification or classifications, the hourly wages paid in each period, the number of hours worked each day, the starting and ending times of work each day and, when available, last four digits of the social security number.

Current rates can be located on the Illinois Department of Labor website.

A. <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/Rates.aspx>

ARTICLE XXV – NO WAIVER OF RIGHTS

A waiver by the Village of any Event of Default or any term of provision of this Contract shall not be a waiver of the same Event of Default, another Event of Default or any other term or provision of this Contract.

ARTICLE XXVI – CONTROLLING LAW AND VENUE

This Contract is entered into in the State of Illinois, for work to be performed in the State of Illinois and shall be governed by and construed in accordance with the laws of the State of Illinois. Any legal matters or dispute shall be resolved in the Circuit Court of Cook County and the Parties hereby submit to the jurisdiction of such Circuit Court.

This Contract shall be construed without regard to any presumption or other rule requiring construction against the Party causing the Contract to be drafted.

ARTICLE XXVII – MISCELLANEOUS

- A. **AMENDMENT** – This Contract may be amended only in writing executed by both Parties.
- B. **NO RECORDING** – This Contract, or a memorandum thereof, may not be recorded in any form by either Party. If either Party records this Contract, or a memorandum thereof, they shall immediately file a release of the same.
- C. **COUNTERPARTS** – This Contract may be executed by the Parties in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute an original instrument.
- D. **SECTION HEADINGS** – The headings in the Contract are intended for convenience only and shall not be taken into consideration in any construction or interpretation of the Contract.
- E. **NO THIRD-PARTY BENEFICIARIES** – This Contract does not confer any rights or benefits on any third party.
- F. **BINDING EFFECT** – This Contract shall be binding and inure to the benefit of the Parties hereto, their respective legal representatives, heirs and successors-in-interest.
- G. **ENTIRE AGREEMENT** – This Contract supersedes all prior agreements and understandings and constitutes the entire understanding between the Parties relating to the subject matter hereof.
- H. **SEVERABILITY** - If any term, condition or provision of the Contract is adjudicated invalid or unenforceable, the remainder of the Contract shall not be affected and shall remain in full force and effect, to the fullest extent permitted by law.
- I. **TORT IMMUNITY DEFENSES** - Nothing contained in this Contract is intended to constitute nor shall constitute a waiver of the rights, defenses, and immunities provided or available to the Village under the Local Governmental and Governmental Employees Tort Immunity Act, 745 ILCS 10 *et seq.*
- J. **CALENDAR DAYS AND TIME.** Unless otherwise provided in this Contract, any reference in this Contract to “day” or “days” shall mean calendar days and not business days. If the date for giving of any notice required to be given, or the performance of any obligation, under this Contract falls on a Saturday, Sunday or federal holiday, then the notice or obligation may be given or performed on the next business day after that Saturday, Sunday or federal holiday.
- K. **COUNTERPARTS.** This Contract may be executed by the Parties in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute an original instrument.

IN WITNESS WHEREOF, the Parties hereto have caused the Contract to be executed as of the Effective Date.

Village of Buffalo Grove,
an Illinois home-rule unit of government

By: [Signature]
Name: Dane Bragg
Title: Village Manager

Company National Power Rodding Corp
[An Illinois _____ company]

By: [Signature]
Name: William T. Kreidler
Title: President

CONTRACT EXHIBIT A- DESCRIPTION OF THE WORK

DESCRIPTION OF WORK

The work services, equipment, labor and/or materials below shall be collectively referred to as the “Work”:

Work consists of the rehabilitation of sanitary manholes through various means called out in the manhole rehabilitation schedule (appendix A). Preparatory work on manholes to be sealed will include surface cleaning and other proper preparation, and repair of the manhole walls and benches/channels.

Care shall be taken when working at all locations. The Contractor shall provide all traffic control and signs and barricades to protect their work sites at all times. All sites shall be kept clean with no disturbance caused to the surrounding private property areas.

The Contractor shall provide a project schedule, considering weather conditions, to minimize disruption of service to residents. Work under this contract will require coordination with other construction projects occurring in the same locations. This may require the Contractor to work on the weekends.

BID SPECIFICATIONS

1. MATERIALS & SERVICES TO BE PROVIDED BY THE VILLAGE

A. WATER AND WATER METER

The Village shall furnish water as necessary to complete the proposed work at no cost to the contractor. Water shall be obtained only from hydrants designated by the Village Director of Public Works or his designee and only through a meter obtained from the Village. Whenever the proposed work is within the vicinity of this hydrant, the contractor shall obtain water from this hydrant only as determined by the Director of Public Works or his designee.

The water meter shall only be used for the Village’s projects and shall not be used by the contractor for outside work.

All fire hydrants shall remain available for use by emergency services in the event of a fire and shall not be obstructed by contractor vehicles or equipment. The contractor’s equipment must be inspected by village staff to ensure that an air gap is equipped when obtaining water from Village hydrants.

Care must be taken to turn the hydrants on and off slowly so as not to damage the water system. Field use may be revoked if the contractor does not follow this guideline. Any notice of damaged or faulty hydrants must be reported to the Department of Public Works immediately.

B. Sewer Atlases

The Village shall furnish the contractor with one (1) 11” x 17” copy of the storm and/or sanitary sewer atlas sheets including the areas to be televised. The atlas sheets shall represent the best available information regarding the storm and sanitary sewers within the inspection area. Atlases are also included in Appendix B of this document.

2. SPECIAL PROVISIONS

A. STANDARDS

Construction provisions shall follow the “Standard Specifications for Road and Bridge Construction”, latest edition (referred to hereinafter as the Standard Specifications”; the “Supplemental Specifications and Recurring Special Provisions”, latest edition; the latest edition of the “Illinois Manual on Uniform Traffic Control Devices for Streets and Highways” (MUTCD); the “Standard Specifications for Water and Sewer Construction in Illinois”, latest edition (hereinafter referred to as the Water and Sewer Specifications), except as modified herein; and the Village of Buffalo Grove, IL Code of Ordinances, and addenda thereto. Where contradiction occurs with any part or parts of the specifications, the most stringent requirement shall take precedence, as determined by the Engineer. In case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern. Where no conflict exists, the said Specifications shall apply to this Contract as if repeated in their entirety herein.

B. DEFINITIONS

Contractor: The individual, firm, partnership, joint venture, or corporation contracting with the Village of Buffalo Grove for performance of the prescribed work.

Department, Owner, or Village: The Village of Buffalo Grove, Illinois.

Engineer: The Village of Buffalo Grove Village Engineer or appointed/contracted representative.

C. PROJECT TIMING

Construction is scheduled to begin upon the proper execution of the Contract Documents, which includes the submission of insurance and bonds. The final completion for all other ancillary work, including landscaping restoration or plantings, not including, any additional work, shall be completed and ready for final acceptance and payment on or before October 03, 2024. Failure to comply with the deadlines for the substantial completion and final completion shall result in the enforcement of liquidated damages for each calendar day that these improvements remain incomplete, in accordance with the Special Provision, “Liquidated Damages”, and Sections 108.05 and 108.09 of the Standard Specifications.

D. CONSTRUCTION SCHEDULE

At the project pre-construction meeting, the Contractor shall submit for review and approval by the Engineer a detailed construction schedule that shall clearly indicate the sequential procedure of work proposed to be followed to complete the work as required by the contract documents. In preparing the construction schedule, the Contractor shall follow the required completion date, calendar days, or additional Special Provisions as specified relating to the construction schedule. Work once commenced must be completed within ten (10) weeks.

The Construction Schedule shall depict all work components and essential activities, the time required for the completion of each of the activities, and the sequence and interdependence of each of the

activities in a project timetable which will translate each project day into an ordinary calendar day. The Contractor shall maintain the construction schedule and shall submit an updated schedule to the Engineer on a weekly, bi-weekly, or monthly basis as determined by the Engineer. No separate payment will be made to the Contractor for the creation and maintenance of the construction schedule.

The Village provides the public with construction schedule and project status through the Village's web page. The Contractor shall provide construction related information in a format consisting of an email, letter, or other form acceptable to the Engineer. The Contractor shall assume that this information shall be provided on a weekly basis during construction and may change to a shorter time frame based on construction activity changes or a longer time frame based on construction inactivity. The Engineer shall determine the time frame and format to be provided by the Contractor.

E. UTILITY LOCATION

The Contractor must exercise extreme caution while working around existing utilities. The Contractor shall notify JULIE (800) 892-0123, a minimum of 48 hours before commencing construction for utility locations within the scope of the project. It is recommended that the Contractor conduct a joint utility meet. It is the responsibility of the Contractor to contact all agencies who may or may not be a part of the JULIE system to verify locations of their facilities.

The Village does not guarantee the accuracy or completeness of this information. The Contractor shall make its own investigation to determine the existence, nature, and location of all utility lines and appurtenances within the limits of the improvement. The Contractor shall locate all utilities far enough in advance to avoid all conflicts in grade separation between existing utilities and the proposed improvements. If the Contractor encounters a conflict between the proposed improvements and an existing utility that was not located in advance by the Contractor, then the Contractor shall, at no cost to the Village, relocate the proposed improvements and/or utility to avoid the conflict.

The Contractor will be required to cooperate with all utility companies involved in connection with the removal, temporary relocation, reconstruction, or abandonment by these companies of any and all services or facilities owned or operated by them within the limits of this improvement.

Before doing any work which will damage, disturb, or leave unsupported or unprotected any utility lines, or appurtenances encountered, the Contractor shall notify the respective Owner thereof, who will make all arrangements for relocating, adjusting, or otherwise maintaining or abandoning service on lines that fall within the limits of the proposed construction without cost to the Contractor, including the removal of all cables, manhole covers, and other appurtenances which the Owner desires to salvage. After such arrangements have been made, the Contractor will proceed with the work as directed by the Engineer. All utility lines and appurtenances which are abandoned by the Owner shall be removed and disposed of by the Contractor.

No extra compensation will be allowed to the Contractor for any expense incurred by complying with these requirements or because of delays, inconvenience, or interruptions in the work resulting from the failure of any utility company to remove, relocate, reconstruct, or abandon their services. The Contractor shall be responsible for prompt and timely removal, relocation, reconstruction, or

abandonment of their facilities by all utility companies to end that work on this improvement is not delayed because of necessary changes in the existing utilities, public or private.

F. CONSTRUCTION OPERATIONS

In order to minimize the effect of construction noise on the area surrounding the improvement, the Contractor and all subcontractors shall comply with the following requirements. Any changes to this schedule will not be accepted unless approved by the Engineer.

- i. All engines and engine driven equipment used for hauling or construction shall be equipped with an adequate muffler in constant operation and properly maintained to prevent excessive or unusual noises. Any machine, device, or part there of which is regulated by or becomes regulated by Federal, or State of Illinois noise standard shall conform to those standards.
- ii. Construction operations shall be confined to the daylight hours between 7:00 AM and 5:00 PM Monday through Friday. No work of any kind shall be done outside these hours or on Saturdays or Sundays in residential areas unless previously approved by the Engineer. These time restrictions shall not apply to maintenance or operation of safety and traffic control devices such as barricades, signs, and lighting, or to construction of an emergency nature. If the Contractor requires additional time to complete a portion of the work on any given day or if he foresees the need to work extended hours for a number of days to comply with the construction schedule, they must receive the approval of the Engineer.
- iii. The Contractor shall take all precautions necessary to protect the general public and his employees from hazardous locations that might occur within the limits of the improvements. **Neither the Village nor the Engineer is responsible for site safety. The Bidder is solely and exclusively responsible for construction means, methods, technologies, and site safety.**
- iv. It shall be the Contractor's responsibility to protect open cut trenches as may be required by OSHA, Illinois Department of Labor, State, or Federal Law. Trenches in pavements or in close proximity to the improved streets or roadways shall be sheeted or braced in a substantial and effective manner. Sheeting may be removed after backfilling has been completed to such an elevation as to permit its safe removal. Sheeting and bracing left in place must be removed for a distance of 3 feet below the established street grade. The cost of furnishing, placing, and removing sheeting and/or bracing shall be incidental to construction and included in the contract unit price for the work being done.
- v. The Contractor shall schedule and conduct its operations so that the closure time of existing driveways along the route of the improvement is kept to a minimum. All homeowners shall be given 24 hours written notice prior to initial removal of their driveway apron. The Contractor shall make every effort to keep driveways open including temporary grading and placement of gravel.
- vi. Beginning on the date that the Contractor begins work on this project, the Contractor shall assume responsibility of normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer. Traffic control and protection for this work will be provided by the Contractor as required by the Engineer. The work involved in maintaining the existing pavement and

shoulders will not be paid for separately at the contract unit prices for the various items or work involved, unless otherwise specified elsewhere in these Special Provisions.

- vii. If items of work have not been provided for in the Contract, or are not otherwise specified for payment, such items will be paid for in accordance with Article 109.04 of the Standard Specifications.

G. EASEMENT AND ACCESS AGREEMENTS

The Village will obtain easements and access agreements for all work to be performed within private property (outside of public right-of-way). Working easements shall be staked by the Village prior to commencement of construction. Extreme caution shall be exercised to protect the existing trees, signs, light posts, etc. within or near the limits of all work. This shall be considered incidental to the Contract.

H. MOBILIZATION

Description

Mobilization shall be according to Section 671 of the Standard Specifications except as modified herein.

Revise Article 671.02, Basis of Payment, to read:

“671.02 Basis of Payment. Mobilization will not be paid for separately but shall be included in the unit bid prices of the items for which this work applies.”

I. INSPECTION

All phases of the improvements will be subject to inspection by representatives of the Village Public Works Department. Projects will not be accepted by the Village without the final approval of the Village of the Village Public Works Department.

The Contractor shall be bound by these specifications and by all Village ordinances and codes.

J. TRAFFIC CONTROL AND PROTECTION

Description

Traffic control shall be in accordance with the applicable portions of Section 701 and 703 of the Standard Specifications, the Supplemental Specifications, the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, any special details and Highway Standards contained in the plans, and Contract Documents herein.

