The Village of Tinley Park will receive sealed proposals for the following improvements at the Clerk's office, 16250 South Oak Park Avenue, Tinley Park, Illinois 60477, until 10:00 AM on Wednesday July 8, 2015.

**BREMENTOWNE SUBDIVISION SANITARY SEWER CLEANING AND TELEVISING**

Proposals will be publicly read aloud after 10:01 AM on Wednesday July 8, 2015. No bid shall be withdrawn after the opening of the proposals without the consent of the President and Board of Trustees for a period of ninety days after the scheduled time of closing bids.

All proposals shall be sealed in an envelope, addressed to the Village of Tinley Park, attention Clerk's office. The name and address of the bidder and the name of the project shall also appear on the outside of the envelope. Proposals must be submitted on the forms provided by the Engineer.

The Bid Documents, including specifications, are on file at the office of the Engineer, Robinson Engineering, Ltd., 10045 W. Lincoln Highway, Frankfort, Illinois 60423, (phone 815-806-0300), and may be obtained from the Engineer's office upon payment of Twenty Five Dollars ($25.00) for each paper copy and/or Ten Dollars ($10.00) per CD format. The bid documents will be issued until 4:30 PM on the last business day preceding the bid. No refund will be made for documents received from the Engineer.

A certified check/bank draft drawn on a solvent bank or a bid bond, payable without condition to the Village of Tinley Park in an amount not less than ten percent (10%) of the bid shall be submitted with each proposal, as a guarantee that, if the proposal is accepted, a contract will be entered into and the performance of the contract is properly secured.

A performance bond in a sum equal to one hundred percent (100%) of the amount of the bid, with sureties to be approved by the President and Board of Trustees for the faithful performance of the contract must be furnished by the successful bidder. All bids or proposals shall contain an offer to furnish bond upon acceptance of such bid or proposal.

The right is reserved to reject any or all proposals, to waive technicalities, to postpone the bid opening, or to advertise for new proposals, if in the judgment of the President and Board of Trustees their best interests will be promoted thereby.

The contractor will be required to pay not less than the prevailing wage rates on this project as established by the United States Department of Labor. He shall also comply with all applicable Federal, State and local regulations.

The Village of Tinley Park Local Vendor Purchasing Policy provides local vendors with preferential treatment when competing for contracts with the Village. A local vendor is defined as a business that has an actual business location within the Village of Tinley Park and is licensed by the Village. As such, when considering contracts, the Village of Tinley Park reserves the right to forego the lowest and responsible bid in favor of a local vendor under the following circumstances:

<table>
<thead>
<tr>
<th>Contract Value</th>
<th>Range (up to a maximum of)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0-$250,000</td>
<td>5%</td>
</tr>
<tr>
<td>$250,000-$500,000</td>
<td>4%</td>
</tr>
<tr>
<td>$500,000-$750,000</td>
<td>3%</td>
</tr>
<tr>
<td>$750,000-$1,000,000</td>
<td>2%</td>
</tr>
<tr>
<td>$1,000,000-$2,000,000</td>
<td>1%</td>
</tr>
</tbody>
</table>
Responsible bidders are determined pursuant to the criteria set forth pursuant to the criteria set forth in the Village's Responsible Bidder Ordinance No. 2009-O-002.

Bidder qualifications and experience will also be included in the basis for determining the lowest responsible bidder. Prequalifications will be required to be submitted to the engineer by all potential bidders. If in the opinion of the engineer and the President and Board of Trustees, an applicant would not be able to serve the best interest of the Village, a proposal will not be issued to the applicant.

President and Board of Trustees
Village of Tinley Park
Cook and Will County, Illinois
PROPOSAL
and
CONTRACT
PROPOSAL

TO THE OWNER, Village of Tinley Park

1. Proposal of Visu-Sewer of Illinois, LLC
   (name and address of bidder)
   9014 S. Thomas Ave Bridgeview, IL 60455
   twoods@visu-sewer.com
   (email address of bidder)

for the improvement described in the NOTICE TO CONTRACTORS.

2. In submitting this proposal, the undersigned declares that the only persons or parties interested in the proposal as principals are those named herein; and that proposal is made without collusion with any other person, firm or corporation.

3. The undersigned further declares that he has carefully examined the proposal, plans, specifications, form of contract and contract bond, and special provisions (if any), and that he has inspected in detail the site of the proposed work, and that he has familiarized himself with all of the local conditions affecting the contract and the detailed requirements of construction, and understands that in making this proposal he waives all right to plead any misunderstanding regarding the same.

4. The undersigned further understands and agrees that if this proposal is accepted, he is to furnish and provide all necessary machinery, tools, apparatus and other means of construction, and to do all of the work, and to furnish all of the materials specified in the contract, except such materials as are to be furnished by the Owner, in the manner and at the time therein prescribed, and in accordance with the requirements therein set forth, and is fully responsible for the construction means, methods, techniques, sequences and safety procedures and programs incident thereto.

5. The undersigned declares that he understands that the quantities mentioned are approximate only and that they are subject to increase or decrease; that he will take in full payment therefore the amount and the summation of the actual quantities, as finally determined, multiplied by the unit prices shown in the schedule of prices contained herein.

6. The undersigned further agrees that the unit prices submitted herewith are for the purpose of obtaining a gross sum, and for use in computing the value of extras and deductions; if there is a discrepancy between the gross sum bid and that resulting from the summation of the quantities multiplied by their respective unit prices, the latter shall apply.

7. The undersigned further agrees that if the Owner decides to extend or shorten the improvement, or otherwise alter it by extras or deductions, including the elimination of any one or more of the items, as provided in the specifications, he will perform the work as altered, increased or decreased at the contract unit prices.
8. The undersigned further agrees that the Owner may at any time during the progress of work covered by this contract order other work or materials incidental thereto and that all such work and materials as do not appear in the proposal or contract as a specific item accompanied by a unit price, and which are not included under the bid price for other items in this contract, shall be performed as extra work, and that he will accept as full compensation therefore the actual cost plus fifteen per cent (15%), the actual cost to be determined as provided in the specifications.

9. The undersigned further agrees to execute a contract for this work and present the same to the Owner within fifteen (15) days after the date of notice of the award of the contract to him.

10. The undersigned further agrees that he and his surety will execute and present within fifteen (15) days after the date of notice of the award of contract, a contract bond satisfactory to and in the form prescribed by the Owner, in the penal sum of the full amount of the contract, guaranteeing the faithful performance of the work in accordance with the terms of the contract.

11. The undersigned further agrees to begin work not later than ten (10) days after the execution and approval of the contract and contract bond, unless otherwise provided, and to prosecute the work in such manner and with sufficient materials, equipment, labor and safety precautions as will insure its completion within the time limit specified herein, it being understood and agreed that the completion within the time limit is an essential part of the contract. The undersigned agrees to complete the work within ____________ calendar days after the date of the execution of the contract by both parties, or by 12/13/13 if this is a completion day contract, unless additional time shall be granted by the Engineer in accordance with the provisions of the specifications. In case of failure to complete the work within the time names herein or within such extra time as may have been allowed by extensions, the undersigned agrees that the Owner shall withhold from such sums as may be due him under the terms of this contract, the costs set forth in the specifications, which cost shall be considered and treated not as a penalty, but as damages due the Owner from the undersigned by reason of inconvenience to the public, added cost of engineering and construction observation, maintenance of detours, and other items which have caused an expenditure of public funds resulting from the failure of the undersigned to complete the work within the time specified in the contract.

12. Accompanying this proposal is a bank draft, bank cashier's check, certified check or bid bond, complying with the requirements of the specifications, made payable to: Village of Tinley Park

The amount of the bond, check or draft is $1000.
Merchants Bonding Company

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we

Visu-Sewer of Illinois, LLC, 9014 S. Thomas Ave., Bridgeview, IL 60455

as Principal, hereinafter called the Principal, and Merchants Bonding Company

a corporation duly organized under the laws of the State of IA

as Surety, hereinafter called the Surety, are held and firmly bound unto Village of Tinley Park

as Obligee, hereinafter called the Obligee, in the sum of

Ten Percent of Amount of Bid .................................................. Dollars (10%),

for the payment of which sum well and truly be made, the said Principal and the said Surety, bind

ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by

these presents.

WHEREAS, the Principal has submitted a bid for Brementowne Subdivision Sanitary Sewer Cleaning

& Televising

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into

a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be

specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such

Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the

failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee

the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for

which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this

obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this 8th day of July 2015

Valerie A. Pace (Witness)

Keith M. Alexander, President (Title)

Merchants Bonding Company

Robert M. Tortelli, Attorney-in-Fact
Know All Persons By These Presents, that MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., both being corporations duly organized under the laws of the State of Iowa (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint, individually.

Debbra A Hinkes; Pamela M Hineman; Robert M Tortelli

of New Berlin and State of Wisconsin their true and lawful Attorney-in-Fact, with full power and authority hereby conferred in their name, place and stead, to sign, execute, acknowledge and deliver in their behalf as surety any and all bonds, undertakings, recognizances or other written obligations in the nature thereof, subject to the limitation that any such instrument shall not exceed the amount of:

TWENTY-FIVE MILLION ($25,000,000.00) DOLLARS

and to bind the Companies thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of the Companies, and all the acts of said Attorney-in-Fact, pursuant to the authority herein given, are hereby ratified and confirmed.

This Power-of-Attorney is made and executed pursuant to and by authority of the following By-Laws adopted by the Board of Directors of the Merchants Bonding Company (Mutual) on April 23, 2011 and adopted by the Board of Directors of Merchants National Bonding, Inc., on October 24, 2011:

"The President, Secretary, Treasurer, or any Assistant Treasurer or any Assistant Secretary or any Vice President shall have power and authority to appoint Attorneys-in-Fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereeto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof. The signature of any authorized officer and the seal of the Company may be affixed by facsimile or electronic transmission to any Power of Attorney or Certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company, and such signature and seal when so used shall have the same force and effect as though manually fixed."

In Witness Whereof, the Companies have caused this instrument to be signed and sealed this 13th day of August, 2014.

STATE OF IOWA
COUNTY OF POLK ss.

WENDY WOODY
Commission Number 784654
My Commission Expires June 20, 2017
Notary Public, Polk County, Iowa

STATE OF IOWA
COUNTY OF POLK ss.

I, William Warner, Jr., Secretary of the MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., do hereby certify that the above and foregoing is a true and correct copy of the POWER-OF-ATTORNEY executed by said Companies, which is still in full force and effect and has not been amended or revoked.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the Companies on this 30th day of May, 2015.

POA 0014 (7/14)
If the proposal and the undersigned shall fail to execute a contract and contract bond as required herein, it is hereby agreed that the amount of the check or draft substituted in lieu thereof, shall become the property of the Owner, and shall be considered as payment of damages due to delay and other causes suffered by the Owner because of the failure to execute said contract and contract bond; otherwise said check or draft substituted in lieu thereof shall be returned to the undersigned.

ATTACH BANK DRAFT, BID BOND, BANK CASHIER'S CHECK OR CERTIFIED CHECK HERE

In the event that one check, bond, or draft is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guarantees of the individual sections covered.

13. The undersigned submits herewith his schedule of prices covering the work to be performed under this contract; he understands that he must show in the schedule the unit prices for which he proposes to perform each item of work; that the extensions must be made by him; and that if not so done, his proposal may be rejected as irregular.

14. The undersigned firm certifies that it is not barred from bidding on this contract as a result of a conviction for the violation of State laws prohibiting bid-rigging or bid-rotating.
CONTRACTOR'S STATEMENT

1. Do you have sufficient knowledge of Drawings and Specifications of the work covered by this Contract to warrant submitting a Proposal for this work?
   Yes

2. (a) Have you done work of this nature? _______ Yes
   (b) To what extent? (Dollar value) $3,000 - $500,000
   (c) For whom? DOZENS OF MUNICIPALITIES AND SANITARY DISTRICTS

3. Do you have sufficient equipment to perform this work? _______ Yes
   If so, list major items:
   MULTIPLE TV TRUCKS, JET TRUCKS, COMBINATION JET/VAC TRUCKS

4. Give Bank reference: Scott Kraemer, BMO Harris Bank
   Address: N14 W23999 Stoneridge Dr.
   Waukesha, WI 53186

5. List names and addresses of major suppliers:
   Airics Industries, 550 Elizabeth St, Waukesha, WI 53186
   National Liner, LLC, 375 Williamstowne, Succ 102 Delafield, WI 53018
   W.W. Grainger, Inc, N21 W23020 Watertown Rd, Waukesha, WI 53188

6. Have you ever had, or do you now have, funds withheld for non-completion of work to the satisfaction of any municipality? _______ No
   (a) If so where?
   (b) For what reason?

7. Have you ever been disqualified by a Governmental Agency for failure to satisfactorily complete a public improvement? _______ No
CONTRACTOR'S STATEMENT (cont.)

8. Have you ever been cited for failing to withhold or report payroll deductions for Federal Income Tax? __________ No _________________

9. Have you ever been cited by the Federal Government for any violation of the Copeland Act (Anti-kick-back Law)? __________ No _________________

10. If awarded contract, work will begin in TBD calendar days.
CERTIFICATE OF ELIGIBILITY TO BID

I, Visu-Sewer of Illinois, LLC (contractor), pursuant to section 33E-11 of the Illinois Criminal Code of 1961 as amended, hereby certifies that neither (he, she, it) nor any of (his, her, its) partners, officers, or owners of (his, her, its) business has been convicted in the past five (5) years of the offense of bid-rigging under section 33E-3 of the Illinois Criminal Code of 1961 as amended and that neither (he, she, it) nor any of (his, her, its) business has ever been convicted of the offense of bid-rotating under section 33E-4 of the Illinois Criminal Code of 1961 as amended.

Date: 7/6/15

By: [Signature]  
(Name of Contractor)

Division Manager  
(Title)
VILLAGE OF TINLEY PARK

LOCATION OF IMPROVEMENT WITH DESCRIPTION

BREMENTOWNE SUBDIVISION SANITARY SEWER CLEANING AND TELEVISING

The undersigned submits herewith his schedule of prices covering the work to be performed under this contract; he understands that he must show in the schedule the unit prices for which he proposes to perform each item of work; that the extensions must be made by him, and if not so done, his proposal may be rejected as irregular.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Items</th>
<th>Unit</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SANITARY SEWER TO BE CLEANED, 8&quot;</td>
<td>FOOT</td>
<td>36750</td>
<td>0.75</td>
<td>27,562.50</td>
</tr>
<tr>
<td>2</td>
<td>SANITARY SEWER TO BE CLEANED, 10&quot;</td>
<td>FOOT</td>
<td>3350</td>
<td>0.75</td>
<td>2,512.50</td>
</tr>
<tr>
<td>3</td>
<td>SANITARY SEWER TO BE CLEANED, 12&quot;</td>
<td>FOOT</td>
<td>1100</td>
<td>0.75</td>
<td>825.00</td>
</tr>
<tr>
<td>4</td>
<td>SANITARY SEWER TO BE CLEANED, 15&quot;</td>
<td>FOOT</td>
<td>250</td>
<td>2.00</td>
<td>500.00</td>
</tr>
<tr>
<td>5</td>
<td>SANITARY SEWER TO BE CLEANED, 18&quot;</td>
<td>FOOT</td>
<td>350</td>
<td>3.00</td>
<td>1,050.00</td>
</tr>
<tr>
<td>6</td>
<td>INTERNAL TELEVISION INSPECTION OF SEWER</td>
<td>FOOT</td>
<td>41800</td>
<td>1.11</td>
<td>46,398.00</td>
</tr>
<tr>
<td>7</td>
<td>CUT PROTRUDING TAPS</td>
<td>EACH</td>
<td>20</td>
<td>10.00</td>
<td>200.00</td>
</tr>
</tbody>
</table>

Awarded Schedule of Prices
(For complete information covering these items, see plans and specifications)

Bidder's Proposal for making Entire Improvements: 79,048.00
SIGNATURES

(If an individual)
Signature of Bidder ..............................................
Business Address ..............................................

__________________________

(If a co-partnership)
Firm Name ..........................................................  (SEAL)
Signed by .......................................................... (SEAL)
Business Address ..............................................

__________________________

Insert
Names and
Addresses of
All Members
of the Firm

__________________________

(If a corporation)
Corporate Name  Visu-Sewer of Illinois, LLC
Signed By

DIVISION MANAGER (POA ATTORNEY)
Business Address  9014 S. Thomas Ave, Bridgeview, IL 60455

(Corporate Seal)

__________________________

Insert
Names of
Officers

President  Keith M. Alexander
Secretary  James S. Senko
Treasurer  Keith M. Alexander

__________________________

Attest:
Secretary

Phone Number  708-237-0340
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that VISU-SEWER OF ILLINOIS, LLC, (hereinafter referred to as Corporation), by KEITH M. ALEXANDER, its President, of W230 N4855 Betker Drive, Pewaukee, County of Waukesha, State of Wisconsin, have made, constituted and appointed and by these presents do make, constitute and appoint THOMAS W. WOODS, an employee and agent of VISU-SEWER OF ILLINOIS, LLC., the Corporation's true and lawful attorney, for it and in its name, place and stead:

1. To exercise or perform any act, power, duty, right or obligation whatsoever that the Corporation now has, or may hereafter acquire the legal right, power, or capacity to exercise or perform, in connection with, arising from, or relating to any person, item, transaction, thing, business property, real or personal, tangible or intangible, or matter whatsoever;

2. To request, ask, demand, sue for, recover, collect, receive, to hold and possess all such sums of money, debts, dues, commercial papers, checks, drafts, accounts, deposits, legacies, bequests, devises, notes, interests, stock certificates, bonds, dividends, certificates of deposit, annuities, pension and retirement benefits, insurance benefits and proceeds, any and all documents of title, choses in action, personal and real property, intangible and tangible property and property rights, and demands whatsoever, liquidated or unliquidated as now are, or shall hereafter become, owned by, or due, owing, payable or belonging to, the Corporation or in which the Corporation has or may hereafter acquire interest, to have, use, and take all lawful means and equitable and legal remedies, procedures, and writs in its name for the collection and recovery thereof, and to adjust, sell, compromise, and agree for the same, and to make, execute, and deliver to it, on its behalf, and in its name, all endorsements, acquittances, releases, receipts, or other sufficient discharges for the same;

3. To lease, purchase, exchange, and acquire, and to agree, bargain, and contract for the lease, purchase, exchange, and acquisition of, and to accept, take, receive, and possess any real or personal property whatsoever, tangible or intangible, or interest thereon, on such terms and conditions, and under such covenants, as said attorney in fact shall deem proper;

4. To maintain, repair, improve, manage, insure, rent, lease, sell, convey, subject to liens, mortgage, subject to deeds of trust and hypothecate, and in any way or manner deal with all or any part of any real or personal property whatsoever, tangible or intangible, or any interest therein, that it now owns or may hereafter acquire, for it, in its behalf, and in its name and under such terms and conditions, and under such covenants, as said attorney in fact shall deem proper;

5. To conduct, engage in, and transact any and all lawful business of whatever nature or kind for the Corporation, on its behalf, and in its name;

6. To make, receive, sign, endorse, execute, acknowledge, deliver, and possess such applications, contracts, agreements, options, covenants, conveyances, deeds, trust deeds, security
agreements, bills of sale, leases, mortgages, assignments, insurance policies, bills of lading, warehouse receipts, documents of title, bills, bonds, debentures, checks, drafts, bills of commercial paper, receipts, withdrawal receipts and deposit instruments relating to accounts or deposits in, or certificates of deposit of, banks, savings and loan or other institutions or associations, proofs of loss, evidences of debts, releases, and satisfaction of mortgages, liens, judgments, security agreements and other debts and obligations and such other instruments in writing of whatever kind and nature as may be necessary or proper in the exercise of the rights and powers herein granted.

7. This instrument is to be construed and interpreted as a general power of attorney. The enumeration of specific items, rights, acts, or powers herein is not intended to, nor does it, limit or restrict, and is not to be construed or interpreted as limiting or restricting, the general powers herein granted to said attorney in fact.

8. The rights, powers, and authority of said attorney in fact herein granted shall commence and be in full force and effect on January 31, 2014 and such rights, powers, and authority shall remain in full force and effect thereafter until further notice.

Dated this 31st day of January, 2014.

Thomas W. Woods

VISU-SEWER OF ILLINOIS, LLC

Keith M. Alexander, President

Subscribed & sworn to before me this 31st day of January, 2014.

Lisa E. Schulze, Notary Public
Waukesha County, WI
My commission expires: 02/15/15
BIDDER'S CERTIFICATE

The undersigned, having executed the attached bid for the construction of:

BREMENTOWNE SUBDIVISION SANITARY SEWER CLEANING AND TELEVISIGN

Name of Project

for the Village/City/Town of Tinley Park, County of Cook.

State of Illinois hereby certifies that he has read all of the Contract Documents, including the Notice to Bidders, Instructions to Bidders, Proposal Forms, General conditions of the contract, Detail Specifications, Forms of contract, Form of Performance Bond and Form of Maintenance Bond, and that he has examined the plans and that his proposal for the work is based on the conditions and requirements therein;

and should the contract be awarded to him, he agrees to execute the work in strict accordance therewith, including compliance with the Insurance Requirements of the General Conditions.

Name of Bidder

[Signature]

By: VISU-SEWER OF ILLINOIS, LLC

Company Name VISU - SEWER OF ILLINOIS

Date: July 6, 2015
CONTRACT

1. THIS AGREEMENT, made and concluded this __________ day of August, 20__, between Village of Tinley Park, (city/village/town of) acting by and through [President-Board of Trustees] known as [President-Board of Trustees/Mayor-City Council] the party of the first part, and [Vish Sewer of Illinois, LLC], his/their executors, administrators, successors or assigns, known as the party of the second part.

2. WITNESSETH: That for and in consideration of the payment and agreements mentioned in the Proposal hereto attached, to be made and performed by the party of the first part, and according to the terms expressed in the Bond referring to these presents, the party of the second part agrees with said party of the first part at his/their own proper cost and expense to do all the work, furnish all materials and all labor necessary to complete the work in accordance with the plans and specifications hereinafter described, and in full compliance with all of the plans of this agreement and the requirements of the Engineer under it.

3. And it is also understood and agreed that the Notice to Contractors, proposals, contract bond, General Requirements and Covenants (Division I), Technical Specifications (Division II), Special Provisions (Division III) and Standard drawings (Division IV), in addition to any specific plans and specifications upon which the contractor’s proposal is based, are all incorporated by reference into this contract and are therefore made a part hereof.

4. IN WITNESS WHEREOF, the said parties have executed these presents on the date above mentioned.

FOR THE VILLAGE OF TINLEY PARK
(Party of the First Part)

By: ____________________________
Title: ____________________________
Attest: ____________________________
Title: ____________________________

FOR THE CONTRACTOR
(Party of the Second Part)

[Signature]
By: ____________________________
Title: ____________________________
Attest: ____________________________
Title: ____________________________

(Municipality and Corporation)

C-1
CONTRACT BOND

KNOWN ALL MEN BY THESE PRESENTS, that we, ____________________________
Visu-Sewer of Illinois, LLC ____________________________, a corporation organized under the laws of the State of WI ____________________________, and licensed to do business in the State of Illinois, as principal, and Merchants Bonding Company ____________________________, a corporation organized and existing under the laws of the State of IA ____________________________, with authority to do business in the State of Illinois, as Surety, are held and firmly bound unto the Village of Tinley Park, State of Illinois, in the penal sum of Seventy Nine Thousand Forty Eight dollars & 00/100-- Dollars ($79,048.00 -- ), lawful money of the United States, well and truly to be paid unto said Village of Tinley Park, for the payment of which we bind ourselves, our successors and assigns, jointly, severally, and firmly by these presents.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that whereas, the said Principal has entered into a written contract with an Owner which is the Village of Tinley Park and acts through its President and Board of Trustees or the construction of the work designated Brementowne Subdivision Sanitary Sewer Cleaning and Televising, which contract hereby is referred to and made a part hereof, as if written herein in length, and whereby the said Principal has promised and agreed to perform said work in accordance with the terms of said Contract, and has promised to pay all sums of money due for any labor, materials, apparatus, fixtures or machinery furnished to such Principal for the purpose of performing such work and has further agreed to pay all direct and indirect damages to any person, firm, company, or corporation suffered or sustained on account of the performance of such work, for any reason whatsoever, during the time thereof and until such work is completed and accepted; and has further agreed that this bond shall inure to the benefit of any person, firm, company or corporation, to whom any money may be due from the Principal, subcontractor or otherwise, for any such labor, materials, apparatus, fixtures or machinery so furnished, and that suit may be maintained on such bond by any such person, firm, company or corporation, for the recovery of any such money.

NOW, THEREFORE, if the said Principal shall well and truly perform said work in accordance with the terms of said contract, and shall pay all sums of money due or to become due for any labor, materials, apparatus, fixtures or machinery furnished to him for the purpose of constructing such work, and shall commence and complete the work within the time prescribed in said contract, and shall pay and discharge all damages, direct and indirect, that may be suffered or sustained on account of

CB-1

(Municipality and Corporation)
such work, for any reason whatsoever, during the time of the performance thereof and until the said work shall have been accepted, and shall hold the aforesaid Owner and its or his agents harmless on account of any such damages, and shall in all respects fully and faithfully comply with all the provisions, conditions and requirements of said contract, then this obligation to be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, we have duly executed the foregoing obligation this 31st day of July ________________ A.D. 2015.

Contractor's corporate name: Visu-Sewer of Illinois, LLC

By: _____________________________
    President
    Division Manager

Attest: ___________________________
    Secretary

Surety's corporate name: Merchants Bonding Company

By: _____________________________
    Attorneys-in-fact
    Debbra A. Hinkes, Attorney-in-Fact

By: ______________________________
    Attorney-in-fact

APPROVED THIS _______ DAY OF August __________ A.D. 2015.

VILLAGE OF TINLEY PARK, IL

By: _____________________________
    Title: David G. Seaman, Village President

ATTEST FOR VILLAGE OF TINLEY PARK, IL

By: _____________________________
    Title: Patrick E. Rea, Village Clerk

CB-2

(Municipality and Corporation)
STATE OF WISCONSIN )
COUNTY OF WAUKESHA ) SS

I, Lisa E. Schulze, a Notary Public in and for said County in the State aforesaid, do hereby certify that Thomas W. Woods and James S. Serketich, to me personally known to be president and secretary, respectively, of Visu-Sewer of Illinois, LLC, a corporation, and also known to me to be the persons whose names are subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that as such president and secretary respectively they signed, sealed and delivered the said instrument as the free and voluntary act of said Corporation, for the uses and purposes therein set forth, and that they were duly authorized to execute the same by the Board of Directors of said Corporation.

GIVEN UNDER MY HAND AND NOTARIAL SEAL THIS 31ST DAY OF JULY A.D. 2015.

Seal

__________________________________________
Notary Public
My Commission Expires 2/15/2019

STATE OF WI ) SS
COUNTY OF Waukesha )

I, Shelley Paquin, a Notary Public in and for said County in the State aforesaid, do hereby certify that Debbra A. Hinkes who is personally known to me to be the same person who signed the above and foregoing instrument as the Attorney in Fact for Merchants Bonding Company appeared before me this day in person and acknowledged that he signed the name of Debbra A. Hinkes thereto, as his Principal, and his own name as Attorney in Fact, as the free and voluntary act of his said Principal for the uses and purposes therein set forth, and that he executed the said instrument under authority given him by said Principal.

GIVEN UNDER MY HAND AND NOTARIAL SEAL THIS 31ST DAY OF JULY A.D. 2015.

Seal

__________________________________________
Notary Public
My commission expires: 9-14-18

(Signature)

CB-3

(Municipality and Corporation)
POWER OF ATTORNEY

Know All Persons By These Presents, that MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., both being corporations duly organized under the laws of the State of Iowa (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint, individually:

Debbra A Hinkes; Pamela M Hineman; Robert M Tortelli

of New Berlin and State of Wisconsin their true and lawful Attorney-in-Fact, with full power and authority hereby conferred in their name, place and stead, to sign, execute, acknowledge and deliver in their behalf as surely any and all bonds, undertakings, recognizances or other written obligations in the nature thereof, subject to the limitation that any such instrument shall not exceed the amount of

TWENTY-FIVE MILLION ($25,000,000.00) DOLLARS

and to bind the Companies thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of the Companies, and all the acts of said Attorney-in-Fact, pursuant to the authority herein given, are hereby ratified and confirmed.

This Power-of-Attorney is made and executed pursuant to and by authority of the following By-Laws adopted by the Board of Directors of the Merchants Bonding Company (Mutual) on April 23, 2011 and adopted by the Board of Directors of Merchants National Bonding, Inc., on October 24, 2011.

"The President, Secretary, Treasurer, or any Assistant Treasurer or any Assistant Secretary or any Vice President shall have power and authority to appoint Attorneys-in-Fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof.

The signature of any authorized officer and the seal of the Company may be affixed by facsimile or electronic transmission to any Power of Attorney or Certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company, and such signature and seal when so used shall have the same force and effect as though manually fixed."

In Witness Whereof, the Companies have caused this instrument to be signed and sealed this 13th day of August, 2014.

STATE OF IOWA
COUNTY OF POLK ss.

On this 13th day of August, 2014, before me appeared Larry Taylor, to me personally known, who being by me duly sworn did say that he is President of the MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC.; and that the seals affixed to the foregoing instrument is the Corporate Seals of the Companies, and that the said instrument was signed and sealed in behalf of the Companies by authority of their respective Boards of Directors.

In Testimony Whereof, I have hereunto set my hand and affixed my Official Seal at the City of Des Moines, Iowa, the day and year first above written.

STATE OF IOWA
COUNTY OF POLK ss.

I, William Warner, Jr., Secretary of the MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., do hereby certify that the above and foregoing is a true and correct copy of the POWER-OF-ATTORNEY executed by said Companies, which is still in full force and effect and has not been amended or revoked.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the Companies on this 13th day of August, 2015.

POA 0014 (7/14)
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that VISU-SEWER OF ILLINOIS, LLC, (hereinafter referred to as Corporation), by KEITH M. ALEXANDER, its President, of W230 N4855 Betker Drive, Pewaukee, County of Waukesha, State of Wisconsin, have made, constituted and appointed and by these presents do make, constitute and appoint THOMAS W. WOODS, an employee and agent of VISU-SEWER OF ILLINOIS, LLC., the Corporation’s true and lawful attorney, for it and in its name, place and stead:

1. To exercise or perform any act, power, duty, right or obligation whatsoever that the Corporation now has, or may hereafter acquire the legal right, power, or capacity to exercise or perform, in connection with, arising from, or relating to any person, item, transaction, thing, business property, real or personal, tangible or intangible, or matter whatsoever;

2. To request, ask, demand, sue for, recover, collect, receive, to hold and possess all such sums of money, debts, dues, commercial papers, checks, drafts, accounts, deposits, legacies, bequests, devises, notes, interests, stock certificates, bonds, dividends, certificates of deposit, annuities, pension and retirement benefits, insurance benefits and proceeds, any and all documents of title, choses in action, personal and real property, intangible and tangible property and property rights, and demands whatsoever, liquidated or unliquidated as now are, or shall hereafter become, owned by, or due, owing, payable or belonging to, the Corporation or in which the Corporation has or may hereafter acquire interest, to have, use, and take all lawful means and equitable and legal remedies, procedures, and writs in its name for the collection and recovery thereof, and to adjust, sell, compromise, and agree for the same, and to make, execute, and deliver to it, on its behalf, and in its name, all endorsements, acquittances, releases, receipts, or other sufficient discharges for the same;

3. To lease, purchase, exchange, and acquire, and to agree, bargain, and contract for the lease, purchase, exchange, and acquisition of, and to accept, take, receive, and possess any real or personal property whatsoever, tangible or intangible, or interest thereon, on such terms and conditions, and under such covenants, as said attorney in fact shall deem proper;

4. To maintain, repair, improve, manage, insure, rent, lease, sell, convey, subject to liens, mortgage, subject to deeds of trust and hypothecate, and in any way or manner deal with all or any part of any real or personal property whatsoever, tangible or intangible, or any interest therein, that it now owns or may hereafter acquire, for it, in its behalf, and in its name and under such terms and conditions, and under such covenants, as said attorney in fact shall deem proper;

5. To conduct, engage in, and transact any and all lawful business of whatever nature or kind for the Corporation, on its behalf, and in its name;

6. To make, receive, sign, endorse, execute, acknowledge, deliver, and possess such applications, contracts, agreements, options, covenants, conveyances, deeds, trust deeds, security
agreements, bills of sale, leases, mortgages, assignments, insurance policies, bills of lading, warehouse receipts, documents of title, bills, bonds, debentures, checks, drafts, bills of commercial paper, receipts, withdrawal receipts and deposit instruments relating to accounts or deposits in, or certificates of deposit of, banks, savings and loan or other institutions or associations, proofs of loss, evidences of debts, releases, and satisfaction of mortgages, liens, judgments, security agreements and other debts and obligations and such other instruments in writing of whatever kind and nature as may be necessary or proper in the exercise of the rights and powers herein granted.