Special attention is called to Articles 107.09 and 107.14 of the Standard Specifications and the following Highway Standards, Details, Recurring Special Provisions, Special Provisions, and Contract Documents contained herein, relating to traffic control.

The Contractor shall maintain traffic in accordance with the applicable portions of Article 107.14 of the Standard Specifications. The Contractor shall furnish, install, maintain, relocate, and subsequently

remove all signs, signals, markings, traffic cones, barricades, warning lights, flagmen, and other devices which are to be used for the purpose of controlling traffic.

Special attention is called to Article 107.09 and 107.14 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Recurring Special Provisions, and Special Provisions contained herein relating to traffic control.

STANDARDS: 701301, 701501, 701801, 701901.

Details: Traffic Control and Protection for Side Roads, Intersections, and Driveways (TC-10)

Special Provisions (included in these Special Provisions):

- viii. Maintenance of Roadways
- ix. Work Zone Traffic Control Surveillance (LRS 3)
- x. Flaggers in Work Zones (LRS 4)
- xi. Sidewalk, Corner, or Crosswalk Closure (BDE)

Barricades shall be placed and maintained along the limits of the work until the surface has been restored, or as otherwise directed by the Engineer.

The Contractor shall contact the Village at least 72 hours in advance of beginning work. Construction operations shall be conducted in a manner such that the streets shall be open to emergency traffic and accessible as required to local traffic. Advanced notice shall be provided to residents, police, fire, school districts, school bus companies, and trash haulers when access to any street will be temporarily closed or limited. The work shall be accomplished such that the streets shall be left open to local traffic at the end of each workday.

The cost of traffic control and protection shall be considered incidental to this project.

K. MAINTENANCE GUARANTEE

The Contractor shall execute and deliver to the Village, before final payment will be issued, a written warranty, in a form satisfactory to the Village, which guarantees that the work is in accordance with the Contract Documents and will not be defective. This warranty shall guarantee this work for a period of one year from the date of acceptance of the work and final payment by the Village.

The Contractor shall furnish a warranty bond in an amount equal to ten percent (10%) of the contract amount by a surety satisfactory to the Village to guarantee Contractor's warranty to repair defective work.

If within the guarantee period, any work is found to be defective, as determined by the Village, the Contractor shall promptly and without cost to the Village, correct or repair such defective work, or remove and replace the defective work in accordance with the Special Provisions for the items in question.

L. RESPONSIBILITY FOR VANDALISM

The Contractor shall be responsible for the defacement of any concrete pours before they have set up. Concrete pavement, sidewalk, driveway, or curb that has been defaced in the opinion of the Engineer, shall be removed and replaced by the Contractor at the Contractor's expense.

M. SHOP DRAWINGS AND SUBMITTALS

Prior to fabrication of materials, the Contractor shall submit shop drawings of the materials to the Engineer for review. Shop drawings shall consist of complete descriptive literature on the materials including all pertinent dimensions, material specifications, and data. Prior to submitting shop drawings to the Engineer, the Contractor shall first review the shop drawings and make corrections or revisions which are appropriate. The Contractor shall be required to maintain a complete set of shop drawings on the job site at all times while work is in progress and shall make them available to the Engineer upon request.

Provide complete copies of required submittals and deliver to the Engineer as follows:

- i. Construction progress schedule: (1) electronic copy
 - a. Initial work schedule
 - b. Revisions to work schedule
- ii. Pre-construction surface televising: (1) electronic copy
- iii. Traffic Control Plan: (1) electronic copy
- iv. Manhole Rehabilitation Material Data Sheet Submittals: (1) electronic copy. All materials data sheets are to be submitted to the Engineer and approved before rehabilitation can proceed.
 - a. Manhole Castings Data Sheets
 - b. External Chimney Seals: Shall conform to ASTM C923 and shall be:
 1. Infi-Shield Uni-bands or approved equal.
 2. WrapidSeal Canusa-CPS or approved equal.
- v. Manhole Grouting Data Sheets
 - a. Grout: Grouting installation shall conform to ASTM F2414-04. Grout shall be Avanti AV-100 or approved equal.
 - b. Sever Active Infiltration: Approved materials to stop severe active infiltration are the following: Hydrostop-Flex 40/500; Avanti AV-100; Deneef Deneproxx 40; or approved equal.
- vi. Manhole Internal Coatings Material Data Sheets:
 - a. Patching Material. The following are approved for patching material: Strong Seal QSR; Quadex Hyperform; or approved equal.
 - b. Cementitious Coat. The following are approved for cementitious coat; Strong Seal MS-2C.
 - c. Visible Infiltration. Approved materials to stop visible infiltration are the following: Strong-Plug; Quadex Quad-Plug; or approved equal.
- vii. Rubber Composite Adjustment Rings: EJ Infra-Riser or pre-approved equal.
- viii. Precast Concrete Adjustment Rings: Shall conform to ASTM C478. Adjustment rings of uniform thickness shall be at least two inches thick. The replacement precast grade adjustment shall provide a structural capacity equal to or greater than the existing specified manhole frame and shall not affect the opening size or surface appearance.

- ix. Barrel Section: Shall be precast concrete conforming to ASTM C478.
- x. Bitumastic Gasket Material: Shall meet or exceed Federal specification SS-S-210A. Material shall be EZ-STIK or approved equal.
- xi. One set of “red-line” field changes on construction plans.
- xii. Typical set-up for flow bypassing.
- xiii. Other required submittals: (1) electronic copy if required for review or record.

This is a non-exhaustive list. The Contractor shall provide all shop drawings that are required in the specifications.

N. CLEAN UP

The cost of cleanup operations shall be spread evenly through the bid items on the proposal. Clean up shall consist of removing all debris from the job site, and removal of all excess dirt, pipe pieces, lumber scraps, paper cups, etc., left by the Contractor’s forces. Clean up shall be performed as the work progresses, and a final clean up shall be done after all operations are completed.

O. CONSTRUCTION DEBRIS

All spoil and waste materials must be removed from site and properly disposed. Disposal of all waste and spoil shall be considered incidental to the contract. For bidding purposes, it shall be assumed that all spoils are residential and can be disposed of at a CCDD landfill. Village will sign LPC-662 form to be prepared by the Contractor. The Contractor shall provide a representative soil sample for pH testing at a lab. Removal of landscaping materials, and protection of the homeowner’s property is considered a part of this contract and will be incidental to the contract pay items.

3. TECHNICAL SPECIFICATIONS

A. SEWER FLOW CONTROL

Description

This work shall include control of sanitary sewer flow during closed circuit television (CCTV) inspection, sewer cleaning operations, sewer rehabilitation, manhole rehabilitation, manhole installation, and all other sewer maintenance, inspection or construction activities. The Contractor shall be fully responsible for maintaining sewer service during these operations and shall not be allowed to backup or flood any sewer system user, building, or property. The Contractor shall be solely liable for property damages that result from the work being performed.

The Contractor will be responsible for coordinating with the Village for any necessary permits needed for bypass pumping.

Since complete stoppage or bypassing of flow may be required during installation of new sewers, point repairs, sewer rehabilitation, and manhole rehabilitation work, the Contractor may be required to submit drawings and complete design data showing methods and equipment to be utilized in bypass and dewatering operations. The bypass plan shall include the following information:

- i. Location of temporary sewer plugs, and bypass discharge lines indicated on plans.

- ii. Capacities of pumps, prime movers, and standby equipment.
- iii. Type of standby power source.
- iv. Traffic control plan.

The Contractor shall indicate where and when flow bypassing is anticipated and provide a typical setup as a submittal. Detailed setup submittals will also be required for non-typical setups as determined by the Village or Engineer. When pumping and bypassing is required, the Contractor shall furnish all temporary pumps, conduits, and other equipment to divert the flow of sewage around the sewer section in which work is to be performed. The bypass system shall have sufficient capacity to handle existing flow plus additional flow that may occur during peak flow periods or from precipitation. The Contractor shall construct the bypass system of material(s) necessary to prevent leakage during pumping operation.

The Contractor shall equip all engines with mufflers and/or enclosed to keep noise levels less than 50 decibels, or 10 decibels above ambient noise levels when measured at building closest to noise source.

The Contractor shall maintain sufficient labor, equipment, and materials on site to ensure continuous and successful operation of bypass and dewatering systems including the following:

- i. Keep standby pumps fueled and operational at all times.
- ii. Maintain onsite sufficient number of valves, tees, elbow, connections, tools, sewer plugs, piping, and other parts or system hardware to ensure immediate repair or modification of any part of the system as necessary.
- iii. Provide piping, joints, and accessories designed to withstand at least twice the maximum system pressure or 50 psi, whichever is greater.

In areas where flows are bypassed, all discharge flow shall be returned to the sanitary sewer. No bypassing to ground surface, receiving waters, storm drains, or bypassing which results in groundwater contamination or potential health hazards shall be permitted.

In the event sewage is released into a storm drainage system or street, the Contractor shall immediately stop the release, notify the Village, and take all necessary actions to clean up and disinfect spillage to the satisfaction of the Engineer.

During plugging or bypass pumping operations, the Contractor shall utilize sewer plugs specifically designed so that all or any portion of sewage can be released. During sewer flow control operations, reduce flow to comply with requirements as described above. After cleaning, inspection, installation, or rehabilitation work has been completed, restore the flow to normal. All plugging, bypass pumping, and sewer flow control operations shall be considered incidental to the Contract and shall not be compensated for separately.

Basis of Payment

The cost of sewer flow control will not be paid for separately but shall be considered as included in the unit bid prices of the Contract, and additional compensation will not be allowed.

B. PROTECTION OF EXISTING DRAINAGE FACILITIES DURING CONSTRUCTION

Description

Unless otherwise noted in the Contract documents, the existing drainage facilities shall remain in use during the period of construction.

Locations of existing drainage structures and sewers, if shown in the Contract documents, are approximate. Prior to commencement of work, the Contractor, at their own expense, shall determine the exact location of existing structures which are within the proposed construction site.

All drainage structures are to be kept free from any debris resulting from construction operations. All work and materials necessary to prevent accumulation of debris in the drainage structure resulting from construction operations shall be removed at the Contractor's own expense and no extra compensation will be allowed.

Unless reconstruction or adjustment of an existing manhole, catch basin, or inlet is called for in the Contract documents or ordered by the Engineer, the proposed work shall meet the existing elevations of these structures. Should reconstruction or adjustment of a structure be required by the Engineer in the field, the necessary work and payment shall be done in accordance with Section 602 and Article 104.02 respectively, of the Standard Specifications.

Existing frames and grates are to remain unless otherwise noted in the Contract documents or as directed by the Engineer. Frames and grates that are missing or damaged prior to construction shall be replaced. The type of replacement frame or grate shall be determined by the Engineer, and replacement and payment for shall be in accordance with Section 604 and Article 104.02 respectively of the Standard Specifications unless otherwise noted in the Contract documents.

C. RESTORATION – GENERAL

Description

All damage to lawns shall be restored with topsoil and seed blanket. All lawn restoration shall be considered incidental to the cost of the manhole rehabilitation. To minimize damage to lawns, the Contractor shall utilize Duramats or other means (protective pads) to buffer equipment traveling across public/private property. Any equipment required for construction work located on lawns must be rubber-tired or rubber-tracked vehicles only.

All work required to move or protect overhead wires and utility poles shall be considered incidental to the contract. Any claims for additional work must be presented to the Engineer immediately. Failure of the Contractor to notify the Engineer will be reason to deny any claims for extra work. All work covered under this contract is subject to inspection by the Village of Buffalo Grove and the Engineer.

The Contractor is responsible for coordinating access to manholes located in backyards with the homeowners and this work shall be considered incidental to the Contract. Restoration efforts must begin within seven (7) days of the initial disturbance of the restoration area.

D. SIDEWALK REMOVAL

Description

This work shall be performed in accordance with Section 440 of the Standard Specifications. This item includes the removal of sidewalk at required locations or as directed by the Engineer. The removal of concrete, brick, flagstone, and asphalt sidewalks is also included in this item. These sidewalks shall be excavated to the subgrade as necessary such that the proposed five inch (5") thick sidewalk, including five inches (5") of crushed stone, gradation CA-6 can be constructed.

Basis of Payment

This work shall be considered incidental to the Contract and shall not be compensated for separately including any additional excavation needed to bring the section to the bottom of proposed cross-section of sidewalk.

E. DRIVEWAY PAVEMENT REMOVAL

Description

This work shall be performed in accordance with Section 440 of the Standard Specifications. This item includes the removal of existing asphalt and concrete driveway pavements at required locations or as directed by the Engineer. The use of drop hammers will not be allowed for breaking these pavements. These driveways shall be excavated to subgrade of the proposed driveway, including the necessary thickness of compacted crushed stone, gradation CA-6. This work shall be included in the cost of the item. The limits of removal shall typically be from the back of curb to the face of sidewalk but shall be designated in the field by the Engineer.

The Contractor shall saw-cut the driveway pavement full-depth at the limits of removal, which costs shall be included in this item. All driveways and driveway aprons scheduled for replacement shall be removed with extreme care in order to avoid damage to existing garages, garage foundations, or adjacent sidewalks scheduled to remain. Any damage caused by the removal of the driveway pavement shall be repaired or otherwise resolved by the Contractor to the satisfaction of the Village and the property owner. No additional compensation will be allowed. Any additional excavation required to reach the proposed subgrade shall be considered included in the cost of this item.

Basis of Payment

This work shall be considered incidental to the Contract and shall not be compensated for separately including any additional excavation or stone bedding needed to offset an unforeseen thickness of driveway or apron removal.