7. This instrument is to be construed and interpreted as a general power of attorney. The enumeration of specific items, rights, acts, or powers herein is not intended to, nor does it, limit or restrict, and is not to be construed or interpreted as limiting or restricting, the general powers herein granted to said attorney in fact.

8. The rights, powers, and authority of said attorney in fact herein granted shall commence and be in full force and effect on January 31, 2014 and such rights, powers, and authority shall remain in full force and effect thereafter until further notice.

Dated this 31st day of January, 2014.

Thomas W. Woods

VISU-SEWER OF ILLINOIS, LLC

Keith M. Alexander, President

Subscribed & sworn to before me this 31st day of January, 2014.

Lisa E. Schulze, Notary Public
Waukesha County, WI
My commission expires: 02/15/15
DIVISION I

GENERAL REQUIREMENTS AND COVENANTS
## SECTION 1. DEFINITION OF TERMS

<table>
<thead>
<tr>
<th>Section</th>
<th>Term</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>DESCRIPTION</td>
<td>1</td>
</tr>
<tr>
<td>1-2</td>
<td>ABBREVIATIONS</td>
<td>1</td>
</tr>
<tr>
<td>1-3</td>
<td>ADDENDA</td>
<td>2</td>
</tr>
<tr>
<td>1-4</td>
<td>AWARD</td>
<td>2</td>
</tr>
<tr>
<td>1-5</td>
<td>BASE COURSE</td>
<td>2</td>
</tr>
<tr>
<td>1-6</td>
<td>BITUMINOUS PAVEMENT</td>
<td>2</td>
</tr>
<tr>
<td>1-7</td>
<td>BIDDER</td>
<td>2</td>
</tr>
<tr>
<td>1-8</td>
<td>CONTRACT</td>
<td>2</td>
</tr>
<tr>
<td>1-9</td>
<td>CONTRACTOR</td>
<td>3</td>
</tr>
<tr>
<td>1-10</td>
<td>CONTRACT BOND</td>
<td>3</td>
</tr>
<tr>
<td>1-11</td>
<td>CORPORATION</td>
<td>3</td>
</tr>
<tr>
<td>1-12</td>
<td>CULVERT</td>
<td>3</td>
</tr>
<tr>
<td>1-13</td>
<td>ENGINEER</td>
<td>4</td>
</tr>
<tr>
<td>1-14</td>
<td>FORCE MAIN</td>
<td>4</td>
</tr>
<tr>
<td>1-15</td>
<td>ENGINEERING OBSERVER</td>
<td>4</td>
</tr>
<tr>
<td>1-16</td>
<td>LABORATORY</td>
<td>4</td>
</tr>
<tr>
<td>1-17</td>
<td>MANHOLE</td>
<td>4</td>
</tr>
<tr>
<td>1-18</td>
<td>NOTICE TO BIDDERS</td>
<td>4</td>
</tr>
<tr>
<td>1-19</td>
<td>OWNER</td>
<td>4</td>
</tr>
<tr>
<td>1-20</td>
<td>PAVEMENT STRUCTURE</td>
<td>4</td>
</tr>
<tr>
<td>1-21</td>
<td>PLANS</td>
<td>5</td>
</tr>
<tr>
<td>1-22</td>
<td>PLUMBING</td>
<td>5</td>
</tr>
<tr>
<td>1-23</td>
<td>PROPOSAL (BID)</td>
<td>5</td>
</tr>
<tr>
<td>1-24</td>
<td>PROPOSAL GUARANTY</td>
<td>5</td>
</tr>
<tr>
<td>1-25</td>
<td>RAILROAD</td>
<td>5</td>
</tr>
<tr>
<td>1-26</td>
<td>RIGHT-OF-WAY AND EASEMENTS</td>
<td>5</td>
</tr>
<tr>
<td>1-27</td>
<td>SEWER, COMBINED</td>
<td>5</td>
</tr>
<tr>
<td>1-28</td>
<td>SEWER, SANITARY</td>
<td>5</td>
</tr>
<tr>
<td>1-29</td>
<td>SEWER, SERVICE</td>
<td>6</td>
</tr>
<tr>
<td>1-30</td>
<td>SEWER, STORM</td>
<td>6</td>
</tr>
<tr>
<td>1-31</td>
<td>SPECIAL PROVISIONS</td>
<td>6</td>
</tr>
<tr>
<td>1-32</td>
<td>SPECIFICATIONS</td>
<td>6</td>
</tr>
<tr>
<td>1-33</td>
<td>STATE SPECIFICATIONS</td>
<td>6</td>
</tr>
<tr>
<td>1-34</td>
<td>SUBCONTRACTOR</td>
<td>6</td>
</tr>
<tr>
<td>1-35</td>
<td>SUB-BASE</td>
<td>6</td>
</tr>
<tr>
<td>1-36</td>
<td>SUB-GRADE</td>
<td>7</td>
</tr>
<tr>
<td>1-37</td>
<td>SUPPLEMENTAL AGREEMENT</td>
<td>7</td>
</tr>
<tr>
<td>1-38</td>
<td>SUPPLIER</td>
<td>7</td>
</tr>
<tr>
<td>1-39</td>
<td>SURETY</td>
<td>7</td>
</tr>
<tr>
<td>1-40</td>
<td>SURFACE COURSE</td>
<td>7</td>
</tr>
<tr>
<td>1-41</td>
<td>WATER MAIN</td>
<td>7</td>
</tr>
<tr>
<td>1-42</td>
<td>WATER SERVICE LINE</td>
<td>7</td>
</tr>
<tr>
<td>1-43</td>
<td>THE WORK</td>
<td>7</td>
</tr>
</tbody>
</table>

**SECTION 2. PROPOSAL REQUIREMENTS AND CONDITIONS**

| 2-1  | CONTENTS OF THE PROPOSAL FORM | 8 |
| 2-2  | INTERPRETATION OF ESTIMATE OF QUANTITIES | 8 |
| 2-3  | EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND SITE OF WORK | 8 |
| 2-4  | ENGINEER’S ESTIMATE          | 9 |
| 2-5  | PREPARATION OF THE PROPOSAL  | 9 |
| 2-6  | MULTIPLE BIDS                | 9 |
| 2-7  | REJECTION OF PROPOSALS       | 9 |
| 2-8  | PROPOSAL GUARANTY            | 10 |
| 2-9  | DELIVERY OF PROPOSALS        | 10 |
| 2-10 | WITHDRAWAL OF PROPOSALS      | 10 |
| 2-11 | WITHDRAWAL OF PROPOSAL GUARANTY | 10 |
| 2-12 | PUBLIC OPENING OF PROPOSALS  | 10 |
| 2-13 | DISQUALIFICATION OF BIDDERS  | 11 |
| 2-14 | COMPETENCY OF BIDDERS        | 11 |
| 2-15 | MATERIAL SUBSTITUTIONS       | 12 |
| 2-16 | CONTRACTOR’S UNDERSTANDING   | 12 |
| 2-17 | STATUS OF RIGHT-OF-WAY, EASEMENT AND CONSTRUCTION EASEMENT ACQUISITION | 12 |
SECTION 6. CONTROL OF MATERIAL

6-1 QUALITY OF MATERIALS
6-2 DEFECTIVE MATERIALS
6-3 TESTING MATERIALS
6-4 SAND, GRAVEL AND CRUSHED STONE
6-5 CONCRETE
6-6 MISCELLANEOUS MATERIALS
6-7 JOB SITE OBSERVATION
6-8 STORED MATERIALS
6-9 "OR EQUAL" CLAUSE

SECTION 7. LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

7-1 LAWS TO BE OBSERVED
7-2 INSURANCE REQUIREMENTS
7-3 PERMITS AND LICENSES
7-4 PATENTS AND ROYALTIES
7-5 STATE AND FEDERAL PARTICIPATION
7-6 SANITARY PROVISIONS
7-7 PUBLIC CONVENIENCE AND SAFETY
7-8 BARRICADES AND WARNING SIGNS
7-9 DEBRIS ON TRAVELED SURFACE OR STRUCTURES
7-10 EQUIPMENT ON TRAVELED SURFACE AND STRUCTURES
7-11 USE OF EXPLOSIVES
7-12 USE OF FIRE HYDRANTS
7-13 PROTECTION AND RESTORATION OF PROPERTY
7-14 PROTECTION AND RESTORATION OF TRAFFIC SIGNS
7-15 CONTRACTOR'S RESPONSIBILITY FOR WORK
7-16 GUARANTEE PERIOD
7-17 PERSONAL LIABILITY OF OWNER'S AGENTS
7-18 NO WAIVER OF LEGAL RIGHTS
7-19 SAFETY
7-20 USE OF PRIVATE LAND
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-21</td>
<td>USE OF WATER</td>
<td>39</td>
</tr>
<tr>
<td>7-22</td>
<td>COST OF SERVICES</td>
<td>39</td>
</tr>
<tr>
<td>7-23</td>
<td>WORK IN BAD WEATHER</td>
<td>39</td>
</tr>
<tr>
<td>7-24</td>
<td>SUNDAY WORK</td>
<td>39</td>
</tr>
<tr>
<td>7-25</td>
<td>WATCHMEN</td>
<td>40</td>
</tr>
<tr>
<td>7-26</td>
<td>CONSTRUCTION DEBRIS</td>
<td>40</td>
</tr>
<tr>
<td>7-27</td>
<td>SAMPLE INSURANCE CERTIFICATE</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>SECTION 8. PROSECUTION AND PROGRESS</td>
<td>42</td>
</tr>
<tr>
<td>8-1</td>
<td>SUBLETTING OR ASSIGNMENT OF CONTRACT</td>
<td>42</td>
</tr>
<tr>
<td>8-2</td>
<td>PROGRESS SCHEDULE</td>
<td>42</td>
</tr>
<tr>
<td>8-3</td>
<td>PRE-CONSTRUCTION CONFERENCE</td>
<td>42</td>
</tr>
<tr>
<td>8-4</td>
<td>PROSECUTION OF THE WORK</td>
<td>42</td>
</tr>
<tr>
<td>8-5</td>
<td>COMPLETION DATE</td>
<td>42</td>
</tr>
<tr>
<td>8-6</td>
<td>LIMITATIONS OF OPERATIONS</td>
<td>43</td>
</tr>
<tr>
<td>8-7</td>
<td>SUSPENSION OF WORK</td>
<td>43</td>
</tr>
<tr>
<td>8-8</td>
<td>DETERMINATION AND EXTENSION OF CONTRACT TIME FOR COMPLETION</td>
<td>43</td>
</tr>
<tr>
<td>8-9</td>
<td>FAILURE TO COMPLETE THE WORK ON TIME</td>
<td>44</td>
</tr>
<tr>
<td>8-10</td>
<td>DEFAULT ON CONTRACT</td>
<td>44</td>
</tr>
<tr>
<td>8-11</td>
<td>TERMINATION OF THE CONTRACTOR'S RESPONSIBILITY</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>SECTION 9. MEASUREMENT AND PAYMENT</td>
<td>46</td>
</tr>
<tr>
<td>9-1</td>
<td>MEASUREMENT OF QUANTITIES</td>
<td>46</td>
</tr>
<tr>
<td>9-2</td>
<td>SCOPE OF PAYMENT</td>
<td>46</td>
</tr>
<tr>
<td>9-3</td>
<td>INCREASED OR DECREASED QUANTITIES</td>
<td>46</td>
</tr>
<tr>
<td>9-4</td>
<td>PAYMENT FOR EXTRA WORK</td>
<td>47</td>
</tr>
<tr>
<td>9-5</td>
<td>PAYMENT FOR SUBCONTRACTING, EXTRA WORK</td>
<td>48</td>
</tr>
<tr>
<td>9-6</td>
<td>PARTIAL PAYMENTS</td>
<td>48</td>
</tr>
<tr>
<td>9-7</td>
<td>ACCEPTANCE AND FINAL PAYMENT</td>
<td>49</td>
</tr>
<tr>
<td>9-8</td>
<td>OWNER'S RIGHT TO WITHHOLD CERTAIN AMOUNTS</td>
<td>49</td>
</tr>
<tr>
<td>9-9</td>
<td>RELEASE OF CLAIMS AND LIENS</td>
<td>50</td>
</tr>
</tbody>
</table>
SECTION 1. DEFINITION OF TERMS

1-1 DESCRIPTION
When a standard specification number is used in the Specifications it shall be taken to mean the latest revision of that Standard Specification at the time of the Bid.

Whenever in the specifications and Contract the following terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as follows:

1-2 ABBREVIATIONS
The following organizations are referred to in this specification by abbreviations of the titles. Additional information noted but not detailed can be obtained from these organizations by writing to them.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSHTO</td>
<td>The American Association of State Highway and Transportation Officials</td>
<td>917 National Press Building, Washington, D.C. 20004</td>
</tr>
<tr>
<td>AWWA</td>
<td>American Water Works Association</td>
<td>6666 West Quincy Avenue, Denver, Colorado 80235</td>
</tr>
<tr>
<td>NSF</td>
<td>National Sanitation Test Laboratory Foundation</td>
<td>Box 1478, Ann Arbor, Michigan</td>
</tr>
<tr>
<td>ANSI</td>
<td>American National Standards Institute</td>
<td>1430 Broadway, New York, New York 10018</td>
</tr>
<tr>
<td>IDOT</td>
<td>Illinois Department of Transportation</td>
<td>2300 South Dirksen Parkway, Springfield, Illinois 62764</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
<td>DOT Building, 400 Seventh St., S.W., Washington, D.C. 20590</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Act</td>
<td></td>
</tr>
<tr>
<td>MWRDGC</td>
<td>The Metropolitan Water Reclamation District of Greater Chicago</td>
<td>100 East Erie Street, Chicago, Illinois 60611</td>
</tr>
</tbody>
</table>
1-3 ADDENDA
Written or graphic instruments issued prior to the execution of the Agreement, which modify or interpret the Contract Documents, Drawings, and Specifications by additions, deletions, clarifications or corrections.

1-4 AWARD
The decision of the Owner to accept the proposal of the lowest responsive, responsible bidder for the work, subject to the execution of and approval of a satisfactory Contract therefore, and bond to secure the performance thereof, and to such other conditions as may be specified or otherwise required by law.

1-5 BASE COURSE
The layer or layers of specified or selected material of designed thickness placed on a sub-base or a subgrade to support the surface course.

1-6 BITUMINOUS PAVEMENT
A pavement structure which maintains intimate contact and distributes loads to the subgrade and depends upon aggregate interlock particle friction and cohesion for stability, and a pavement structure which includes a bituminous concrete surface course over a bituminous concrete base course or a portland cement concrete base course.

1-7 BIDDER
Any individual, firm, partnership or corporation submitting a proposal for the Work contemplated, acting directly or through a duly authorized representative.

1-8 CONTRACT
The written agreement between the Owner and the Contractor setting forth the obligations of the parties thereunder, including, but not limited to, the performance of the Work (the furnishing of labor and materials, and the basis of payment).
The Contract includes such of the following document parts as may be utilized. These document parts so utilized will be as fully part of the Contract as if therein set out verbatim, or, if not attached, as if attached thereto. The controlling order of priority for these documents on the project is as follows (e.g., A is controlling over B-N, etc.):

A. Supplemental Agreements (Change Order)
B. Addenda
C. Special Conditions of Contract
D. General Conditions of Contract
E. Special Provisions to the Specifications
F. Detailed Specifications
G. Complete Project Plans or Drawings
H. General Specifications
I. Contract
J. Contractor's Contract Bond
K. Contractor's Proposal
L. Notice to Proceed
M. Notice of Award
N. Notice to Bidders

1-9 CONTRACTOR
The Bidder awarded the Contract for the Work.

1-10 CONTRACT BOND
The approved form of security furnished by the Contractor and his surety as a guaranty that he will execute the Work in accordance with the terms of the Contract.

1-11 CORPORATION
With respect to the execution and performance of the Contract, a corporate body authorized or licensed to do business in the State of Illinois for projects in Illinois and in the State of Indiana for projects in Indiana.

1-12 CULVERT
A drainage structure extending across and beneath a traveled way and having a tubular or box-type cross-section open on both ends.
1-13 **ENGINEER**
ROBINSON ENGINEERING, LTD. or an engineer of a municipality, including such assistants as are authorized to represent them, who represents the Owner during the construction phase activities of the Work.

1-14 **FORCE MAIN**
A pipe constructed or used to carry sewage under pressure.

1-15 **ENGINEERING OBSERVER**
The authorized representative of the Owner or of the Engineer assigned to observe the progress of the Work to determine only if the Work is proceeding in accordance with the technical plans and specifications.

1-16 **LABORATORY**
An established testing laboratory approved by the Engineer.

1-17 **MANHOLE**
A vertical enclosed structure providing access to a pipe line or other structure.

1-18 **NOTICE TO BIDDERS**
The official notice, included in the proposal form, inviting bids for the proposed improvement, including a brief description of the Work.

1-19 **OWNER**
The Village, City, Town, Sanitary District, or other governmental body, corporation, partnership or individual initiating the project, acting through its legally constituted officials, officers or employees. The Department as referenced in the State Specifications.

1-20 **PAVEMENT STRUCTURE**
The combination of sub-base, base course and surface course placed on a sub-grade to support the traffic load and distribute it to the roadbed.
1-21 PLANS
All official drawings or reproductions of drawings pertaining to the Work provided for in the contract.

1-22 PLUMBING
Plumbing shall be as defined in the latest adopted Illinois State Plumbing Code, copies of which are available from the Illinois Department of Public Health, Division of Engineering and Sanitation, 535 West Jefferson Street, Springfield, Illinois 62706.

1-23 PROPOSAL (BID)
The written offer of the Bidder to perform the proposed Work.

1-24 PROPOSAL GUARANTY
The security designated in the proposal to be furnished by the Bidder as a guaranty that said Bidder will enter into a Contract with the Owner for the acceptable performance of the Work and will furnish the required Contract Bond, if the Work is awarded to him.

1-25 RAILROAD
The Railroad or Railway Company whose property is involved in the Work.

1-26 RIGHT-OF-WAY AND EASEMENTS
The areas owned, or acquired by permanent easement; also, the areas acquired by temporary easement during the time the easement is in effect.

1-27 SEWER, COMBINED
Any sewer constructed or used for the purpose of carrying both storm water and waterborne wastes to a treatment facility.

1-28 SEWER, SANITARY
Any sewer constructed or used for the purpose of carrying waterborne wastes to a treatment facility.
1-29 **SEWER, SERVICE**
A branch sanitary sewer line constructed from the main sanitary sewer line to a point described in the Special Provisions or Plans or to a point established by the Engineer.

1-30 **SEWER, STORM**
A sewer constructed or used for carrying storm water or sub-surface water to a storm water outlet.

1-31 **SPECIAL PROVISIONS**
Specific directions, provisions, requirements and revisions of the Specifications peculiar to the Work under consideration which are not satisfactorily provided for in the Specifications. The Special Provisions set forth the final contractual intent as to the matter involved. The Special Provisions included in the Contract shall not operate to annul those portions of the Specifications with which they are not in conflict.

1-32 **SPECIFICATIONS**
The body of directions, provisions and requirements contained herein, or in any supplement to this document referred to in the Special Provisions, together with written agreements and all documents of any description made or to be made pertaining to the method or manner of performing the Work, the quantities or the quality of materials to be furnished under the contract.

1-33 **STATE SPECIFICATIONS**
IDOT, Standard Specifications for Road and Bridge Construction, latest edition at the time of Bid. This book outlines the general requirements and covenants to all improvements, as well as provisions relating to materials, equipment and construction requirements for individual items of work.

1-34 **SUBCONTRACTOR**
The individual, firm, partnership or corporation to whom the Contractor, with the written consent of the Engineer, sublets, assigns, or otherwise disposes of any part of the Work covered by the contract.

1-35 **SUB-BASE**
The layer or layers of specified or selected material of designed thickness placed on a sub-grade to support a base course.
1-36  **SUB-GRADE**
The top of surface of a roadbed upon which the pavement structure and shoulders are constructed.

1-37  **SUPPLEMENTAL AGREEMENT**
The written agreement executed by the Owner and the Contractor, with the assent of the Contractor's surety, covering modifications or alterations of the terms of the original Contract.

1-38  **SUPPLIER**
Any person or organization who supplies materials or equipment for the Work including that fabricated to a special design.

1-39  **SURETY**
The corporate body, individual or individuals which engage to be responsible for the Bidder's acts in the execution of the Contract in the event of its being awarded to him; or, which are bound with and for the Contractor to insure his acceptable performance of the Contract, his payment of all obligations pertaining to the Work, and his fulfillment of such other conditions as may be specified or otherwise required by law.

1-40  **SURFACE COURSE**
One or more layers of a pavement structure designed to accommodate the traffic load, the top layer of which resists skidding, traffic abrasion, and the disintegrating effects of climate. The top layer is sometimes called "wearing course".

1-41  **WATER MAIN**
A pipe constructed or used to carry potable water under pressure.

1-42  **WATER SERVICE LINE**
That line connected to the water main, which delivers potable water to the user's facilities.

1-43  **THE WORK**
The improvement advertised for bids, described in the Proposal form, indicated on the Plans and covered in the Specifications, Special Provisions, Contract, authorized alterations, extensions and deductions, and supplementary agreements, or any part or parts thereof.
SECTION 2. PROPOSAL REQUIREMENTS AND CONDITIONS

2-1 CONTENTS OF THE PROPOSAL FORM
Bidders will be furnished with forms stating the location and description of the Work contemplated, the approximate quantities of Work to be performed, the amount of the Proposal Guarantee, requirements pertaining to labor, and the date, time and place of filing and opening Proposals. All documents bound with or attached to the proposal shall be considered a part thereof, and shall not be detached or altered.

2-2 INTERPRETATION OF ESTIMATE OF QUANTITIES
An estimate of quantities of Work to be done and materials to be furnished under the Specifications is given in the Proposal. It is given as a basis for comparison of Proposals and the award of the Contract. The Owner and Engineer do not expressly or by implication agree that the actual quantities involved will correspond therewith; nor shall the Bidder plead misunderstanding or deception because of such estimate of quantities pertaining to the Work.

Payment will be based on the actual quantities of Work performed in accordance with Contract, at the Contract unit prices specified. No allowance will be made for any change in anticipated profits due to an increase or decrease in the original estimate of quantities. The Owner reserves the right to omit any item entirely, or to increase or decrease any or all items as provided in Section 4-3.

2-3 EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND SITE OF WORK
The bidder shall, before submitting his bid, carefully examine the Proposal, Plans, Specifications, Special Provisions, and form of Contract and bond. He shall inspect in detail the site of the proposed Work and familiarize himself with all the local conditions affecting the Contract and the detailed requirements of construction. If his Bid is accepted, he will be responsible for all errors in his Proposal resulting from his failure or neglect to comply with these instructions. The Owner or Engineer will, in no case, be responsible for any change in anticipated profits resulting from such failure or neglect.

When the Plans or Special Provisions include information pertaining to sub-surface exploration, borings, test pits, and other preliminary investigations, such information is included only for the convenience of the Bidder. The Owner or Engineer assumes no responsibility whatever in respect to the sufficiency of the information, and there is no guaranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the Work, or that unanticipated developments may not occur.

When the Plans or Special Provisions include information pertaining to the location of underground utility facilities, such information is only included for the convenience of the Bidder. The Owner or Engineer assumes no responsibility whatever in respect to the sufficiency or accuracy of the information, or lack of information, shown on the Plans relative to the location of underground utility
facilities. It shall be the Contractor's responsibility to obtain from the respective utility companies detailed information relative to the location of their facilities and the work schedules of the utility companies for removing or adjusting them.

2-4 ENGINEER'S ESTIMATE
The Engineer's "Estimate of Cost" as prepared for the Owner for the work to be completed under this contract may or may not be available to the Bidders at the discretion of the Owner or the Engineer. If the "Estimate of Cost" is available, it shall be given to all prospective bidders upon request.

2-5 PREPARATION OF THE PROPOSAL
The Bidder shall submit his Proposal on the form furnished by the Owner. The Proposal shall be executed properly, and Bids shall be made for all items indicated in the proposal form, except that when alternate bids are asked, a Bid on more than one alternate for each item is not required, unless the Special Provisions provide otherwise. The Bidder shall indicate, in figures, a unit price or lump sum for each of the separate items called for in the Proposal; he shall show the products of respective quantities and unit prices in the column provided for that purpose, and the gross sum shown in the place indicated in the Proposal shall be the summation of said products. All writing shall be with ink or typewriter, except the signature of the bidder, which shall be written with ink.

If the Proposal is made by an individual, his name and post office address shall be shown. If made by a firm, joint venture, or partnership, the name and post office address of each member of the firm, joint venture, or partnership shall be shown. If made by a corporation, the Proposal shall show the names, titles, and business addresses of the president, secretary, and treasurer, certified to by the secretary.

2-6 MULTIPLE BIDS
If multiple Bids are to be received, bidding shall be in accordance with the instructions in the Special Provisions.

2-7 REJECTION OF PROPOSALS
Proposals that contain omissions, erasures, alterations, additions not called for, conditional or alternate bids unless called for, irregularities of any kind, or proposals otherwise regular which are not accompanied by the proper proposal guaranty shall be rejected as informal or insufficient. However, the Owners reserve the right to reject any or all Proposals and to waive such technical error as may be deemed best for the interest of the Owner.
2-8 PROPOSAL GUARANTY
Each proposal shall be accompanied by a bid bond, bank draft, bank cashier's check, or properly certified check for not less than ten per cent (10%) of the amount Bid unless otherwise specified in the Special Provisions.

If a multiple Bid is submitted, the bid bond, bank draft, bank cashier's check, or certified checks, which accompany the individual Proposals making up the combination, will be considered as also covering the multiple Bid.

See Paragraph 3-3 regarding return of Proposal Guaranty.

The bid bond, bank draft, cashier's checks, or certified checks accompanying Proposals shall be made payable to the Owner.

2-9 DELIVERY OF PROPOSALS
Proposals shall be delivered prior to the time and at the place indicated in the notice to bidders. Each Proposal shall be placed in an envelope sealed and plainly marked to indicate its contents. Only sealed Proposals will be accepted.

Proposals will not be opened unless received at the place of letting and prior to the time stated in the Notice to Bidders.

2-10 WITHDRAWAL OF PROPOSALS
Permission will be given a Bidder to withdraw a Proposal if he makes his request in writing before the time for opening Proposals. If a Proposal is withdrawn, the Bidder will not be permitted to submit another Proposal for the same Work at the same letting.

2-11 WITHDRAWAL OF PROPOSAL GUARANTY
See Paragraphs 3-2 and 3-3 on award of Contract and return of Proposal Guaranty.

2-12 PUBLIC OPENING OF PROPOSALS
Unless otherwise specified, Proposals will be opened and read publicly at the time and placed specified in the Notice to Bidders. Bidders, their authorized agents, and other interested parties are invited to be present.
2-13 DISQUALIFICATION OF BIDDERS
Any one or more of the following causes may be considered as sufficient for the disqualification of a Bidder and rejection of his Proposal.

A. More than one Proposal for the same Work from an individual, firm, partnership, or corporation under the same or different names.

B. Evidence of collusion among bidders.

C. Unbalanced Proposals in which the prices for some items are substantially out of proportion to the prices for other items.

D. Failure to submit a unit price for each item of Work listed in the Proposal.

E. If the Proposal form is other than that furnished by the Engineer or if the form is altered or any part thereof is detached.

F. If there are omissions, erasures, alterations, unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the Proposal incomplete, indefinite or ambiguous as to its meaning.

G. If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.

H. If the Proposal is not accompanied by the proper proposal guaranty.

I. If the Proposal is prepared with other than ink or typewriter.

J. Lack of competency as revealed by financial statement or experience questionnaire.

K. Unsatisfactory performance record as shown by past work judged from the standpoint of workmanship and progress.

L. Uncompleted work, which, in the judgment of the Owner, might hinder or prevent the prompt completion of additional work.

M. False information provided on a Bidder's "Contractor's Statement."

N. Failure to comply with any prequalification regulations of the Owner.

O. Default under previous contracts.

2-14 COMPETENCY OF BIDDERS
The Bidder, if a corporation, shall show the name of the State in which the corporation is chartered. Each Bidder shall furnish the Owner within two (2) weeks after request, with satisfactory evidence of his competency to perform the Work contemplated. When requested, he shall submit to the Owner a
financial statement prepared by a Certified Public Accountant showing his financial condition at the end of his past fiscal year. The accountant who prepares the statement shall certify that he holds a valid and unrevoked certificate as a Certified Public Accountant, issued in accordance with the laws of the State in which he is licensed. The Bidder, if requested, shall also answer and submit questionnaires relating to his experience and available equipment for performing construction work similar to that for which he is offering a proposal, and shall do so within the same two weeks from the time of request.

Before an award is made, the Bidder may, at the option of the Owner be required to furnish a statement showing the value of all uncompleted work for which he has entered into contracts.

2-15 MATERIAL SUBSTITUTIONS
If restrictions of any governmental authority prohibit the use of certain items that are required by the Plans and Specifications, substitution for such items will be determined by the Owner.

Each Bidder shall base his bid on the furnishing of all items exactly as shown on the Plans and as described in the Specifications. The successful Bidder will not be authorized to make any substitutions on his own volition, but in each and every case must obtain a properly authorized change order from the Owner on his Contract before installing any work in variance with the Contract requirements.

2-16 CONTRACTOR'S UNDERSTANDING
It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the Work, the general and local conditions, and all other matters which can in any way affect the Work under this Contract. No verbal agreement or conversation with any officer, agent, or employee of the Owner and Engineer, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

2-17 STATUS OF RIGHT-OF-WAY, EASEMENT AND CONSTRUCTION EASEMENT ACQUISITION
Each bidder is instructed to fully acquaint himself with the status of the right-of-way, easement and construction easement acquisition at the time of submission of his proposal and the possibility of the acquisition of the parcels remaining to be acquired, if any, in time so as not to interfere with the progress of his work under this contract, and the owner shall not be liable to any damage that may occur to him for any and all delay through delay of the owner in securing the necessary right-of-way, easement and construction easement.

The owner agrees that it will make every effort to acquire any right-of-way, easement and construction easement with all speed and diligence possible.
SECTION 3. AWARD AND EXECUTION OF CONTRACT

3-1 CONSIDERATION OF PROPOSALS
The proposals received will be compared on the basis of the summation of the products of the items of Work listed and the unit prices offered. In case of discrepancy between the gross sum shown in the Proposal prices, the unit prices shall govern, and any errors found in said products shall be corrected. In awarding Contracts, the Owner will, in addition to considering the amounts stated in the Proposals, take into consideration the responsibility of the various Bidders as determined from a study of the data required under the previous article and from other investigations, which the Owner may elect to make.

3-2 AWARD OF CONTRACT
Except in cases where the Owner exercises the right reserved to reject any or all Proposals, the Contract will be awarded by the Owner, as soon as practicable after the opening of Proposals.

Unless otherwise specified, if a Contract is not awarded within forty-five (45) days after the opening of Proposals, a Bidder may file a written request with the Owner for the withdrawal of his bid or award date may be extended by mutual consent of the Owner and Bidder. The Owner will have a maximum of ten (10) days after the receipt of such request to award the Contract or release the Bidder from further obligation by return of the Bidder's Proposal Guaranty.

3-3 RETURN OF PROPOSAL GUARANTY
The Proposal Guaranties of all except the two lowest Bidders will be returned promptly after the Proposals have been checked. Proposal Guaranties of the two lowest Bidders will be returned as soon as the Contract and Bond of the successful bidder have been properly executed and approved.

If Contracts cannot be awarded promptly, the Owner shall permit the two (2) lowest Bidders to substitute for the bank cashier's checks, or certified checks which they may have submitted with their Proposals as Proposal Guaranties, a bid bond executed by a corporate surety company satisfactory to the Owner, but such substitutions shall not be made until a period of three (3) days has elapsed after the date of opening Proposals.

3-4 REQUIREMENT OF CONTRACT BOND
The successful Bidder, at the time of the execution of the Contract, shall deposit with the Owner a surety bond for the full amount of the Contract. The form of bond shall be that furnished by the Owner, and the surety shall be acceptable to the Owner.
3-5 EXECUTION OF THE CONTRACT
The contract shall be executed by the successful Bidder. The bond, when required, shall be executed by the principal and the sureties, and executed Contract and Contract Bond shall be presented to the Owner within fifteen (15) days after the date of notice of the award of the Contract.

Each Contract must be executed in three (3) original counterparts, and there shall be executed original counterparts of the Contract Bond in equal number to the executed original counterparts of the Contract. One (1) copy each of such executed documents will be retained by the Owner and the Engineer, the third will be delivered to the Contractor.