F. PCC SIDEWALK, 5" OR 6"

Description

This work shall be performed in accordance with Section 424 of the Standard Specifications and the following:

The five-inch (5”) thick Portland Concrete Cement (PCC) sidewalk shall be constructed to the limits and grade required to blend with adjoining surfaces. Across driveways and aprons, PCC Sidewalk shall be six inches (6”) thick. All sidewalks shall be placed upon a base of compacted crushed stone, gradation CA-6, having a minimum thickness of five inches (5”). The installation of this bedding shall be included in the cost of this item. Full depth expansion joints shall be placed between the sidewalk and the back of any adjacent curb, sidewalk, or building, and as directed by the Engineer. Steel forms will not be allowed.

Basis of Payment

This work shall be considered incidental to the Contract and shall not be compensated for separately i.

G. HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 3”

Description

This work shall be performed in accordance with Section 406 of the Standard Specifications and the following:

Existing asphalt driveway which are slated to be replaced shall be surfaced with a three inch (3”) thick hot-mix asphalt surface course. The asphalt must be placed in two 1.5” lifts. This item will include the preparation of existing pavement including the installation, compacting, and priming of the aggregate base. The driveway shall be placed upon compacted crushed stone, gradation CA-6, having a minimum thickness of six inches (6”). The installation of this bedding shall be included in the cost of this item.

The material shall meet the requirements of Hot-Mix Asphalt Surface Course, Mix “D” N50, as described in the Standard Specifications.

Basis of Payment

This work shall be considered incidental to the Contract and shall not be compensated for separately.

H. TOPSOIL FURNISH AND PLACE, 4”

Description

This work shall be performed in accordance with Section 211 of the Standard Specifications and the following:

The Contractor shall take precautions so as not to unnecessarily damage lawns. In areas that are designated to be sodded or seeded, the existing sod shall be cut and removed; the area shall then be shaped, graded, and rototilled. The area to be sodded or seeded shall then have a layer of good quality, pulverized topsoil which has been approved by the Engineer prior to placement, spread and fine raked

in such a manner as to result in a top dressing of the parkway having an average thickness of four inches (4") of topsoil.

Any excavation and grading of the parkway which is required to give a uniform slope from the limit of sod or seed restoration to the top of curb shall be included in this item. The Contractor shall be responsible for removing any weeds prior to the placement of the sod or seed. The method of weed removal must be approved by the Engineer. The topsoil and subgrade shall be thoroughly compacted along newly installed concrete by a compaction method approved by the Engineer. If proper compaction is not achieved, the Engineer may direct the Contractor to remove any soil backfill that the Contractor has placed and replace it with a granular stone backfill. This will be included in the cost of this item.

Basis of Payment

This work shall be considered incidental to the Contract and shall not be compensated for separately.

I. SEEDING

Description

This work shall be performed in accordance with Section 250 of the Standard Specifications and the following:

This work shall consist of seeding on all landscaped areas disturbed by construction as required or as directed by the Engineer. Any excessive of unnecessary damage to the parkway will be restored by the Contractor at his own expense. All areas designated to be seeded shall be prepared with application of 4" of topsoil. A seed mix of Type 1A shall be utilized in parkways. A modified mixture for shade application shall be submitted to the Engineer for approval to be used at locations where directed by the Engineer. Areas in which the seed does not take root shall be seeded at no additional cost to the Village. The Contractor shall be responsible for fertilizing landscaped areas. Fertilizer shall not contain Phosphorus. Any necessary fertilizer applications shall be considered incidental. Installation of knitted straw blanket shall be considered incidental.

Basis of Payment

This work shall be considered incidental to the Contract and shall not be compensated for separately.

J. REPLACE COVER

Description

Where indicated on the plans, the existing manhole frame and cover shall be replaced with a new cover by the Contractor.

The new cover shall be the standard Village of Buffalo Grove frame and cover. See Exhibit No. 109 – Materials List and Exhibit No. 301 – Sanitary Sewer Manhole Lid Detail in Appendix C for details for the Village standard frame and cover.

The Contractor is required to measure each cover and frame that needs replacing to ensure proper fit.

Basis of Payment

This item shall be paid for at the Contract Unit Price per Each for REPLACE COVER and shall include all work necessary for the installation of a new cover including measurement, procurement, installation, replacement, and returning the original cover to the Owner.

K. REPLACE FRAME AND COVER (PAVED OR NON-PAVED)

Description

Where indicated on the plans, the existing manhole frame and cover shall be replaced with a new cover by the Contractor. This pay item includes the replacement of the adjusting rings and installation of an external chimney seal as described in the provision SEAL AND ADJUST MANHOLE FRAME.

The new cover shall be the standard Village of Buffalo Grove frame and cover. See Exhibit No. 109 – Materials List and Exhibit No. 301 – Sanitary Sewer Manhole Lid Detail in Appendix C for details for the Village standard frame and cover. Frames and adjusting rings shall be joined with preformed flexible joint sealant.

Basis of Payment

This item shall be paid for at the Contract Unit Price per Each for REPLACE FRAME AND COVER of the restoration type specified (paved or non-paved) and shall include all work necessary for the installation of a new cover including measurement, procurement, installation, replacement of adjustment, installation of an external chimney seal, returning the original cover to the Owner, and restoration including but not limited to full depth patching, PCC sidewalk, sod, driveway pavement, and curb and gutter removal and replacement.

L. SEAL AND ADJUST SANITARY MANHOLE FRAME, NON-PAVED

Description

For all frame adjustment work including replacements, adjustments, and realignments, the manhole adjustment rings shall be removed, replaced, and sealed per the following specification. The Contractor may not reuse existing concrete rings during frame adjustment work. Frames that are indicated for adjustment and not replacement shall be removed, cleaned, and sealed in accordance with the following specification. External chimney seals shall be included in this work. When the manhole is in the pavement, the Contractor shall be required to saw cut existing pavement to a minimum of a 5' by 5' square. This square cut shall allow for proper removal and replacement of the frame and adjustment rings and for the installation of external chimney seals.

The Contractor shall remove existing frame and cover, remove all gasket material between the cone, adjustment rings and frame, and shall wire brush clean all exposed surfaces. In addition, the Contractor shall dry all surfaces with a torch or other approved method. Existing manhole frames and covers in good condition will be cleaned and reinstalled unless specified elsewhere for replacement.

The Contractor shall remove all loose materials located at the top of the corbel and fill the voids.

Materials and Installation

Adjustment Rings

The Contractor shall replace all adjustment rings with new rings per Exhibit No. 109 – Materials List found in Appendix C.

The Contractor shall use the minimum number of rings possible for the adjustment. No shims or other leveling devices, other than leveling rings provided by the manufacturer, will be permitted.

External Chimney Seal

External chimney seals are to be installed for all frame adjustment work requiring excavation including adjustments, replacements, realignments, and raises unless indicated otherwise by the Engineer. This external sealing system shall prevent leakage of water into the manhole through the frame joint adjustment area.

Two types of external chimney seals will be used as directed by the Engineer. The acceptable external chimney seals are:

- i. Infi-Shield Uni-bands, or approved equal
- ii. WrapidSeal Canusa-CPS, or approved equal

The Contractor shall have both types of approved seals onsite so that where needed, a WrapidSeal can be used in lieu of Infi-Shield seal. On all precast concrete manholes, Infi-Shield shall be used. The Contractor shall obtain approval from the Engineer prior to switching from Infi-Shield to WrapidSeal.

Frame seals shall remain flexible throughout a 50-year design life, allowing repeated vertical movement of the frame of not less than 2" and/or repeated horizontal movement of not less than ½".

The seal shall be a continuous seamless band made of high-quality EPDM (Ethylene Propylene Diene Monomer) rubber with a minimum thickness of 65 mils. There shall be a preformed "L" shaped corner molded into the top of the seal. The top section and the side section will extend from the "L" shaped corner at a generally 90-degree angle to each other, wherein the seal is pre-formed in substantially the same shape as when attached to the manhole structure. The thickness of the "L" shaped corner extending 1" into the top section and 1" down the side section is increased and may be at least twice the thickness of the top section reinforcing the seal at this particular area. There shall be a 2" wide strip of butyl mastic attached to the underside of top section of the seal. The mastic shall be non-hardening butyl rubber sealant, with a minimum thickness of 1/8", and shall seal to the cone/top of the manhole section and over the flange of the casting frame. An aerosol primer shall be used to enhance the bond strength of the seal to the structure.

The Contractor shall excavate around the frame to a depth of at least 12" below the top of the cone section to allow for proper installation. The Infi-Shield Uni-Band seal sealing system shall be installed according to the manufacturer's recommendations. The top section of the seal shall extend 3" attaching

to the casting base/flange with the side section covering over the entire grade adjustment ring area and onto the one section a minimum of 2". Install external manhole chimney seal as shown on the detail, with extensions where needed to cover the entire chimney area, in accordance with the manufacturer's instructions. External chimney seals installed shall not be buried until inspected by the Engineer.

Gasket Materials

EZ-STIK of an approved equal butyl mastic sealant shall be used when rejoining the manhole frame to the precast adjustments to provide a watertight structure. The sealing compound shall be produced from blends of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler, and shall contain no solvents, irritating fumes, or obnoxious odors. Avoid use of overly thick gasket material which will likely produce after-settlement of manhole frame due to long-term cold flow of gasket materials. The compound shall not depend on oxidizing, evaporation, or chemical action for its adhesive or cohesive strength. It shall be supplied in extruded rope form of suitable cross section and in such sizes to seal the joint space. The Contractor shall use two (2) complete ropes at each joint.

Interior Finish Coat

After all other adjustment work has been completed, the interior surfaces of the adjustment, from the bottom of the frame to the top of the cone section, shall have a calcium aluminate high performance mortar finish applied which is then troweled and brushed to a smooth finish. Calcium Aluminate Cement shall be Strong Seal MS-2C or approved equal.

Basis of Payment

This item shall be paid for at the Contract Unit Price per Each for SEAL AND ADJUST MANHOLE FRAME, NON-PAVED and shall include all work necessary for the complete adjustment and sealing of each manhole frame as specified in these provisions including measurement, procurement, installation, replacement, external chimney seals, adjustment rings, and restoration.

M. CEMENTITIOUS MANHOLE SEALING

Description

Manhole sealing shall consist of all necessary measures to internally seal the manhole including cementitious wall coating, external or internal grouting, and reconstruction of bench/trough and shall establish structural integrity for the manhole and shall eliminate inflow and infiltration.

This work shall provide for a monolithic fiber-reinforced calcium aluminate structural cementitious spray liner applied in two ½" lifts intended to seal the entire manhole structure. The spray liner shall be a complete manhole reconstruction that stops inflow and infiltration, providing a leak free structure, restoring structural integrity, and providing protection against corrosion.

This specification shall govern all work, materials, and equipment required for manhole rehabilitation for the purpose of eliminating infiltration, exfiltration, providing corrosion protection, repair of voids,

and restoration of the structure integrity of the manhole as a result of applying a monolithic fiber-reinforced structural cementitious liner to the adjustment, cone, wall, and bench surfaces of brick, block, pre-case or poured concrete, or other masonry construction material.

Described are procedures for cleaning, preparation, application, and testing. The applicator, approved and trained by the manufacturer, shall furnish all labor, equipment and materials for applying a cementitious mix to form two coats of a structural monolithic liner, with machinery specially designed for the application. All aspects of the installations shall be in accordance with the manufacturer's recommendation and per the following specifications which includes:

- i. Remove loose and unsound materials
- ii. Clean area to be sprayed
- iii. Eliminate infiltration
- iv. Repair and fill voids
- v. Repair and seal bench trough/inverts
- vi. Spraying the cementitious monolithic liner

Remove Loose and Unsound Material

Loose and protruding brick, mortar, and concrete shall be removed using a mason's hammer and chisel and/or a scraper. Any loose debris on the benches, invert or walls of the manhole shall be removed by means of a scraper and vacuum machine or other approved method as long as it is taken from the manhole and not caused to go into the sewer. Any damaged manhole steps shall be removed prior to cleaning the interior of the manhole. Place covers over invert to prevent extraneous material from entering the sewer lines before cleaning.

Clean Area to be Sprayed

The Contractor shall clean the interior surfaces of the manhole by removing all debris, dirt, oil, grease, remains of old coating materials, and any other extraneous materials. The Contractor shall then pressure wash (minimum 3,000 psi) the manhole walls to remove loose mortar, concrete, roots, and debris. Heavy grease build-up or unusual conditions may require hydro-blasting or chemical cleaning. Loose and protruding brick, mortar, and concrete shall be removed using a mason's hammer and chisel and/or scraper.

Eliminate Infiltration

The following are approved for patching material: Strong Seal QSR; Quadex Hyperform; or approved equal. This quick setting fiber reinforced calcium aluminate corrosion resistant cementitious material shall be used as a patching material and is to be mixed and applied according to manufacturer's recommendations and shall have the following minimum requirements:

Compressive Strength	ASTM C109	>1,800 psi, 1 hr
		>2,600 psi, 24 hrs

Bond	ASTM C882	>1,600 psi, 28 days
Calcium Aluminate Cement		Sulfate resistant
Applied Density		105 lbs/cu.ft. +/- 5
Shrinkage	ASTM C490	0% at 90% R.H.
Placement Time		5 to 10 minutes
Set Time		15 to 30 minutes

Approved materials to stop visible infiltration are the following: Strong-Plug; Quadex Quad-Plug; or approved equal. This rapid setting cementitious product specifically formulated for leak control, shall be used to stop minor water infiltration, and shall be mixed and applied according to manufacturer's recommendations and shall have the following minimum requirements:

Compressive Strength	ASTM C109	>1,000 psi, 1 hr >2,500 psi, 24 hrs
Sulfate Resistance	ASTM C267	No wt. loss, 15 cycles @ 2,000 ppm
Freeze/Thaw	ASTM C666	Method A 100 cycles
Pull Out Strength	ASTM C234	14,000 lbs
Set Time		<1 minute

Approved materials to stop severe active infiltration are the following: Hydrostop-Flex 40/500; Avanti AV-100; Deneef Denepox 40; or approved equal. Grouting installation shall conform to ASDTM F2414-04. Grouting shall be performed anywhere where active infiltration cannot be stopped with the cementitious grout. All grouting work shall be considered incidental to the unit price bid payment item for CEMENTITIOUS MANHOLE SEALING.

Repair and Fill Voids

The Contractor shall fill any large voids using one of the approved patching materials. Active leaks shall be stopped using quick-setting, specially formulated mixes, according to manufacturer's recommendations. Some leaks may require weep holes to localize infiltration during the application. After application the weep holes shall be plugged with quick setting material. After repairing and filling voids and preparations are complete, remove all loose material and wash again. Any bench or invert repairs shall be made at this time using the quick setting patching mix.

Repair and Seal Bench Trough/Inverts

Invert repair shall be performed on all inverts with visible damage or where infiltration is present or when vacuum testing is specified. After blocking the flow through the manhole and thoroughly cleaning the invert, a quick setting patch material shall be applied in an expeditious manner. The material shall be troweled uniformly onto the damaged invert at a minimum thickness of ½" at the invert extending out onto the bench of the manhole sufficiently to tie into the structural monolithic liner to be spray applied. The finished invert shall be smooth and free of ridges. The flow may be re-established in the manhole within 30 minutes after placement of the material.

Spraying the Cementitious Monolithic Liner

Liner material shall be Strong-Seal MS2-C or an approved equal and shall be made with calcium aluminate cement and shall be used according to manufacturer's recommendations in applications where there is evidence of mild sulfide conditions (substrate surface of PH 2.0 or higher). The cementitious liner shall be used to form a structural monolithic liner covering all interior manhole surfaces and shall have the following minimum requirements:

Compressive Strength	ASTM C109 28 days	>9,000 psi
Tensile Strength	ASTM C496 28 days	>800 psi
Flexural Strength	ASTM C293 28 days	>1,200 psi
Shrinkage @ 90% R.H.	ASTM C596 28 days	0%
Bond	ASTM C882 28 days	>2,000 psi
Density, when applied		134 +/- 5 lbs/cu.ft.
Freeze/Thaw	ASTM C666	300 cycles no vis. damage

During application, the surface shall be clean and free of all foreign material and shall be damp without noticeable free water droplets or running water, but totally saturated just prior to application of material. Materials shall be spray applied in two lifts, at least 24 hours apart. Minimum total thickness for each pass shall not be less than ½" and shall be from the bottom of the frame to the invert of the manhole. The surface shall then be troweled to a relatively smooth finish being careful not to over trowel. A brush finish shall be applied to the trowel-finished surface.

After the walls are coated, the invert covers shall be removed, and the bench sprayed with excess materials applied in such a manner that a gradual slope is produced from the walls to the invert with the thickness at the invert to be no less than ½". The wall/bench intersection shall be rounded to a uniform radius the full circumference of the intersection. Trough area shall be coated as required to seal all cracks and to provide a smooth surface.

The material shall have a minimum of four (4) hours cure time before being subjected to active flow. Ambient conditions in the manhole are adequate for curing as long as the manhole is covered. Traffic shall not be allowed over manholes for 12 hours after reconstruction is complete. Caution shall be taken to minimize exposure of applied product to sunlight, quick surface drying, and air movement. At no time should the finished product be exposed to sunlight or air movement for longer than 15 minutes before replacing the cover. In extremely hot and arid climates, the manhole should be shaded while reconstruction is in process.

No application shall be made if ambient temperature is below 40 degrees Fahrenheit. No application shall be made to frozen surfaces or if freezing is expected to occur within the substrate within 24 hours after application. If the ambient temperatures are in excess of 95 degrees Fahrenheit, precautions shall be taken to keep the mix temperatures at time of application below 90 degrees Fahrenheit. Water temperature shall not exceed 80 degrees Fahrenheit. Chill with ice if necessary.

Quality Control

Final acceptance shall be made upon successfully passing:

- i. Vacuum test as described under the provision VACUUM TESTING.

- ii. Compressive strength test:
 - a. Sample and make five test cylinders per ASTM C31 and analyze with ASTM C39, or as specified by contract document, for testing compressive strength from each day's work (for Vertical Infrastructure) or every 32,000 lbs. of material (for Horizontal Infrastructure). Label cylinders with the date, location, project, and product batch numbers. The product batch numbers are located on each geopolymer material bag. Send the cylinders to a third-party laboratory or the manufacturer for verification. Test in accordance with ASTM C39, or as specified in contract documents. Test the geopolymer material for compressive strength at 7 days (1 cylinder) and at 28 days (2 cylinders) and leave 1 cylinder for retainage.
- iii. Performance and Material Testing for Manholes:
 - a. Performance testing as directed in ASTM F2551.
 - b. Submit the following information to the engineer:
 - i. Product data, including manufacturer and brand name along with laboratory test results to verify 28-day compressive strength in accordance with ASTM C39 or ASTM C109. The samples must be undisturbed for a period of at least 24 hours before they can be transported. The project superintendent will require that samples of applied material be taken representative of each day's work of material used. Samples shall be obtained from the pump, hose, or nozzle, identified, and sent to an independent test laboratory to verify 28-day compressive strength testing as described in ASTM C39 or ASTM C109 and shall have a minimum average of the strength set forth hereinabove.

Basis of Payment

This item shall be paid for at the Contract Unit Price per Vertical Foot for CEMENTITIOUS MANHOLE SEALING and shall include all labor and materials to rehabilitate the manhole as described in the above provisions. Measurement for payment shall be made from the invert to the bottom of the manhole frame and shall be measured to the tenth of a foot.

VACUUM TESTING shall be measured and paid for separately. The compressive strength tests shall be considered incidental.

N. CURTAIN GROUT MANHOLE, GROUT WALL JOINTS, & CURTAIN GROUT BOTTOM 18"

Description

This specification shall govern all work, materials, and testing required for chemical pressure grouting of manhole defects. Manholes or sections of manholes with leaks are shown on the Manhole Rehabilitation Schedule (Appendix A). Manhole structure grouting includes the sealing or plugging of the manhole base, walls, corbel/cone, and chimney using chemical grout sealants to eliminate leakage. Chemical grout shall be injected into the soil surrounding the manhole as needed for complete sealing resulting in a grout curtain.

Curtain Grout Manhole

The Contractor shall furnish all labor, supervision, materials, equipment, and testing if required for the completion of chemical grout sealing of manhole defects in accordance with the Contract Documents. Manhole grouting shall not be performed until sealing of manhole frame and grade adjustments is complete.

- i. Equipment: The basic equipment shall consist of chemical pumps, chemical containers, injection packers, hoses, valve, and all necessary equipment and tools required to seal manholes by chemical pressure grouting. The chemical injection pumps shall be equipped with pressure meters that will provide monitoring pressure during the injection of the chemical sealants. When necessary, liquid bypass lines equipped with pressure-regulating bypass valves will be incorporated into the pumping equipment.
- ii. Chemical Sealing Materials: The chemical grout shall be Avanti AV-100 or approved equal which has a documented record of satisfactory performance in sewer usage. All grouting materials shall be delivered to the job site in the original, labeled, and unopened containers. The Contractor shall submit with his bid, the brand name manufacturer of the chemical grout(s) intended for use. The chemical grout(s) selected by the Contractor is subject to approval of the Engineer.
- iii. For protection of the manhole structure through freeze thaw cycles, the top four (4) feet of the structure shall be a urethane base grout AV-248 Low Viscosity or approved equal.
- iv. Mixing and handling of chemical grout, which may be toxic under certain conditions, shall be in accordance with the recommendations of the manufacturer and in such a manner to minimize hazard to personnel. It is the responsibility of the Contractor to provide appropriate protective measures to ensure that chemicals or gels are handled by authorized personnel in the proper manner. All equipment shall be subjected to the approval of the Engineer. Only personnel thoroughly familiar with the handling of the grout material and additives shall perform the grouting operations.
- v. Preliminary Repairs: All cracked or deteriorated material shall be removed from the manhole and the Contractor shall cut and trim all roots within the manhole. The Contractor shall seal all unsealed lifting holes, unsealed step holes, pre-cast manhole section joints, and voids larger than approximately ½” in thickness with manhole section joints, and voids larger than approximately ½” in thickness with a waterproof quick-setting mortar, Strong Seal QSR; Quadex Hyperform, or an approved equal in accordance with the manufacturer’s specifications.
- vi. Drilling and Injection: Injection holes shall be drilled through the manhole at 120-degree angles from each other at the same plane of elevation. Rows shall be separated by no more than three (3) vertical feet, and the holes shall be staggered with the holes in the rows above and below. Provide additional injection holes near observed defects, bench and trough, and at pipe seals. At all visible leaks and areas with evidence of leaks within the manhole structure, a hole shall be carefully drilled from within the manhole and shall extend through the entire manhole wall. A minimum of six (6) injection holes shall be provided in the walls/cone and three (3) injection holes at each pipe seal and at the bench/trough.
- vii. Manholes shall be grouted completely from the pipe invert to the top of the corbel or bottom of the flattop. Grout shall be injected through the holes under pressure with a suitable probe.

Grout ports or sealant injection devices shall be placed in these previously drilled holes in such a way as to provide a watertight seal between the holes and the injection device. A hose, or hoses shall be attached to the injection device from an injection pump. Grouting from the ground surface shall not be allowed. Grout travel shall be verified by observation of grout to defects or adjacent injection holes. Provide additional injection holes, if necessary to ensure grout travel. Care shall be taken during the pumping operation to ensure that excessive pressures do not develop and cause damage to the manhole structure or surrounding surface features. Grout shall be injected through the lowest holes first. The procedure shall be completed until the manhole is externally sealed with grout, resulting in a chemical grout curtain.

- viii. **Sealing After Grouting:** Upon completion of the injection, all chemical grout material shall be removed from interior surfaces of the manhole. After grouting is completed, the grout ports shall be removed, and the remaining holes shall be cleaned with a drill and filled with quick-setting hydraulic mortar and troweled flush with the surface of the manhole wall or other surfaces. The mortar used shall be a non-shrink patching mortar such as Strong Seal QSR; Quadex Hyperform, or an approved equal. This coating shall cover at least 6" either side of the joint sealed or where injection holes were drilled.

Grout Wall Joints

The procedures for Grout Wall Joint shall be the same as listed above for a complete curtain grout manhole but shall be limited to wall joints and/or areas with evidence of infiltration for each manhole indicated on the plans. Holes shall be carefully drilled from within the manhole and shall extend through the entire manhole wall. In cases where there are multiple leaks around the circumference of the manhole, fewer holes may be drilled, providing all leakage is stopped from these holes. Grout ports or sealant injection devices shall be placed in these previously drilled holes in such a way as to provide a watertight seal between the holes and the injection device. A hose, or hoses, shall be attached to the injection device from an injection pump. Grout travel shall be verified by observation of grout to defects or adjacent injection holes. Provide additional injection holes, if necessary to ensure grout travel.

Sealing after grouting wall joints shall be the same as above and shall include patching with a ½" thick quick setting mortar such as Strong Seal QSR; Quadex Hyperform, or an approved equal and shall cover at least 6" either side of the joint sealed or where injection holes were drilled.

Curtain Grout Bottom, 18"

The procedures for Grout Bottom, 18" shall be the same as indicated above, but shall be limited to the bottom portion of the manhole. Pipe seal grouting shall include all pipe seals in the specified manhole and grouting of the bench/trough, wall/bench joint, and walls to the maximum height of 18" from the crown of the pipe. Provide additional injection holes near observed defects, bench and trough, and at pipe seals. At all visible leaks, a hole shall be carefully drilled from within the manhole and shall extend through the entire manhole wall. A minimum of three injection holes at each pipe seal and at the bench/trough shall be required.

Sealing after grouting manhole bottoms shall be the same as above and shall include patching with a ½” thick quick setting mortar such as Strong Seal QSR; Quadex Hyperform, or an approved equal and shall cover at least 6” either side of each location sealed or where injection holes were drilled.

Grout Tests

The Contractor shall perform and record a grout gel test in the presence of the Engineer. This test shall include the recording of the grout tank solution temperature, catalyst tank solution temperature, ambient air temperature in truck, and gel time of the sample. The test shall be performed whenever the following conditions occur:

- i. At the beginning of each day. The material in the hoses shall be recycled to the tanks and a sample shall be taken;
- ii. Whenever new batches of grout are mixed; and
- iii. Whenever the temperature in the tanks or ambient temperature have changed by more than +/- ten (10) degrees Fahrenheit from the previous gel test.

Final Acceptance

After the specified sealing work has been completed, the manholes shall be visually inspected by the Contractor (as required) in the presence of the Owner/Engineer and found to be acceptable. All rehabilitated manholes shall also be re-inspected for leaks one year after completion and resealed, if necessary, at no additional cost to the Owner.

Basis of Payment

The Contractor shall provide the necessary tools and equipment to complete all work as described above. Payment shall be based on the Contract Unit Price per Each for CURTAIN GROUT MANHOLE or CURTAIN GROUT BOTTOM, 18”. Payment shall be based on the Contract Unit Price per Each Joint for GROUT WALL JOINTS. If more than two (2) Grout Wall Joints and/or Curtain Grout Bottom, 18” are necessary to seal the manhole, the Engineer shall have the right to change the pay item and scope to Curtain Grout Manhole.

O. REPAIR BENCH AND TROUGH

Description

Invert repair shall be performed on all inverts with visible damage or where infiltration is present or when vacuum testing is specified. After blocking the flow through the manhole and thoroughly cleaning the invert, a quick-setting patch material shall be applied in an expeditious manner. The material shall be troweled uniformly onto the damaged invert at a minimum thickness of ½” at the invert extending out onto the bench of the manhole sufficiently to tie into the structural monolithic liner to be spray

applied. The finished invert shall be smooth and free of ridges. The flow may be re-established in the manhole within 30 minutes after the placement of the material.

The trough shall then be coated with a cementitious product such as Strong Seal MS2-C or approved equal in the manner specified in Manhole Sealing (Cementitious).