3-6 FAILURE TO EXECUTE CONTRACT
Failure on the part of the successful Bidder to execute a Contract and an acceptable Contract Bond and acceptable insurance certificates as provided herein, within fifteen (15) days from the date of receipt of Contract documents from the Owner will be considered as just cause for the annulment of the award and the forfeiture of the proposal guaranty to the Owner, not as a penalty but in payment of liquidated damages sustained as a result of such failure.
SECTION 4. SCOPE OF WORK

4-1 INTENT OF THE PLANS AND SPECIFICATIONS
The intent of the contract is to prescribe a complete outline of work which the Contractor undertakes to do in full compliance with the contract, plans and specifications. The Contractor shall furnish all required materials, equipment, tools, labor, and incidentals, unless otherwise provided in the contract, and shall include the cost of these items in the unit prices bid for the several units of work. Contractor shall be solely responsible for all safety procedures and safety violations. The quantities appearing in the bid schedule of prices are estimates prepared for the establishment of pay item prices and the comparison of bids. Payment to the Contractor will be made for the actual measured quantities performed and accepted or material furnished and accepted according to the contract, and the scheduled quantities may be increased, decreased, or omitted as herein provided.

Under no circumstances shall the Contractor exceed any established pay item quantity without notification to the Engineer and receipt of written authorization as provided herein.

The latest edition of the State Specifications and Standard Specifications for Water and Sewer Construction in Illinois shall be the basis and govern this contract unless otherwise provided by special provision or exception.

4-2 SPECIAL WORK
Should any construction or requirement not covered by the Specifications be anticipated on any proposed Work, Special Provisions for the same will be prepared and included in the Proposal form, which Special Provisions shall be considered as a part of the Specifications the same as though contained fully herein.

4-3 CHANGES
The Owner reserves the right to make, in writing, at any time during work, changes in quantities, alterations in work, and the performance of extra work to satisfactorily complete the project. Such changes in quantities, alterations, and extra work shall not invalidate the contract nor release the surety, and the Contractor agrees to perform the work as altered.

If the alterations or changes in quantities significantly change the character of the work under the contract, whether or not changed by any such different quantities or alterations, an adjustment, excluding loss of anticipated profits, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the Contractor in such amount as the Owner may determine to be fair and equitable.
If alterations or changes in quantities do not significantly change the character of the work to be performed under contract, the altered work will be paid for as provided elsewhere in the contract.

The term "significant change" shall be construed to apply only when the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction or when a major item, defined as an item whose total original contract costs exceeds ten percent of the total original contract amount, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity.

All alterations, cancellations, extensions, and deductions shall be authorized in writing by the Owner before work is started. Such authorizations shall set up the items of work involved and the method of payment for each item.

The Contractor shall accept payment for alterations which result in an increase or decrease in the quantities of work to be performed according to the following:

A. All increases in work of the type which appear in the contract as pay items accompanied by unit prices will, except as provided under paragraph (C) herein, be paid for at the contract unit prices. Decreases in quantities included in the contract will be deducted from the contract at the unit bid prices. No allowance will be made for delays or anticipated profits.

B. Major items of work for which the quantities are increased by not more than 125 percent or reduced to not less than 75 percent of the original contract quantities will be paid for as specified in paragraph (a) above. Any adjustments for increased quantities for major items of work increased more than 125 percent shall only apply to that portion in excess of 125 percent of original contract quantities. Any adjustments made for major items of work which are decreased to less than 75 percent of the original contract quantities shall apply to the actual amount of work performed.

C. Extra work which is not included in the contract as pay items at unit prices and is not included in other items of the contract will be paid for according to Section 9-4.

4-4 PERIODIC AND FINAL CLEANUP

From time to time or as may be ordered by the Owner and immediately after completion of the Work, the Contractor shall at his own expense clean up and remove all refuse and unused materials of any kind resulting from the Work. Upon failure to do so within five (5) working days after receipt of written request from the Owner, the Work may be done by the Owner and the cost thereof be charged to the Contractor and be deducted from his Contract price. Upon completion of the Work, the Contractor shall remove all his equipment and put the area of the Work in a neat and clean condition and do all other cleaning required to complete the Work in a workmanlike manner, ready for use and satisfactory to the Owner.
All Cleanup shall be performed as specified in the various sections of these Specifications or in the Special Provisions.

4-5  **LUMP SUM CONTRACTS**
On lump sum Contract, when specified in Special Provisions, or Contracts containing lump sum items, the lump sum contract price shall include the furnishing and installation of all Work described in the Specifications and/or shown on the Plans.

4-6  **LOCAL ORDINANCES AND REGULATIONS**
The Contractor shall keep himself fully informed of all existing laws, ordinances, and regulations of the municipality affecting the work and/or material of this Contract. If any inconsistency is discovered between the Plans, Specifications and those covered by local municipal laws, ordinances, or regulations, it shall be reported to the Owner and Engineer.

4-7  **PREFERENCE TO VETERANS**
Attention is called to assure compliance with Illinois Revised State Chapter 126 Section 23. Preference to veterans upon public works: "In the employment and appointment to fill positions in the construction, addition to, or alteration of all public works undertaken or contracted for by the state, or by any political subdivision thereof, preference shall be given to persons who were engaged in the military or naval service of the United States in time of war".
SECTION 5. CONTROL OF THE WORK

5-1 PLANS AND WORKING DRAWINGS
The Contractor shall submit to the Engineer such shop, working, or layout drawings pertaining to the construction of the Work, as may be required. These drawings shall be reviewed by Engineer for general conformance with the design concept only. This review by the Engineer does not relieve the Contractor and/or fabricator/vendor of responsibility for conformance with the Contract documents (see 1-8) and applicable codes, all of which have priority over these shop, working and layout drawings. Corrections or comments made on the shop drawings by the Engineer during this review process do not relieve the Contractor from compliance with the requirements of the Contract documents (1-8) and applicable codes.

When the Contract includes work adjacent to a railroad and false work, cofferdams, or sheeting is required, the Contractor shall submit to the Engineer for his approval and the Railroad Engineer's approval, plans for the false work, cofferdams, or sheeting by a Registered Structural Engineer. It shall be the responsibility of the Contractor to contact the railroad to determine how to meet their requirements. The cost of meeting those requirements shall be borne by the Contractor. The plans shall be submitted sufficiently in advance of the time the Contractor intends to start work to permit checking. No such work shall be started prior to receipt by the Contractor of approval of the Plans for the false work, cofferdams, or sheeting.

The cost of furnishing such Drawings shall be incidental to the contract and no additional compensation will be allowed the Contractor for any delays resulting therefrom.

5-2 CONFORMITY WITH PLANS AND SPECIFICATIONS
It is the intent of the Specifications that all Work performed and all materials furnished shall be in conformity with the lines, grades, cross section, dimensions and material requirements shown on the Plans or indicated in the Specifications.

In the event the Engineer finds the materials or the finished product in which the materials are used or the Work performed are not in conformity with the Engineering Plans and technical Specifications including tolerances and have resulted in an inferior or unsatisfactory product, the Work or material shall be removed and replaced or otherwise corrected by and at the expense of the Contractor.

5-3 COORDINATION OF COMPONENT PARTS OF THE CONTRACT
The Specifications, the accompanying Plans, the Proposal, the Special Provisions, and all other contract documents are intended to describe a complete Work and are essential parts of the Contract. A requirement occurring in any of them is binding. In case of discrepancy, figured dimensions shall govern over scaled dimensions, Plans shall govern over Specifications, Special Provisions shall govern over both Specifications and Plans, and quantities shown on the plans shall govern over those shown in the
Proposal. Neither the Owner, Engineer, nor the Contractor shall take advantage of any apparent error or omission in the Plans or Specifications, and the Owner shall be permitted to make such minor changes or alterations as may be deemed necessary for the fulfillment of the intent of the Plans and Specifications. Any corrections or alterations so made shall be subject to the provisions of Section 4-3.

5-4 COOPERATION BY CONTRACTOR

The Contractor will be furnished necessary copies of the Plans and Special Provisions, and he shall have one copy of each available on the work at all times during its prosecution. He shall give the work his constant attention to facilitate the progress thereof, and shall cooperate with the Owner and Engineer in every way possible. He shall have on the Work site at all times a competent, English-speaking representative authorized to receive orders and act for him and shall not replace him without prior written notification to the Owner.

5-5 UTILITIES

Not all of the gas, power, telephone or cable television lines, whether above or below ground, have been shown on the drawings. The location of existing underground utilities, such as water mains, sewers gas mains, etc., as shown on the drawings, have been determined from the best available information and are given for the convenience of the Contractor. The Contractor must assume responsibility for location and protection of all utilities, whether shown or not, and must realize that the actual locations of the utilities shown on the drawings may be different from the location indicated.

It is the responsibility of the Contractor to phone the Joint Utility Locating Information for Excavators (J.U.L.I.E.) at least 48 hours before excavation starts (except Saturday, Sunday and Holidays) phone toll free 1-800-892-0123. The Contractor shall also be responsible for having the "Dig Number" assigned as a result of the phone request available at the construction site and at his office.

It is understood and agreed that the Contractor has considered in his Proposal all of the permanent and temporary utility appurtenances shown or otherwise indicated on the Plans in their present positions and that no additional compensation will be allowed for any delays, inconvenience, or damage sustained by him due to any interference from the said utility appurtenances of the operation of moving them either by the utilities company or by the Contractor; or on account of any special construction methods required in prosecuting his work due to the existence of said appurtenances.

5-6 COOPERATION BETWEEN CONTRACTORS

If separate contracts are let for Work comprising an entire improvement, each Contractor shall conduct his Work so as not to interfere with or hinder the progress or completion of the Work being performed by other Contractors.
The Contractor shall as far as possible arrange his Work, and place and dispose of the materials being used so as not to interfere with the operations of the other contractors within the limits of the same improvement. He shall join his work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others. In case of dispute, the latest approved progress schedule shall govern.

5-7 CONSTRUCTION STAKES
Construction stakes and/or paint will be furnished and set by the Engineer to mark the general location, alignment, elevation and grade of the Work. The Contractor shall exercise proper care in the preservation of stakes set for his use or the use of the Engineer. The Contractor shall pay for the cost of replacing stakes damaged by his operation or those stolen by others.

5-8 AUTHORITY AND DUTIES OF OBSERVERS
Observers employed by the Owner or by the Engineer shall be authorized to observe the progress of the Work to determine if the Work is proceeding in accordance with the technical Plans and Specifications, and to perform such other duties as may be designated by the Engineer. However, the Engineer shall not be responsible for the construction means, methods, techniques, sequences or safety procedures and precautions in connection with the work by the contractors.

5-9 ENGINEER'S FIELD OFFICE AND/OR LABORATORY
When required by the Special Provisions, the Contractor shall furnish a field office and laboratory. The field office and/or laboratory shall be a weatherproof building for the exclusive use of the Engineer. It shall be independent of any building used by the Contractor. All keys to the building shall be turned over to the Engineer. The Engineer shall designate the location of the building and it shall remain on the site until released by the Engineer.

The building shall conform to the following requirements:

- Floor space, not less than 120 square feet
- Height of ceiling, not less than 8 feet
- Windows, not less than 3
- Door, with lock approved by the Engineer
- Instrument locker, 2 feet x 3 feet x 4 feet, with adjustable shelves
- Hinged wall table 3 feet x 6 feet
SECTION 4. SCOPE OF WORK

4-1 INTENT OF THE PLANS AND SPECIFICATIONS
The intent of the contract is to prescribe a complete outline of work which the Contractor undertakes to do in full compliance with the contract, plans and specifications. The Contractor shall furnish all required materials, equipment, tools, labor, and incidentals, unless otherwise provided in the contract, and shall include the cost of these items in the unit prices bid for the several units of work. Contractor shall be solely responsible for all safety procedures and safety violations. The quantities appearing in the bid schedule of prices are estimates prepared for the establishment of pay item prices and the comparison of bids. Payment to the Contractor will be made for the actual measured quantities performed and accepted or material furnished and accepted according to the contract, and the scheduled quantities may be increased, decreased, or omitted as herein provided.

Under no circumstances shall the Contractor exceed any established pay item quantity without notification to the Engineer and receipt of written authorization as provided herein.

The latest edition of the State Specifications and Standard Specifications for Water and Sewer Construction in Illinois shall be the basis and govern this contract unless otherwise provided by special provision or exception.

4-2 SPECIAL WORK
Should any construction or requirement not covered by the Specifications be anticipated on any proposed Work, Special Provisions for the same will be prepared and included in the Proposal form, which Special Provisions shall be considered as a part of the Specifications the same as though contained fully herein.

4-3 CHANGES
The Owner reserves the right to make, in writing, at any time during work, changes in quantities, alterations in work, and the performance of extra work to satisfactorily complete the project. Such changes in quantities, alterations, and extra work shall not invalidate the contract nor release the surety, and the Contractor agrees to perform the work as altered.

If the alterations or changes in quantities significantly change the character of the work under the contract, whether or not changed by any such different quantities or alterations, an adjustment, excluding loss of anticipated profits, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the Contractor in such amount as the Owner may determine to be fair and equitable.
If alterations or changes in quantities do not significantly change the character of the work to be performed under contract, the altered work will be paid for as provided elsewhere in the contract.

The term "significant change" shall be construed to apply only when the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction or when a major item, defined as an item whose total original contract costs exceeds ten percent of the total original contract amount, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity.

All alterations, cancellations, extensions, and deductions shall be authorized in writing by the Owner before work is started. Such authorizations shall set up the items of work involved and the method of payment for each item.

The Contractor shall accept payment for alterations which result in an increase or decrease in the quantities of work to be performed according to the following:

A. All increases in work of the type which appear in the contract as pay items accompanied by unit prices will, except as provided under paragraph (C) herein, be paid for at the contract unit prices. Decreases in quantities included in the contract will be deducted from the contract at the unit bid prices. No allowance will be made for delays or anticipated profits.

B. Major items of work for which the quantities are increased by not more than 125 percent or reduced to not less than 75 percent of the original contract quantities will be paid for as specified in paragraph (a) above. Any adjustments for increased quantities for major items of work increased more than 125 percent shall only apply to that portion in excess of 125 percent of original contract quantities. Any adjustments made for major items of work which are decreased to less than 75 percent of the original contract quantities shall apply to the actual amount of work performed.

C. Extra work which is not included in the contract as pay items at unit prices and is not included in other items of the contract will be paid for according to Section 9-4.

4-4 PERIODIC AND FINAL CLEANUP
From time to time or as may be ordered by the Owner and immediately after completion of the Work, the Contractor shall at his own expense clean up and remove all refuse and unused materials of any kind resulting from the Work. Upon failure to do so within five (5) working days after receipt of written request from the Owner, the Work may be done by the Owner and the cost thereof be charged to the Contractor and be deducted from his Contract price. Upon completion of the Work, the Contractor shall remove all his equipment and put the area of the Work in a neat and clean condition and do all other cleaning required to complete the Work in a workmanlike manner, ready for use and satisfactory to the Owner.
All Cleanup shall be performed as specified in the various sections of these Specifications or in the Special Provisions.

4-5 **LUMP SUM CONTRACTS**
On lump sum Contract, when specified in Special Provisions, or Contracts containing lump sum items, the lump sum contract price shall include the furnishing and installation of all Work described in the Specifications and/or shown on the Plans.

4-6 **LOCAL ORDINANCES AND REGULATIONS**
The Contractor shall keep himself fully informed of all existing laws, ordinances, and regulations of the municipality affecting the work and/or material of this Contract. If any inconsistency is discovered between the Plans, Specifications and those covered by local municipal laws, ordinances, or regulations, it shall be reported to the Owner and Engineer.

4-7 **PREFERENCE TO VETERANS**
Attention is called to assure compliance with Illinois Revised State Chapter 126 Section 23. Preference to veterans upon public works: “In the employment and appointment to fill positions in the construction, addition to, or alteration of all public works undertaken or contracted for by the state, or by any political subdivision thereof, preference shall be given to persons who were engaged in the military or naval service of the United States in time of war”.

042015 G 17
SECTION 5. CONTROL OF THE WORK

5-1 PLANS AND WORKING DRAWINGS
The Contractor shall submit to the Engineer such shop, working, or layout drawings pertaining to the construction of the Work, as may be required. These drawings shall be reviewed by Engineer for general conformance with the design concept only. This review by the Engineer does not relieve the Contractor and/or fabricator/vendor of responsibility for conformance with the Contract documents (see 1-8) and applicable codes, all of which have priority over these shop, working and layout drawings. Corrections or comments made on the shop drawings by the Engineer during this review process do not relieve the Contractor from compliance with the requirements of the Contract documents (1-8) and applicable codes.

When the Contract includes Work adjacent to a railroad and false work, cofferdams, or sheeting is required, the Contractor shall submit to the Engineer for his approval and the Railroad Engineer's approval, plans for the false work, cofferdams, or sheeting by a Registered Structural Engineer. It shall be the responsibility of the Contractor to contact the railroad to determine how to meet their requirements. The cost of meeting those requirements shall be borne by the Contractor. The plans shall be submitted sufficiently in advance of the time the Contractor intends to start work to permit checking. No such work shall be started prior to receipt by the Contractor of approval of the Plans for the false work, cofferdams, or sheeting.

The cost of furnishing such Drawings shall be incidental to the contract and no additional compensation will be allowed the Contractor for any delays resulting therefrom.

5-2 CONFORMITY WITH PLANS AND SPECIFICATIONS
It is the intent of the Specifications that all Work performed and all materials furnished shall be in conformity with the lines, grades, cross section, dimensions and material requirements shown on the Plans or indicated in the Specifications.

In the event the Engineer finds the materials or the finished product in which the materials are used or the Work performed are not in conformity with the Engineering Plans and technical Specifications including tolerances and have resulted in an inferior or unsatisfactory product, the Work or material shall be removed and replaced or otherwise corrected by and at the expense of the Contractor.

5-3 COORDINATION OF COMPONENT PARTS OF THE CONTRACT
The Specifications, the accompanying Plans, the Proposal, the Special Provisions, and all other contract documents are intended to describe a complete Work and are essential parts of the Contract. A requirement occurring in any of them is binding. In case of discrepancy, figured dimensions shall govern over scaled dimensions, Plans shall govern over Specifications, Special Provisions shall govern over both Specifications and Plans, and quantities shown on the plans shall govern over those shown in the
Proposal. Neither the Owner, Engineer, nor the Contractor shall take advantage of any apparent error or omission in the Plans or Specifications, and the Owner shall be permitted to make such minor changes or alterations as may be deemed necessary for the fulfillment of the intent of the Plans and Specifications. Any corrections or alterations so made shall be subject to the provisions of Section 4-3.

5-4 COOPERATION BY CONTRACTOR

The Contractor will be furnished necessary copies of the Plans and Special Provisions, and he shall have one copy of each available on the work at all times during its prosecution. He shall give the work his constant attention to facilitate the progress thereof, and shall cooperate with the Owner and Engineer in every way possible. He shall have on the Work site at all times a competent, English-speaking representative authorized to receive orders and act for him and shall not replace him without prior written notification to the Owner.

5-5 UTILITIES

Not all of the gas, power, telephone or cable television lines, whether above or below ground, have been shown on the drawings. The location of existing underground utilities, such as water mains, sewers gas mains, etc., as shown on the drawings, have been determined form the best available information and are given for the convenience of the Contractor. The Contractor must assume responsibility for location and protection of all utilities, whether shown or not, and must realize that the actual locations of the utilities shown on the drawings may be different from the location indicated.

It is the responsibility of the Contractor to phone the Joint Utility Locating Information for Excavators (J.U.L.I.E.) at least 48 hours before excavation starts (except Saturday, Sunday and Holidays) phone toll free 1-800-892-0123. The Contractor shall also be responsible for having the "Dig Number" assigned as a result of the phone request available at the construction site and at his office.

It is understood and agreed that the Contractor has considered in his Proposal all of the permanent and temporary utility appurtenances shown or otherwise indicated on the Plans in their present positions and that no additional compensation will be allowed for any delays, inconvenience, or damage sustained by him due to any interference from the said utility appurtenances of the operation of moving them either by the utilities company or by the Contractor; or on account of any special construction methods required in prosecuting his work due to the existence of said appurtenances.

5-6 COOPERATION BETWEEN CONTRACTORS

If separate contracts are let for Work comprising an entire improvement, each Contractor shall conduct his Work so as not to interfere with or hinder the progress or completion of the Work being performed by other Contractors.
The Contractor shall as far as possible arrange his Work, and place and dispose of the materials being used so as not to interfere with the operations of the other contractors within the limits of the same improvement. He shall join his work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others. In case of dispute, the latest approved progress schedule shall govern.

5-7 CONSTRUCTION STAKES
Construction stakes and/or paint will be furnished and set by the Engineer to mark the general location, alignment, elevation and grade of the Work. The Contractor shall exercise proper care in the preservation of stakes set for his use or the use of the Engineer. The Contractor shall pay for the cost of replacing stakes damaged by his operation or those stolen by others.

5-8 AUTHORITY AND DUTIES OF OBSERVERS
Observers employed by the Owner or by the Engineer shall be authorized to observe the progress of the Work to determine if the Work is proceeding in accordance with the technical Plans and Specifications, and to perform such other duties as may be designated by the Engineer. However, the Engineer shall not be responsible for the construction means, methods, techniques, sequences or safety procedures and precautions in connection with the work by the contractors.

5-9 ENGINEER'S FIELD OFFICE AND/OR LABORATORY
When required by the Special Provisions, the Contractor shall furnish a field office and laboratory. The field office and/or laboratory shall be a weatherproof building for the exclusive use of the Engineer. It shall be independent of any building used by the Contractor. All keys to the building shall be turned over to the Engineer. The Engineer shall designate the location of the building and it shall remain on the site until released by the Engineer.

The building shall conform to the following requirements:

- Floor space, not less than 120 square feet
- Height of ceiling, not less than 8 feet
- Windows, not less than 3
- Door, with lock approved by the Engineer 1
- Instrument locker, 2 feet x 3 feet x 4 feet, with adjustable shelves
- Hinged wall table 3 feet x 6 feet
The Contractor shall provide lights, heat, and when electric power is available, summer air conditioning for the building. The conditions shall be acceptable to the Engineer.

When shown on the plans or specified in the Special Provisions, the Contractor shall furnish two (2) buildings conforming to the above requirements, one to be used as a field laboratory, and each to be located where designated by the Engineer.

With the approval of the Engineer, a mobile building or buildings of approximately the same dimensions and having similar facilities may be substituted for the above described building or buildings.

The cost of furnishing the building or buildings, light, heat, and air conditioning shall be paid for at the contract lump sum price for "FIELD OFFICE AND/OR LABORATORY". The office and/or laboratory shall remain the property of the Contractor when the Work is completed.

5-10 CONSTRUCTION OBSERVATION

All materials and each part or detail of the Work may be subject at all times to observation by the Engineer and the Owner, or their authorized representatives, and the Contractor will be held strictly to the true intent of the Contract documents in regard to quality of materials, workmanship and the diligent execution of the Contract. Observations may be made at the site or at the source of material supply whether mill, plant or shop. The Engineer, or his representatives, shall be allowed access to all parts of the Work and shall be furnished with such information and assistance by the Contractor as is required to make his observations and construction review. The duty of the Engineer to conduct observations and construction review of the Contractor's performance shall not include review of the adequacy of the Contractor's safety measures in, on, or near the construction site.

Engineer shall not at any time supervise, direct, or have control over any contractors' work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any contractor, nor for safety precautions and programs in connection with the contractors' work, nor for any failure of any Contractor to comply with laws and regulations applicable to contractors' work. Engineer neither guarantees the performance of any contractor nor assumes responsibility for any contractor's failure to furnish and perform its work. Engineer shall have no authority to stop the work of any contractor on the Project. The Engineer's efforts will be directed toward providing assurance for the Owner that the completed project will conform to the Plans and Specifications as prepared by the Engineer, to safeguard the Owner against variances and deviations from the Plans and Specifications, and to assist in a correct interpretation of the Plans and Specifications.

The Engineer shall not have control of the construction and does not have a right, duty or responsibility to stop work for any reason including any contractor's failure to follow proper safety precautions or any acts or omissions. The Engineer shall not be responsible for the acts, errors or omissions of any contractor or any of their agents or employees or any other person performing any of the Work under the Contract.
The Contractor shall, upon written notice from the Owner, remove or uncover such portions of the finished Work as he may direct, before the final acceptance of the same. After examination, the Contractor shall restore said portion of the Work to the standard required by the Contract documents. If the Work thus exposed or examined proves acceptable, the expenses of uncovering or removing and the replacing of the parts removed shall be paid for as Extra work, unless otherwise provided in the Contract documents, but if the Work so exposed or examined is unacceptable, the expense of uncovering or removing and the replacing of the same in accordance with the Contract documents shall be borne by the Contractor.

The Contractor shall supervise and direct the Work. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction.

Any reference to "supervision" by the Engineer in the Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction or any other referenced documents shall be changed to "observation."

When the State and/or Federal Government is to pay a portion of the cost of the Work covered by the Contract, the Work shall be subject to the observation of the representatives of those Governments, but such observation shall in no sense make those Governments a part of the Contract.

5-11 REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK

Work done without lines and grades being given, or beyond the lines shown on the Plans or as given, except as herein provided, or any extra work done without authority will be considered as unauthorized and at the expense of the Contractor, and will not be measured or paid for. Work so done may be ordered by the Owner to be removed or replaced at the Contractor's expense.

All work, which has been rejected, shall be remedied or removed and replaced so as to comply with the Plans and Specifications by the Contractor at his own expense. Upon failure on the part of the Contractor to comply promptly with any order of the Owner made under the provisions of this article, the Owner shall, after giving written notice to the Contractor, have the authority to cause defective work to be remedied, or removed and replaced, or to cause unauthorized work to be removed, and to deduct the cost thereof from the contract price due or become due to the Contractor.

5-12 FINAL ACCEPTANCE

The Engineer shall make final acceptance of all Work included in the Contract, as soon as practicable after notification by the Contractor that the Work is completed. If the Work is not acceptable to the Engineer, he shall inform the Contractor in writing as to the particular defects to be remedied before final acceptance can be made.
The Contractor shall be relieved of normal maintenance responsibilities for any sections of the work, which are completed and accepted by the Owner prior to project completion. For the remainder of the Work, the guarantee period shall be as stated in Section 7-16.

When the Contract includes work for which the County, State and/or Federal Government is to pay a portion of the cost thereof, such work shall also be subject to the inspection and approval of the representatives of those governments.

5-13  PUBLIC CONSTRUCTION BID ACT, 30 ILCS 557/1
It is agreed that the Public Construction Bid Act, 30 ILCS 557/1, shall not be applicable to this contract pursuant to the home rule powers of the community.
SECTION 6. CONTROL OF MATERIAL

6-1 QUALITY OF MATERIALS
It is the intent of the Specifications that first-class materials shall be used throughout the Work, and that they shall be incorporated as to produce completed construction, which is workmanlike and acceptable in every detail. The cost or collecting and furnishing of samples of all test material shall be borne by the Contractor. The cost of all testing shall be borne by the Owner. Only materials, which conform to the requirements of these Specifications, shall be incorporated in the Work.

6-2 DEFECTIVE MATERIALS
All materials not conforming to the requirements of the Specifications shall be considered as defective and shall be removed from the Work; if in place, they shall be removed by the Contractor at his expense and replaced with acceptable materials. No defective materials, the defects of which have been subsequently corrected, shall be used until approval has been given. Upon failure of the Contractor to comply forthwith with any written order of the Owner pursuant to the provisions of this article, the Owner shall have authority to remove and replace defective materials and to deduct the cost of removal and replacement from any monies due to become due the Contractor.

6-3 TESTING MATERIALS
All materials should be tested and approved by the Engineer before incorporation in the Work. The Contractor shall give sufficient advance notice of placing orders to permit tests to be completed before the materials are incorporated in the Work and the Contractor shall afford such facilities as the Engineer may require for collecting and forwarding samples and making observations.

6-4 SAND, GRAVEL AND CRUSHED STONE
The source of sand, gravel and crushed stone construction shall be approved by the Engineer prior to usage. The approval shall be based upon testing of samples furnished by the Contractor and tested by the Engineer for conformance with Specifications. Approval shall be contingent upon the Contractor using materials on the job, which conform with the samples satisfactorily tested.

6-5 CONCRETE
Samples of concrete used in construction shall be taken by the Contractor and made into test cylinders in conformance with ASTM C31. The Owner shall provide the services of an independent testing laboratory to collect and test the cylinders in conformance with ASTM C39, and furnish a copy of test results to the Engineer. Any concrete, which tests indicate failed to conform to the Specifications, shall be removed and replaced at Contractor's expense. At the option of the Owner, the concrete may be accepted and agreed upon adjustment in payment.
6-6 MISCELLANEOUS MATERIALS
Fittings, valves, castings, hydrants, house service pipes, masonry blocks, bricks, manhole sections or other miscellaneous manufactured materials used in water and sewer construction shall be furnished with the implied guarantee that such materials conform with the requirements of the Specifications. The Engineer reserves the right to require a certified statement from the manufacturer of such materials that the specific materials have been inspected and tested and conform with the Specifications.

6-7 JOB SITE OBSERVATION
Regardless of any tests of materials made at the source, the Contractor shall carefully inspect all materials before installation and reject any materials, which have been damaged or have visible flaws. The Engineer also reserves the right to make such observation, but failure to detect irregularities does not relieve the Contractor of responsibility to remove and replace materials, which are found to be defective after installation.

6-8 STORED MATERIALS
If it is necessary to store materials, they shall be protected in such a manner as to insure the preservation of their quality and fitness for the Work. All stored materials shall be inspected at the time of use in the Work, even though they may have been inspected and approved before being placed in storage. The Contractor may use the right-of-way for storage of materials. If stockpiling is done outside the right-of-way, the additional space required shall be provided by the Contractor at his expense.

6-9 "OR EQUAL" CLAUSE
Whenever, in any of the Contract Documents, an article, material or equipment is defined by describing a proprietary product, or by using the name of a manufacturer, or vendor, the term "or equal", if not inserted shall be implied except where the Proposal provides for alternate bids. The specific article, materials, or equipment mentioned shall be understood as indication of the type function, minimum standard or design, efficiency and quality desired and shall not be construed in such a manner as to exclude manufacturer's products of comparable quality, design and efficiency. The Contractor shall comply with the requirements of the Contract Documents relative to an Owner's approval of materials and equipment before they are incorporated in the project.
SECTION 7. LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

7-1 LAWS TO BE OBSERVED
The Contractor shall at all times observe and comply with all Federal laws, State laws, County laws, local laws, ordinances, and regulations which in any manner affect the conduct of the Work, and all such orders or decrees as exist at the time Bids are advertised, of legislative bodies or tribunals having legal jurisdiction or authority over the work and no plea of misunderstanding or ignorance thereof will be considered. The Engineer shall not be responsible for determining whether the Contractor is in compliance with these laws, ordinances and regulations.

The Contractor shall indemnify and save harmless the Owner, the Engineer, and all of their officers, agents, employees and servants against any claim or liability, including legal fees, arising from or based on the violation of such law, ordinance, regulation, order or decree, whether by themselves or their employees.

7-1.01 INDEMNIFICATION
To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless Owner and REL and their respective officers, agents and employees, from and against all claims, damages, losses, costs, expenses, judgments and liabilities, including but not limited to attorney's fees, costs and expenses, arising out of or in connection with Contractor's performance of or failure to perform this Agreement, provided that any such claim, damage, loss, costs, expenses, judgments or liabilities are attributable to bodily injury, sickness, disease or death, or to injury or destruction of tangible personal property, including the loss of use resulting therefrom, that is caused in whole or in part by any act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by any party indemnified hereunder.

Contractor shall defend, indemnify and hold harmless Owner, REL, and their respective officers, agents and employees from and against all claims, damages, losses, costs and expenses arising out of, relating to, or incurred in connection with the use by Contractor, its officers, agents, subcontractors and employees of any equipment, materials, tools, construction equipment, machinery, and/or motor vehicles owned or leased by Owner. The indemnification provided by this Section shall apply regardless of whether Owner consents to the use of equipment by Contractor.

In the event such indemnity as described above is prohibited by law, then said indemnity shall only be to the extent caused by the negligent acts or omissions of the Contractor, subcontractors, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, or to the extent allowed by applicable law.
The indemnification obligation under this paragraph shall not be limited in any way by any limitations on the amount or type of damages, compensation or benefits payable by or for the benefit of Contractor or any indemnities under any Worker's Compensation Act, Occupational Disease Act, Disability Benefits Act, or any other employee benefits act. The Contractor further agrees to waive any and all liability limitations based upon the Worker's Compensation Act court interpretations or otherwise.

Contractor agrees that a similar waiver of liability limitation will be incorporated in its agreements with subcontractors or anyone directly or indirectly employed by them. Contractor agrees that in the event it fails to incorporate such a waiver of liability limitation in its agreements with said subcontractors and others, then it will be responsible for any additional liability arising out of said failure. The defense and indemnification obligations set forth in this provision shall survive the termination or expiration of this Agreement.

Contractor further agrees that all future contracts in furtherance of this contract between Contractor and any of its subcontractors will designate Owner and REL as intended third party beneficiaries of that contract. Contractor hereby agrees to specifically label Owner and REL as an “intended third party beneficiaries” in all contracts entered in furtherance of this contract.

7-2 INSURANCE REQUIREMENTS

7-2.01 GENERAL
The Contractor and any Subcontractors shall obtain and thereafter keep in force for the term of the contract the insurance coverage specified in 7-2.02 MINIMUM INSURANCE REQUIREMENTS.

The Contractor shall not commence work under the Contract until all the insurance required by this section or any Special Provisions has been obtained. The insurance companies must be authorized to do business in the State of Illinois for Work in Illinois and the State of Indiana for Work in Indiana.

The insurance companies providing coverage shall be rated in the Best’s Key Rating Guide with a rating not lower than A- and shall have a financial size category of not less than VII.

The Contractor shall be solely responsible for enforcing compliance with these insurance requirements by all Subcontractors of any tier.

A. PRIMARY INSURANCE
All insurance required of the Contractor shall be specifically endorsed so that it is Primary Insurance as to all additional insureds with respect to all claims arising out of operations by or on their behalf. If additional insureds have other applicable insurance coverage, those coverages shall be deemed to be on an excess or contingent basis.
B. NO WAIVER OF INSURANCE REQUIREMENT BY OWNER

Under no circumstances shall the Owner be deemed to have waived any of the insurance requirements of this Contract by any act or omission, including, but not limited to:

1. Allowing work by Contractor or any Subcontractor of any tier to start before receipt of certificates of insurance, endorsements, and other required insurance documents; or

2. Failure to examine, or to demand correction of any deficiency of, any certificate of insurance received.

The Contractor agrees that the obligation to provide insurance is solely the Contractor’s responsibility and cannot be waived by any act or omission of the Owner.

C. INSURANCE DOES NOT LIMIT LIABILITY

The purchase of insurance by the Contractor under this Contract shall not be deemed to limit the liability of the Contractor in any way for damages suffered by Owner (e.g., in excess of policy limits, because of deductibles, or not covered by the policies purchased).

D. NOTIFICATION OF PERSONAL INJURY/PROPERTY DAMAGE

The Contractor shall notify the Owner, in writing, of any possible or potential claim for personal injury or property damage arising out of the work of this Contract promptly whenever the occurrence giving rise to such a potential claim becomes known to the Contractor.

7-2.02 MINIMUM INSURANCE REQUIREMENTS

The insurance coverage required of the Contractor and any Subcontractors shall be written for not less than the following, or greater if required by law:

A. Workers’ Compensation and Occupational Disease Insurance in accordance with applicable state and federal laws, and Employer’s Liability Insurance with a bodily injury per accident limit of liability of at least $500,000, bodily injury by disease limit each employee of $500,000 and bodily injury by disease policy limit of $500,000 or such greater sum as may be reasonably required by Owner.
B. **Commercial General Liability Insurance** provided by ISO form CG 0001 with a combined Bodily Injury and Property Damage limit of at least $1,000,000 per occurrence, $2,000,000 products and completed operations aggregate and $2,000,000 general aggregate, or such greater sum as may be reasonably required by Owner.

1. Completed Operations and Products liability insurance shall be maintained for a period of 2-years after completion and acceptance of the Project by Owner, or such longer period as may be reasonably required by the Owner.

2. The above policy shall include an endorsement identifying Owner, Robinson Engineering, Ltd, and any other parties as may be reasonably required by Owner or REL as Additional Insured. ISO endorsements CG 2010 and CG 2037 any edition, or equivalent forms, must be used to provide this coverage. Copies of the endorsements must be included with the certificate of insurance as required in paragraph I.

3. Claims-Made coverage triggers are not acceptable to Owner.

4. ISO form CG2503, Designated Construction Project(s) General Aggregate Limit or an equivalent form must be endorsed to the policy and identified on the certificate of insurance. An Owners and Contractors Protective Liability policy can be utilized in lieu of aggregate limits per project, (see 7-2.020 for OCP requirements)

5. The policy shall not contain a sunset provision, commutation clause or any other provision which would prohibit the reporting of a claim and the subsequent defense and indemnity that would normally be provided by the policy.

6. The policy shall not contain any provision, definition or endorsement which would serve to eliminate third party action over claims.

7. Residential Work exclusions or limitations, in any form, are not acceptable to Contractor.

C. **Comprehensive Automobile Liability Insurance** covering use of all owned, non-owned and hired vehicles with Bodily Injury and Property Damage limit of at least $1,000,000 Combined Single Limit, or such greater sum as may be reasonably required by the Owner. This policy shall include coverage for Owner, REL, and any other parties as may be reasonably required by Owner, for liability arising out of the actions of Contractor, whether by endorsement or otherwise.
D. **Excess or Umbrella Liability Insurance** limits of no less than $5,000,000 per occurrence for Employer’s Liability, Commercial General Liability and Comprehensive Automobile Liability, in excess of the minimum policy limits stated below:

- **Employer’s Liability**: $500,000 / $500,000 / $500,000
- **Commercial General Liability**: $1,000,000 per occurrence
- **Commercial General Liability**: $2,000,000 general aggregate
- **Commercial General Liability**: $2,000,000 completed operations aggregate
- **Comprehensive Auto Liability**: $1,000,000 combined single limit

Excess/Umbrella coverage shall be provided as no less than Follow Form and shall name Owner, REL, and any other parties as may be reasonably required by Owner, as Additional Insured on a Primary and Non-Contributory basis.

E. **Pollution Liability** in the amount of $1,000,000 per occurrence and in the aggregate or such sum as may be reasonably required by the Owner. This requirement covers the Contractor’s use of, transportation, removal and/or disposal of hazardous materials and/or pollutants. Additionally, this requirement must apply to any disposal site receiving hazardous materials and/or pollutants. Pollution means the actual or alleged discharge, dispersal, release, seepage, migration, growth, or escape of smoke, soot, fumes, acids, alkalis, toxic chemicals, mold, mildew, spores, fungi, microbes, bacterial matter, legionella pneumophilia, asbestos, lead, silica, liquids or gases, waste materials, contaminants, or other irritants, into or upon land, the atmosphere, any structure on land, the atmosphere contained within that structure, or any watercourse or body of water, including groundwater. Radioactive matter shall also be considered a pollutant, except as otherwise covered or protected by insurance or protections provided pursuant to 42 U.S.C. § 2014(w), as amended, or Section 170 of the Atomic Energy Act of 1954, as amended.

F. **Professional Liability** in the amount of $2,000,000 per occurrence and in the aggregate or such sum as may be reasonably required by the Owner. This requirement covers the Contractor’s duties that involve professional architectural, engineering, design or consultation work. Any applicable deductibles and/or retention’s must be noted on the Certificate of Insurance. Policy exclusions are not allowed for pollution, including mold, fungi or bacteria including the vapor produced or arising therefrom. Please see the project Special Provisions for the project specific needs of this policy.
G. **Property and Equipment** Contractor shall purchase and maintain at its own discretion and expense, Builder’s Risk/Installation Floater Insurance in an amount equal to the insurable value of the Contractor’s property, whether off site or in transit, to cover any equipment, tools or tangible personal property. Contractor assumes all liability and risks, and agrees to waive all claims against Owner and REL for damage to or loss of equipment, machinery, tools, supplies and other tangible personal property owned or supplied by Contractor and utilized or intended to be utilized during the course of Contractor’s Work. Any insurance carried by Contractor covering such damage or loss shall be endorsed with a waiver of subrogation in favor of Owner and REL. Any and all subcontractors agree to assume the same liabilities and risks as Contractor.

H. **Each of Contractor’s** General Liability, Auto Liability, Pollution Liability, Professional Liability and Excess/Umbrella Liability policies must be endorsed as Primary and Non-Contributory as to any insurance maintained by the Additional Insured(s) and shown on the certificate of insurance.

I. **An endorsement** in favor of the Additional Insured(s) waiving the Contractor’s and its insurer’s rights of subrogation shall be issued with respect to the Commercial General Liability, Comprehensive Auto Liability, Pollution Liability, Professional Liability and Workers’ Compensation and Employers Liability policies. Evidence of this endorsement must be noted on the certificate of insurance.

J. **Self-funded** or other non-risk transfer insurance mechanisms or deductibles/self-insured retentions greater than $25,000 per occurrence are not acceptable to Owner on any insurance coverage required in this agreement. If the Contractor has such a program, full disclosure must be made to Owner and REL prior to any consideration being given.

K. **Any subcontractor** employed by Contractor shall have equivalent coverage.

L. **A Certificate of Insurance**, including copies of the Additional Insured endorsements, shall be sent to REL prior to the commencement of any Work (please see the sample attached at the end of Section 7). All Certificates of Insurance and Endorsements verifying the existence of the above required insurance shall be in form and content satisfactory and acceptable to Owner and REL and shall be submitted to REL in a timely manner so as to confirm Contractor’s full compliance with these insurance requirements stated herein, throughout the entire term of this Agreement.

Certificates must be sent to: RELcertificates@thehortongroup.com
M. Contractor shall provide written notice via email to RELcertificates@thehortongroup.com of any cancellation notice received by Contractor from any insurer providing insurance as required in this Agreement within two (2) business days of Contractor's receipt of such notice.

N. Permitting Contractor to commence Work prior to RELs receipt of the required certificate shall not be a waiver of the Contractor's obligation to provide all of the above insurance. Acceptance by Owner or REL of insurance submitted by Contractor shall not relieve or decrease in any manner the liability of the Contractor for its performance under this Agreement.

In the event Contractor fails to obtain or maintain any of the foregoing required coverage, the Owner may purchase such coverage and charge the expense thereof to the Contractor, or may terminate this Agreement.

These Insurance provisions are intended to be a separate and distinct obligation on the part of Contractor. Therefore, these provisions shall be enforceable and Contractor shall be bound thereby regardless of whether or not the Indemnity provisions of this Agreement are determined at any time to be enforceable in the jurisdiction in which the Work covered by this Agreement is performed. The obligation of the Contractor to provide the insurance herein specified shall not limit in any way the liability or obligations assumed by the Contractor elsewhere in this Agreement.

In the event Contractor or its insurance carrier(s) defaults on any obligations under this Insurance provision, Contractor agrees that it will be liable for all reasonable expenses and attorneys' fees incurred by Owner in the enforcement of the terms of this provision.

O. Owner's and Contractor's Protective Liability Insurance
If the Contractor is unable or unwilling to provide the required General Liability Additional Insured forms, an Owner's and Contractor's Protective Policy can be purchased as an acceptable alternate; Required limits of insurance;

1. Bodily Injury and Property Damage Combined
   $5,000,000 Each Occurrence
   $10,000,000 Annual Aggregate

2. The Contractor will furnish and maintain during the entire period of construction an Owner's and Contractor's Protective Liability policy written in the name of the Owner and REL with not less than the limits indicated. The named insureds shall be:
a. Owner  
b. Robinson Engineering, Ltd.

3. Proof of insurance for the coverages required to be purchased by the Contractor, including the Owner's and Contractor's Protective Policy shall be submitted to REL for transmittal to the Owner for his approval prior to the start of construction. Proof of the Owner's Protective Policy shall consist of providing an entire copy of that policy to REL. With respect to all other coverages required to be purchased by the Contractor, proof of insurance shall consist of a Certificate of Insurance issued by the Contractor's insurance agency.

4. It is further understood that any insurance maintained or carried by Owner and Robinson Engineering, Ltd. shall be in excess of any coverage provided by any Contractor or Subcontractor.

P. Railroad Protective Insurance will be required by Special Provisions if needed.

Q. Builder's Risk Insurance is not provided by the Owner. The Contractor is responsible for any loss that would be insured by such coverage. On Contracts for construction of buildings, bridges, or other structures, all Builder's Risk coverage may be required by Special Provisions. Such coverage shall name the Owner, Contractor, subcontractors, and suppliers, as their interests may appear as named insureds.

7-3 PERMITS AND LICENSES
The Contractor, prior to commencing work, shall at his own expense procure all permits, licenses, and bonds necessary for the prosecution of the work, required by Municipal, County, State and Federal regulations, unless specifically provided otherwise in the Special Conditions of the Contract.

The Contractor shall also give all notice, pay all fees, and comply with all Federal, State, County and Municipal laws, ordinances, rules and regulations and building and construction codes bearing on the conduct of the Work.

7-4 PATENTS AND ROYALTIES
If any design, device, material or process covered by letters patent or copyright is used by the Contractor, he shall provide for such use by legal agreement with the owner of the patent or a duly authorized licensee of such owner, and shall save harmless the Owner and the Engineer from any and all loss or expense on account thereof, including its use by the Owner.
7-5 **STATE AND FEDERAL PARTICIPATION**
When the County, State, and/or the Federal Government pays all or any portion of the cost of the Work, the Work shall be subject to the inspection of the appropriate agency.

7-6 **SANITARY PROVISIONS**
The Contractor shall comply with all rules and regulations of the Federal, State, County, and local health departments, and shall take precautions to avoid creating unsanitary conditions. The Engineer shall not be responsible for determining whether the Contractor is in compliance with these rules and regulations.

7-7 **PUBLIC CONVENIENCE AND SAFETY**
The Contractor shall notify the Owner at least five (5) days in advance of the starting of Work, which might in any way inconvenience or endanger traffic, so that arrangements may be made, if necessary, for closing the road and providing suitable detours. The Contractor shall at all times conduct the Work as to insure the least obstruction to vehicular and pedestrian traffic. The convenience of the general public and of residents along the roadway shall be provided for in an adequate and satisfactory manner. (See also 7-9, 7-14 and 8-6.)

If a temporary road is required for the convenience of the general public and/or residents along the roadway, temporary road requirements will not be paid for separately, but will be incidental to the Contract and no extra compensation will be allowed.

7-8 **BARRICADES AND WARNING SIGNS**
When any section of road is closed to traffic, the Contractor shall provide, erect, and maintain barricades, red flags, signs and lights at each end of the closed section and at all intersecting roads in accordance with the Illinois Manual of Uniform Traffic Control Devices.

If during the progress of the work, it is necessary to provide access to private property along the road, the Contractor shall provide, erect, and maintain within the closed portion of the road, such barricades, signs, flags and lights as may be necessary to protect the Work and to safeguard local traffic.

When traffic is to be permitted to use the road during construction, the Contractor shall protect the work and provide for safe and convenient public travel by providing, erecting, and maintaining such barricades, red flags, and lights as are necessary.

The Contractor's responsibility for the work, as provided in Section 7-15, shall apply, even though barricades, signs, red flags, and lights are installed as required above.
The cost of furnishing and maintaining barricades, warning signs, red flags, and lights as required herein shall be incidental to the Contract and no extra compensation will be allowed. The Engineer shall not be responsible for determining whether the Contractor is in compliance with these rules and regulations.

7-9 DEBRIS ON TRAVELED SURFACE OR STRUCTURES
Where the Contractor's equipment is operated on any portion of the traveled surface or structures used by traffic on or adjacent to the section under construction, the Contractor shall clean the traveled surface of all dirt and debris at the end of each day's operation.

The cost of this work shall be included in the unit prices bid and no additional compensation will be allowed. The Engineer shall not be responsible for determining whether the Contractor is in compliance with these rules and regulations.

7-10 EQUIPMENT ON TRAVELED SURFACE AND STRUCTURES
The traveled surface and structures on or adjacent to the work shall be protected, from damage by lugs or cleats on treads or wheels of equipment.

All equipment used in the prosecution of the work shall comply with the legal loading limits established by the statutes of the State of Illinois or local regulations when moved over or operated on any traveled surface or structure unless permission in writing has been issued by the Owner. Before using any equipment, which may exceed the legal loading, the Contractor shall secure a permit, allowing ample time for making an analysis of stresses to determine whether or not the proposed loading would be within safe limits. The Owner will not be responsible for any delay in construction operations or for any costs incurred by the Contractor as a result of compliance with the above requirements. The Engineer shall not be responsible for determining whether the Contractor is in compliance with these rules and regulations.

7-11 USE OF EXPLOSIVES
When the use of explosives is necessary for the prosecution of the Work, the Contractor shall be governed by the rules and regulations of the Department of Mines and Minerals of the State of Illinois and any local regulations, which govern the use of explosives. The Engineer shall not be responsible for determining whether the Contractor is in compliance with these rules and regulations.

7-12 USE OF FIRE HYDRANTS
If the Contractor desires to use water from hydrants, he shall make application to the proper authorities, and shall conform to the municipal ordinances, rules or regulations concerning their use. Water from
Hydrants or other sources shall be at the Contractor's expense unless otherwise provided in the Special Provisions.

Fire hydrants shall be accessible at all times to the Fire Department. No material or other obstructions shall be placed closer to a fire hydrant than permitted by municipal ordinances, rules or regulations, or within ten feet (10') of a fire hydrant, in the absence of such ordinances, rules or regulations.

7-13 PROTECTION AND RESTORATION OF PROPERTY

If corporate or private property interferes with the Work, the Contractor shall notify, in writing, the owners of such property, advising them of the nature or disposition of such property. The Contractor shall furnish the Owner with copies of such notifications and with copies of any agreements between him and the property owners concerning such protection or disposition.

The Contractor shall take all necessary precautions for the protection of corporate or private property, such as walls and foundations of buildings, vaults, underground structures of public utilities, underground drainage facilities, overhead structures of public utilities, trees, shrubbery, crops and fences contiguous to the Work, of which the Contract does not provide for removal. The Contractor shall protect and carefully preserve all official survey monuments, property marks, section markers, and Geological Survey monuments, or other similar monuments, until the Owner or an authorized surveyor or agent has witnessed or otherwise referenced their location or relocation. The Contractor shall take reasonable precautions to avoid disturbing any archeological and other historic remains encountered during construction. The Contractor shall notify the Owner of the presence of such survey or property monuments or archeological and other historic remains as soon as they are discovered.

The Contractor shall be responsible for the damage or destruction of property of any character resulting from error, neglect, misconduct or omission in his manner or method of execution or non-execution of the Work, or caused by defective Work or the use of unsatisfactory materials, and such responsibility shall not be released until the Work shall have been completed and accepted and the requirements of the Specifications complied with.

Whenever public or private property is so damaged or destroyed, the Contractor shall at his own expense, restore such property to a condition equal to that existing before such damage or injury was done by repairing, rebuilding, or replacing it as may be directed, or he shall otherwise make good such damage or destruction in an acceptable manner. If he fails to do so, the Owner may, after the expiration of a period of forty-eight (48) hours after giving him notice in writing, proceed to repair, rebuild, or otherwise restore such property as may be deemed necessary, and the cost thereof shall be deducted from any compensation due, or which may become due the Contractor under his contract.

The Contractor shall remove all mailboxes within the limits of construction, which interfere with construction operations and shall erect them at temporary locations. As soon as construction
operations permit, he shall set the mailboxes at their permanent locations. The Contractor shall replace at his own expense any mailbox or post which has been damaged by his operations.

The cost of all materials required and all labor necessary to comply with the above provisions will not be paid for separately, but shall be considered as incidental to the Contract, unless otherwise specified in the Special Provisions.

7-14 PROTECTION AND RESTORATION OF TRAFFIC SIGNS
Any traffic sign within the limits of construction, which interferes with construction operations, may be removed by the Contractor when authorized by the traffic sign owner. Any traffic sign, which has been removed, shall be re-erected immediately by the Contractor at the temporary location designated by the traffic sign owner, and as soon as construction operations permit, the sign shall be set at its permanent location. The cost of all materials required and all labor necessary to comply with this provision will not be paid for separately, but shall be considered as incidental to the contract.

The Contractor shall replace at his own expense any traffic sign or post which has been damaged due to his operations.

Any traffic sign designated as critical by the traffic sign owner shall not be disturbed and no additional compensation will be allowed the Contractor for any delays, inconvenience, or damage sustained by him due to any special construction methods required in prosecuting his work due to the existence of such traffic signs.

7-15 CONTRACTOR'S RESPONSIBILITY FOR WORK
The Work shall be under the control and care of the Contractor until final acceptance or use or occupancy by the Owner. The Contractor shall assume all responsibility for injury or damage to the Work by action of the elements or from any other cause whatsoever, and shall rebuild, repair, restore, and make good, at his expense, all injuries or damages to the Work, except that when the Work is opened to usage by written order of the Owner, the provisions of this article shall not apply to damage caused by such use and not due to the Contractor's fault or negligence.

When materials are furnished to the Contractor by the Owner for inclusion in the work, the Contractor's responsibility for handling and installation of all such materials shall be the same as for materials furnished by him.

In case of suspension of Work by the Contractor, the Contractor shall be responsible for the Work and shall take such precautions as may be necessary to prevent damage to the Work, provide for normal drainage and shall erect any necessary temporary structures, signs, or other facilities at his expense.
7-16 GUARANTEE PERIOD
The Contractor shall warrant all Work performed for a period of one (1) year from the date of final acceptance in writing by the Engineer. In case of acceptance of a part of the work for use or occupancy prior to final acceptance of the entire Work, the guarantee for the part so accepted shall be for a period of one year from the date of such partial acceptance, in writing, by the Engineer.

In placing orders for equipment, the Contractor shall purchase same only under a written guarantee from the respective manufacturers that the equipment supplied will function satisfactorily as an integral part of the completed Work in accordance with the Plans and Specifications, and that the manufacturer will repair or otherwise make good any defects in workmanship or materials which may develop within a period of one (1) year from the date of final acceptance. Furthermore, the Contractor shall require that the manufacturer agree in writing at the time the order for equipment is placed that he will be responsible for the proper functioning of the equipment in cooperation with the Contractor, and that whenever necessary during the installation period or tuning up period following construction period, the manufacturer will supply without additional cost to the Owner, such superintendence and mechanical labor and any adjustments and additional parts and labor needed to make the equipment function satisfactorily, even if same was not shown on the approved shop drawings.

7-17 PERSONAL LIABILITY OF OWNER’S AGENTS
In carrying out the provisions of this contract, or in exercising any power or authority granted to the Owner, there shall be no personal liability upon any officer or authorized agent of the Owner provided the Owner is a governmental body, it being understood that all such persons act as agents and representatives of the Owner.

7-18 NO WAIVER OF LEGAL RIGHTS
The Owner and the Engineer shall not be precluded by any measurement, estimate, or certificate made either before or after the completion and acceptance of the Work and payment therefor, from showing the true amount and character of the Work performed and materials furnished by the Contractor, or from showing that any such measurement, estimate, or certificate is untrue or incorrectly made, or that the Work or materials do not conform in fact to the Contract. The Owner shall not be precluded, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor and his sureties such damages as if it may sustain by reason of his failure to comply with the terms of the Contract. Neither the acceptance by the Owner, nor any representative of the Owner, nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, nor any possession taken by the Owner, shall operate as a waiver of any portion of the Contract, or of any power herein reserved, or any right to damages herein provided. A waiver of any breach of the Contract shall not be held to be a waiver of any other or subsequent breach.
7-19  **SAFETY**
Contractor shall comply with State and Federal Safety regulations as outlined in latest revision of Federal Construction Safety Standards (Series 1926) and with applicable provisions and regulation of Occupation Safety and Health Administration (OSHA) Standards of the Williams-Steiger Occupational Health and Safety Act of 1970 (rev.). The Engineer shall not be responsible for determining the Contractor's compliance with these regulations.

The Contractor is solely responsible for the safety procedures, programs and methods of its employees, subcontractors of every tier, and agents. Contractor shall hold the Owner and the Engineer harmless for any and all damages resulting from violations thereof.

7-20  **USE OF PRIVATE LAND**
The Contractor shall not use any vacant lot or private land as a plant site, depository for materials, or as a spoil site without the written authorization of the owner of the land (or his agent), a copy of which authorization shall be filed with the Owner.

7-21  **USE OF WATER**
Contractors desiring to use water furnished by the Owner will be required to make application for extension to the proper authorities and conform to the rules and regulations provided in such cases by the municipal ordinances and pay the usual water rates.

7-22  **COST OF SERVICES**
The Contractor will be required to pay the established water rates for water obtained from the Owner. Large quantities of water for flushing trenches, filling mains, testing or other operations shall be drawn only at night or at times specifically authorized by the Owner.

The cost of all power, lighting and heating required during construction shall be paid by the Contractor and its costs merged in the contract price.

7-23  **WORK IN BAD WEATHER**
No construction work shall be done during stormy, freezing or inclement weather, except such as can be done satisfactorily, and to secure first-class construction throughout, and then only subject to permission of the Owner.

7-24  **SUNDAY WORK**
No work shall be performed under these specifications at night or on Sunday and legal holidays without the approval of the Owner. If it is found necessary to continue the work at night or on Sunday or on a legal holiday, the Contractor will be charged for the Engineering and observation at such times at the rate of Seven Hundred Fifty Dollars ($750.00) per day of eight (8) working hours for each person doing such work on the job, and the amount will be deducted from money due to the Contractor at the time of settlement.

7-25 WATCHMEN
Watchmen are to be provided by the Contractor at the site of the project to prevent loss, damage to property, or accidents.

7-26 CONSTRUCTION DEBRIS
The Contractor shall not conduct any generation, transportation, or recycling of construction or demolition debris, clean or general or uncontaminated soil generated during construction, remodeling, repair, and demolition of utilities, structures, and roads that is not commingled with any waste, without the maintenance of documentation identifying the hauler, generator, place of origin of the debris or soil, the weight or volume of the debris or soil, and the location, owner, and operator of the facility where the debris or soil was transferred, disposed, recycled or treated. This documentation must be maintained by the Contractor for 3 years.
## SAMPLE INSURANCE CERTIFICATE

EMAIL ALL CERTIFICATES TO RELCERTIFICATES@THEHORTONGROUP.COM

### CERTIFICATE OF LIABILITY INSURANCE

**DATE (MM/DD/YYYY):**

**THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFER NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.**

**IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).**

### PRODUCER

**YOUR INSURANCE AGENT:**

---

### INSURED

**YOUR NAME AND ADDRESS:**

---

### COVERAGES

**CERTIFICATE NUMBER:**

**REVISION NUMBER:**

**THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.**

<table>
<thead>
<tr>
<th>TYPE OF INSURANCE</th>
<th>&quot;ADD:&quot; (S) NO.</th>
<th>POLICY NUMBER</th>
<th>EFF DATE</th>
<th>EXP DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMERCIAL GENERAL LIABILITY</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CLAIMS MADE</td>
<td>OCCUR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>POLICY NUMBER</td>
<td>EFF DATE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUTOMOBILE LIABILITY</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ANY OWNED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>POLICY NUMBER</td>
<td>EFF DATE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UMBRELLA/LIBL</td>
<td></td>
<td></td>
<td>POLICY NUMBER</td>
<td>EFF DATE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WORKERS' COMPENSATION</td>
<td></td>
<td></td>
<td>POLICY NUMBER</td>
<td>EFF DATE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROFESSIONAL</td>
<td></td>
<td></td>
<td>POLICY NUMBER</td>
<td>EFF DATE</td>
</tr>
</tbody>
</table>

**DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES (Attach ACORD 186, Additional Risk Schedule. If more space is required):**

**REL. JOB NUMBER AND PROJECT NAME AND ADDRESS:**

Additional insured with respect to General Liability, Auto Liability and Umbrella/Excess Liability on a primary and non-contributory basis when required by written contract (Owner and Robinson Engineering Inc.) Owner is Certificate Holder. Waiver of Subrogation in favor of listed additional insureds with respect to General Liability, Auto Liability, Umbrella/Excess Liability and Workers’ Compensation policies. Additional insured with respect to General Liability coverage per ISO forms CG2010 and CG2037 or equivalent forms. Umbrella/Excess is on a follow form basis and is primary and non-contributory.

### CANCELLATION

**SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPPIATION DATE THENSE, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.**

**AUTHORIZED REPRESENTATIVE:**

---

© 1998-2010 ACORD CORPORATION. All rights reserved.

ACORD 26 (201005) The ACORD name and logo are registered marks of ACORD
SECTION 8. PROSECUTION AND PROGRESS

8-1 SUBLETTING OR ASSIGNMENT OF CONTRACT
The Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of the Contract or Contracts or any portion thereof, or of his right, title, or interest therein, without written consent of the Owner. In case such consent is given, the Contractor will be permitted to sublet a portion thereof, but shall perform with his own organization, Work amounting to not less than 50 per cent of the total Contract, except that any items designated in the Contract as "specialty items" may be performed by subcontract and may be deducted from the total Contract price before computing the amount of work required to be performed by the Contractor with his own organization. No subcontracts, or transfer of Contract, shall in any case release the Contractor of his liability under the Contract. All transactions of the Owner 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.

8-2 PROGRESS SCHEDULE
Promptly after the award of the contract, if requested, the Contractor shall submit to the Owner a satisfactory progress schedule, which shall show the proposed sequence of work, and how the Contractor proposes to complete the various items of work within the number of days set up on the contract. The progress schedule shall be reviewed and revised periodically as working conditions warrant. The Contractor shall confer with the Owner in regard to the prosecution of the Work in accordance with this schedule. This schedule shall be used as a basis for establishing major construction operations, and for checking progress of the Work.

8-3 PRE-CONSTRUCTION CONFERENCE
Unless the need for a preconstruction conference is waived by the Engineer, the Contractor shall make himself and his representatives available to meet with the Engineer and other representatives of the Owner, prior to the start of construction to discuss scheduling, handling of materials, payments, etc.

8-4 PROSECUTION OF THE WORK
The Contractor shall begin the Work to be performed under the contract not later than ten (10) days after the execution and acceptance of the Contract, unless otherwise provided, but not prior to the execution of the Contract.

8-5 COMPLETION DATE
The Contractor shall complete all Work on or before the stipulated completion date, or on or before a later date determined as specified herein; otherwise, the Owner may proceed to collect liquidated damages described hereinafter.
When a delay occurs due to unforeseen causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of the public enemy, governmental acts, fires, floods, epidemics, strikes, extraordinary delays in delivery of materials caused by strikes, lockouts, wrecks, freight embargoes, governmental acts, or acts of God, the time of completion shall be extended in whatever amount is determined by the Owner.

An "Act of God" means an earthquake, flood, cloudburst, cyclone, or other cataclysmic phenomena of nature beyond the power of the Contractor to foresee or make preparation in defense against. A rain, windstorm or other natural phenomenon of normal intensity, based on U.S. Weather Bureau reports, for the particular locality and for the particular season of the year in which the work is being prosecuted, shall not be construed as an "Act of God", and no extension of time will be granted for the delays resulting therefrom.

8-6 LIMITATIONS OF OPERATIONS
The Contractor shall conduct his work so as to create a minimum amount of inconvenience to vehicular and pedestrian traffic. At any time when, in the judgment of the Owner, the Contractor has obstructed or closed the road or is carrying on operations on a greater portion of a street than is necessary for the proper prosecution of the Work, the Owner may require the Contractor to finish the section on which Work is in progress before the Work is started on any additional section. (See also Section 7-7).

8-7 SUSPENSION OF WORK
The Owner shall have authority to suspend the Work wholly or in part, for such period of time as he may deem necessary, due to conditions unfavorable for the satisfactory prosecution of the Work, or to conditions which in his opinion warrant such action; or for such time as is necessary by reason of failure on the part of the Contractor to carry out orders given, or to perform any or all provisions of the Contract. No additional compensation will be paid the Contractor because of any costs caused by such suspension, except when the suspension is ordered for reasons not resulting from any act or omission on the part of the Contractor. If it becomes necessary to stop Work for an indefinite period of time, the Contractor shall store all material in such manner that they will not obstruct or impede the traveling public unnecessarily or become damaged in any way, take every precaution to prevent damage or deterioration of the Work performed, provided suitable drainage of the roadway, and erect temporary structures where necessary. The Contractor shall not suspend Work without written authority from the Owner. (See also Section 7-15).

8-8 DETERMINATION AND EXTENSION OF CONTRACT TIME FOR COMPLETION
When the time for completion of the Work contemplated is specified in the Contract, it is understood that the completion of the Work within the time specified is an essential part of the Contract. If the Contractor finds it impossible to complete the Work within the time specified in the Contract, he may, at
any time prior to the last thirty (30) days of the Contract time specified, make written request to the Owner for an extension of Contract time. He shall set forth in full in his request the reasons, which he believes justify the granting of his request. If the Owner finds that the Work is delayed because of conditions beyond the control of the Contractor, or that the quantities of work done, or to be done, are in excess, he shall promptly grant an extension of time for completion, which appears reasonable and proper. The extended time for completion shall then be considered as in effect the same as if it were the original Contract time for completion.

8-9 FAILURE TO COMPLETE THE WORK ON TIME
Should the Contractor fail to complete the Work within the Contract time the Contractor shall be liable to the Owner in the amount shown in the following schedule of deductions, as liquidated damages, and not as a penalty, for each day of overrun in the Contract time or such extended time as may have been allowed.