Basis of Payment

This item shall only be paid where cementitious coating is not being applied to the walls and shall be paid for at the Contract Unit Price per Each for REPAIR BENCH AND TROUGH. This price shall be payment in full for performing the work for furnishing all labor, supervision, materials, equipment, and testing necessary to complete the work.

P. CORROSION PROTECTIVE LINING FOR MANHOLE STRUCTURE

Description

This specification shall govern all work, materials, and equipment required for rehabilitating and protecting the interior walls and bench of new and selected existing wastewater structures, manholes, and other underground vaults by monolithic spray-application of a high-build, solvent-free, 100% solids, high performance epoxy coating to eliminate infiltration, provide corrosion protection, repair voids, and enhance structural integrity.

Material

Raven 405 as manufactured by Raven Lining Systems or approved equal.

Submittal Requirements

The following items shall be submitted and approved before rehabilitation can proceed:

- i. Material Safety Data Sheet (MSDS)
- ii. Submit product data for each component specified including data substantiating that the proposed materials comply with specified requirements and recommendations by the manufacturer covering all materials.
- iii. Samples of the cured system as described below:
 - a. Finish texture as determined by the Village or Village's authorized representative.

Construction Sequencing

The sequence of construction shall follow the below listed steps. This procedure is for epoxy coating of an existing manhole:

- i. The Contractor shall mobilize equipment for cleaning and preparation.
- ii. Setup confined space entry, scaffolding, and ventilation as necessary.
- iii. Contractor may use a flow-through plug to convey the forcemain discharge flow through the manhole.
- iv. Prepare wall and invert surfaces according to Preliminary Surface Preparation Requirements.

- v. Repair and fill voids if any.
- vi. Repair and seal bench if necessary: After repairing and filling voids and preparations are complete, remove all loose material and wash again. Any bench repairs shall be made at this time using the Quick-setting patching mix.
- vii. Prepare wall and bench surfaces according to manufacturer recommendations.
- viii. Apply a primer base coat.
- ix. Apply epoxy corrosion protective lining according to Epoxy Coating Installation.
- x. Allow curing according to manufacturer's recommendations.

Preliminary Surface Preparation

The Contractor shall inspect all surfaces specified to receive a protective coating prior to surface preparation. Applicator shall notify the Village of any noticeable disparity in the surfaces which may interfere with the proper preparation or application of the repair mortar and protective coating.

- i. Place covers over invert(s) to prevent extraneous material from entering the sewer lines before cleaning.
- ii. Clean interior surfaces of manhole debris, dirt, oil, grease, and any other extraneous materials. Pressure wash (minimum 3,500 psi) manhole walls to remove loose mortar, concrete, and debris.
- iii. The substrate must be visibly dry before proceeding. Any specific area that is not visibly dry or is experiencing water penetration (i.e., groundwater seepage) shall be surface-dried utilizing forced air heating or dehumidification units.
- iv. Fill any large voids (if any) using one of the approved patching materials. Surface voids and defects shall receive a minimum of ½" thickness of the specified structural lining repair mortar.
- v. After preparations are complete, remove any loose material and wash again.
- vi. Material shall be applied only when the walls are in a damp or dry state with no visible water dripping or running over the manhole walls. The bench application shall be such that a gradual slope is produced from the walls to the invert and the wall/bench intersection shall be rounded to uniform radius the full circumference of the intersection.
- vii. The repair materials shall be permitted to cure according to manufacturer's recommendations. Curing compounds should not be used unless approved for compatibility with the specified protective coating.
- viii. If cementitious coating has been applied, epoxy coating shall be applied only after cementitious coating is fully cured in accordance with epoxy coating manufacturer's recommendations.

Epoxy Coating Installation

Specified surfaces shall receive one coat of primer and one coat of a moisture tolerant, solvent free, 100% solids, epoxy protective coating by spray application to a wet film thickness of 80 mils. The specified wet film thickness shall be applied via spray application in a single coat with multiple passes.

- i. All surfaces should be inspected during and after preparation and before the protective coating is applied.

- ii. Protect surrounding areas and surfaces not scheduled to be coated from damage during surface preparation and application of epoxy liner system. Immediately remove epoxy liner system that fall on surrounding areas and surfaces not scheduled to be coated.
- iii. All epoxy liner materials shall be mixed and applied at temperatures in accordance with these Specifications and the manufacturer's recommendation.
- iv. Epoxy liner materials shall not be applied in inclement weather conditions.
- v. Ambient temperatures must be between 40- and 85-degrees Fahrenheit during application of epoxy liner materials. Relative humidity must be below 85%.
- vi. The minimum substrate temperature at the time of application shall be 45 degrees Fahrenheit. The maximum substrate temperature at the time of application shall be 100 degrees Fahrenheit.
- vii. At the time of application, the substrate temperature must be at least 5 degrees Fahrenheit above dew point.
- viii. Adequate lighting shall be provided to sufficiently light up all areas to be worked on without inclusion of shadow areas.
- ix. Epoxy liner materials shall not be applied in windy conditions. Contractor shall ensure windblown matter is prevented from contaminating freshly coated surfaces.
- x. Keep containers closed when not in use to avoid contamination.
- xi. Do not use mixed epoxy liner materials beyond pot life limits.
- xii. Use application equipment, tools, pressure settings, and techniques in accordance with manufacturer's instructions.
- xiii. Manufacturer approved heated plural component spray equipment shall be used in the application of the specified protective coating.
- xiv. Airless spray application equipment approved by the coating manufacturer shall be used to apply each coat of the protective coating.
- xv. Uniformly apply epoxy liner materials at spreading rate required to achieve specified.
- xvi. During application a wet film thickness gage meeting ASTM D4414 – Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gages, shall be used to ensure a monolithic coating and uniform thickness during application.

Final Acceptance

After curing (typically 6 to 8 hours) the surface shall be spark tested to determine presence of any pinholes in accordance with ASTM D4787. These shall be repaired immediately. Testing and repairs shall be considered incidental.

Any structure receiving corrosion protective lining shall be re-inspected for leaks six months after completion and repaired, if necessary, at no cost to the Village.

Minimum requirements of the corrosion protection coatings and/or lining system are that it be free of the following:

- i. Uncured material
- ii. Inadequate thickness
- iii. Pinholes

- iv. Blisters
- v. Delamination
- vi. Foreign matter
- vii. Unspecified materials

Basis of Payment

This item will be paid for at the Contract Unit Price per Vertical Foot for CORROSION PROTECTIVE LINING FOR MANHOLE STRUCTURE. This price shall include all labor and materials to rehabilitate the manhole as described in the above provisions. Measurement for payment shall be made from the invert to the bottom of the manhole frame and shall be measured to the nearest tenth of a foot.

Q. VACUUM TESTING

Description

This specification shall govern the vacuum testing of sanitary sewer manholes and structures and shall be used as a method of determining acceptability by the Owner, in accepting maintenance or installation of a sanitary sewer manhole or structure. Vacuum testing shall be according to ASTM c1244, except as specified otherwise herein. Other forms for testing of some manholes may be required, as deemed necessary by the Owner.

At least twenty-five percent (25%) of the total number of the sanitary sewer manholes installed or receiving cementitious coating shall be vacuum tested as specified herein. Manholes to be tested shall be selected by the Engineer at the time of testing. No advance notice will be provided to the Contractor as to which manholes will be tested. If more than ten percent (10%) of the manholes tested fail the initial test, an additional twenty-five percent (25%) of the total manholes shall be tested at no additional charge. This process shall continue until a series of manholes (25% of the total) successfully test with no more than 10% initial failure or until all manholes have been tested. Additional vacuum testing required after failing the initial testing will be considered incidental to the Contract and will not be paid for separately.

Manholes shall be tested after installation or rehabilitation and when all connections are in place. Lift holes, if any, shall be plugged with an approved, non-shrinkable grout prior to testing. Drop connections shall be installed prior to testing. The vacuum test shall include testing of the seal between the cast iron frame and the concrete cone, slab, or grade rings. Manhole vacuum testing shall be performed after all adjacent underground utilities have been installed and all manholes have been backfilled and finished to final grade.

All manholes found to have been damaged or disturbed prior to the final (one-year) inspection shall be corrected and vacuum tested at that time, regardless of whether or not they were originally vacuum tested. If a coating or lining is to be applied to the interior of the manhole, the vacuum test must not be performed until the coating or lining has been cured according to the manufacturer's recommendations.

Procedure for testing shall be as follows:

- i. Temporarily plug all pipes entering the manhole. Each plug must be installed at a location beyond the manhole/pipe gasket (i.e., outside the manhole wall), and shall be braced to prevent the plug or pipe from being drawn into the manhole.
- ii. The test head shall be placed inside the rim of the cast iron frame at the top of the manhole and inflated, in accordance with the manufacturer's recommendations.
- iii. A vacuum of at least ten inches of mercury (10" Hg) shall be drawn on the manhole. Shut the valve on the vacuum line to the manhole and shut off the pump or disconnect the vacuum line from the pump.
- iv. The pressure gauge shall be liquid filled, having a 3.5-inch diameter face with a reading from zero to thirty inches of mercury.

The manhole shall be considered to pass the vacuum test if the vacuum reading does not drop more than 1" Hg during the following minimum test times for various manhole diameters.

Depth (ft)	Manhole Diameter (inches)								
	30	33	36	42	48	54	60	66	72
	Test Time (seconds)								
8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	29	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	53	65	72	81
22	31	33	39	45	55	64	72	79	89
24	33	36	42	50	59	64	78	87	97
26	36	39	46	55	64	75	85	94	105
28	39	42	49	59	69	81	91	101	113
30	42	45	53	65	74	87	89	108	121

Basis of Payment

This item shall be paid for at the Contract Unit Price per Each for VACUUM TESTING and shall include furnishing all labor, supervision, materials, equipment, and testing necessary to complete the work.

R. PRE-CONSTRUCTION SURFACE VIDEO RECORDING

Description

This work consists of performing color video and audio recording of the project area and other areas which may be impacted by construction, specifically excavation or any work that requires backyard access.

Preconstruction video recordings will include coverage of the project area and all other areas which may be impacted by construction. Video recordings will also include construction easements when applicable. Video recordings will provide a visual record of all physical features within those areas, including, but not limited to, roadways, pavements, curbs, gutters, driveways, driveway aprons, sidewalks, carriage walks, parkways, trees, landscaping, shrubbery, plantings, landscaping walls, retaining walls, signs, sign posts, fences, utility poles, light poles, utilities, equipment, manholes, b-boxes, cleanouts, valves, curb structures, pipelines, buildings, mailboxes, and any other features located within the project area.

Video recordings will begin with an audio narrative which provides the current date and time, the name of Owner and name of project, and a description of both the starting location and the location(s) to be recorded, including street name(s), addresses, and any additional information which may be necessary to describe the location and subject of viewing.

Video recordings will maintain viewer orientation by means of an audio commentary in the audio track of each video recording which provides an explanation of what is being viewed; and by videotaping landmarks and readily identifiable objects (property addresses, street signs, etc.) at appropriate intervals.

Preconstruction surface televising will be recorded at a rate of travel not exceeding 48 feet per minute and zooming and panning rates will be controlled to provide clarity of features during playback. The finished product will be provided with bright, clear pictures and accurate colors free from distortion, tearing, rolls, or other forms of picture imperfection. The audio will have proper volume and clarity. All recordings will be performed at times of satisfactory visibility, and when no more than ten percent of ground is obscured by snow, leaves, or other cover.

If any element within or portion of the project area is not adequately documented by the preconstruction surface televising so as to definitively demonstrate its condition prior to the start of construction, Contractor will assume responsibility for the repair, restoration, or replacement of that element or portion of the project area. Such repair, restoration, or replacement will be to equal or better condition than previously existing and will further comply with all standards and provisions which govern the work in question.

Schedule

Preconstruction surface televising will be performed according to the following schedule:

- i. Preconstruction surface televising will take place after a Notice to Proceed has been issued.
- ii. Preconstruction surface televising will take place after the JULIE request for the project area(s) have cleared.

- iii. Preconstruction surface televising will take place before any equipment, materials, or other items are delivered to the site.
- iv. Preconstruction surface televising will take place no more than fourteen (14) chargeable days prior to the start of construction.
- v. The required preconstruction surface televising deliverables will be submitted to the Engineer, and the Engineer will review, and issue written approval of the video before any activity other than utility locating will be permitted to start. Such activity will include, but not be limited to, delivery of materials and equipment, installation of traffic control and erosion control, and completion of construction layout and tree protection. No days will be charged against the contract time while the video is under review by the Engineer, including the day the deliverables are submitted and the day a response is provided. If the video or any portions thereof are rejected, the contract time will commence to run until revisions are submitted.
- vi. The televising will be submitted to the Engineer for review prior to commencement of any construction and receive acceptance of recordings prior to commencement of construction. Any areas found not acceptable to the Owner will be re-filmed at no additional cost to the contract.

Deliverables

Video will be high definition, with a minimum resolution of 1280x720 pixels per frame. Video will be filmed in a landscape aspect ratio. Video will be filmed in a portrait aspect ratio will be considered unacceptable and will be rejected.

Preconstruction surface televising will be provided as electronic files of .avi, .mp4, .wmv, or .mpg file format, or of such other file format as may be approved by the Engineer. Preconstruction video recordings will be provided as independent digital container format files, which container files will include all video, audio, and other electronic information necessary to view the preconstruction surface televising as intended.

Preconstruction surface televising electronic files will be provided on a portable electronic media device of the following types: USB flash drive, SD flash memory card, external hard drive, or such other portable electronic media device approved by the Engineer. Preconstruction surface televising electronic files may also be provided via online file sharing, cloud storage, File Transfer Protocol (FTP), or other online/network file transfer methods if approved by the Engineer.

Video DVD will be considered an unacceptable format for providing preconstruction surface televising and will be rejected.

Preconstruction surface televising electronic files shall be accompanied by corresponding logs with document the dates, times, and locations covered by each preconstruction video recording electronic file.