**SCHEDULE OF DEDUCTIONS FOR EACH DAY OF OVERRUN IN CONTRACT TIME**

<table>
<thead>
<tr>
<th>Original Contract Amount</th>
<th>Daily Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>From more than</td>
<td>To and</td>
</tr>
<tr>
<td>$0</td>
<td>100,000</td>
</tr>
<tr>
<td>100,000</td>
<td>500,000</td>
</tr>
<tr>
<td>500,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>1,000,000</td>
<td>3,000,000</td>
</tr>
<tr>
<td>3,000,000</td>
<td>6,000,000</td>
</tr>
<tr>
<td>6,000,000</td>
<td>12,000,000</td>
</tr>
<tr>
<td>12,000,000</td>
<td>And over</td>
</tr>
</tbody>
</table>

8-10 DEFAULT ON CONTRACT
If the Contractor fails to begin the Work under Contract within the time specified, or fails to perform the Work with sufficient workmen and equipment or with sufficient materials to insure the completion of said Work within the Contract time, or shall perform the Work unsuitable, or shall neglect or refuse to remove materials or perform anew such Work as shall be rejected as defective and unsuitable, or shall discontinue the prosecution of the Work, or if the Contractor shall become insolvent or be declared bankrupt, or shall commit any act of bankruptcy or insolvency, or shall make an assignment for the benefit of creditors, the Owner shall give notice in writing to the Contractor and his surety of such delinquency, said notice to specify the corrective measures required.

If the Contractor, within a period of ten (10) days after said notice, shall not proceed in accordance therewith, the Owner shall have full power and authority to forfeit the rights of the Contractor and at its
option to call upon the surety to complete the Work in accordance with the terms of the contract, or it may take over the Work, including any or all materials and equipment on the ground as may be suitable and acceptable, and may complete the Work with his own forces, or may enter into a new agreement for the completion of said Contract according to the terms and provisions thereof, or use such other methods as, in its opinion, shall be required for the completion of said Contract in an acceptable manner.

All costs and charges incurred by the Owner, together with the cost of completing the work under Contract, shall be deducted from the Contract amount. In case the expense so incurred by the Owner shall be less than the sum which would have been payable under the Contract if it had been completed by the Contractor, the Contractor shall be entitled to receive the difference subject to any claims for liens thereon in case such expense shall exceed the sum which would have been payable under the Contract, the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

8-11 TERMINATION OF THE CONTRACTOR'S RESPONSIBILITY
Whenever the Work called for by the Contract shall have been completely performed on the part of the Contractor and all parts of the Work have been approved and deemed to be in compliance with the Technical Plans and Specifications by the Engineer, according to the Contract, and the final estimate paid, the Contractor's obligations shall be considered fulfilled, except as set forth in his Bond, in Section 7-18 and his one-year guarantee, in Section 7-16.
SECTION 9. MEASUREMENT AND PAYMENT

9-1 MEASUREMENT OF QUANTITIES
All Work completed under the Contract will be measured by the Engineer according to United States Standard Measures. The method of measurement shall be described in the Specifications or the Special Provisions.

9-2 SCOPE OF PAYMENT
The Contractor shall receive and accept the compensation as herein provided, in full payment for furnishing all materials, labor, tools and equipment; for performing all Work contemplated and embraced under the Contract; for all loss or damage arising out of the nature of the Work or from action of the elements; for any unforeseen difficulties or obstructions which may arise or be encountered during the prosecution of the Work until its final acceptance by the Owner; for all risks of every description connected with the prosecution of the Work; also, for all such expenses incurred by or in consequence of suspension or discontinuance of such prosecution of the work as herein specified, or for any infringement of patents, trademarks, or copyrights, and for completing the Work in an acceptable manner according to the Contract Documents.

Contractor will be paid in cash and/or negotiable warrants at intervals, and in accord with the terms of the Contract. Except for subdivision contracts, the Owner will retain ten percent (10%) of each periodic payment until final completion and acceptance by the Owner of all Work included in the Contract.

The payment of any current estimate prior to final acceptance of the Work by the Owner shall in no way constitute an acknowledgment of the acceptance of the Work, nor in any way prejudice or affect the obligation of the Contractor, at his expense, to repair, correct, renew, or replace any defects or imperfections in the construction or in the strength or quality of the materials used in or about the construction of the Work under Contract and its appurtenances, nor any damage due or attributable to such defects, which defects, imperfections, or damage shall have been discovered on or before the final inspection and acceptance of the Work. Defects, imperfections, or damage, shall be determined by the Engineer observing the work for compliance with the Plans and Specifications, and the Contractor shall be liable to the Owner for failure to correct the same as provided herein.

9-3 INCREASED OR DECREASED QUANTITIES
Whenever the quantity of any item of Work as given in the Proposal shall be increased or decreased, payment shall be made on the basis of the actual quantity completed at the unit price for such item named in the Proposal, except as otherwise provided in Sections 4-3 or in the detailed specifications for each class of Work.
9-4  PAYMENT FOR EXTRA WORK

Extra Work which results from any of the changes as specified in Section 4-3 shall not be started, except in case of an emergency, until receipt of a written authorization or Work order from the Owner, which authorization shall state the items of work to be performed and the method of payment for each item. Work performed without such order will not be paid for.

Extra work will be paid for:

A. Either at a lump sum price or at unit prices agreed upon by the Contractor and the Owner. (In case a Supplemental Agreement is signed between the Contractor and the Owner, the agreed prices pertaining thereto shall prevail).

B. If acceptable to the Engineer, on the following force account basis:

1. Labor. The Contractor will be paid the actual amount of wages for all labor and foreman in direct charge of the specific Work for each hour that said labor and foreman are actually engaged in such Work, to which cost shall be added twenty percent (20%) of the sum thereof.

2. Bond, Insurance, Tax, Welfare Fund and other Payments. The Contractor will receive the actual cost of Contractor's bond, public liability and property damage insurance, workmen's compensation insurance, social security tax, welfare fund and other payments, if any, in accordance with agreements applicable to the Contract, required for force account work, to which no percentage shall be added. The Contractor shall furnish satisfactory evidence of the rate or rates paid for such bond, insurance tax, welfare fund and other payments.

3. Materials. The Contractor will receive the actual cost for all materials which are an integral part of the finished Work, including freight charges as shown by the original receipted bills, to which shall be added fifteen percent (15%) of the sum thereof.

The Contractor will be reimbursed for any materials used in the construction of the Work, such as sheeting, false work, form lumber, curing materials, etc., which are not an integral part of the finished Work. The amount of reimbursement shall be agreed upon in writing before such Work is begun, and no percent shall be added. The salvage value of such materials shall be taken into consideration in the reimbursement agreed upon.
4. **Equipment.** Machinery and equipment, which the Contractor has on the job for use on contract items, shall be used on extra work as deemed necessary or desirable. The Contractor will be paid for all machinery and equipment used on extra work in accordance with the latest revision of "SCHEDULE OF AVERAGE ANNUAL EQUIPMENT OWNERSHIP EXPENSE WITH OPERATING COST" as issued by the Department of Transportation, State of Illinois, for the period that said machinery and equipment are in use on such work, to which no percent shall be added. In the event that equipment is used which is not included in aforesaid publication, the latest edition of the "Compilation of Nationally Averaged Rental Rates for Construction Equipment" compiled by Equipment Distributors, 615 West 22nd Street, Oak Brook, Illinois 60521, shall be used to determine equipment rental rates and no percent shall be added to the rates indicated in such publication.

**9-5 PAYMENT FOR SUBCONTRACTING, EXTRA WORK**

Where an authorized subcontractor performs some or all of the work qualifying as an Extra Work item and compensation is to be based on the terms of paragraph 9-4 (2), the cost of labor, bonds, material and equipment shall be the cost to the subcontractor on these items and an additional allowance to the prime Contractor of five percent (5%) of all costs as determined in paragraph 9-4 (2) shall be made in such instances.

**9-6 PARTIAL PAYMENTS**

Once each month, the Contractor will make an approximate estimate, in writing, of the materials in place complete, the amount of work performed, and the value thereof, at the contract unit prices. From the amount so determined of completed work there shall be deducted ten percent (10%) to be retained until after the completion of the entire work to the satisfaction of the Owner, and the balance certified to the Owner for payment.

In addition, an estimate may, at the discretion of the Owner and upon presentation of receipted bills and freight bills, be made for payment of the value of acceptable non-perishable materials delivered at the work site or in acceptable storage places and not used at the time of such estimate. The care and storage of such material shall be the Contractor’s responsibility. In the absence of receipted bills, an estimate may, at the request of the Contractor and at the discretion of the Owner, be made for payment of the value of materials in acceptable storage places and not used at the time of the estimate, but in such an event payment shall be made of such amounts by a check requiring the endorsement of both the Contractor and materials supplier. Endorsement of such a check by the material supplier shall be construed a waiver of lien for the cost of materials covered by the check. Such materials, when so paid for by the Owner, shall become the property of the Owner, and in the event of default on the part of the Contractor, the Owner may use or cause to be used such materials in the construction of the Work.
provided for in the Contract. The amount thus paid by the Owner shall be deducted from estimates due the Contractor as the material is used in the Work.

9-7 ACCEPTANCE AND FINAL PAYMENT
Whenever the Work provided for by the Contract shall have been completely performed on the part of the Contractor, and all parts of the Work have been deemed to be in substantial compliance with the Plans and Specifications by the Engineer and accepted by the Owner, a final estimate showing the value of the Work will be prepared by the Engineer as soon as the necessary measurements and computations can be made, all prior estimates upon which payments have been made being approximate only and subject to correction in the final payment. The amount of this estimate, less any sums that have been deducted or retained under the provisions of the Contract, will be paid to the Contractor as soon as practicable after the final acceptance, provided the Contractor has furnished to the Owner satisfactory evidence that all sums of money due for any labor, materials, apparatus, fixtures, or machinery furnished for the purpose of such Work have been paid or that the person or persons to whom the same may be due have consented to such final payment.

Neither the final payment on this contract by the Owner nor any provisions in the contract documents shall relieve the Contractor of the responsibility for negligence in the furnishing and installation of faulty materials or for faulty workmanship which shows up within the extent and period provided by law or within the guarantee period of one (1) year from final acceptance of the work performed under this Contract, whichever is greater, nor of the responsibility of remedying such faulty workmanship and materials.

The acceptance by the Contractor of the final payment shall constitute a release and waiver of all claims by the Contractor except those previously made and still unsettled.

9-8 OWNER'S RIGHT TO WITHHOLD CERTAIN AMOUNTS
The Owner may withhold, in addition to retained percentages, from payment to the Contractor, such an amount or amounts as may be necessary to cover:

A. Payments that may be earned or due for just claims for labor and materials furnished in and about the Work.
B. For defective Work not remedied.
C. For failure of the Contractor to make proper payments to his subcontractors.
D. For reasonable doubt that the contract can be completed for the balance then unpaid.

The Owner will disburse and shall have the right to act as agent for the Contractor in disbursing such funds as have been withheld pursuant to this paragraph to the party or parties who are entitled to payment therefrom. The Owner will render to the Contractor a proper accounting of all such funds disbursed in behalf of the Contractor.
The Owner also reserves the right, even after full completion and acceptance of the Work, to refuse payment of the final ten percent (10%) due the Contractor, until it is satisfied that all subcontractors, material suppliers, and employees of the Contractor have been paid in full.

9-9  RELEASE OF CLAIMS AND LIENS
Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the Owner a complete release of all claims or liens arising out of this contract, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he has knowledge or information the release and receipts include all the labor and materials for which a lien or claim could be filed; but the Contractor may, if a subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Owner to indemnify the Owner against any claim or lien (in cases where such payment is not already guaranteed by surety bond). If any claim or lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.
DIVISION II
Technical Specifications

EXCAVATION AND CLEANUP
SECTION 1. EXCAVATION AND BACKFILL FOR UNDERGROUND CONDUITS

1-1 DESCRIPTION

1-2 CONSTRUCTION DETAILS

SECTION 2. RESTORATION OF SURFACES

2-1 GENERAL

2-2 CONSTRUCTION DETAILS

SECTION 3. FINISHING AND CLEAN UP FOR UNDERGROUND CONDUITS

3-1 CLEAN UP
SECTION 1. EXCAVATION AND BACKFILL FOR UNDERGROUND CONDUITS

1-1 DESCRIPTION

For the purpose of this section, underground conduits shall be considered sewer pipe, water main or any other pipe conduit indicated on the Plans. Wherever the term "pipe" or "pipe line" is used, it shall mean underground conduit.

Excavation and backfill shall include all excavation, backfilling, compacting, disposal of surplus material, restoration of all disturbed surface, and all other work incidental to the construction of trenches, including any additional excavation which may be required for manholes or other structures forming a part of the pipe line.

1-2 CONSTRUCTION DETAILS

1-2.01 SURFACE REMOVAL AND TOPSOIL PRESERVATION

Along the proposed pipe lines as indicated on the Plans, the Contractor shall remove the surface materials only to such widths as will permit a trench to be excavated which will afford sufficient room for proper efficiency and proper construction. Where sidewalks, driveways, pavements and curb and gutter are encountered, care shall be taken to protect such against fracture or disturbance beyond reasonable working limits. In areas specified on the Plans, topsoil suitable for final grading and landscaping shall be piled separately in locations approved by the Owner and preserved so that it may be restored after the remainder of the backfill is replaced.

1-2.02 WIDTH OF EXCAVATION

A. The bottom width of the trench at and below the top of the pipe and inside the sheeting and bracing, if used, shall be in accordance with Section 550.04 of the Standard Specifications, unless otherwise noted.

Note: The strength or class of pipe shall be as indicated on the Plans.

B. Trench sheeting and bracing or a trench shield shall be used as required by the rules and regulations of O.S.H.A. The Engineer shall not be responsible for determining whether the contractor is in compliance with this provision. The bottom of the trench excavation shall conform to the details shown on the Plan.

C. If these trench widths are exceeded without the written permission of the Engineer, the pipe shall be installed with a concrete cradle or with concrete encasement or a stronger pipe than originally specified shall be used as approved by the Engineer.
1-2.03 EXCAVATION BELOW GRADE

In cases where the excavation is carried beyond or below the lines and grades given by the Engineer, the Contractor shall, at his own expense, refill all such excavated space with suitable granular material.

1-2.04 ROCK EXCAVATION

A. GENERAL

Wherever "rock" is used as the name of an excavated material, it shall mean boulders or pieces of rock, concrete, or masonry measuring one-half (1/2) cubic yard or more, hard shale or solid ledge rock and masonry which requires for its removal the continuous use of pneumatic tools or drilling and blasting.

Before payment is allowed for "Rock Excavation", the Contractor shall be required to demonstrate the material cannot be removed "by hand pick" or by power operated excavator or shovel. No payment will be made for Rock Excavation unless air tools or explosives were used by the Contractor. No payment will be made for "Rock Excavation" unless the Engineer approves such payment in writing in advance upon being satisfied that the material meets the above criteria.

B. MEASUREMENT FOR PAYMENT

Where "Rock Excavation" is to be measured for payment, quantities will be determined by the Engineer. Rock required to be removed shall be computed by the cubic yard. Width for pay purposes shall be the measured width of rock removed, but shall not exceed the width specified in Section 550.04 of the Standard Specifications, plus any sheeting and bracing if required. Depth for pay purposes shall be the difference in elevation between the top and bottom of the rock as determined by the Engineer. Where rock is encountered in the bottom of the trench, the maximum depth for payment purposes will be six inches (6") below the bottom of the pipe. Where the proposal does not contain a pay item for "Rock Excavation", the additional cost of rock removal as defined by the specifications shall be paid on extra work basis. (Division I, Section 9-4).

C. PAYMENT

Payment shall be made at the Contract unit price per cubic yard of "Rock Excavation". These prices shall be full compensation for furnishing all materials; for all preparation, excavation and disposal of rock; and for all labor, equipment, tools and incidentals necessary to complete the item.
1-2.05 SUBSURFACE EXPLORATION

All information available to the Owner, if any, on subsurface exploration will be made available for examination by prospective Bidders. However, it is understood and agreed that the Owner shall in no way be held responsible for interpretation of this information, its accuracy or its thoroughness. Prospective Bidders shall make such subsurface explorations as they believe necessary to verify and supplement information received from the Owner.

1-2.06 EXPLORATORY EXCAVATION

A. GENERAL
Whenever, in the opinion of the Engineer, it is necessary to explore or excavate in advance of the Work to determine the best line and grade for the construction of the proposed pipe line, the Contractor shall make explorations and excavations for such purposes.

B. PAYMENT
The cost of such excavation will be paid at the contract unit price per foot for "Exploration Trench", or if no Bid Item is included, on an extra work basis.

1-2.07 BRACED AND SHEETED TRENCHES

A. GENERAL
Open-cut trenches shall be sheeted and braced or otherwise protected as required by any governing Federal or State laws and municipal ordinances, and as may be necessary to protect life, property, or the Work. In any event, the minimum protection shall conform to the recommendations in the Occupational Safety and Health Act Standards for Construction (OSHA). A sand box or trench shield may be used in lieu of sheeting as permitted by OSHA. When close-sheeting is used, it shall be so driven as to prevent adjacent soil from entering the trench either below or through such sheeting. Tight sheeting shall be used in that portion of the excavation in or along state and county highways below the intersection of a 1 to 1 slope line from the nearest face of the excavation to the edge of the pavement.

Where sheeting and bracing are used, the trench width shall be increased accordingly. The sheeting will be driven to the full depth of work, or to a depth where the soil has the stability necessary to meet the OSHA standards, whichever is lower. The shallower depth of required sheeting may be established by soil boring and analysis, to be performed at the Contractor's sole cost. The owner shall have the right of consent in the selection of the soils engineer for the sampling and analysis. This provision shall not relieve the contractor, in any degree, from his responsibilities under the contract.
Sheeting and bracing, which are required to be left in place shall be cut off at the specified elevation. Trench bracing, except that specified to be left in place, may be removed when the backfilling reaches the said bracing's level. All sheeting except that required to be left in place may be removed as the excavation is refilled, in such a manner as to avoid bank cave-in(s) or disturbance to the adjacent area(s) or structure(s). The voids left by the withdrawal of the sheeting shall be carefully filled by jetting, vibrating, ramming or other satisfactory means.

B. **PAYMENT**

Payment for sheeting and bracing, and all other Work incidental to sheeting and bracing, shall not be made separately but shall be included in the Contract price for the pipe size, except when ordered left in place.

Payment for timber sheeting left in place when shown on the plans or directed by the Engineer shall be made at the Contract unit price per 1,000 board feet of "Timber Sheet Left in Place."

Payment for steel sheet piling when specified shall be made at the Contract unit price per square foot for "Steel Sheet Piling."

Payment for steel sheet piling left in place when shown on the plans or directed by the Engineer shall be made at the Contract unit price per square foot for "Steel Sheet Piling Left in Place."

**1-2.08 TRENCHES WITH SLOPING SIDES, LIMITED**

The Contractor may, at his option, where working conditions and right-of-way permit, excavate pipe line trenches with sloping sides, but with the following limitations:

A. In general, only braced and vertical trenches will be permitted in traveled streets, alleys or narrow easements.

B. Where trenches with sloping sides are permitted, the slopes shall not extend below the top of the pipe, and trench excavations below this point shall be made with vertical sides with widths not exceeding those specified hereinbefore for the various sizes of pipe.
1-2.09 SHORT TUNNELS

In some instances, trees, fire hydrants, sidewalks and other obstructions may be encountered, the proximity of which may be a hindrance to open-cut excavation. In such cases, the Contractor shall excavate by means of short tunnels in order to protect such obstructions against damage. Where such obstructions are shown on the Plans, short tunnel work shall be considered incidental to the construction of the pipe line and shall not be grounds for extra payment or payment for tunnel work. Where such obstructions are not shown on the Plans, payment will be at the Contract unit price or as extra work in accordance with Division I, Section 9-4.

1-2.10 PILING EXCAVATION MATERIAL

All excavated material shall be stockpiled to avoid obstructing streets, sidewalks and driveways. Excavated material suitable for backfilling shall be stockpiled separately on the site. No material shall be placed closer than 2'0" to the edge of an excavation. Fire hydrants under pressure, valve pit covers, valve boxes, curb top boxes, or other utility controls shall be left unobstructed and accessible until the Work is completed. Gutters shall be kept clear or other satisfactory provisions made for street drainage. Natural watercourses shall not be obstructed or polluted. Surplus material and excavated material unsuitable for backfilling shall be transported and disposed of off the site in disposal areas obtained by the Contractor.

1-2.11 REMOVAL OF WATER

The Contractor shall at all times during construction provide and maintain ample means and devices with which to promptly remove and properly dispose of all water entering the excavations or other parts of the Work until all Work to be performed therein has been completed. No sanitary sewer shall be used for disposal of trench water, unless specifically approved by the Engineer and then only if the trench water does not ultimately arrive at existing pumping or sewage treatment facilities. No water containing settle able solids shall be discharged into storm sewers.

1-2.12 BLASTING

Blasting for excavation will be permitted only after securing the approval of the Owner and only when proper precautions are taken for the protections of persons and property. The hours of blasting will be reviewed by the Owner. Any damage caused by blasting shall be repaired by the Contractor at his expense. The Contractor's methods of procedure in blasting shall conform to Federal and State laws and municipal ordinances and O.S.H.A. rules and regulations. The Engineer shall not be responsible for determining whether the contractor is in compliance with these rules and regulations.
1-2.13 SAFETY

A. BARRICADES, GUARDS AND SAFETY PROVISIONS
To protect persons from injury and to avoid property damage, adequate barricades, construction signs, lights and guards as required shall be placed and maintained by the Contractor at his expense during the progress of the construction Work and until it is safe for traffic to use the roads and streets. All material piles, equipment and pipe which may serve as obstructions to traffic shall be enclosed by fences or barricades and shall be protected by proper lights when the visibility is poor. The rules and regulations of O.S.H.A. and appropriate authorities respecting safety provisions shall be observed. The Engineer shall not be responsible for determining whether the contractor is in compliance with these rules and regulations.

B. STRUCTURE PROTECTION
Temporary support, adequate protection and maintenance of all underground and surface structures, drains, sewers and other obstructions encountered in the progress of the Work shall be furnished to the Contractor at his expense. Any structures which may have been disturbed shall be restored upon completion of the Work.

C. PROTECTION OF PROPERTY AND SURFACE STRUCTURES
Trees, shrubbery, fences, poles and all other property and surface structures shall be protected during construction operations unless their removal for purposes of construction is authorized by the Engineer. Any fences, poles, or other man-made surface improvements which are moved or disturbed by the Contractor shall be restored to the original conditions, after construction is completed, at the Contractor's expense. Any trees, shrubbery or other vegetation which are approved for removal or ordered for removal by the Engineer in order to facilitate construction operations shall be removed completely, including stumps and roots, by the Contractor. Responsibility for any damage or claims for damage caused by construction operations to shrubbery or other landscape improvements which were not authorized for removal by the Engineer shall be assumed by the Contractor.

1-2.14 DEVIATIONS OCCASIONED BY STRUCTURES OR UTILITIES
Wherever obstructions are encountered during the progress of the Work and interfere to such an extent that an alteration in the plan is required, the Engineer shall have the authority to change the Plans and order a deviation from the line and grade or arrange with the owners of the structures for the removal, relocation or reconstruction of the obstructions. Where gas, water, telephone, electrical, hot water, steam, or other existing utilities are an impediment to the vertical or horizontal alignment of the proposed pipe line, the Engineer shall order a change in grade or alignment or shall direct the Contractor to arrange with the owners of the utilities for their removal.
1-2.15 INTERRUPTION TO UTILITIES
The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures may be determined. Prior to proceeding with trench excavation, the Contractor shall contact all utility companies in the area to aid in locating their underground services.

The Contractor shall take all reasonable precautions against damage to existing utilities. However, in the event of a break in an existing water main, gas main, sewer or underground cable, he shall immediately notify the responsible official of the organization operating the utility interrupted. The Contractor shall lend all possible assistance in restoring services and shall assume all cost, charges, or claims connected with the interruption and repair of such services if the location of said utility was marked by the owner thereof prior to excavation.

1-2.16 MAINTENANCE OF TRAFFIC AND CLOSING OF STREETS
The Contractor shall carry on the Work in a manner which will cause a minimum of interruption to traffic, and may close to through travel not more than two consecutive blocks, including the cross street intersected. Where traffic must cross open trenches, the Contractor shall provide suitable bridges at street intersections and driveways. The Contractor shall post suitable signs indicating that a street is closed and necessary detour signs for the proper maintenance of traffic. Prior to closing of any streets, the Contractor shall notify responsible municipal authorities at least five (5) days in advance of the starting of the Work, unless otherwise approved by the municipality.

1-2.17 CONSTRUCTION IN EASEMENTS
In easements across private property, the Contractor shall confine all operations in the easement area and shall be responsible and liable for all damage outside of the easement area. Trees, fences, shrubbery or other type of surface improvements located in the easements will require protection during construction. The provisions of Section 1-2.14C above shall apply to all easement areas as well as to public right-of-way. Precautions shall be taken by adequate sheeting or other approved method to prevent any cave-in or subsidence beyond the easement limits or damage to improvements within the easement. In general, the easement area is intended to provide reasonable access and working area for efficient operation by the Contractor. Where easement space for efficient operation is not provided, the Contractor shall be responsible for organizing his operations to perform within the restrictions shown on the Plans. The Owner shall make available to the Contractor a copy of the construction easements.
1-2.18 UNDERGROUND CONDUIT CONSTRUCTED IN TUNNEL

A. GENERAL
Where shown on the plans or where specifically authorized by the Engineer, pipe lines shall be constructed in tunnel. This work will be made in accordance with requirements of any permits obtained by the Owner from railroads or state or county highway departments for tunnel work or in accordance with the following paragraph.

B. MATERIALS
Pipe materials shall be as shown on the Plans or as described in the Special Provisions.

C. EXCAVATION AND LAYING
Requirements for excavation and laying and for joints shall be those applicable for the type of pipe line involved, unless otherwise specified.

Before starting excavations for tunnel shafts or jacking or augering pits, the Contractor shall submit drawings of proposed sheeting and bracing arrangements which have been prepared, signed and sealed by a structural Engineer registered in the State of Illinois for Work in Illinois and by a structural Engineer registered in the State of Indiana for Work in Indiana.

An adequate ventilation system shall be provided to properly ventilate all parts of the tunnel.

D. METHODS OF CONSTRUCTION
1. The tunnel shall be only of sufficient width and height to provide free working space. The sides and roof of the tunnel shall be braced sufficiently to support the external loads and to prevent caving, bulging, and settlement of the earth.

2. The Contractor shall backfill all tunnels with well compacted sand, fine gravel or stone screenings as rapidly as the conditions permit.

3. The backfill material shall be deposited in the tunnel in such a manner as not to injure or disturb the pipe. The filling of the tunnel shall be carried on simultaneously on both sides of the pipe in such a manner that injurious side pressures do not occur. Special care shall be taken to compact the backfill under the haunches of the pipe. The remainder of the tunnel, or such portion of the remainder as may be possible, shall then be backfilled by one of the following methods, at the option of the Contractor.

   a. The material shall be deposited in uniform layers not to exceed twelve inches (12") thick (loose measure) and such layer either inundated or deposited in water.
b. The tunnel shall be backfilled with loose material or only partly backfilled at a time, if necessary, and settlement secured in either case by introducing water through holes jetted into the material to a point approximately two feet (2') above the top of the pipe.

4. If neither of the above methods is practicable or can be used for only a portion of the backfill, the remainder of the tunnel shall be completely backfilled with material carefully deposited in uniform layers and each layer compacted by ramming or tamping with appropriate tools.

5. When sheeting and bracing have been used, sufficient bracing shall be left across the trench as the backfilling progresses to hold the sides and top firmly in place without caving or settlement before the backfilling has been placed. This bracing may be removed as soon as practicable.

6. Any depressions which may develop within the area involved in the construction operations due to settlement of the backfilling material shall be filled.

E. USE OF CASING PIPE

The Contractor may use metal casing pipe as a tunnel liner in place of timber shoring for tunnel sections. The design data for such pipe, including, but not necessarily limited to, the diameter, gauge, type of pipe, method of placing and installation will be submitted for the owner's review. The void space between tunnel liners or casing pipe and the carrier pipe shall be filled with compacted sand or other approved material.

F. JACKING OR BORING OF PIPE

The Contractor may, subject to the approval of the Owner, use special cast iron or specially designed reinforced concrete jacking pipe jacked and/or bored into position with or without tunnel liners, for tunneled sections pipe.

G. MEASUREMENT AND PAYMENT

Underground conduit constructed in tunnel will be paid for at the unit prices Bid for "Underground Conduit Constructed in Tunnel" for the various type and sizes for the actual length of tunnel Work. Payment shall include all labor, materials and equipment necessary to construct the conduit and tunnel, complete in place, including excavation and backfill, shoring and bracing, furnishing and laying casing pipe where required and carrier pipe, and all other Work necessary for a complete installation.
1-2-19 SANITARY SEWERS

A. GENERAL
The methods of excavating and backfilling sanitary sewer pipe shall be in compliance with the latest edition of the Illinois Department of Transportation, "Standard Specifications for Road and Bridge Construction", and the Metropolitan Water Reclamation District of Greater Chicago, "Manual of Procedure", latest revision. Where there is a conflict of these specifications, the MWRDGC, "Manual of Procedure" shall be used.

B. MATERIAL
Pipe material shall be as shown on the Plans or as described in the Special Provisions. No substitution of material shall be made without written approval from the Owner.

C. EXCAVATION AND BEDDING
The trench shall be excavated to an elevation to allow for the following bedding.

Bedding, other than concrete embedment, shall consist of gravel, crushed gravel, crushed stone or crushed slag, 1/4" to 1" in size. As a minimum, the material shall conform to the requirements of Article 1004.01 of the State Specifications or ASTM Designation C-33. The gradation shall conform to Section 1004, gradation CA 11 or CA 13 or to ASTM Gradation No. 67. The pipe shall be laid so that it will be uniformly supported and the entire length of the pipe barrel will have full bearing. No blocking of any kind shall be used to adjust the pipe to grade except when used with embedment concrete. Bedding shall be required for all sewer construction, except ductile iron pipe, and shall be of a thickness equal to 1/4 of the outside diameter of the sewer pipe with a maximum thickness of eight inches (8") but shall not be less than four inches (4").

Where unsuitable material is encountered at the grade established, all such unsuitable soil shall be removed under the pipe and for the width of the trench, and shall be replaced with well compacted bedding material, to the satisfaction of the Engineer.

Where rock is encountered, it shall be removed below grade and replaced with a cushion of well compacted bedding material having a thickness under the pipe of not less than eight inches (8").

The cost of furnishing, placing and compacting bedding material will be considered as incidental work and no additional compensation will be allowed.

D. BACKFILLING
The backfilling of the sanitary sewer pipe trench shall be the same as for storm sewer pipe described in Section 550.07 of the Standard Specifications.
E. **METHOD OF MEASUREMENT**
   The method of measurement shall be the same as for storm sewer pipe described in Section 550.09 of the Standard Specifications except measurements will be made to the center of manholes.

F. **BASIS OF PAYMENT**
   This work will be paid for at the Contract unit price per foot for "Sanitary Sewer" of the type and diameter specified and measured as specified.

   "Trench Backfill", when specified, will be measured and paid for at the Contract unit price per foot unless otherwise stated in the Special Provisions or contract documents.

1-2.20 **WATER MAINS**

A. **GENERAL**
   The method of excavating and backfilling water mains shall be in compliance with the latest edition of the Illinois Department of Transportation, "Standard Specifications for Road and Bridge Construction," and those below.

B. **MATERIAL**
   Pipe material shall be as shown on the Plans or as described in the Special Provisions. No substitution of material shall be made without written approval of the Owner.

C. **EXCAVATION AND BEDDING**
   The trench shall be excavated to an elevation to allow the minimum cover over the pipe as called for on the plans. Provision must be made by the Contractor to allow for any future cuts to be made to the ground over the pipe to assure that the minimum cover is maintained.

   Bedding as described in Section 1-2.21C for sanitary sewers shall be required for all water mains, except ductile iron pipe that requires no bedding. The method of bedding for unsuitable material and where rock is encountered shall also comply with the conditions of that Section.

   The cost of furnishing, placing and compacting bedding material will be considered as incidental work and no additional compensation will be allowed.

D. **BACKFILLING**
   The backfilling of the water main pipe shall be the same as for storm sewer pipe as described in Section 550.07 of the Standard Specifications except that the moist fine aggregate backfill to the elevation of the center of the pipe will not be required for ductile iron pipe. For PVC or any other type of pipe, the moist fine aggregate shall be
brought to a level 12" above the top of the pipe and it shall be compacted as described in that Section.

E. METHOD OF MEASUREMENT
"Water main" pipe of the different types and diameters will be measured by the lineal foot in place.

Unless they are listed as separate Bid items, the water main item shall include all fittings required and all other material, except trench backfill within the specified trench.

F. BASIS OF PAYMENT
This work will be paid for at the Contract unit price per lineal foot for "Water main" of the type and diameter specified and measured as specified.

"Trench Backfill", when specified, will be measured and paid for at the Contract unit price per foot, unless otherwise specified in the special provisions or contract documents.
SECTION 2. RESTORATION OF SURFACES

2-1 GENERAL

Restoration of surfaces shall include the removal of the existing surface, the disposal of surplus material, and the construction of new surfaces as indicated on the plans or Special Provisions. The type of surface restoration required shall be shown on the Plans or described in the Special Provisions.