Contractor shall maintain copies of all items submitted to the Engineer for Contractor's own use and record.

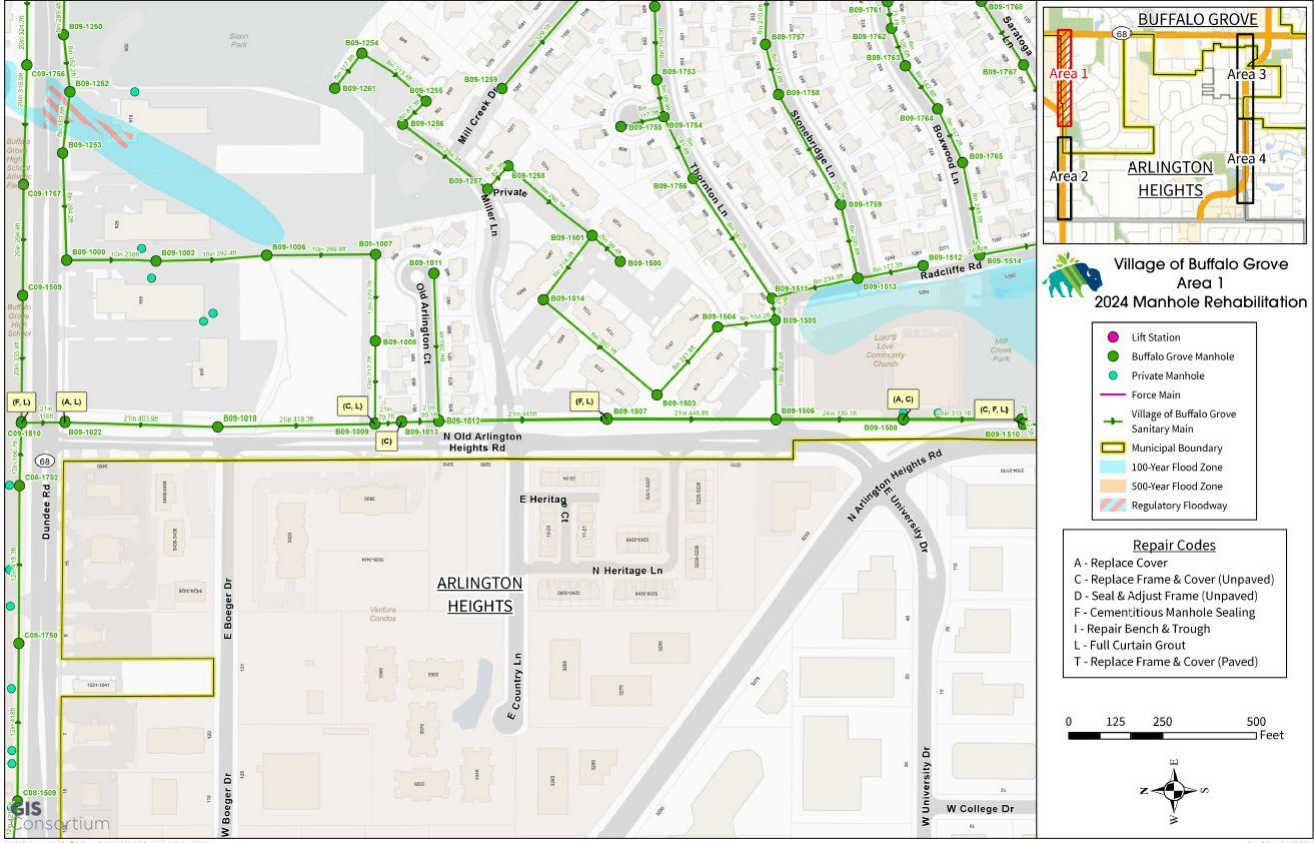
Basis of Payment

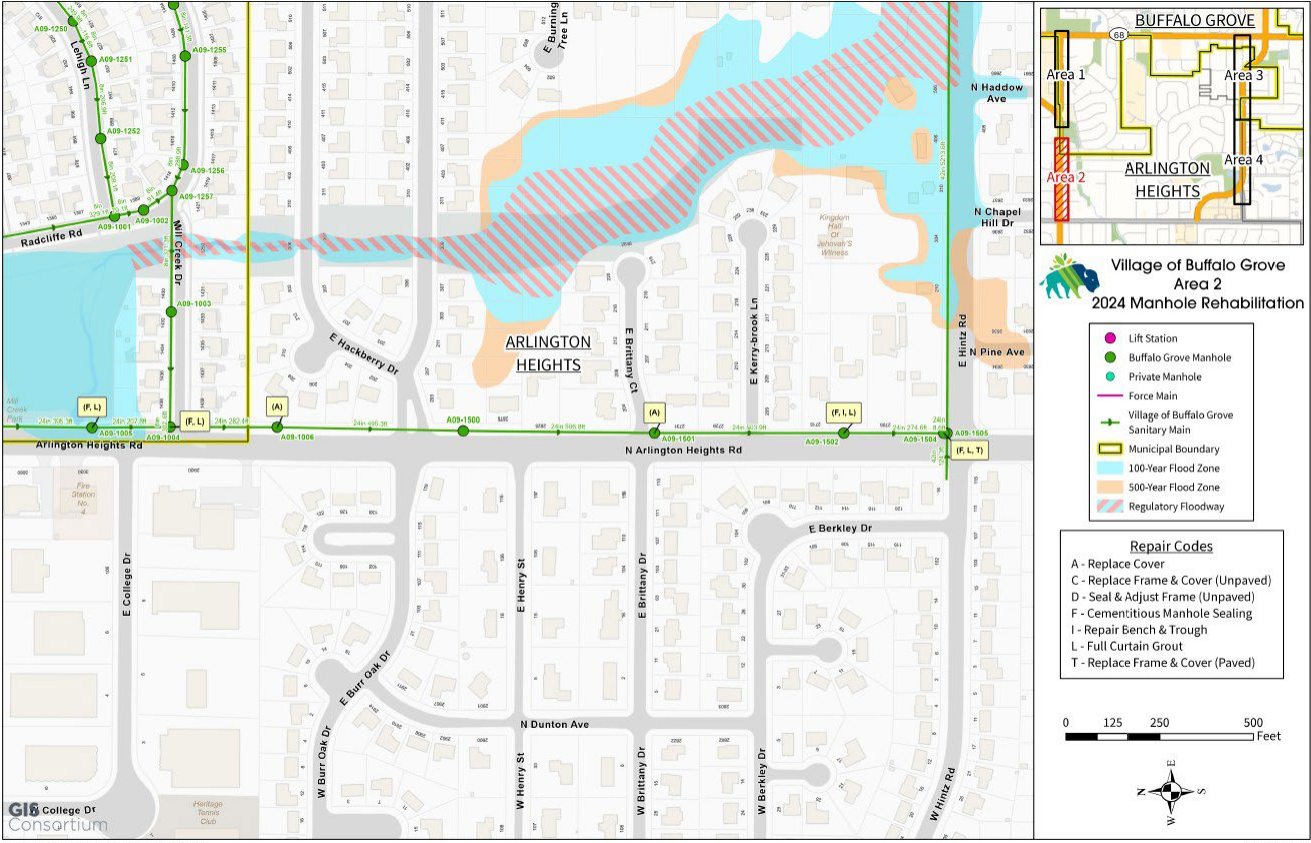
This work shall be paid for at the Contract Unit Price per Lump Sum for PRE-CONSTRUCTION SURFACE VIDEO RECORDING and shall include furnishing all labor, supervision, materials, AND equipment necessary to complete the work.

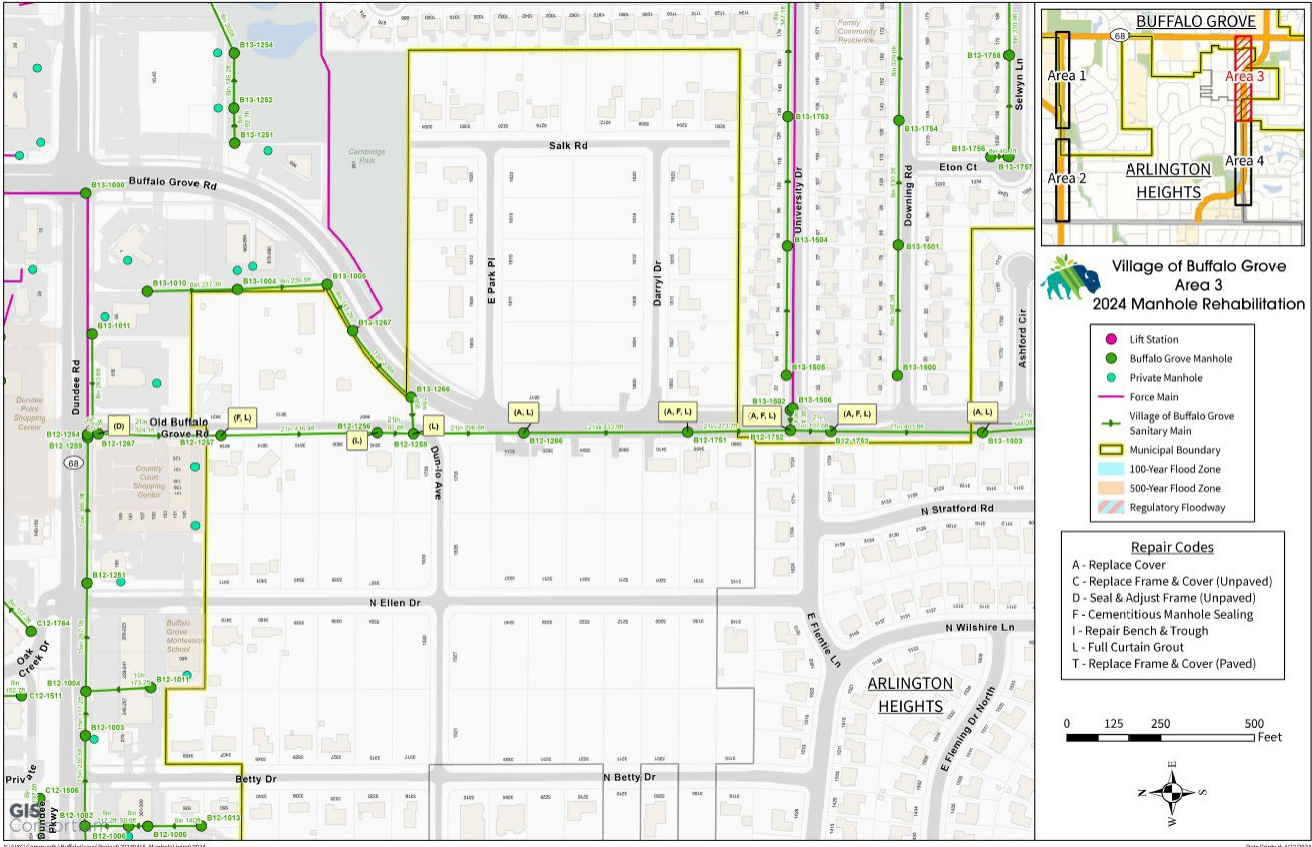
MANHOLE REHABILITATION SCHEDULE APPROXIMATE SUMMARY OF QUANTITIES

Village of Buffalo Grove, IL 2024 Manhole Rehabilitation Program Manhole Rehabilitation Schedule													
Manhole Information							Rehabilitation Method						
Manhole ID	Address	Surface Type	Structure Location	Manhole Depth (ft)	Manhole Diameter	Structure Material	Replace Cover	Replace Frame and Cover - Nonpaved	Replace Frame and Cover - Paved	Seal and Adjust Manhole Frame - Nonpaved	Cementitious Manhole Sealing	Curtain Grout Manhole	Repair Bench and Trough
A9-1504	2701 N Arlington Heights Rd	Concrete/Pvmt	Road	22.6	60"	Concrete			1		1	1	
A9-1502	2705 N Arlington Heights Rd	Grass/Dirt	Easement/ROW	22.5	48"	Concrete					1	1	1
A9-1501	2731 N Arlingotn Heights Rd	Concrete/Pvmt	Sidewalk	8.85	60"	Concrete	1						
A9-1006	2909 N Arlington Heights Rd	Grass/Dirt	Easement/ROW	6.2	48"	Concrete	1						
A9-1004	1438 Mill Creek Dr	Concrete/Pvmt	Sidewalk	20.2	60"	Concrete					1	1	
A9-1005	3001 N Arlington Heights Rd	Grass/Dirt	Easement/ROW	19.8	60"	Concrete					1	1	
B9-1510	3201 N Arlington Heights Rd	Grass/Dirt	Easement/ROW	21.12	48"	Concrete		1			1	1	
B9-1508	3211 N Arlington Heights Rd	Grass/Dirt	Easement/ROW	14.45	60"	Concrete	1	1					
B9-1507	3228 N Old Arlington Heights Rd	Concrete/Pvmt	Sidewalk	18.03	60"	Concrete					1	1	
B9-1013	951 Old Arlington Ct	Grass/Dirt	Yard	20.36	48"	Concrete		1					
B9-1009	3400 N Old Arlington Heights Rd	Grass/Dirt	Easement/ROW	20.04	60"	Concrete			1			1	
B9-1022	3448 N Old Arlington Heights Rd	Grass/Dirt	Easement/ROW	21.7	60"	Concrete	1						1
C9-1510	1100 W Dundee Rd	Grass/Dirt	Easement/ROW	21.55	48"	Concrete					1	1	
A13-1502	2748 Old Buffalo Grove Rd	Asphalt	Road	13.2	48"	Concrete						1	
A13-1501	601 Old Buffalo Grove Rd	Asphalt	Road	11.8	60"	Concrete			1			1	
A13-1002	1799 E Burning Tree Ct	Concrete/Pvmt	Road	12.35	60"	Concrete	1					1	
A13-1001	3004 Buffalo Grove Rd	Concrete/Pvmt	Road	15.85	60"	Concrete	1					1	
A13-1000	Buffalo Grove Rd	Concrete/Pvmt	Road	15.35	60"	Concrete	1					1	
B12-1503	3100 N Buffalo Grove Rd	Concrete/Pvmt	Road	16.8	60"	Concrete	1					1	
B12-1753	3228 N Buffalo Grove Rd	Concrete/Pvmt	Road	20.2	60"	Concrete	1				1	1	
B12-1752	3230 Buffalo Grove Rd	Concrete/Pvmt	Road	20.75	60"	Concrete	1				1	1	
B12-1751	3400 Buffalo Grove Rd	Concrete/Pvmt	Road	20.2	60"	Concrete	1				1	1	
B12-1266	3514 Buffalo Grove Rd	Concrete/Pvmt	Road	18.75	60"	Concrete	1					1	
B12-1258	1799 Dun-Lo Ave	Grass/Dirt	Easement/ROW	14.5	60"	Concrete						1	
B12-1256	3516 N Old Buffalo Grove Rd	Grass/Dirt	Easement/ROW	13.8	60"	Concrete						1	
B12-1257	3618 N Old Buffalo Grove Rd	Grass/Dirt	Easement/ROW	9.48	60"	Concrete					1	1	
B12-1267	165 W Dundee Rd	Grass/Dirt	Easement/ROW	5.12	60"	Concrete				1			

MANHOLE REHABILITATION LOCATION MAP

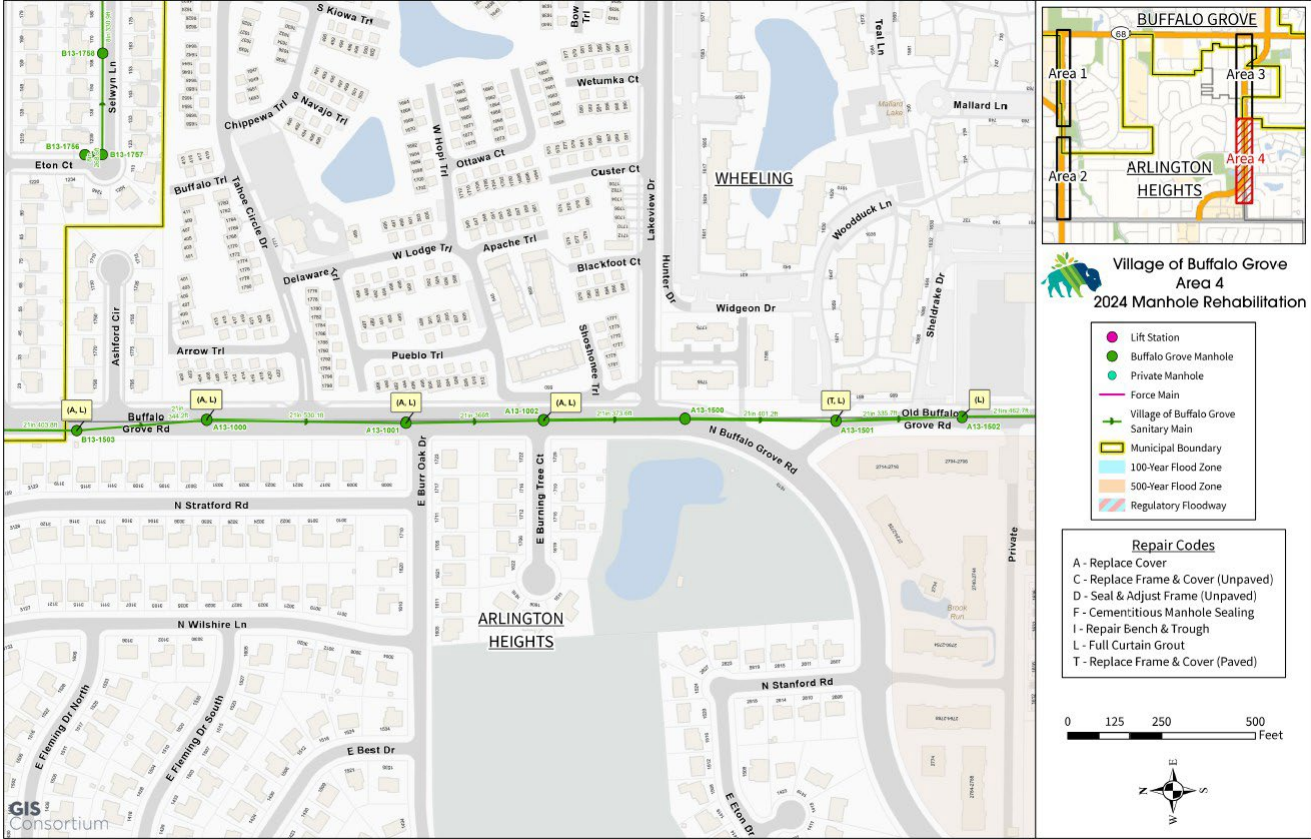






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Date Printed: 6/22/2024



2024 MANHOLE REHABILITATION PROJECT

Village Material List

EXHIBIT NO.109 MATERIALS LIST

Date of revision: 1/1/16

Water Distribution Material Specifications:

Water main pipe.	Ductile Iron Pipe. Pipe class thickness—AWWA C150, minimum thickness, Class 52. Pipe—AWWA C151. Pipe lining—AWWA C104. Fittings—AWWA C153. Joints—mechanical and push-on, AWWA C111. Wrap—4 mil. X-Lam conforming to AWWA C105.A21.5 and AWWA C600. No 90 degree bends allowed. All stainless steel trim.
Valves.	American Flow Control, Series 2500 resilient wedge gate valve, All sizes two inch to fourteen inch, counter clockwise to open, AWWA C500., AWWA C504. Clow AWWA C-504 Butterfly Valve for sixteen inch and above. Joint end—mechanical, AWWA C111. All stainless steel trim.
Valve Vault.	All structures shall be monolithically precast with designed openings or mechanically cored in the field and shall have rubber boots conforming to ASTM C-923. Dog house vaults are excluded from these requirements when permitted by Village Engineer. Size: For six and eight inch diameter valves, valve vaults shall have a forty-eight inch inside diameter; for pressure connections and valves ten inches and larger in diameter, valve vaults shall have a sixty inch inside diameter. All valve vault cones must be eccentric centers with valve properly aligned.
Castings.	East Jordan Iron Works 1022 Frame and Lid or Neenah R-1713, embossed per Exhibit No. 401 of Buffalo Grove Numerical Code Title 16.
Fire Hydrant.	Waterous Pacer Model WB67-250, AWWA C502, painted fire engine red above ground, with resilient wedge auxiliary gate valve. Nozzles, two at two and one half inch, one at four and one half inch, with threads conforming to National Standard Specifications. Frangible section (breakaway type) with the break line flange located one inch above finished grade. Joint end, six inch, mechanical or push-on. All stainless steel trim. Auxiliary boxes and hydrants shall be a direct flange-to-flange connection.
Fire hydrant extension	Fire hydrant extensions and parts to be manufactured by Waterous only. All stainless steel trim.
Hydrant Valve Box \ Valve boxes	Hydrant Valve Box Tyler 664-S. Lid embossed "WATER." Rubber valve box stabilizer required.
Service Pipe.	Copper tube, two inches and smaller, ASTM B88, Type K (1" minimum). Ductile iron, larger than two inches. Conform to Water main section above. Service upgrade for existing water main requires a stainless steel tap repair clamp. Ford model FS1-CC, minimum length 15" long.
Corporation Stop.	Mueller H15000, 1" minimum, AWWA C800. 1" Direct tap or 1 1/4" and larger shall use Ford FC202 stainless steel band, epoxy coated saddle.
Curb Stop.	Copper service, Mueller H-15154. Ductile iron service, Resilient wedge counter clockwise to open, AWWA C500. Joint end—mechanical, AWWA C111.
Curb box	Copper service, Mueller H-10302. Ductile iron service, conform to Hydrant Valve Box section above. Ductile iron service, 6" and larger, conform to Valve Vault section above.
Copper to Copper Fittings	Mueller Company Model #H-15400. An all flared coupling is required, no sweat joint or compression allowed.
Pressure Connections	Ford FTSS style tapping sleeve. American Flow Control Series 2500 tapping valve four inch minimum. All stainless steel trim.

Sanitary Sewer Material Specifications:

Sewer and Service Connection Pipe	Reinforced concrete pipe—circular reinforcement, minimum Class 3, ASTM C76, with epoxy lining. PVC solid wall (SDR-26H) pipe—ASTM D-3034 for six to fifteen inches in diameter.
Sewer and Service Connection Pipe Joints.	Reinforced concrete pipe—ASTM C443. PVC solid wall (SDR-26H) pipe—ASTM D-3212 for six to eighteen inches in diameter.
Sewer and Service Connection Pipe Fittings	PVC solid wall (SDR-26H) pipe—ASTM D3034 for six to fifteen inches in diameter.
Casing Pipes.	Steel pipe—ASTM A120, three-eighths inch minimum thickness.
Manholes	Size: For sewer eighteen inch diameter or less, manhole shall have a forty-eight inch inside diameter. For sewer twenty-one inch to thirty-six inch diameter, manhole shall have a sixty inch inside diameter. For sewer greater than thirty-six inch diameter, manhole shall have an offset riser pipe of forty-eight inch inside diameter. All structures shall be monolithically precast including bases and invert flow lines.
Castings.	East Jordan Iron Works Frame 1022 or Neenah R-1713, with self-sealing lid and recessed pick hole, embossed per Exhibit No. 301 of Buffalo Grove Numerical Code Title 16.

Storm Sewer System Material Specifications:

Structures.	All structures shall be precast with designed openings or mechanically cored in the field.
Castings.	Closed Lid, East Jordan Iron Works 1022 or Neenah R-1713, embossed per Exhibit No. 201., Open Lid, East Jordan Iron Works 1022 or Neenah R-1713, Standard B4.12 or any other barrier curb, Type 11— East Jordan Iron Works 7210 or Neenah 3281-A or Neenah 3170 on existing structures where required. Box height must be 6" minimum with 5' tapers to match curb height., Depressed barrier curb, Type M3 Grate, Yard inlet, Type 8— East Jordan Iron Works 6517 or Neenah R-4340-B
Sewer Pipe Joints.	Reinforced concrete pipe—ASTM C443 or C361. PVC solid wall (SDR-26H) pipe—ASTM D-3212 for six to eighteen inches in diameter.
Sump pump service connection pipe/sub surface drain pipe.	4" PVC solid wall sewer pipe SDR-35. Blind connections must be cored in storm sewer and pipe connection shall be made with a rubber boot and stainless steel band. Sump pump per Exhibit No. 202 of Buffalo Grove Numerical Code Title 16 and underdrain per Exhibit No. 203.

Material Specifications For All Utilities:

Bedding	CA-11, Class B or better. All stone shall be crushed; rounded aggregate will not be permitted. The stone shall be compacted to 90% modified proctor density as required by ASTM D1557 or AASHTO T-180. Recycled materials permitted from IDOT approved sources meeting the correct gradations.
Trench Backfill	CA-11, Class B or better. This item shall meet the requirements of Class B CA-11, per the IDOT Standard Specifications for Road and Bridge Construction. All stone shall be crushed; rounded aggregate will not be permitted. The stone shall be compacted to 95% modified proctor density as required by ASTM D1557 or AASHTO T-180. Jetting of trenches is not permitted. Recycled materials permitted from IDOT approved sources meeting the correct gradations.
Adjustments	No more than two precast concrete adjusting rings with six inch maximum height adjustment shall be allowed, minimum one 2" ring installed on new structures. All adjustment rings less than 2" shall be HDPE rings. Only one HDPE may be used within the precast tolerances. Only precast concrete or

	HDPE adjustment rings permitted. ½" x 3.5" mastic to be used between all frames, rings and structures. Mortar around rings, but none between. Bed of mortar can be used on cone or flat top of structure.
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Miscellaneous Material Specifications:

Detectable Warnings	East Jordan Iron Works or Neenah cast iron detectable warnings. Color shall be brick red.
Concrete	In accordance with IDOT Standard Specifications for Road and Bridge Construction
Asphalt	In accordance with IDOT Standard Specifications for Road and Bridge Construction and Section 16.50.070 of the Village of Buffalo Grove Municipal Code

* The Village Engineer shall have the authority to approve the use of alternative materials than those specifically required by Exhibit 109 in the manner provided for in Title 16 of the Village of Buffalo Grove Numerical Code. The Village Engineer may approve alternative materials that are not specifically required by this title when:

1. The materials or their components required by this title are no longer manufactured and available for purchase; and
2. The alternative materials are generally consistent with requirements of this title, including but not limited to those standards relating to production, composition, safety and aesthetics.