2-2 CONSTRUCTION DETAILS

2-2.01 TEMPORARY SURFACE OVER TRENCH

Wherever conduits are constructed under traveled roadways, driveways, sidewalks, or other traveled surfaces, a temporary surface shall be placed over the top of the trench as soon as possible after compaction, as specified above, has been satisfactorily completed. The temporary surface shall consist of a minimum of six inches (6") of coarse aggregate conforming to the current specifications of the State Specifications for Grade No. CA-9 or CA-10. The top of the temporary surface shall be smooth and meet the grade of the adjacent undisturbed surface. The temporary surface shall be maintained at the Contractor's expense until final restoration of the street surface is completed, unless specific items for temporary aggregate is specified. No permanent restoration of street surface shall be initiated until authorized by the Engineer.

2-2.02 REMOVAL OF PAVEMENT, SIDEWALK, DRIVEWAY AND CURB

Wherever the pipe is located along or across an improved surface, the width of the trench shall be held as nearly as possible to the maximum width specified in Section 1-2.02. Where brick or concrete pavement, sidewalk, driveway or curbing is cut, the width of the cut shall exceed the actual width of the top of the trench by twelve inches (12") on each side or a total of two feet (2'). Exposed surfaces of portland cement or asphaltic concrete shall be cut with a pavement saw before breaking. Care shall be taken in cutting to insure that a straight joint is sawed.

2-2.03 REPLACEMENT OF PERMANENT TYPE PAVEMENT, SIDEWALKS, DRIVEWAYS, CURBS, GUTTERS AND STRUCTURES.

The Contractor shall restore (unless otherwise specified or ordered by the Engineer) all permanent type pavements, sidewalks, driveways, curbs, gutters, shrubbery, fences, poles and other property and surface structures removed or disturbed during or as a result of construction operations to a condition which is equal in appearance and quality to the condition that existed before the Work began. The surface of all improvements shall be constructed of the same material and match in appearance the surface of the improvement which was removed. Where trench backfill is used, the restoration shall be made as soon as possible after jetting of the backfill has been completed.
2-2.04 REPLACING EXISTING TEMPORARY STREET AND ALLEY SURFACES

A. GENERAL
For the purpose of this specification, all existing street and alley surfaces shall be considered temporary except:

(1) concrete or brick pavements; (2) an asphaltic concrete or a bituminous treated surface over a soil cement, concrete, crushed stone or selected gravel base. Specifically included as temporary street surfaces, shall be compacted earth, cinders, shale, mixtures of gravel and earth or crushed stone and earth, whether or not these respective materials are further stabilized by road oil or bituminous surface treatment. This work should not be confused with Temporary Surface Over Trench as specified in Section 2-2.01.

Where conduits are constructed under temporary street or alley surfaces, or where such surfaces are used for the placement of backfill material or are disturbed by construction operations, the Contractor shall reconstruct, by grading and shaping, the entire width of roadway, and any drainage facilities which may have existed, to the original condition at the Contractor's expense, including that portion within the specified trench width where removal and restoration is paid for under a separate payment item.

Where, in the opinion of the Engineer, the conduit is located in the traveled portion of the temporary street or alley traveled surface, a new temporary surface shall be constructed over the trench, as specified in Section 2-2.01 of this Division. After this surface has been placed, it shall be maintained by the Contractor until final restoration is authorized. Just prior to final restoration, the entire width of the street to be restored shall be scarified. For final surface restoration, the Contractor shall apply a bituminous treatment to the entire width of the traveled surface, as ordered by the Engineer. The bituminous treatment shall consist of the application of a bituminous prime coat and a bituminous surface treatment corresponding to the materials and construction methods described in the State Specifications for bituminous surface treatment, Class A-1, A-2, or A-3 as specified, or shown in the bid items.

The Engineer reserves the right to order the omission of Bituminous Surface Treatment in any locations where such omission may be, in his opinion, in the public interest.

B. MEASUREMENT
Measurement for purposes of payment shall be computed by using the actual length and width of surface to which treatment is applied, in accordance with these Specifications.
C. **PAYMENT**

The cost of final restoration of the surface shall be paid for at the contract unit price per foot, unless so stated in the Special Provisions or for all State of Illinois projects, for "Bituminous Surface Treatment", of the type specified. Such price shall include the cost of all labor and materials necessary to provide the bituminous treatment as specified.

2-2.05 **DISPOSAL OF SURPLUS EXCAVATED MATERIAL**

Surplus excavated material not needed for backfill shall be promptly removed from the site to locations provided by the Contractor. The cost of removal and disposal of surplus excavated materials will be included in the respective unit prices for pipeline or conduit construction and no additional payment will be allowed therefor.

2-2.06 **CLEANING UP**

All surplus materials and all tools and temporary structures shall be removed from the site by the Contractor. All dirt, rubbish and excess earth from the excavation shall be hauled to a dump provided by the Contractor and the construction site left clean and acceptable to the Owner at the earliest possible date.
SECTION 3. FINISHING AND CLEAN UP FOR UNDERGROUND CONDUITS

3-1 CLEAN UP

Before acceptance of underground conduits construction, all pipes, manholes, catch basins, fire hydrants and other appurtenances shall be cleaned of all debris and foreign material.

After all backfill has been completed, the ground surface shall be shaped to conform to the contour of adjacent surfaces. General clean up of the entire construction area shall otherwise conform to applicable requirements specified.
DIVISION II
Technical Specifications

SANITARY SEWER AND
FORCE MAIN
SECTION 6. FORCE MAIN MATERIAL AND INSTALLATION

6-1 DESCRIPTION
6-2 GENERAL
6-3 CERTIFICATION
6-4 MATERIALS
6-5 CONNECTION TO EXISTING SANITARY SEWER MANHOLE
6-6 STEEL SLEEVES-AUGERED
  Standard Sizes of Steel Sleeves Used As Casings*
6-7 STEEL SLEEVES-OPEN CUT INSTALLATION
6-8 SEWER FLOW CONTROL AND BYPASS PUMPING
6-9 WATER USE

SECTION 7. FORCE MAIN VALVES

7-1 GENERAL
7-2 MANUFACTURERS
7-3 MATERIALS
7-4 VALVE JOINTS
7-4 OPERATING FORCE
7-5 FLOOR AND BENCH STANDS
7-6 VALVE VAULTS
7-7 TYPE-SPECIFIC VALVE SPECIFICATIONS
7-8 PAYMENT
SECTION 1. PIPE MATERIAL FOR SEWERS

1-1 DESCRIPTION
Pipe used in sanitary sewer construction, unless otherwise specified, shall be Polyvinyl Chloride Pipe (PVC) or Ductile Iron Pipe (DIP). All sanitary sewer pipe shall have flexible gasketed joints unless otherwise specified.

The Contractor shall only use the sewer pipe material specified on the Plans unless he receives written permission from the Engineer to substitute one of the other materials mentioned herein. No verbal approval, regardless of the source, will be recognized for changing the pipe material, class or type of joint.

1-2 GENERAL
Where reference is made to an ASTM or ANSI designation, it shall be the latest revision at the time of call for Bids, except as noted on the Plans or in the Special Provisions.

CERTIFICATION shall be the responsibility of the pipe manufacturer to certify that pipe and joint material furnished is capable of withstanding the infiltration or exfiltration basis as specified or required, if properly installed.

1-3 MATERIALS

1-3.01 PIPE MATERIALS
The type, class and strength of pipe to be used shall be as shown on the Plans or described in the Special Provisions.

A. DUCTILE IRON PIPE AND FITTINGS
Ductile Iron Pipe shall conform to ANSI A 21.51 (AWWA C-151), Class 52 designed per ANSI A 21.50 (AWWA C-150), tar (seal) coated and/or cement lined per ANSI A 21.4 (AWWA C-104), with mechanical or rubber ring (slip seal or push on) joints. Ductile Iron fittings shall conform to ANSI/AWWA C110 for mechanical, push-on or flanged joints. Cement-mortar and/or tar (seal) coat per ANSI A 21.4 (AWWA 104) and as specified.

B. POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS
Polyvinyl Chloride pipe (PVC) and fittings shall conform to ASTM F 679 or ASTM D 3034, except that it shall be made of PVC plastic having a minimum cell classification of 12454B.

1-3.02 JOINT MATERIALS
The type of joint materials to be used shall be as shown on the Plans or described in the Special Provisions.
JOINTS FOR SANITARY SEWERS

A. Polyvinyl Chloride (PVC) pipe joints shall conform to ASTM D 2855 for solvent joints or ASTM D 3212 for gasket joints.


1-3.03 FITTINGS

Unless otherwise specified, tee fittings shall be provided in the sanitary sewer main for service sewer connections; a log of all tee fitting locations shall be kept by the Contractor during installation and one legible copy of each such log shall be turned over to the Owner prior to completion. Tees shall be six inches (6") inside diameter, unless otherwise specified or noted. All fittings shall be of the same material as the pipe. Material joining the fitting to the pipe shall be free from cracks and shall adhere tightly to each joining surface.

1-3.04 CAP FOR FITTINGS

All fittings shall be capped with a plug of the same material as the pipe, and gasketed with the same gasket material as the pipe joint, or be of material approved by the Engineer. The plug shall be secured to withstand test pressures specified herein.
SECTION 2. PIPE LAYING, JOINTING AND TESTING OF SEWERS

2-1 CONSTRUCTION DETAILS

2-1.01 SEWER PIPE LAYING
Laying of sewer pipe shall be accomplished to line and grade in the trench only after it has been dewatered and the foundation and/or bedding has been prepared in accordance with Division II, Excavation and Cleanup. Mud, silt, gravel and other foreign material shall be kept out of the pipe and off the jointing surfaces.

Variance from established line and grade shall not be greater than one thirty-second of an inch (1/32") per inch of pipe diameter and not to exceed one-half inch (1/2"), provided that any such variation does not result in a level or reverse sloping invert; provided also that variation in the invert elevation between adjoining ends of pipe, due to non-concentricity of joining surface and pipe interior surfaces, does not exceed one sixty-fourth of an inch (1/64") per inch of pipe diameter, or one-half inch (1/2") maximum.

The sewer pipe, unless otherwise approved by the Engineer, shall be laid upgrade from point of connection on the existing sewer or from a designated starting point. The sewer pipe shall be installed with the bell end forward or upgrade, unless approved otherwise. When pipe laying is not in progress, the forward end of the pipe shall be kept tightly closed with an approved temporary plug.

A. SEWER PIPE AND WATER MAIN SEPARATION
Sanitary sewers, house sewers or storm drains that are laid in the vicinity of pipe lines designated to carry potable water shall meet the following conditions as set forth in Division II, Water Distribution, Section 2-2.01.

B. SEWER MANHOLES
Sewer manholes shall be constructed so that no water pipe is in contact with or enclosed by any part of a sewer or sewer manhole. See also Division II, Water Distribution, Section 2-2.01.

2-1.02 Dewatering
Dewatering sufficient to maintain the water level twelve inches (12") below the surface of the trench bottom or base of the bedding course, shall be accomplished prior to pipe laying and jointing, if not prior to excavation and placing of the bedding as called for in other sections of the Specifications or Special Provisions. The dewatering operation, however accomplished, shall be carried out so that it does not destroy or weaken the strength of the soil under or alongside the trench. The normal water table shall be restored to its natural level in such a manner as to not disturb the pipe and its foundation.

2-1.03 BEDDING
The pipe bedding shall be placed so that the entire length of the pipe will have full bearing. No blocking of any kind shall be used to adjust the pipe to grade except when used with concrete encasement.
2-1.04 PLUGS AND CONNECTIONS
Plugs for pipe branches, stubs or other open ends which are not to be immediately connected shall be made of an approved material and shall be secured in place with a joint comparable to the main line joint. Stoppers may be of an integrally cast breakout design.

2-1.05 PIPE MARKINGS
All pipe shall have a homing mark on the spigot provided by the manufacturer.

2-1.06 PIPE JOINTING
Type of joint to be used will conform to the requirements of Section 1-3.02.

All pipe and jointing for sanitary sewers shall be subject to the tests specified in Section 2-1.09.

A. GASKET TYPE JOINTS
All extensions, additions and revisions of a sanitary sewer system, unless otherwise indicated in the Special Provisions, shall be made with sewer pipe jointed by means of a flexible gasket which shall be fabricated and installed in accordance with the specifications that follow. When gaskets are placed on the pipe in the field, the surfaces on which the gasket seats must be thoroughly cleaned. The gasket, lubricated according to the manufacturer's instructions, is placed on the pipe.

Pipe handling after the gasket has been affixed shall be carefully controlled to avoid disturbing the gasket and knocking it out of position or loading it with dirt or other foreign material. Any gaskets so disturbed shall be removed and replaced, cleaned and relubricated if required, before the jointing is attempted.

Care shall be taken to properly align the pipe before joints are entirely forced home. During insertion of the tongue or spigot, the pipe shall be partially supported by hand, sling or crane to minimize unequal lateral pressure on the gasket and to maintain concentricity until the gasket is properly positioned.

Sufficient pressure shall be applied in making the joint to assure that it is home, as described in the installation instructions provided by the pipe manufacturer. Sufficient restraint as specified in Section 2-1.02 shall be applied to the line to assure that joints once home are held so, until fill material under and alongside the pipe has been sufficiently compacted. At the end of the work day, the last pipe laid shall be blocked in an effective way to prevent creep. The pipe shall be closed with a suitable "night cap".

Pipe required to be laid on curved alignment shall be joined in straight alignment and then be deflected, joint by joint. Special care shall be taken in blocking the pipe just previously laid, by tamped fill or otherwise to resist the misaligning forces generated during compression of the joints being made.
B. JOINTING OF DISSIMILAR PIPES
Suitable adaptation couplings shall be specified in the Special Provisions for the jointing of dissimilar pipes. Where suitable adaptor couplings are not available for dissimilar pipes the jointing shall be accomplished with a special fabricated coupling to concrete encasement as specified, or as submitted by the Contractor and approved by the Engineer.

2-1.07 SEWER LINE CONNECTIONS
Sewer line connections to trunks, mains, laterals, or side sewers shall be left uncovered until after an acceptance observation has been made. After approval of the connection, the trench shall be backfilled as specified in Division II, Excavation and Cleanup, Section 1-2.20 after first covering the bare pipe with select material compacted to a depth of six inches (6") above the crown of the pipe.

No existing sewer shall be connected to a sanitary sewer unless specifically authorized in each instance by the Engineer. Storm drains and drain tiles shall not be connected to a sanitary sewer.

2-1.08 SERVICE RISERS
Where the depth of the sewer invert is greater than twelve feet (12') below the surface of the ground, a service riser shall be constructed to an elevation of ten feet (10') below the ground elevation or as directed by the Engineer.

The service riser shall be constructed with the six-inch (6") tee as shown on the Plans placed to receive the six-inch (6") riser pipe. The tee shall be bedded as shown on Plans.

The riser pipe shall extend to the proper elevations and shall terminate with a manufactured plug.

Extreme care shall be taken in backfilling around risers. Where the excavated material is not suitable for this purpose in the opinion of the Engineer, granular material shall be placed around the riser.

2-1.09 TESTING AND INSPECTION FOR ACCEPTANCE OF SANITARY SEWER
Testing and inspection of sanitary sewers for acceptability shall be conducted by:

A. Exfiltration of water
B. Infiltration of water
C. Exfiltration of air under pressure
D. Lamping
E. Televising (Optional procedure to supplement items A. through E.)

At a minimum, all sanitary sewers shall be tested for acceptability by either A., B., or C. above or a combination thereof. All lines shall be cleaned of debris and flushed clean as necessary. Debris shall not be flushed into sanitary sewer.
A. **SELECTION OF TEST SECTIONS**

Unless otherwise specified or directed by the Engineer, the first section of sanitary sewer constructed of approximately 1,200 feet in length or the entire length of sewer if it is less than 1,200 feet shall be tested by the exfiltration, infiltration, or air testing method before additional excavation is permitted.

The Contractor may at his option divide the first section of sewer into subsections of more convenient length for testing. If the section or subsection tested does not pass the tests, it shall be repaired and the test repeated until a satisfactory test is obtained. Excavation shall not proceed beyond the first 1,200 foot section until test results for the entire 1200 feet are satisfactory.

In the event the first 1,200 foot section of sewer or portion thereof did not pass the test on the first trial, the next section of sanitary sewer of approximately 1,200 feet in length shall also be tested, repaired if necessary, and retested until a satisfactory test is obtained before additional excavation is started.

When favorable test results are obtained on the first trial on a full 1,200 foot section of pipe, the Engineer may designate additional sections for testing as conditions in his opinion warrant. The Engineer reserves the right to select the location and lengths of additional test sections when construction operations or materials change or where construction difficulties indicate leakage or deflection may be present or in sections selected at random.

The Engineer shall notify the Contractor of the location where a test is to be required no later than 15 days after the sewer installation has been completed in the section to be tested. Unless otherwise authorized, the Contractor shall arrange to commence the test within 15 days after the sewer has been installed or 15 days after notification by the Engineer, whichever date is later.

B. **TESTING TECHNIQUE**

All Testing Methods: All wyes, tees and stubs shall be plugged with flexible jointed caps, or acceptable alternate, securely fastened to withstand the internal test pressure. Such plugs or caps shall be readily removable.

1. **Exfiltration Method Procedures:** The section of sewer to be tested shall be sealed by inserting inflatable rubber bags in the pipes or by other means approved by the Engineer, and then water shall be introduced into a manhole until the section is completely filled. The Contractor shall fill the pipe to the test level prior to the time of exfiltration testing to permit normal absorption into the pipe walls.

   Throughout the test period of at least one (1) hours, the water level in the upper manhole shall be maintained at least twenty-four inches (24") above the
crown of the upper end of the pipe or at least twenty-four inches (24") above the ground water table, whichever is higher. The length of pipe tested shall be limited so that the pressure on the center line of the lower end of the section tested shall not exceed six feet (6') of water column.

2. Infiltration Method Procedures: The section of sewer to be tested shall have been trench backfilled and the tests conducted by inducing infiltration conditions by jetting the sewer trench for a sufficient length of time to insure that the water level in the trench is a minimum of twenty-four inches (24") over the crown of the sewer pipe at the upper end of the pipe. The test must be performed before existing sewers are connected and before sewage flow is allowed in the sewers.

3. Air Testing Method Procedures: The section of sewer to be tested shall have been trench backfilled and cleared. Pneumatic plugs (having a sealing length equal to or greater than the diameter of the pipe to be tested) placed in both ends of the pipe to be tested shall be inflated to 25 psig. The sealed sewer pipe shall then be pressurized to 4 psig above the average back pressure of ground water over the sewer pipe and the air pressure allowed to stabilize for at least two minutes.

   After the stabilization period the line shall be pressurized to 3.5 psig and the time in minutes measured for pressure to drop to 2.5 psig. If groundwater is present, the air pressure within shall be increased to 3.5 psig above the level of the ground water and the drop of one pound of air pressure measured in minutes.

   Air testing techniques shall be in accordance with the latest ASTM standard practice for testing sewer lines by low-pressure air test method for the appropriate pipe material, except that the time shall not be less than that shown in the Air Test Table contained in Section 2-1.11C.

4. Testing Procedures for PVC pipe shall include the following;

   All sanitary sewers and manholes shall be tested by low pressure air testing and deflection testing. Deflection test shall not occur within less than thirty (30) days of completion of the section of sewer being tested including backfilling to finished grade.

   A five percent (5%) Mandrel Deflection Test shall be performed on all PVC gravity sanitary sewer pipe. These pipes shall be mandrelled with a rigid device sized to pass five percent (5%) or less deflection (or deformation) of the base inside diameter of the sewer pipe.
Laser Profiling of the installed pipe to measure pipe deflection is acceptable in lieu of mandrell testing. The laser profiler shall be a “Scanner 3-D” type, which permits the measuring of actual deformities with a precision of at least 0.25%. The measurement of the actual pipe deformity must be calculated with the actual interior diameter on all points of the pipe (not the nominal diameter). The laser profiler must be able to give a series of at least a 1000 diametrical measurements at any given measuring point in a pipe. The laser profiling and observation measuring equipment must be certified on an annual basis by a qualified and accredited third party laboratory.

After the placement base material or compacted soils, a video recording of the interior of the installed pipe will be properly documented utilizing equipment indicated in this specification. Provide a video and report.

The contractor will dewater, clean, and bypass (if necessary) the installed pipe and provide the Engineer with a video and report using low barrel distortion video equipment with laser profile technology, non-contact laser aim video micrometer, and associated software.

For video recorded, laser profiled pipe that indicates deflection that is in excess of that allowed in the specification, the engineer may require the removal, replacement, repair, and/ or retesting of the pipe that has failed to meet the specific deflection requirements for the type of pipe installed, at no cost to the Owner.

For video recorded, observation and/or defect measured pipe that indicates that it exceeds that allowed in the specification, the engineer may require the removal, replacement, repair, and/ or retesting of the pipe that has failed to meet the specific observation and/or defect specification for that type of pipe installed, at no cost to the Owner.

Provide high quality video recording of the CCTV inspection in a high definition format video with a standard resolution of 720x 480. Utilize a camera with lighting suitable to allow a clear picture of the entire periphery of the pipe. Center the camera in the pipe both vertically and horizontally and be able to pan and tilt to a 90 degree angle with the axis of the pipe and rotating 360 degrees. Use equipment suitable to be able to move the camera through the pipe that will not obstruct the camera’s view or interfere with proper documentation of the pipe’s condition.

The video image shall be clear, focused, and relatively free from roll, static, or other image distortion qualities that would prevent the reviewer from evaluating the condition of the pipe. The video will include identification, at a minimum, before each line section of pipe to be filmed, the project number, the
structure number corresponding to the structure number on the set of plans for the project, size of pipe, the date and time, and indicate which pipe is being filmed if multiple pipes are connected to the structure. Written or typed television inspection logs shall be taken during the video recording process. Provide the engineer with copies of these “logs” along with the video.

Move the camera and Laser profiler through the pipe at a speed no greater than 30 feet per minute. Mark the video with the distance down the pipe. The distance meter shall have an accuracy of one foot per hundred feet; (300mm in 328 meters). Stop the camera and pan when necessary to properly document observations and defects. Film the entire circumference at each joint. The operator must measure each joint, defect and crack discovered during the videotaping process surpassing the permitted values of the present specification.

A report of field conditions utilizing the laser profiler must, at a minimum, contain the following:

a. graphic indicating the actual deformity registered in real-time for each section of the pipe (every 10mm);

b. The description and a picture of the pipe and of the laser ring for each deformity surpassing the permitted values by the present standard;

c. A copy of the calibration certificate from an accredited third party laboratory specifying the technology used, the device used and the certificate’s validity date for this device;

d. A recorded (video and written) measurement of crack lengths and width surpassing the permitted values of the present specification;

e. A recorded (video and written) measurement of all pipe joints surpassing the permitted values of the present specification;

f. Documentation of all pipe deformities, actual pipe measurements, leaks, debris and any other damage or defects;

g. Deviation in pipe line and grade, joint gaps, and joint misalignment;

h. Indexed and interactive display software for graphics (profile and isometric views), as well as two separate windows showing the video inspection and the laser profiler video inspection simultaneously.

5. Lamping shall be performed on all sewer pipeline by the Engineer.
C. ALLOWABLE TESTING LIMITS FOR SANITARY SEWERS

1. Exfiltration leakage shall not exceed 200 gallons per inch of pipe diameter per mile per day of sewer pipe, including manholes in the test section.

2. Infiltration flow shall be measured by a 90-degree V-notch weir with free fall discharge or other means acceptable to the Engineer. Infiltration leakage shall not exceed 200 gallons per inch of pipe diameter per mile per day of sewer pipe, including manholes in the test section.

3. Air leakage test results shall not be less than the time per inch of pipe diameter per length of sewer pipe as specified in the table entitled "Air Test Table".

4. Three-fourths (3/4) of the pipe circle shall be observed both vertically and horizontally for lamping.

AIR TEST TABLE
SPECIFICATION TIME (min:sec) REQUIRED FOR PRESSURE DROP FROM 3-1/2 TO 2-1/2 PSIG WHEN TESTING ONE PIPE DIAMETER ONLY

<table>
<thead>
<tr>
<th>Length of Sewer Pipe (in Feet)</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>15</th>
<th>18</th>
<th>21</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>0:04</td>
<td>0:10</td>
<td>0:18</td>
<td>0:28</td>
<td>0:40</td>
<td>1:02</td>
<td>1:29</td>
<td>2:01</td>
<td>2:38</td>
</tr>
<tr>
<td>50</td>
<td>0:09</td>
<td>0:20</td>
<td>0:35</td>
<td>0:55</td>
<td>1:19</td>
<td>2:04</td>
<td>2:58</td>
<td>4:03</td>
<td>5:17</td>
</tr>
<tr>
<td>75</td>
<td>0:13</td>
<td>0:30</td>
<td>0:53</td>
<td>1:23</td>
<td>1:59</td>
<td>3:06</td>
<td>4:27</td>
<td>6:04</td>
<td>7:55</td>
</tr>
<tr>
<td>100</td>
<td>0:18</td>
<td>0:40</td>
<td>1:10</td>
<td>1:50</td>
<td>2:38</td>
<td>4:08</td>
<td>5:56</td>
<td>8:05</td>
<td>10:34</td>
</tr>
<tr>
<td>150</td>
<td>0:26</td>
<td>0:59</td>
<td>1:46</td>
<td>2:45</td>
<td>3:58</td>
<td>6:11</td>
<td>8:30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>175</td>
<td>0:31</td>
<td>1:09</td>
<td>2:03</td>
<td>3:13</td>
<td>4:37</td>
<td>7:05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>0:35</td>
<td>1:19</td>
<td>2:21</td>
<td>3:40</td>
<td>5:17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>225</td>
<td>0:40</td>
<td>1:29</td>
<td>2:38</td>
<td>4:08</td>
<td>5:40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>0:44</td>
<td>1:39</td>
<td>2:56</td>
<td>4:35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>275</td>
<td>0:48</td>
<td>1:49</td>
<td>3:14</td>
<td>4:43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>0:53</td>
<td>1:59</td>
<td>3:31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>350</td>
<td>1:02</td>
<td>2:19</td>
<td>3:47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td>1:10</td>
<td>2:38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>1:19</td>
<td>2:50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>1:28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

112014 SSFM 10
D. **PAYMENT FOR TESTS**
Payment for tests will not be paid for separately, but shall be included in the unit price of pipe, per foot. If any section fails to meet the test, it shall be repaired at the Contractor's expense and retested until it meets the leakage limitation.

2-2 **MEASUREMENT**
For payment purposes, the length of sewers installed shall be measured along the centerline. No deductions in length will be made for tees or fittings.

2-3 **PAYMENT**
Payment for pipe sewers shall be made at the contract unit price of the size and type indicated on the bid item at the contract unit price per foot for the size and type indicated. The cost of all items of construction not specifically listed for separate payment shall be included as an incidental expense in the contract price. No more than ninety percent (90%) of the value of work included in the unit price shall be eligible for inclusion in a partial payment estimate until leakage tests have been performed as specified and the pipes and joints are found to be satisfactory.

2-4 **MEASUREMENT AND PAYMENT**
The cost of all items described under "Pipe Laying, Jointing and Testing" not shown as bid items on the Proposal shall not be measured or paid for by item, but shall be included as part of the respective unit bid prices per foot for conduit construction of the size and type specified.
SECTION 3. MANHOLES FOR SANITARY SEWERS

3-1 DESCRIPTION
Manholes shall be leak-tight and shall be constructed of pre-cast concrete units, or cast-in-place concrete only, all in compliance with Plans and these Specifications.

3-2 MATERIALS

3-2.01 REINFORCED CONCRETE
Reinforced concrete shall consist of Portland Cement, mineral aggregates and water, in which steel has been embedded in such manner that the steel and concrete set together.

A. CEMENT
Cement shall conform to the requirements of the Specifications for Portland Cement ASTM C 150, and may be either standard Portland Cement or air-entrained Portland Cement of any type unless otherwise specified in the Special Provisions.

B. WIRE FABRIC REINFORCEMENT
Reinforcement shall consist of wire conforming to ASTM A185 or A497. Also, smooth wire conforming to ASTM A82 and deformed wire conforming to ASTM A496.

C. BAR REINFORCEMENT
Bar reinforcement shall conform to ASTM A615, grade 40.

D. AGGREGATES
Aggregates shall conform to ASTM C33, except that the requirements for gradation shall not apply to precast items.

E. MIXTURES
The aggregates shall be so sized and graded, and proportioned and thoroughly mixed in proportions of cement and water as will produce a homogeneous concrete mixture of such quality that the manhole components will conform to the strength and watertightness requirements of these specifications.

F. CURING
Cast-in-place manhole components shall be moist-cured for a period not less than seven (7) days except that when high-early-strength cement is used, the curing shall be not less than three (3) days. Pigmented membrane curing compound or other approved method may be applied in lieu of moist curing.

G. STRENGTH
All concrete placed under these specifications shall have a minimum compressive strength of thirty-five hundred (3,500) psi at twenty-eight (28) days. Strength
determination shall be in accordance with ASTM C-39, unless otherwise approved by the Engineer.

3-2.02 STEPS
Manhole steps shall be cast iron ASTM A48 furnished and installed as shown on the Plans with load and pullout ratings meeting OSHA standards.

3-2.03 CAST IRON FRAMES AND COVERS
Castings shall conform to the requirements of gray iron castings ASTM A48 and conform to the details shown on the Plans. They shall be adjusted to final grade with precast concrete rings and mortar.

3-2.04 PRECAST MANHOLE COMPONENTS
Precast manholes shall conform with ASTM C-478 and with design dimensions. Cones and sections shall be substantially free from fractures, large or deep cracks and surface roughness. Slabs shall be sound and free from gravel pockets.

3-2.05 ADJUSTING RINGS
Final adjustment of frames and grates to grade shall be accomplished through the use of precast concrete adjusting rings. The rings shall be designed to provide a structural capacity equal to the cones and sections. They shall have a device for positively positioning and securely fastening the ring to the frame so as to match the surface grade and slope and prevent movement when under traffic loadings.

3-2.06 MONOLITHIC CONCRETE MANHOLES
Monolithic concrete manholes shall conform to detailed shop drawings submitted to the Engineer for approval prior to beginning Work and shall conform to the dimensional requirements specified. Walls and base shall be six inches (6") minimum thickness and space of steps shall be sixteen inches (16").

3-3 CONSTRUCTION DETAILS

3-3.01 FOUNDATION PREPARATION

A. DEWATERING
Dewatering of the site shall conform to the requirements for sewer trench de-watering in Section 2-1.04.

B. SUB-BASE PREPARATION
Adequate foundation for all manhole structures shall be obtained by removal and replacement of unsuitable material with well graded granular material; or by tightening with coarse ballast rock, or by such other means as provided for foundation preparation of the connected sewers, or as shown on the Plans.

3-3.02 BEDDING
Precast base sections shall be placed on a well graded granular bedding course conforming to the requirements for sewer bedding in Section 2, but not less than six inches (6") in thickness and extending
to the limits of the excavation. The bedding course shall be firmly tamped and made smooth and level to assure uniform contact and support of the precast element.

3-3.03 CAST-IN-PLACE BASES
Unless otherwise specified, cast-in-place bases shall be at least eight inches (8") in thickness and shall extend at least six inches (6") radially outside of the outside diameter of the manhole section.

3-3.04 PRECAST MANHOLES
Precast manholes may be constructed with a precast base section or a monolithic base structure as specified or shown on the Plans.

A precast base section shall be carefully placed on the prepared bedding so as to be fully and uniformly supported in true alignment and making sure that all entering pipes can be inserted on proper grade.

All lift holes on precast elements for sanitary sewer manholes shall be completely filled with a concrete plug and sealed with an approved bitumastic material. All joints between precast elements on sanitary sewer manholes shall be made with an approved bitumastic material or an approved rubber gasket.

The first precast section shall be placed on the monolithic base structure before the base has taken initial set, and shall be carefully adjusted to true grade and alignment with all inlet pipes properly installed so as to form an integral watertight unit; or the section shall be mortared into a suitable groove provided in the top of the monolithic base. The first section shall be uniformly supported by the base concrete, and shall not bear directly on any of the pipes.

Precast sections shall be placed and aligned to provide vertical sides and vertical alignment of the ladder rungs. The completed manhole shall be rigid, true to dimensions, and be watertight.

3-3.05 MONOLITHIC CONCRETE MANHOLES
Monolithic concrete manholes shall be constructed in accordance with the provisions of this Section and the details shown on the Plans.

3-3.06 EXCAVATION AND BACKFILLING
In order to permit the joints to be mortared properly and also to permit proper compaction of the backfill material, the excavation shall be made to a diameter of at least six inches (6") greater than the diameter of the structure.

The space between the sides of the excavation and the outer surfaces of the manhole, shall be backfilled with selected granular backfill if the manhole is in a pavement or if the nearest point of the excavation for the manhole falls within 2 feet of the pavement edge. If the structure falls beyond these limits, other backfilling material may be used, provided it meets with the approval of the Engineer.