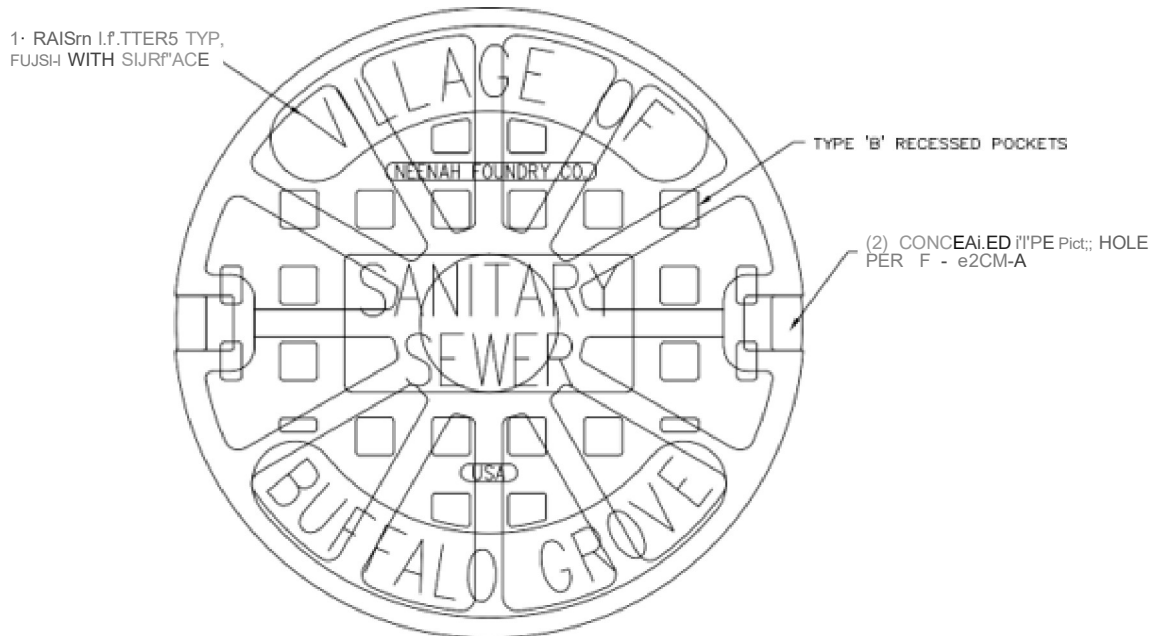
Testing Specifications:

(In addition to the requirements of IDOT's Standard Specifications for Road and Bridge Construction or the Standard Specifications for Water and Sewer Construction in Illinois)

Storm Sewer	Cleaning and televising, with reporting, as directed by the Village Engineer
Sanitary Sewer	Cleaning and televising, with reporting, as directed by the Village Engineer

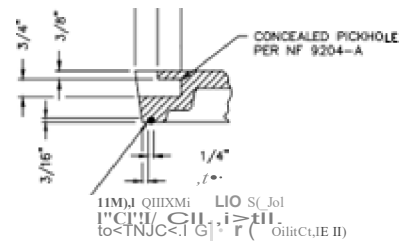
*When conflicting information exists between the plans specifications and this exhibit number 109 the information listed in exhibit number 109 shall govern. All castings on a project or development shall come from a single manufacturer.

EXHIBIT N, Q., 301



NEENAH FOUNDRY
R-1772 SOLID LID TYPE "B"

CONCEALED PIPE HOLE DETAIL



SANITARY SEWER MANHOLE LID, DETAIL

CONTRACT EXHIBIT B- SCHEDULE OF PRICES

VoBG-2024-17

EXHIBIT B - SCHEDULE OF PRICES

Name of Bidder:

National Power Rodding Corp.

Address of Bidder:

2500 W Arthington St.

City Chicago State IL Zip 60612

Telephone 312-666-7700

Email Address: office@nationalpowerrodding.com

The Bidder declares, represents, and warrants that it has read and agrees to abide by the terms, conditions and obligations set forth in the Invitation to Bid. In particular, the Bidder declares, represents and warrants that it has informed itself of all the conditions under which the Work is to be performed including, but not limited to, and where applicable, the conditions of the ground, and building codes. Bidder waives any right to additional compensation for failure to make itself aware of the afore-mentioned conditions.

Bidder further declares that if their Bid Proposal is accepted, that Bidder will enter into the Contract in the same form as set forth in the Bid and Contract Documents. However, Bidder may request changes to the Contract by submitting with this Schedule of Prices a list of requested changes to the Contract.

If this bid is accepted, and the undersigned fails to (i) contract as aforesaid, (ii) provide the Performance and Payment Bond required by the Contract, and (iii) provide all insurance required under the Contract within fifteen (15) calendar days after the date of the award of the Contract then the Village, at its option, may determine that the bidder has abandoned this Bid, and thereupon this Bid and the acceptance thereof shall be null and void, and such security accompanying this Bid shall be forfeited and shall be the property of the Village of Buffalo Grove not as penalty, but as liquidated damages.

BJD SECURITY

Accompanying this Bid is a bid bond

in the amount of ten percent of total bid _____ Dollars

(\$ 100,000).

Note: (11) Inscr't the words "Bank Draft", "Cashier's Check", "Certified Check" or "Bid Bond", as the case may be.

(b) Amount must be equal to at least ten percent (10%) of the Total Base Bid.

EXHIBIT B - SCHEDULE OF PRICES (cont.)

See Appendix A for approximate quantities.

Item	Item Description	Estimated Quantities	Unit Price	Extended Price
1.	Replace Frame and Cover - Non-Paved	4	\$ 2,500.00	\$ 10,000.00
2.	Replace Frame and Cover - Paved	2	\$ 4,000.00	\$ 8,000.00
3.	Seal and Adjust Manhole Frame - Non-Paved	1	\$ 7,000.00	\$ 7,000.00
4.	Ceramic Manhole Sealing	217 LF	\$ 175.00	\$ 37,975.00
5.	Replace Cover	12	\$ 500.00	\$ 6,000.00
6.	Repair Bench and Trough	1	\$ 2,500.00	\$ 2,500.00
7.	Curtain Grout Manhole	22	\$ 750.00	\$ 16,500.00
8.	Curtain Grout Bottom 18"	0		
9.	Corrosion Protective Lining for MH Structure	0		
10.	Vacuum Testing	3	\$ 2,000.00	\$ 6,000.00
11.	Pre-Construction Surface Video Recording	Lump Sum (1)	\$ 3,000.00	\$ 3,000.00
12.	Traffic Control and Protection	Lump Sum (1)	\$ 25,000.00	\$ 25,000.00
TOTAL BASE BID (Items 1 - 12)				\$ 121,975.00

EXTENSION

Do you agree that escalating prices shall be no more than the Consumer Price Index for All Urban Consumers (CPI-U) in the Chicago area on 12/31/24, whichever is less. If possible, please provide the following information?

Yes No

EXHBJT B - SCHEDULE OF PRICES (cont.)

SUBCONTRACTOR LISTING

Bidder to employ the following listed subcontractors -For the following enumerated classes of work and is not to alter or add to such list, without the written consent of the Village.

<u>SUBCONTRACTOR</u>	<u>CLASS OF WORK</u>
1. <u>N/A</u>	
2. _____	
3. _____	
4. _____	

ACKNOWLEDGEMENT OF ADDENDA

Acknowledgement of receipt of Addenda (s) 1 (list each addendum number)

Attach each signed addendum-i, if any to the bidpacket as part of your submittal.

CONTRACTOR SIGNATURE and CONTACT INFORMATION

June 4, 2024
Date

312-666-7700
Phone

National Power Rodding Corp.
Legal Entity

office@nationalpowerrodding.com
E-Mail


(Sign here)
William T. Kreidler, President
(Print Name)

CONTRACT EXHIBIT C – PERFORMANCE BOND
FORM OF PERFORMANCE BOND

Bond Number: _____

KNOW ALL MEN BY THESE PRESENTS, That _____ (the "Principal") and _____ (the "Surety"), are held and firmly bound unto the Village of Buffalo Grove, an Illinois home-rule unit of government (the "Village"), the full and just sum of _____ Dollars (\$ _____) in lawful money of the UNITED STATES OF AMERICA as herein provided.

THE CONDITION OF THIS OBLIGATION is such that the Principal and Surety agree to bind themselves, their successors, assigns, executors, heirs and administrators, jointly and severally, for the full and faithful performance of the Work as defined in that particular Manhole Rehabilitation 2024 contract between Principal and the Village dated ___day of _____, 20 __ , (hereinafter referred to as the "Contract"), a copy of which is attached and incorporated by reference as though fully set forth herein.

NOW THE CONDITIONS OF THIS OBLIGATION ARE SUCH that if the said Principal (i) shall in all respects keep and perform all the undertakings, covenants, terms, conditions and agreements of the Contract; (ii) shall pay all sums of money due or to become due, for any labor, materials, apparatus, fixtures or equipment furnished for the Work provided in said Contract; and (iii) shall remove and replace any defects in workmanship or materials which may be apparent or may develop within the ARTICLE XIX – WARRANTY PERIOD of the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or the Work thereunder shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work.

IN WITNESS WHEREOF, we have hereunto set our hands and sea ___day of _____, 20__.

SURETY

PRINCIPAL

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

ATTEST

ATTEST

By: _____

By: _____

NOTE: Date of Bond must not be prior to date of Contract.

If Contractor is Partnership, all partners should execute Bond.

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Departments most current list (Circular 570 as amended) and be authorized to transact business in the state where the Work is located

CONTRACT EXHIBIT D – PARTIAL LIEN WAIVER

PARDAL UEIN WAIVER

STATIL OF ILLINOIS

COUN'fYOF

TO WHOM IT MAY CONCERN:

WHEREAS undersigned (has been employed) by _____ to furnish _____

from the kDDWD.i15 _____

of: amici _____ is the owner.

THE foregoing of _____ (\$ _____)

Dollars, Dime - imd, 'aluable oosider. Iliom; the receipt \-baocofis l:iereby a dD(e:s) waive and mē.as:e arry and ill lien or claim of; oc right to, nm, 'Ullrls- the strlt1.!!!5 of the Stm! of Illinois; relating m meclJamics' lien5, Niih -iii!: Splr! OO on said abm. and die imprm.em!Dfs fuereoo, amd on the IDilfmal, mimes, app or Iliil.clrinely fumismd., andon die IDJIIHYS, funds ar otba-coosmeratians due oc00-become dw! fi-am th! Im'!!!X, on JICCUJIII afill labm- sei, qc:es, m.iferial, fudm:es, * or ImC!m!J!fy fumisbedl to this date by ibe undersigned for the .iloo. bed premises; INUUDINGEX.TJRAS..

DATE _____ COMP.ANYNAME _____

ADDRESS _____

SIGNATURE AND TITLE _____

IN: IHD1: Bu:r UENOJ"EJMIJED to OH.L."IG! OihIEI: S.IIOOHIL.U.A!IHilm"lfi, ID J!llf: COJ'U.AC'F

CONTR. 4. CT011: S AH" IDAVff

STATIB OP ILLINOIS

COUNTY OF

TO WHOM IT MAY CONCERN:

THE UNDERSIGNED, (NAME) _____ BEING DULY SWORN, DEPOSES AND SAYS THAT HE OR SHE IS (POSITION) _____ OP (COMP.ANY NAME) _____

CONTRACTOR. FURNISHING _____ WORK ON THE BUILDING

LOCATION _____

ON (DATE) BY _____

That I have total amount of the Contract Indument is \$ _____

& I am claiming either legal or equitable interest in the property as follows: _____

particulars of the same as follows: _____

specific portions of said work for which I am entering into the contract and that I am due or to be paid _____

and that I have included all bills and materials required to complete the work.

Table with 5 columns: H. IMIS A. ID JDDIHSIIS, WHAT FOR, EIPPHJCH IICLIJHOGRAS, WOIFF PAID, ffg PAYMENT, BUJANCE! DUI!

and there are mother contract for said work and that there is nothing due to be paid to me for the material, labor and other things included in the contract.

I, A. JE _____ SIGNATURE: _____

SUBSCRIBED AND SIGNED BEFORE ME THIS _____ DAY OF _____

EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHARGE _____

ORDERS, 13011 ORAL AND WRITTEN. IF ONLY CONTRACT _____ NOTARY PUBLIC

CONTRACT EXHIBIT E – FINAL LIEN WAIVER

FINAL WAIVER OF LIEN

STATE OF ILLINOIS

COUNTY OF _____

TO WHOM IT MAY CONCERN:

WHEREAS the undersigned has been employed by _____
 to furnish _____
 for the premises known as _____
 of which _____ is the owner.

THE undersigned, for and in consideration of _____
 (\$ _____) Dollars, and other good and valuable considerations, the receipt whereof is hereby acknowledged,
 do(es) hereby waive and release any and all lien or claim of, or right to, lien, under the statutes of the State of Illinois, relating
 to mechanics' liens, with respect to and on said above-described premises, and the improvements thereon, and on the material,
 fixtures, apparatus or machinery furnished, and on the moneys, funds or other considerations due or to become due from the
 owner, on account of all labor, services, material, fixtures, apparatus or machinery, heretofore furnished, or which may be
 furnished at any time hereafter, by the undersigned for the above-described premises, INCLUDING EXTRAS.*

DATE _____ COMPANY NAME _____
 ADDRESS _____
 SIGNATURE AND TITLE _____

***EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHANGE ORDERS, BOTH ORAL AND WRITTEN, TO THE CONTRACT**

CONTRACTOR'S AFFIDAVIT

STATE OF ILLINOIS

COUNTY OF _____

TO WHOM IT MAY CONCERN:

THE UNDERSIGNED, (NAME) _____ BEING DULY SWORN, DEPOSES
 AND SAYS THAT HE OR SHE IS (POSITION) _____ OF
 (COMPANY NAME) _____ WHO IS THE
 CONTRACTOR FURNISHING _____ WORK ON THE BUILDING
 LOCATED AT _____
 OWNED BY _____

That the total amount of the contract including extras* is \$ _____ on which he or she has received payment of
 \$ _____ prior to this payment. That all waivers are true, correct and genuine and delivered unconditionally and that
 there is no claim either legal or equitable to defeat the validity of said waivers. That the following are the names and addresses
 of all parties who have furnished or delivered material or labor, or both, for said work and all parties having contracts or sub
 contracts for specific portions of said work or for material entering into the construction thereof and the amount due or to
 become due to each, and that the items mentioned include all labor and material required to complete said work according to
 plans and specifications:

NAMES AND ADDRESSES	WHAT FOR	CONTRACT PRICE INCLDG	AMOUNT PAID	THIS PAYMENT	BALANCE DUE
TOTAL LABOR AND MATERIAL INCLUDING EXTRAS*					

That there are no other contracts for said work outstanding, and that there is nothing due or to become due to any person for
 material, labor or other work of any kind done or to be done upon or in connection with said work other than above stated.

DATE _____ SIGNATURE: _____

SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ DAY OF _____

*EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHANGE ORDERS, BOTH ORAL AND WRITTEN, TO THE CONTRACT.

 NOTARY PUBLIC