3-3.07 INLET AND OUTLET PIPES
Pipe or tile placed in the masonry for inlet or outlet connections shall extend through the wall and beyond the outside surface of the wall a sufficient distance to allow for connections, and the masonry shall be carefully constructed around them so as to prevent leakage along the outer surfaces.
3-3.08 PLACING CASTINGS
Casting placed on concrete or masonry surface shall be set in full bituminous mastic beds. Castings shall be set accurately to the finished elevation so that no subsequent adjustment will be necessary.

A. STREETS AT GRADE
Where Work is in paved streets or areas which have been brought to grade, not more than sixteen inches \((16")\) shall be provided between the top of the cone or slab and the underside of the manhole casting ring for adjustment of the casting ring to street grade.

B. STREETS OR ALLEYS WITH NO ESTABLISHED GRADE
Where Work is in the streets or other areas which have not been brought to grade, not less than four inches \((4")\) nor more than sixteen inches \((16")\) shall be provided between the top of the cone or slab and the underside of the manhole casting ring for adjustment of the casting ring to street grade.

The top of the manhole casting shall be flush with the street surface unless otherwise directed by the Engineer.

C. MANHOLES NOT WITHIN STREET OR ALLEY AREAS
Where Work is in cultivated areas, the top of the casting, unless otherwise directed by the Engineer, shall be eighteen inches \((18")\) below the established ground surface.

Unless otherwise directed, in non-cultivated areas, the top of manhole castings shall be at grade of existing surface.

D. SEALING MANHOLES
Sanitary sewer manholes which are covered with earth or are located in low areas than can collect rainwater, and any other manholes indicated on the Plans, to be sealed, shall be equipped with an approved self-sealing lid.

3-3.09 CHANNELS
Channels shall be made to conform accurately to the sewer grade and shall be brought together smoothly with well rounded junctions, satisfactory to the Engineer, and in conformance with details shown on the Plans.

3-3.10 PIPE CONNECTIONS
Special care shall be taken to see that the openings through which pipes enter the structure shall be provided with flexible watertight connections conforming with ASTM C 923, "Standard Specifications For Resilient Connectors Between Reinforced Concrete Manhole Structures And Pipes." Other methods may be used to ensure watertightness when specified in the Special Provisions.

3-3.11 DROP MANHOLE CONNECTIONS
Drop manhole connections, whenever shown on the Plans, shall conform in all respects to details shown on the Plans.
3-3.12 CLEANING
All newly constructed manholes shall be cleaned of any accumulation of silt, debris, or foreign matter of any kind, and shall be free from such accumulations at the time of final inspection.

3-4 PAYMENT
Payment for each Manhole shall consist of a basic price for each.

3-5 MEASUREMENT AND PAYMENT
The following items under "Manholes for Sanitary Sewers" are specifically listed for separate measurement and payment:

"Manholes" of the type and size indicated.

"Drop Manholes" of the type and size indicated.
SECTION 4. SERVICE SEWERS

4-1 DESCRIPTION
A service sewer is a branch sanitary sewer line constructed from the main sanitary sewer line to a point described on the Plans or to a point established by the Engineer.

The general requirements for construction of sewers in other sections of these Specifications shall apply for service sewers unless they are inconsistent with any of the provisions of this particular section, and the Specifications shall apply alike to all service sewers on public rights of way and private property.

Unless otherwise specified, service sewers and fittings shall be six inches (6") in diameter.

4-2 MATERIALS

4-2.01 PIPE AND FITTINGS
Approved pipe and fitting materials shall be ductile iron, PVC, or vitrified clay. All other materials shall conform to the material requirements for sanitary sewer construction in other sections of the Specifications.

4-2.02 JOINTS
Approved jointing material shall be flexible gasketing. Flexible gasketing shall be construed to include rubber, synthetic rubberlike and plastic materials specially manufactured for the joint, pipe size, and use intended and shall be furnished by the manufacturer of the pipe to be used. Physical properties of the flexible gasketing shall conform to that defined in Section 1.

4-3 CONSTRUCTION DETAILS

4-3.01 GENERAL
Service sewer construction shall conform to all applicable ordinances or regulations unless otherwise stated in the Special Provisions. The Owner will obtain any necessary permits for service sewer construction.

4-3.02 EXCAVATION AND BACKFILL
Excavation and backfilling for service sewers shall conform to the requirements of other sewers, excepting that no backfill in excess of that required to hold the pipe in true alignment shall be placed prior to inspection.

4-3.03 PIPE LAYING AND JOINTING
Pipe laying and jointing, except as hereinafter provided, shall in general conform to the requirements of Section 2. During the pipe laying and jointing, the service sewer shall be kept free of any water, dirt or objectionable matter.

A watertight, factory-made plug shall be installed at the end of each sewer service.
A. **LINE AND GRADE**
Pipe shall be laid with a minimum grade of one-eighth inch (1/8") per lineal foot unless otherwise ordered. The Contractor shall establish such alignment and grade control as is necessary to properly install the service sewer.

B. **PIPE LAYING**
Pipe shall be laid in a straight line at a uniform grade between fittings, or on a uniform horizontal or vertical curvature achieved by deflecting pipe joints within the limits recommended by the manufacturer of the pipe used.

4-3.04 **FITTINGS**
All fittings shall be factory-produced and shall be designed for installation on the pipe to be used. Fittings shall be of the same quality and material as the pipe used.

The maximum deflection permissible at any one (1) fitting shall not exceed 45 degrees (one-eighth (1/8) bend). The maximum deflection of any combination of two adjacent fittings shall not exceed 45 degrees (one-eighth (1/8) bend) unless straight pipe of not less than two and one-half feet (2-1/2') in length be installed between such adjacent fittings, or unless one of such fittings be a wye branch with a cleanout provided on the straight leg.

Service sewers shall be connected to the tee, wye, or riser provided in the public sewer where such is available, utilizing approved fittings or adaptors. Where no tee, wye, or other riser is provided or available, connection shall be made by machine made tap and suitable saddle, or other methods as specified in the Special Provisions.

4-3.05 **CLEANOUTS**
Cleanouts shall be provided at locations and in accordance with details shown on the Plans.

4-3.06 **RESTORATION, FINISHING AND CLEANUP**
The Contractor shall restore all paved surfaces, curbing, sidewalks, or other surfaces to their original condition in such manner as to meet the requirements of applicable sections. All surplus material and temporary structures, as well as all excess excavation, shall be removed and the entire site of Contractor operations shall be left in a neat and clean condition.

4-4 **MEASUREMENT**
Measurement shall be along the pipe from the outside surface of the main sewer to the extreme end of the last pipe or fitting placed. Measurement shall be to the nearest one foot (1').

4-5 **PAYMENT**
Payment or service sewers shall be at the unit contract price per foot or each for "Service Sewers" of the size indicated. Tees, wyes, bends, adaptors, and plugs shall be considered as incidental to the construction.
All other costs shall be considered as incidentals to the construction of the service sewer and shall be included in the unit Contract prices for "Service Sewers".

4-6  MEASUREMENT AND PAYMENT
The cost of all items described under "Service Sewers" shall not be measured or paid for by item, but shall be included as part of the respective unit bid prices for conduit construction of the size specified.
SECTION 5. PIPE COVERING AND EMBANKMENT FOR SEWER CONSTRUCTION

5-1 DESCRIPTION
This section of the Specification applies to the construction of pipe covering and embankment. Pipe covering shall be constructed where the invert of the pipe is so shallow that placing of earth over the pipe becomes necessary to provide a minimum depth of cover. Pipe cover and embankment shall be constructed where the invert of the pipe is above the existing ground and it becomes necessary to construct an embankment upon which the pipe and pipe covering is to be placed. The embankment and cover shall be constructed to lines shown on the Plans.

5-2 CONSTRUCTION DETAILS

5-2.01 PIPE BED
The area upon which the embankment for the pipe bed is to be placed shall be stripped to the extent the Engineer directs to provide a firm bedding.

The embankment upon which the pipe is to be installed shall be constructed up to the spring line in six inch (6") lifts, each lift being compacted to a density equal to ninety-five percent (95%) of ASSHTO T 99 density. The material used in constructing the embankment shall be such that it will readily compact to required density. The Contractor may use any type of compacting equipment he wishes provided the required end result is obtained, and provided no damage occurs to surface or subsurface improvements.

5-2.02 PIPE COVER
The pipe cover material above the compacted embankment shall be placed without compacting, and shall be shaped to the required section.

5-2.03 SOURCE OF MATERIAL
The source of material shall be that which is specified in the Special Provisions.

5-3 MEASUREMENT
Measurement will be by the cubic yard of embankment as calculated from cross sections based on elevations of the ground surface after stripping and the neat line of the section conforming to the drawing. No deduction will be made for pipe volume displacement.

5-4 PAYMENT
Payment will be made at the unit Contract price per cubic yard for Pipe Covering and Embankment, which price shall be full compensation for furnishing all labor, equipment, and materials necessary to strip, construct and compact the embankment and cover as specified to the satisfaction of the Engineer.
SECTION 6. FORCE MAIN MATERIAL AND INSTALLATION

6-1 DESCRIPTION
Pipe used in force main construction, unless otherwise specified, shall be Polyvinyl Chloride Pipe (PVC) or Ductile Iron Pipe (DIP). All force main shall have flexible gasketed joints unless otherwise specified.

The Contractor shall only use the force main pipe material specified on the Plans unless he receives written permission from the Engineer to substitute one of the other materials mentioned herein. No verbal approval, regardless of the source, will be recognized for changing the pipe material, class or type of joint.

6-2 GENERAL
Where reference is made to an ASTM or ANSI designation, it shall be the latest revision at the time of call for Bids, except as noted on the Plans or in the Special Provisions.

6-3 CERTIFICATION
It shall be the responsibility of the pipe manufacturer to certify that pipe and joint material furnished is capable of withstanding the pressure rating as specified or required, if properly installed.

6-4 MATERIALS

A. DUCTILE IRON FORCE MAIN AND FITTINGS
Ductile Iron Pipe (DIP) force main shall conform to ANSI A21.51 (AWWA C151), designed per ANSI A21.50 (AWWA C150), and shall comply with the American National Standard C104/A21.4-95 for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water. Flanged fittings shall be Class 53 that meet the requirements of AWWA C110/A21.10. Flanged joints shall meet the requirements of AWWA C115/A21.15 with full-face gaskets for joints on 12-inch diameter and smaller pipe and ring type gaskets for larger pipe. Mechanical joint fittings shall meet the requirements of AWWA C153/A21.53. Mechanical joints shall comply with American National Standard C111/A21.50-90 for Rubber Gasket Joints for Ductile-Iron Pressure Pipe and Fittings. All underground DIP force main shall be Class 52 wrapped in 8-mil thick polyethylene encasement in accordance with ANSI/AWWA C105/A21.5, Method B, with pipe and joints wrapped separately. For ductile iron pipe and fittings with mechanical joints that require harnessing, provide ductile iron mechanical joint retainer glands that are designed to resist pullout of the joints at the test pressures specified. Provide stainless steel bolts and nuts meeting the requirements of ASTM A 307, Grade B. Where required provide wall castings and connecting pieces meeting the requirements of AWWA C110/A21.10.

Installation of DIP shall be governed by AWWA Standard C600-93, AWWA Standard for Installation of Ductile-Iron Water Mains and Their Appurtenances. Bedding shall be in
accordance with ASTM C 12. All piping shall be installed and tested in accordance with AWWA standard C600-93, AWWA Standard for Installation of Ductile-Iron Water Mains and Their Appurtenances.

DIP force main shall utilize mechanical joint fittings for force restraint. The mechanical joint restraint devices shall be:

1. EBAA Iron, Inc., MegaLug 1100 series
2. Uni-Flange Series 1400, One-Lok Series SLD
3. Engineer-approved equal

Measurement shall be made along the centerline of force main installed. The contract unit price bid for DIP force main construction shall include the cost for piping, joint-restraint devices, polyethylene encasement, excavation, trench dewatering and maintenance, trench bottom reshaping, bedding, haunching, compaction, testing, and all other work necessary for a complete job. This work will be paid for at the contract unit price bid of LINEAL FOOT for DUCTILE IRON FORCE MAIN at the diameter specified. Fittings in the force main will be paid for at the contract unit price bid per POUND for DUCTILE IRON FITTINGS at the diameter specified.

**B. POLYVINYL CHLORIDE (PVC) FORCE MAIN AND FITTINGS**

Polyvinyl Chloride (PVC) force main and fittings shall be Pressure Class 200, DR 14 conforming to AWWA C900 (AWWA Standard for Polyvinyl Chloride [PVC] Pressure Pipe and Fabricated Fittings, 4 in. Through 12 in. [100 mm Through 300 mm], for Water Distribution) with fittings and elastomeric gasketed joints meeting the requirements of AWWA C907 (Injection-Molded Polyvinyl Chloride [PVC] Pressure Fittings, 4 in. Through 12 in. [100 mm Through 300 mm], for Water Distribution), unless otherwise directed by the Engineer.

All PVC piping shall be installed and tested in accordance with AWWA C605 (Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water).

PVC force main shall utilize mechanical joint fittings for force restraint. The mechanical joint restraint devices shall be:

1. EBAA Iron, Inc., MegaLug 1100 series
2. Uni-Flange Series 1400, One-Lok Series SLD
3. Engineer-approved equal

Each PVC pipe length and fitting shall be clearly marked with the following:

1. Manufacturer's Name
2. Nominal Pipe Size
3. Cell Classification
4. Minimum Pipe Stiffness
The Contractor shall take great care not to scratch, indent, puncture or otherwise damage the PVC pipe during installation. All pipe materials used shall be inspected and approved by the Engineer before and during installation. If a pipe section has been damaged in any way before or during installation, it shall be removed and replaced with a pipe section acceptable to the Engineer. Pipe installation shall strictly conform to the manufacturer’s recommendations.

A detectable metallic tracing and warning tape of a type approved by the Engineer shall also be installed. This work shall consist of burying of metallic tape in the trench running along the centerline of the force main. The tape shall be laid in the trench 2 feet above the buried force main. The tape shall be 2” wide and read “CAUTION – BURIED FORCE MAIN BELOW.”

Measurement shall be made along the centerline of force main installed. The contract unit price bid for PVC force main construction shall include the cost for piping, joint-restraint devices, magnetic pipe location tape, excavation, trench dewatering and maintenance, trench bottom reshaping, bedding, haunching, compaction, testing, and all other work necessary for a complete job. This work will be paid for at the contract unit price bid of LINEAL FOOT for PVC FORCE MAIN at the diameter specified. Fittings in the force main will be paid for at the contract unit price bid per POUND for PVC FITTINGS at the diameter specified.

6-5 CONNECTION TO EXISTING SANITARY SEWER MANHOLE

This work involves connection of the force main to an existing sanitary manhole at the location shown on the plans, or as directed by the Engineer. The contractor will have to provide sheeting, scaffolding or bracing to insure that no movement of the exposed manhole will take place while core drilling the exposed wall to allow the pipe installation. Should the structure be found to deflect, displace or fall out of plumb, the contractor shall be responsible for correcting the movement.

In the process of core drilling the wall, extreme care shall be taken so that minimal structural damage is done to the manhole. All debris falling into the manhole must be entirely removed. Connections to existing manholes shall be made using an A-Lok gasket, rubber boot, or other approved flexible seal.

The cost for all equipment, labor and materials, including core drilling the manhole wall opening, excavation, furnishing, erecting, and removing shoring, scaffolding and/or bracing, water stop, and backfilling will be paid for at the contract unit price per EACH for CONNECTION TO EXISTING SANITARY SEWER MANHOLE.
6-6  STEEL SLEEVES-AUGERED

The Contractor is advised to review the site and familiarize himself with the soil conditions prior to finalizing his bid for this portion of the work. No additional compensation shall be allowed for changes in the construction method due to ground conditions that may exist at the time of construction. All work shall be performed in accordance with Section 552 of the Standard Specification except as described in the following specifications and the Steel Sleeve Specification contained herein.

This work shall consist of auguring a steel sleeve at the location and at the line and grades provided on the plans or as where directed by the Engineer. The Contractor shall field verify the elevations and locations of any and all utilities that may cross beneath or over the proposed auger prior to ordering structures, or beginning the auger operation so as to not damage the existing utilities during auger operations. No additional compensation shall be given for any modifications required to be made to the proposed force main design (including but not limited to re-ordering/restocking structures), or for any delay time incurred due to a difference in assumed and actual elevations of the existing utilities.

The Contractor shall take all necessary precautions to prevent the undermining of roadways, structures, embankments, or property including the utilization of trench boxes, sheeting, etc., to properly maintain the auger and receiving pit excavations such that underlying soils between the pavement edge etc. and auger limits are prevented from entering the excavation. In the event that settlement or any other damage occurs to adjacent roadways, property or structures between the time the auguring is completed and the end of the contract bond guaranty period, the Contractor shall be fully responsible for any repairs deemed necessary by the Engineer.

This work shall consist of the construction of steel sleeves (casing pipe) augured at the locations indicated in the contract drawings or as directed by the Engineer. The minimum thickness of the steel sleeves shall be as listed below. All casing pipe shall be smooth, Grade B welded steel pipe meeting the requirements of ASTM A139 and ANSI/ AWWA C200 (AWWA Standard for Steel Water Pipe—6 in. (150 mm) and Larger), minimum yield strength of 35,000 psi. Sleeves shall be installed as indicated in the detail drawings, unless otherwise approved by the Engineer.

After installation of the steel sleeve is completed, the proposed force main shall be constructed in place within the sleeve. The water main shall be inserted and centered by use of model CCS stainless steel casing spacers as manufactured by Cascade Waterworks Mfg. Co. of Yorkville, IL or Engineer-approved equal.

Caser spacing shall be bolt on style with a two-piece shell made from T-304 stainless steel of a minimum 14-gauge thickness. Each shell section shall have bolt flanges formed with ribs for added strength. Each connecting flange shall have a minimum of three (3) five-sixteenths inch (5/16") T-304 bolts. The shell shall be lined with a ribbed PVC extrusion with a retaining section that overlaps the edge of the shell and prevents slippage. Bearing surfaces (runners) made from UHMW polymer with a static coefficient of friction of 0.11-0.13 shall be attached to support structures (risers) at appropriate positions to properly support the carrier within the casing and to ease installation. The runners shall be attached mechanically by T-304 threaded fasteners inserted through the punched riser section and TIG welded
for strength. Risers shall be made of T-304 14-gauge stainless steel. All risers over two inches (2") in height shall be reinforced. Risers shall be MIG welded to the shell. All metal surfaces shall be fully passivated.

The cost for excavating, shoring, trench backfill, and backfilling of the jacking pit and receiving pit, including dewatering (if necessary), stabilization, and installing the steel sleeve shall be considered incidental to the contract unit price for the steel sleeve auger.

**Standard Sizes of Steel Sleeves Used As Casings***

<table>
<thead>
<tr>
<th>Carrier Pipe ID in Inches</th>
<th>Casing Wall Thickness in Inches</th>
<th>Casing Outside Diameter in Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>0.344</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>0.344</td>
<td>20</td>
</tr>
<tr>
<td>12</td>
<td>0.375</td>
<td>24</td>
</tr>
<tr>
<td>16</td>
<td>0.469</td>
<td>30</td>
</tr>
<tr>
<td>20</td>
<td>0.563</td>
<td>36</td>
</tr>
<tr>
<td>24</td>
<td>0.625</td>
<td>42</td>
</tr>
<tr>
<td>30</td>
<td>0.719</td>
<td>48</td>
</tr>
<tr>
<td>36</td>
<td>0.781</td>
<td>54</td>
</tr>
<tr>
<td>42</td>
<td>0.875, 0.938</td>
<td>60, 66</td>
</tr>
<tr>
<td>48</td>
<td>1.000</td>
<td>72</td>
</tr>
</tbody>
</table>

*Adapted from City of Chicago, Il Water Department Standard Specifications

The cost of furnishing and installation of the steel sleeve, and all incidental work necessary for its installation, including casing spacers, will be paid for at the contract unit price bid per LINEAL FOOT for [SPECIFIED SIZE] DIAMETER STEEL SLEEVE, [SPECIFIED SIZE] WALL THICKNESS, AUGERED. The cost for force main constructed within the sleeves will be paid for at its unit price.

**6-7 STEEL SLEEVES-OPEN CUT INSTALLATION**

The work for open cut installation of steel sleeves shall be identical to the work described in Section 6.6, except that no augering, jacking, or receiving pits are required.

The cost for excavating, shoring, trench backfill, and backfilling of the open cut area, including dewatering (if necessary), stabilization, and installing the steel sleeve shall be considered incidental to the contract unit price for the steel sleeve auger.

The cost of furnishing and installation of the steel sleeve, and all incidental work necessary for its installation, including casing spacers, will be paid for at the contract unit price bid per LINEAL FOOT for [SPECIFIED SIZE] DIAMETER STEEL SLEEVE, [SPECIFIED SIZE] WALL THICKNESS, OPEN CUT INSTALLATION. The cost for force main constructed within the sleeves will be paid for at its unit price.
6-8 SEWER FLOW CONTROL AND BYPASS PUMPING

It is the intent of this specification to provide the minimum requirements for sewer flow control bypass pumping.

The Contractor shall provide all labor, equipment, supervision, and materials necessary to control flows via bypass pumping through a section or sections of pipe designated for replacement. The Contractor shall be responsible for controlling and maintaining all sanitary and storm flows within the sewer system during the Work. The Contractor may drain flows by pipes, chases, fluming, bypass pumping, or other appropriate methods approved by the Owner.

Precautions shall be taken to ensure that flow control and dewatering operations shall not cause flooding or damage to public or private properties. In the event flooding or damage occurs, the Contractor shall make provisions to correct such damage at no additional cost to the Owner. The Contractor shall be responsible for any damages to public or private property, overflows from the sewer system and violations resulting in fines as a result of the dewatering/bypass operation.

When required for this project, the Contractor shall provide all labor, equipment, and materials necessary for the transfer of flow around the sections of pipe and/or the existing lift station. If the Contractor utilizes a subcontractor for bypass pumping operations, the subcontractor shall have at least five years of experience in the bypass pumping industry.

The bypass shall be made by diversion of the flow from an existing upstream location, around the section(s) to be taken from service for inspection or rehabilitation, to an existing downstream location. The bypass system shall be of adequate capacity to handle all flows, including wet weather related flows. If bypass pumping is utilized by the Contractor to control flows, the Contractor shall be responsible for monitoring the bypass pumping operation at all times until Work is complete. The location of pump(s), force main, discharge point, pumping rates, etc., shall be approved by the Owner.

The Contractor shall prepare a detailed Flow Control Plan that describes the measures to be used to control flows. The Contractor shall submit the Plan to the Engineer for review prior to beginning any flow control work. The Contractor’s Plan shall include, but not necessarily be limited to, the following:

A. Stand-by/back-up pump set for the bypass application.
B. Detail plan for 24-hour monitoring.
C. Fueling of pump sets on demand.
D. Location of flow diversion structures, collapsible sewer plugs, dams, pumps, and related materials and equipment. Sewer plug method and type of plugs or gates to be used.
E. Key operational control factors, (i.e. maximum flow elevations upstream of dams).
F. Pump sizes and flow rates.
G. Destination of bypassed flows, including routing of force mains and provisions for vehicular and pedestrian traffic as necessary.
H. Wet weather event procedures.
I. Staging areas for the pumps.
J. Number, size, material, locations, and method of installation of suction piping.
K. Bypass pump sizes, capacity, number of each size to be on site, and power requirements.
L. Calculations of static lift, friction loss, and flow velocity.
M. Stand-by power.
N. Downstream discharge plan.
O. Method of noise control for each pump.
P. Temporary pipe supports and anchoring required.
Q. Heavy equipment needed for installation of pumps and piping.

The number and size of pumps utilized in bypass pumping shall be such that if the largest pump is out of service, bypass flows will be maintained during the bypass operation. Bypass pumping equipment shall include pumps, conduits, engines, and related equipment necessary to divert the flow or sewage around the section in which work is to be performed. In addition, the Contractor shall maintain at the same location and in operable condition, duplicate equipment to be used in case there is equipment failure. In this event, the Contractor shall promptly repair or replace the failed equipment to the satisfaction of the Owner.

The bypass system shall be of sufficient capacity to handle the peak flow of the pipe. The Contractor shall provide the necessary labor and supervision to set up and operate the pumping and bypassing system. The Contractor shall comply with any local sound ordinance. The equipment shall be manned continuously. During bypass pumping operations, the Contractor shall provide the necessary labor to continually monitor the operation and ensure uninterrupted and sufficient pumping at all times. The bypass pumping system shall be fueled every 24 hours or when the fuel tank reaches one quarter full, whichever comes first.

The Contractor shall provide all materials and labor as necessary to maintain flows in the existing sewer interceptor and all collector and lateral lines at all times and under all weather conditions. Interruption of flows will not be permitted. Overflows from bypass operations will not be permitted to enter into any streams or bodies of water. The Contractor will be solely responsible for any legal actions taken by the federal or state regulatory agencies if such overflows occur during construction.

New sewer pipes may be used by the Contractor to carry the sanitary flows after the new pipes have passed inspection and testing. Any “temporary” connections to the new sewer pipes shall be approved by the Owner.

New sewer pipes may be used by the Contractor to carry the sanitary flows after the new pipes have passed inspection and testing. Any “temporary” connections to the new sewer pipes shall be approved by the Owner.

Engine driven equipment for bypass pumping equipment shall have “critical grade mufflers.” The enclosure shall be portable in order to allow the enclosure to be moved when bypass pumping equipment is moved. These conditions are subject to any other additional stipulations that may be required by local sound ordinances.
Bypass pumping, including all elements detailed above, will be paid for at the contract lump sum price of SEWER FLOW CONTROL AND BYPASS PUMPING.

6-9 WATER USE
The Contractor desiring to use water from municipal hydrants will be required to make an application to the Owner, and if the request is granted, shall conform with the ordinances of the municipality, as well as with the rules and regulations of the Water Department, and will be held responsible for all damages to hydrants and water pipe used for the purposes of securing water. Pipe wrenches approved by the Water Department shall be utilized for opening and closing hydrants and other appurtenances.

When additional water from fire hydrants is necessary to avoid delay in normal work procedures, the water shall be conserved and not used unnecessarily. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant.

The Owner wishes to keep accurate records of the amount of water used for the construction purposes. The Contractor shall use an approved water meter to record usage, and shall report the total water used to the Water Superintendent at the end of each working day. The Contractor will be responsible for the cost of the water billed at the normal residential rate.
SECTION 7. FORCE MAIN VALVES

7-1 GENERAL
Provide valve operators complete, including a suitable enclosure, with all appurtenances necessary for the operator to perform its intended function. Such appurtenances include, but are not limited to, anchor bolts and other mounting hardware, extension stems, operating nuts, direct burial valve boxes, and other such items.

7-2 MANUFACTURERS
Acceptable manufacturers are listed below. Other manufacturers of equivalent products may be submitted.

A. Air Release Valves:
   1. Val-Matic Valve & Mfg. Corporation
   2. Engineer-approved equal

B. Eccentric Plug Valves:
   1. DeZURIK
   2. Milliken
   3. Engineer-approved equal

C. Single Disc Swing Check Valves:
   1. American Flow Control
   2. Clow Valve Company
   3. M&H Valve Company
   4. Mueller Company
   5. GA Industries
   6. Engineer-approved equal

7-3 MATERIALS
Fabricate valves and operators of materials resistant to corrosion for the required service. For valve components the following standards shall apply:

A. Operator housings and pedestal handwheels:
   1. Cast iron
      ASTM A 126, Class B
      ASTM A 48, Class 30 or 35
   2. Ductile iron
      ASTM A 395
      ASTM A 536, Grade 65-45-12
   3. Cast steel
      ASTM A 27/A27M

112014
SSFM 29
B. Operator worms, steel
   ASTM A 29/A29M Grade 8620

1. Operator gears, steel
   ASTM A 572/A572M (spur & helical)

2. Worm gears, bronze
   ASTM B 148, Alloy C95400 or C95500
   ASTM B 584, Alloy C86300

7-4 VALVE JOINTS
Fabricate all valves with flanged ends, unless otherwise specified. For metallic flanged joints, provide flanges that are faced accurately at right angles to the axis of the casting. Face and drill flanges and shop coat with a rust-preventive compound before shipment. For flanged joints, provide flanges whose dimensions and drillings meet the requirements of ASME B16.1, 125 pounds as a minimum. For valves installed in force mains with test pressure requirements higher than 125 psi, provide flanges whose pressure ratings equal or exceed the specified test pressure of the force main. Furnish special drillings where required. For valves having flanges that do not conform to the thickness requirements of ASME B16.1, test each valve in accordance with the hydrostatic shell test pressure requirements of ASME B16.1.

7-4 OPERATING FORCE
Fabricate valves to limit the maximum force required to operate all manual valves, including but not limited to valves with wrench operated nuts, levers, handwheels and chainwheels, to 40 pounds. Limit the overall length of each wrench or single-arm lever to 18 inches. Limit the overall length of each dual-arm lever to 36 inches.

7-5 FLOOR AND BENCH STANDS
Accurately center floor and bench stands over the valve. Solidly bolt stands to the floor or support structure, with through-bolts wherever possible. Place approximately 3/4 inch of non-shrink cement grout beneath stands mounted on concrete or similar construction to assure uniform support. For stands installed within the area of a removable type floor, platform, or grating, securely mount them on their own support structure independent of the removable element, unless otherwise shown or specified.

7-6 VALVE VAULTS
Where a valve is shown or specified to be located within a vault, the vault shall be furnished and installed as shown on the drawings.
7-7 TYPE-SPECIFIC VALVE SPECIFICATIONS
Provide valves of the type(s) specified conforming to the specifications detailed in the sections below.

7-7.01 AIR RELEASE VALVES

A. SCOPE AND INTENT
This specification is intended to cover the design, manufacture, and testing of 1 in. (25 mm) through 8 in. (200 mm) Wastewater Combination Air Valves suitable for pressures up to 150 psig (1000 kPa).

Wastewater Combination Air Valves shall be fully automatic float operated valves designed to exhaust large quantities of air during the filling of a piping system and close upon liquid entry. The valve shall open during draining or if a negative pressure occurs. The valve shall also release accumulated air from a piping system while the system is in operation and under pressure. The valve shall perform the functions of both Wastewater Air Release and Wastewater Air/Vacuum Valves and furnished as a single body and dual body type as indicated on the plans.

B. STANDARDS, APPROVALS, AND VERIFICATION
Valves shall be manufactured and tested in accordance with American Water Works Association (AWWA) Standard C512. The manufacturer shall have a quality management system that is certified to ISO 9001:2000 by an accredited, certifying body.

C. CONNECTIONS
Single body valves sizes 4 in. (100 mm) and smaller shall have full size NPT inlets and outlets equal to the nominal valve size with a 2 in. (50 mm) inlet on 1 in. (25 mm) valves. The body inlet connections shall be hexagonal for a wrench connection. The body shall have 2" NPT cleanout and 1" NPT drain connection on the side of the casting. The valve shall have three additional NPT connections for the addition of backwash accessories.

D. DESIGN
Valves shall provide an extended body with a through flow area equal to the nominal size. Floats shall be unconditionally guaranteed against failure including pressure surges. A resilient bumper shall be provided on 4 in. (100 mm) and larger sizes to cushion the float during sudden opening conditions. The seat shall provide drop tight shut off to the full valve pressure rating.

Single body valves shall have a full port orifice, a double guided plug, and an adjustable threaded orifice button. The 1 in. (25 mm) body shall be globe style to increase float clearance and reduce clogging. The plug shall be protected against direct water impact by an internal baffle and extended float stem. The float shall include a sensitivity skirt to minimize spillage.
E. MATERIALS AND CONSTRUCTION
Body material shall be ASTM A536 Grade 65-45-12 ductile iron. The float, plug, guide shafts, and bushings shall be constructed of Type 316 stainless steel. Non-metallic guides and bushings are not acceptable. Resilient seats shall be Buna-N. Interior of valve to be coated with fusion bonded epoxy. The exterior of the valve shall be coated with a universal alkyd primer.

Backwash accessories shall be furnished and shall consist of an inlet shut-off valve, a blow-off valve, a clean water inlet valve, rubber supply hose, and quick disconnect couplings. Accessory valves shall be quarter-turn, full ported bronze ball valves.

F. MANUFACTURER QUALIFICATIONS
The manufacturer shall demonstrate a minimum of five (5) years' experience in the manufacture of air valves. The valves shall be manufactured and tested in accordance with American Water Works Association Standard (AWWA) C512. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.

Wastewater Combination Air Valve shall be Model 802ABW as manufactured by Val-Matic and Manufacturing Corporation, Elmhurst, IL, USA or Engineer-approved equal.

7-7.02 ECCENTRIC PLUG VALVES

A. SCOPE AND INTENT
This specification is intended to cover the design, manufacture, and testing of quarter turn plug valves having an eccentric action that causes the plug to rise off the seat contact during the opening movement rather than sliding from its seat.

B. MATERIALS AND CONSTRUCTION
Provide plug valves with Buna-N or Chloroprene faced plugs.

Construct plug valves of cast iron or semi-steel at least equal to ASTM A 126, Class B. Construct the body seats with a welded-in overlay, of not less than 90 percent pure nickel, on all surfaces contacting the plug face. Make the overlay a minimum of 1/16-inch thick. Provide zinc plated bonnet bolts, studs and nuts.

Make the water-tightness of the valve seating adjustable. Provide a seating adjustment device that is external to the valve and that can be used without the need to remove the valve from the piping and with the valve under pressure.

Furnish plug valves with oil impregnated, permanently lubricated, Type 316 stainless steel bearings in the upper and lower journals.
Provide a stem seal consisting of multiple, self-adjusting and replaceable chevron type packing rings and a packing gland. Make the stem seal adjustable and replaceable without removing the valve from the piping and without the need to disassemble the valve and operator. For buried or submerged service, provide a sealed enclosure to keep the stem seal clean.

Unless otherwise specified, construct the valve with a minimum port area of 80 percent of the full area of the pipe in which the valve is installed.

Equip plug valves, except for buried or submerged service, with external visible indication of the plug position.

Unless otherwise shown or specified, equip valves with quarter-turn gear operators. Furnish one wrench for each size valve in each individual room or space in which valves are located. All geared operators to have bronze bearing located above and below the worm gear, as well as grease seals.

Unless otherwise shown or specified, for eccentric plug valves installed in horizontal piping, orient the valve such that when the shaft is in the horizontal position the seat is in the downstream position, and when the valve is in the open position, the plug is up. Unless otherwise shown or specified, for eccentric plug valves installed in vertical piping, orient the valve with the plug up when the valve is in the closed position.

C. SOURCE QUALITY CONTROL
Perform a plug leakage shop test on each eccentric plug valve with the plug in the closed position. Unless otherwise specified, perform the leakage test with a minimum pressure of 150 pounds per square inch (gauge) applied sequentially to both the upstream and downstream faces of the plug. Perform the test for a minimum duration of 15 seconds. Demonstrate that there is no leakage past the plug.

Give each eccentric plug valve hydrostatic shop pressure tests with the plug open and with the plug closed. Perform the hydrostatic tests with a minimum pressure that is at least equal to the test pressure specified for the pipeline in which the valve is installed. Perform the test for a minimum duration of 30 seconds. Demonstrate with the hydrostatic tests that the valve is structurally sound and that there are no leaks through the external surfaces of the valve.

7-7.03 SINGLE DISC SWING CHECK VALVES

A. SCOPE AND INTENT
Provide single disc swing check valves designed to allow a full diameter passage and to operate with a minimum loss of pressure.
B. MATERIALS AND CONSTRUCTION

Provide 1/8- through 3-inch check valves that meet the requirements of MSS SP-80. Except as specified herein, provide 4-inch through 24-inch check valves that meet the requirements of AWWA C508.

Equip check valves with bronze renewable seat rings, bronze discs or disc rings, and bronze disc hinge bushings and pins. Carefully mount discs and provide discs that swivel in disc hinges. Provide pins, discs and other parts that are non-corrosive, non-sticking, and properly cured to operate satisfactorily within a temperature range of 34 to 100 degrees Fahrenheit and with the fluid specified.

Check valves shall be of the lifting arm type. Screw type check valves will not be allowed. Equip 6-inch and larger check valves with outside levers and weights.

7-8 PAYMENT

This work shall be paid for at the contract unit price per each for the type of valve specified at the diameter specified, complete with the valve vault (if specified), which payment shall include full compensation for furnishing labor, materials, and equipment, complete, in-place, and accepted, and for all materials necessary to complete the work as shown on the plans and specified above.
VILLAGE OF TINLEY PARK
BREMENTOWNE SUBDIVISION SANITARY SEWER CLEANING AND TELEVISIONING

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction", adopted January 1, 2012 by Illinois Department of Transportation (herein referred to as the Standard Specifications), the latest editions of the "Supplemental Specifications and Interim Special Provisions" and the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways" and the "Manual of Test Procedures for Materials" in effect on the date of the invitation for bids; the "Supplemental Specifications and Recurring Special Provisions", the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition; the Division I General Requirements and Covenants and the Division II Technical Specifications of this contract, and in case of conflict with any part or parts of said specifications, the said Special Provisions shall take precedence and shall govern.

However, in all cases, the Division I General Requirements and Covenants of the Specifications shall take precedence over the Division 100 General Requirements and Covenants of the Standard Specifications for Road and Bridge Construction and shall govern.

SCOPE OF WORK

This project consists of cleaning and internal television inspection of main drain sanitary sewers and the lawful removal and disposal of accumulated and recovered materials, all in the Village of Tinley Park, Illinois (Owner). The Contractor shall not clean or televise interceptor (or any other) sewers other than what is specified on the plans unless authorized by the Owner or Authorized Representative.

The Contractor shall be responsible to sufficiently familiarize himself with the local conditions prior to bidding the project. It is hereby understood and agreed that the contract unit prices shall prevail throughout the contract, and that adjustments to unit prices will not be allowed for any increase or decrease to the contract quantities or due to varying levels of cleaning which may be required.

WAGE RATES

This contract calls for the construction of a "public work," within the meaning of the Illinois Prevailing Wage Act, 820 ILCS 130/.01 et seq. (the Act). The Act requires contractors and subcontractors to pay laborers, workers and mechanics performing services on public works projects no less than the "prevailing rate of wages" (hourly cash wages plus fringe benefits) in the county where the work is performed. For information regarding current prevailing wage rates, please refer to the Illinois Department of Labor's website. All contractors and subcontractors rendering services under this contractor must comply with all requirements of the Act, including but not limited to, all wage, notice and record keeping duties.

INSURANCE COVERAGE

The Insurance Requirements can be found in Section 7 of the General Requirements "Legal Relations and Responsibility to the Public". The Contractor and any Subcontractors shall obtain and thereafter keep in force for the term of the contract the insurance coverage specified in this section. The Contractor shall not commence work under the Contract until all the insurance required by this section or any Special Provision has been obtained.

Section 7-2.02F Professional Liability WILL NOT be required as part of this project.

TRAFFIC CONTROL

Traffic Control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets.
and Highways, these special provisions and any special details and Highway Standards contained herein and in the plans and specifications and the Standard Specifications for Traffic Control Items.

Special attention is called to Section 107.09 and Section 107.14 of the Standard Specifications for Road and Bridge Construction and the Highway Standard 701501.

<table>
<thead>
<tr>
<th>Section 107.09 of the Standard Specification is amended as follows for this work:</th>
</tr>
</thead>
<tbody>
<tr>
<td>First paragraph (p.28), first sentence: The Contractor shall notify the Owner and not the Engineer, of the start of the work as required.</td>
</tr>
<tr>
<td>Sixth paragraph (p. 29), last sentence: The Contractor’s method of protection shall be subject to the approval of the Owner and not the Engineer.</td>
</tr>
<tr>
<td>Eighth Paragraph (p. 29), last sentence: The Contractor shall notify the Owner and not the Engineer, about the horizontal or vertical clearance restriction.</td>
</tr>
<tr>
<td>Ninth Paragraph (p. 29), middle sentence: The required signs shall be placed at the locations designated by the Owner and not the Engineer.</td>
</tr>
<tr>
<td>The Engineer shall not be responsible to determine the adequacy of the traffic control devices used at the site and/or to monitor their maintenance by the Contractor. The Contractor shall have the sole responsibility to provide adequate traffic control in compliance with these provisions.</td>
</tr>
</tbody>
</table>

The Contractor shall obtain, erect, maintain and remove all signs, barricades, flagmen and other traffic control devices as may be necessary for the purpose of regulating, warning or guiding traffic. Placement and maintenance of all traffic control devices shall be in accordance with the applicable parts of Section 107.14 of the Standard Specifications and the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways.

Traffic Control and Protection will not be compensated for separately, but shall be considered incidental to the contract.

**COMPLETION SCHEDULE**

All work contained within this contract shall be completed by December 13, 2015. The Contractor should assume the contract will be awarded on August 4, 2015. The completion date will be adjusted accordingly if the contract is not awarded on the specified date.

Failure of the Contractor to complete all work contained in this contract by the deadline will result in liquidated damages in the amount of $1,000 per calendar day that the work remains incomplete.

**JOINT VENTURES, CONTRACTORS, and SUBCONTRACTORS**

No joint venture shall be permitted on this project. The Contractor shall be required to perform the majority, or more than fifty percent (50%) of the dollar value, of the contract with his own resources (labor, equipment, materials, accessories, tools, transportation, services, technical competence, etc.). The Contractor may subcontract a minority part of the work.

**WORK HOURS**

The Contractor may prosecute work between the hours of 7:00 a.m. and 8:00 pm, Monday thru Friday and Saturdays 8:00 am to 6:00 pm. No work will be permitted on Sundays, or on holidays, without prior written permission of the Owner. Any hours of operation specifically applied by any of the permitting agencies will supersede these hours.

**NOTIFICATION REQUIREMENTS**

The Contractor shall provide 24 hour advance written notice to: 1) the Owner of the scheduled sewer work, 2) those properties with connections to the sewer sections to be cleaned, televised, lined or repaired within the forthcoming work day, and 3) any other properties that may potentially be adversely affected by the cleaning, televising, lining operations, and repairs. The notification shall be of a form and method as approved by the Owner.
SEWER FLOW CONTROL
The Contractor shall be responsible for maintaining sewer flow necessary for the continuation of sewer service during construction. The cost for the sewer flow control shall not be paid for separately but shall be merged into the unit price for the cleaning, internal inspection or repair activity being performed.

During sewer cleaning operations, the flows shall be reduced to a maximum of twenty five percent (25%) of the pipe diameter by manual operation of pump stations, plugging/blocking of the flows or by pumping/bypassing of the flows, as specified. During sewer repair operations, no sewer flows will be permitted.

Any sewer plugs utilized during bypass pumping shall be designed so that all or any portion of the sewage flow can be released. During the cleaning, inspection or repair portion of the operation, flows shall be controlled as described above. After these tasks have been completed, flows shall be restored to normal.

The Contractor shall not backup or flood existing services or buildings. This may require that the Contractor provide bypass pumping capabilities. Any bypass pumping that may be required will be considered incidental to the maintenance and or rehabilitation operations. Whenever flows in a sewer line are blocked, plugged or bypassed, sufficient precautions must be taken to protect the sewer lines from damage that might be inflicted by excessive sewer surcharging. The Contractor shall be solely responsible and liable for any property damages resulting from the work.

When pumping/bypassing is required, the Contractor shall supply the necessary 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 be of sufficient capacity to handle existing flows plus additional flow that may occur during periods of a rain event. The Contractor will be responsible for furnishing the necessary labor and supervision to set up and operate the pumping and bypassing of the flow. If pumping is required on a twenty four (24) hour basis, all engines shall be equipped in a manner to keep the pump noise at a minimum.

WATER USE
The Contractor shall apply to the Owner / Water Superintendent for use of municipal hydrants to meet his water use requirements. The Contractor shall conform to the ordinances of the Owner, as well as with the rules, regulations, and procedures of the Water Department. The Owner wishes to keep accurate records of the amount of water used for the construction purposes. Therefore, the Contractor must request a meter from the Village of Tinley Park, pay the appropriate deposit, and report the total water used to the Owner/Water Superintendent at the end of each working day. The Contractor will not be charged for water use that is reasonable for the project.

The Contractor will be held responsible for all damages to hydrants, meters, and water pipes used for the purposes of securing water. Pipe wrenches approved by the Owner/Water Department shall be utilized for opening and closing hydrants and other appurtenances. All costs associated with water usage and metering shall be considered incidental to the contract.

When additional water from fire hydrants is necessary to avoid delay in normal work procedures, the water shall be conserved and not used unnecessarily. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant.

MANHOLE ACCESS
The Contractor shall be solely responsible for accessing the facilities. The Owner will assist in locating all facilities but shall not be responsible for providing additional access to the facilities, other than identifying roadways and easements to access the project site.

WORK IN CONFINED SPACES
The Contractor's attention is directed to the nature of the working environment for most of the work required in this contract. Working in confined spaces, such as manholes, is inherently dangerous and must be done only with certain equipment, procedures and precautions. Properly functioning equipment, including but not necessarily limited to a
ventilator of adequate capacity, gas detectors, respiratory masks, winch, harness etc. and support personnel on the ground for the worker(s) in the manhole may be necessary at each work site.

This contract's means and methods for performing the required work, including safety provisions, are and remain the Contractor's responsibility. The Owner or Authorized Representative have neither any responsibility to monitor and/or inspect the Contractor's means and methods, including the safety equipment and/or practices, for performing the work required in this contract nor shall they assume any responsibility and/or liability whatsoever resulting from the Contractor's means and methods during this contract.

The cost of compliance with this requirement shall not be compensated for separately, but shall be considered incidental to the contract.

PROPERTY RESTORATION
It is anticipated that no public and/or private property shall be disturbed by this work. The Contractor shall take all precautions to avoid such damage and shall restore any public and/or private property, including landscaping, damaged and/or disturbed by the proposed work, to the satisfaction of the Owner, at no additional compensation. If the Contractor encounters a situation which some private property or a public facility/infrastructure will suffer unavoidable damage or disturbance, the Contractor shall bring it to the Owner's attention for a specific authorization to proceed with such work, before the task in question is performed.

SEWER CLEANING
This item of work shall consist of the cleaning of sewers and adjacent structures with high-velocity hydro-cleaning equipment at locations as shown on the plans or as directed by the Owner or Authorized Representative.

Cleaning shall be performed on the entire sewer section starting at and including the upstream structure and continuing to and including the downstream structure. If cleaning of an entire section cannot be successfully performed from the downstream equipment set-up location, the Contractor shall set-up the cleaning equipment on the upstream structure and continue cleaning without additional compensation.

All obstructions in the pipe including, but not limited to, root penetrations, mineral deposits, heavy debris, foreign objects, etc. shall be removed.

When, in the opinion of the Owner or Authorized Representative, hydro-cleaning equipment cannot satisfactorily clean or remove obstructions in the pipe, the Contractor shall utilize the appropriate mechanical cleaning equipment and continue operations to remove the obstructions. This work shall not be paid for separately, but shall be considered incidental to the contract.

If any debris remains on the benches, walls or invert of any structures after cleaning has been completed, the Contractor shall be required to re-clean the structures and the adjacent downstream sections of sewer at no additional cost to the Owner.

It is recognized that there are some conditions, such as badly broken, collapsed, or eroded pipe, or major blockages, that may prevent cleaning from being accomplished or where additional sewer line damage would be done if cleaning is attempted or continued. Should conditions of this nature be encountered, the Contractor shall notify the Owner or Authorized Representative immediately. The Owner or Authorized Representative shall then determine an appropriate cleaning method or whether to not clean that specific sewer section.

Cleaning Precautions: During sewer cleaning operations, precautions shall be taken to ensure that the water pressure created does not damage or cause flooding of public or private property being served by the sewer. When possible, the flow of sewage in the sewer shall be utilized to provide the necessary pressure for hydraulic cleaning devices. If heavy-cleaning equipment is approved by the Owner or Authorized Representative for use, extreme care shall be taken to ensure that the existing sewer is not damaged during the operations.

Debris Removal and Disposal: All sludge, dirt, sand, rocks, grease, roots, corroded or broken pipe pieces, concrete, asphalt, bricks, or any other material resulting from the cleaning operation shall be removed at the downstream structure of the section being cleaned by a “Vactor” or similar type vacuum truck. Debris catching
baskets shall also be required during any operation in which debris may pass from one sewer segment to an adjacent sewer segment. Passing material from structure section to structure section shall not be permitted.

All materials and debris collected during the cleaning operations shall be removed from the site and disposed of at the end of each workday. Under no circumstances will the Contractor be allowed to accumulate debris on the site of work. The Owner will provide an accessible staging area within the municipality's limits for the temporary placement of a debris box. It is the sole responsibility of the Contractor to properly dispose of all collected sewer debris on a daily basis. This work shall be done at the Contractor's own expense and considered incidental to the contract. All requirements of the Illinois Environmental Protection Agency and all other regulating agencies shall be followed. The Contractor shall be required to provide all necessary documentation for the proper and lawful disposal of debris. The Owner shall not be responsible for the disposal of the debris.

Cleaning Equipment: The Contractor shall provide all equipment necessary to meet the intent of the specification, including, but not limited to, high-velocity water-jetting equipment, vacuum machines, hydraulically propelled equipment, or mechanically powered equipment. Cleaning equipment capable of cleaning lengths up to one thousand feet (1000') shall be provided. Equipment must be able to clean this length with vehicular access to only one structure. Whatever equipment is used, any necessary pulleys and/or supports shall be installed in structures so as not to restrict the cleaning operation or damage existing structures.

High-Velocity Hydro-Cleaning Equipment:
All high-velocity sewer cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two (2) or more high-velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 degrees to 45 degrees in all size lines designated to be cleaned. Equipment shall also include a high velocity gun for washing and scouring structure walls and bench. The high velocity gun for washing manholes shall be capable of producing flows from a fine spray to a long distance solid stream. The equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel. All controls shall be located so that the equipment is operated above ground.

Hydraulic Cleaning Equipment:
The equipment used shall be of the movable dam type and be constructed such that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the upstream sewer lines. The movable dam shall be of an external diameter equal to the internal diameter of the sewer being cleaned and shall be provided with a flexible scraper around the outer periphery to ensure total grease removal. If sewer cleaning balls, or other such equipment which cannot be collapsed instantly are used, precautions against flooding of upstream sewers (public or private) shall be taken.

Mechanical Cleaning Equipment:
Bucket machines shall be in pairs with sufficient power to perform the work in an efficient manner. Machines shall be belt operated or have an overload device. Machines with direct drive that could cause damage to the pipe will not be allowed. Where bucket machines and buckets are to be used, caution should be taken that a properly sized flexible cable be used so that breakage will not occur, hanging the cleaning equipment within the sewer.

A power rodding machine shall be of the continuous type capable of holding a minimum of one thousand feet (1000') of rod without joints, couplings, fittings or connectors. The rodding equipment shall be provided with a minimum rated 25 Hp motor drive unit. The rod shall be 4.0-gauge specifically treated steel. To ensure safe operations, the machine shall have a fully enclosed body and an automatic safety throw-out clutch or relief valve. The rodding unit shall be able to pull brushes, swabs, and other cleaning equipment as well as the television camera. It shall also have a footage meter attached so that the location of the cleaning tools and/or television camera will be known at all times.

Lumberjacks and impact & drill cutters are multipurpose cutters running off water pressure designed to cut roots and also used to remove grease, mineral deposits and protruding laterals. Since lumberjacks can rotate at up to 50,000 rpm, extreme caution is required to ensure that the existing sewer pipes are not damaged while utilizing this type of equipment.
Impact & drill cutters typically rotate at about 200 rpm with impacts of up to 1000 blows per minute. Three modes for impact & drill cutter types usually include impact and drill simultaneously, impact only and drill only. Extreme caution is required to ensure that the existing sewer pipes are not damaged while utilizing this type of equipment.

Acceptance of Sewer Cleaning: Acceptance of sewer line cleaning shall be made upon the successful completion of the televising inspection and shall be to the industry standard of 95% clean. If the televising inspection shows the cleaning to be unsatisfactory, the Contractor shall be required to re-clean and re-inspect the sewer line until the cleaning is shown to be satisfactory, at no additional cost to the Owner.

The cost of this work, regardless of the number of set-ups, passes, or types of cleaning equipment used, including structure cleaning, shall be paid for at the contract unit price bid per FOOT for SANITARY SEWER TO BE CLEANED [DIAMETER].

SEWER TELEVISION
The Contractor shall furnish the mobile television inspection studio, all television and other necessary types of equipment, and all materials, electricity, labor, technicians, etc., as may be needed to perform the closed circuit television inspection of the sewers as shown on the plans or as directed by the Owner or Authorized Representative.

Television inspection and documentation shall be in compliance with the National Association of Sewer Service Companies' (NAASCO) Pipeline Assessment and Certification Program (PACP), current version.

The television inspection shall be performed in one section of sewer at a time between adjacent structures. The inspection shall be performed by pulling the television camera or crawling through the section of the sewer along the axis of the pipe. The inspection may be performed in a forward or backward direction as dictated by the sewer line conditions at the time of the inspection.

The television inspection shall be conducted in such manner that the television control technician or supervisor, and the Owner or Authorized Representative, can determine that the sewer line is thoroughly cleaned, and so that all leaking joints, pipe breaks, line sags or dips, service lines, roots, etc. can be accurately seen and located within and along the sewer line.

The operation of the television equipment shall be controlled by a certified NAASCO PACP technician who shall be located at the control panel in the mobile television inspection studio. The control of the television equipment may be accomplished by means of remote control winches or by telephone or other suitable means of communications between the television control technician or supervisor in the mobile television inspection studio and the technicians operating the winches at either end of the sewer section being inspected.

The television control technician in the mobile television inspection studio shall, at all times, be able to move the television camera through the sewer in either direction without loss of quality in the video presentation on the television monitor. The television image on the monitor shall, at all times, be free of electrical interference and shall provide a clear, stable image and picture. If for any reason the television inspection image becomes unclear, out of focus, too dark or too light to see the condition of the sewer being televised, the Contractor will be directed to re-televising that section of sewer at no additional cost. When directed to do so by the Owner or Authorized Representative, or television control technician, the television camera shall be stopped and/or backed up as required so either can view, analyze and photograph when so desired any features or conditions that appear unusual or uncommon in a good sound sewer.

The travel speed of the television camera through the sewer shall be uniform and shall not exceed the maximum speed of 30 feet per minute, under normal conditions. Any means of propelling the camera through the sewer which produces non-uniform rates of speed or which results in a speed faster than that specified by the Owner or Authorized Representative will not be acceptable.

The television control technician shall be able to adjust the brilliance of the lighting system built into television camera and be able to change the focus of the television camera by remote control. The television image shall continuously
be recorded with proper lighting. Services or sections of sewer that appear too dark or too light to see the condition of the sewer or the connected service shall be re-televisioned at no additional cost.

Television inspection of the sewer is required to start from the center of the manhole whether it is upstream or downstream and shall finish at the center of the manhole at the other end of the sewer section being televised. No preset measurements or starting the camera inside the pipe any distance will be allowed. This means that from the center of the manhole when the camera starts moving the footage counter shall be set at zero and increase accurately through the sewer pipe being televised. Every service connection shall be viewed to confirm whether it is active or capped.

Measurement of the exact location of any sewer line defects (i.e., breaks, sags, leaks, etc.) shall be at the ground level by means of a metering device. Markings on a cable, or the like, which would require interpolation for the structure depth, will not be allowed. Measurement meters shall be accurate to two-tenths of a foot (0.20'). A measuring target in front of the television camera shall be used as an exact measurement reference point, and the meter reading shall show the exact location of this measurement reference point.

Where obstructions within the sewer line prevent the passage of televising equipment, the Contractor shall reset his equipment to pass through the sewer line section from the other end and thereby complete the inspection of the section.

To facilitate the television inspection of various sections of sewer lines having sags or depressed areas filled with water, a high pressure jet cleaner shall be utilized to dewater the settled or sagged section of the sewer line. The high pressure jet cleaner shall be used to pull the water away from the front of the television camera thereby exposing 95% of the pipe interior for internal television inspection. The television inspection of these sags or depressed areas is most important since these depressed areas are frequently caused by broken pipe, poor service line connections, or open pipe joints and are usually locations of probable infiltration and trouble. The Owner or Authorized Representative shall determine when the high pressure jet cleaner shall be utilized for this type of work.

**Television Equipment:** The television camera used for the sewer line inspection shall be one specifically designed and constructed for such inspection work. Lighting for the camera shall be adequate and suitable, and adjustable to allow a clear picture of the entire periphery of the pipe. The camera shall be capable of rotating three hundred and sixty (360) degrees about its axis. The camera shall be waterproof and shall be operative in 100 percent humidity conditions.

The camera shall be small enough to pass through and clearly televise the interior of a six inch (6") diameter sewer and all other larger sewer sized up to and including the largest diameter sewer as bid on this project. The camera focal length or distance shall be adjustable through a range of six inches (6") to infinity. The television camera shall be capable of transmitting a picture having not less than 600 lines of resolution.

To ensure optimum or peak picture quality throughout all conditions that may be encountered during the sewer inspection work, the variable intensity control of the camera lighting and the adjustments for focal length and iris control shall be under the direct control of the television control technician at the central control panel in the television inspection studio. The camera speed and direction of movement shall also be controlled by the television control technician in the television inspection studio.

The view seen by the television camera shall be transmitted to a monitor of not less than twelve inches (12") diagonally in size. The television monitor shall be capable of receiving and displaying a picture having not less than 600 lines of resolution. The television monitor shall be located inside the mobile television studio.

The monitor character generator shall be capable of creating the precise numeric manhole identification number with no truncation allowed regardless of the number of digits that make up the manhole identification number.

The picture shall be free at all times of electrical interference and shall provide a clear stable image having the number of lines of resolution specified.
The mobile television studio shall be large enough to accommodate up to four people for the purpose of viewing the monitor while the inspection is in progress. The Owner or Authorized Representative shall have access to view the television screen at all times.

The video recording equipment shall be the type on which both audio and video information can be recorded. This equipment shall be continuously connected to the television inspection or monitoring equipment in such a manner that it can easily turned on or off as the Owner or Authorized Representative determines that a video or audio recording is or is not needed.

The video recording and monitoring equipment shall have the built-in capability to allow the Owner or Authorized Representative, or television control technician, to instantly review both the audio and video quality of the video productions at all times during the television survey. Playback speed shall be continuously adjustable from 1/3 normal speed (for slow-motion viewing) to normal playback speed.

The central control panel, television camera controls, video recording equipment, etc. shall all be located in the mobile television studio. The television studio shall be mounted on a mobile device (truck or trailer) which will allow safe and orderly movement of the inspection equipment throughout the job site.

**Equipment Retrieval:** The Contractor shall promptly retrieve at the end of the internal inspection any and all equipment, including television cameras, from the sewer being worked on. The municipality may, at its discretion, allow some additional retrieval time for any equipment which may get stuck in the sewer or in whose retrieval the Contractor may experience some difficulty. In such a case, the Contractor shall promptly contact the Owner or other similar designated public official to advise of the circumstances and to request additional retrieval time. The Contractor shall continue to maintain the sewer in continuous service during the entire retrieval process, using pumping or any other required means.

If it becomes necessary to excavate for equipment retrieval, the Contractor shall be responsible for restoring the sewer section disturbed in the retrieval efforts, to the satisfaction of the Owner, backfilling and restoring the disturbed ground surface to the pre-retrieval conditions or better.

In order to avoid equipment retrieval difficulty, the Contractor is encouraged at his discretion to pass the camera only through the sewer as a test-run to ascertain the retrieval conditions. Logging of defects or other conditions usually required to be logged in the internal inspection work will not be required during the test-run.

All materials and labor involved in the equipment retrieval and test-runs, including excavation, restoration of the sewer and ground surface described above shall be considered incidental to the contract, and shall not be compensated for separately.

**Digital Video Format:** Digital Video Format (i.e. mpeg or avi) delivered one file per sewer line section shall be provided on two separate hard drives in digital format. All digital video files shall be named in a manner such that "to manhole" and "from manhole" is defined for linkage to GIS. Two (2) copies of the finished video recordings on external hard drives and paper reports shall be delivered to the Authorized Representative, the cost of which shall not be paid for separately but shall be incidental to the contract.

A video recording of the inspection view as it appears on the television monitor shall be taken for the complete length of all sewer lines that are television inspected or as may be directed by the Owner or Authorized Representative. The video recording shall be made whenever television inspection is in process. However, the video recording shall be stopped after a short duration whenever the television camera movement is stopped or backed up to examine a defect for a length of time. Whenever the camera movement is restarted, the video recording should be restarted prior to any camera movement.

The video recording of the sewer line inspection shall produce a video image equal to or better than the quality of the picture on the television monitor. When the recorded video information is replayed and reviewed on the monitor/receiver, it shall be free of electrical interference and shall produce a clear, stable image with a resolution of not less than 600 lines.

The video recordings shall also supply a continuous audio record of all observations for the complete length of all sewer lines television inspected. The audio portion of the composite signal shall be sufficiently free of electrical
interference, background noise, and heavy foreign or regional accents to provide an oral report that is clear and complete and easily discernible. The audio portion of the video reporting shall be recorded by the operating technician on the video as they are being produced and shall include the following:

A. Sewer line location (street name and address, structure to structure numbers, etc.)
B. Description and location of defects observed in the sewer line
C. Description and location of service laterals
D. Length of each sewer line section televised
E. All other information as encountered during inspection such as obstructions to camera passage and sags in the pipe which require dewatering

Dubbing the audio information onto the video tract after the internal television inspection is completed will not be permitted.

Video recordings shall be one file per sewer line section and shall be included on the external hard drives submitted. One (1) hard drive containing all of the pre and post video and report files shall be delivered to the Owner or Authorized Representative and (1) copy shall be delivered to the Owner. Each hard drive shall be labeled “VILLAGE OF TINLEY PARK – BREMINTOWNE SUBDIVISION SANITARY SEWER CLEANING AND TELEVISION (14-441)”.

Also included on each hard drive should be a master spreadsheet that has a record for each line segment televised. The spreadsheet shall be in Excel format and shall have hyperlinks to both the pre and post video files and the associated PDF of the scanned paper report for each section of sewer televised. The spreadsheet shall include the following information for each record: Pre or post inspection, Upstream and Downstream Structure Numbers, Date Televised, Televised Length, Pipe Size, NASSCO PACP defect coding, and links to the Video and PDF files.

Television Inspection Reports: The Contractor shall keep an electronic log or record covering the television inspection work and the information acquired for each sewer line section inspected. A sewer line section is defined here as the length of sewer which connects two (2) adjacent structures. Specialized forms shall be used for this log or record, and they must meet the approval of the Owner or Authorized Representative prior to initiation of work for the project. After the televising is complete, the detailed observations from each final television inspection segment need to be submitted in a digital spreadsheet format as well as in PDF and paper format that includes the following information:

- Date and Time televised
- Name of Inspection company and Name of TV control technician
- Project Number
- Sewer pipe ID (non-abbreviated structure to structure numbers in their entirety)
- Sewer line section location (street name, address nearest to each manhole)
- Sewer pipe size
- Sewer pipe material
- Sewer pipe length
- Depth of sewer in each manhole to within plus or minus 0.1 feet
- Sewer section joint length
- Upstream Manhole ID (provided by the Owner or Authorized Representative)
- Downstream Manhole ID (provided by the Owner or Authorized Representative)
- Name of the inspection video file for the sewer pipe
- Direction of flow and direction of camera movement in sewer line
- Root intrusion and mineral deposit locations and descriptions
- Notes on changes in sewer line grades, sewer dips, sags, etc.
- Sewer service line locations (distance from the upstream manhole)*
- Sewer service line connection type (Y or T)
- Position of the Sewer service line on the periphery of the sewer pipe*
- Sewer service line status (active/capped)
- Pipe damage and character, type and location of such damage
- NASSCO PACP defect coding
- Other problems or remarks

* In the situation that the inspection is conducted from the downstream manhole, i.e., the camera moves against the flow direction from the downstream manhole to the upstream manhole, the service line locations and positions need to be adjusted to reflect their locations and positions from the upstream manhole. For instance, on a 200 foot sewer pipe, a service connection at 50 feet and 3 o’clock position from the downstream manhole is 150 feet and 9 o’clock position from the upstream manhole. Thus the 150 feet and 9 o’clock need to be recorded in the spreadsheet submitted.

The submittal of the digital spreadsheet containing all television inspection observations as well as the PDF copies of the report shall be submitted on the two hard drives and shall be considered incidental to the contract and must be submitted on or before the completion dates specified in the contract documents.

If specifically requested at the preconstruction meeting, one additional paper copy of the logs or records, separate from the final report, shall be given to the Owner or Authorized Representative at the completion of each day’s work. Digital media containing that week’s video, digital spreadsheet observation data as well as the PDFs of the report logs shall be provided to the Owner or Authorized Representative at the start of the following week. Two hard copies of the individual logs or records and a summary of said information shall also be included in the final project report generated through the computer and shall additionally be contained in the hard drives.

**Final Project Reports:** Two (2) hard copies of the final project reports shall be prepared and bound by the Contractor and submitted to the Authorized Representative prior to the completion deadline specified herein, as soon as possible after completion of cleaning and television inspection of all sewer lines. This report shall include as a minimum the following information:

A. Sewer line section television inspection logs or records and a summary of information on the logs or records.

B. Field maps showing the correct address location of each manhole shall be shown in addition to its identifying manhole number. The correct locations of all manholes should be marked on the plan sheets and submitted with the report and marked “AS FIELD LOCATED.”

C. An index of all video segments recorded and an identification record for each of those segments.

There shall be no separate or extra compensation for preparation and submittal of the final project reports. All of the Contractor’s costs for preparation and submittal of the final project reports shall be considered incidental to the contract.

**Measurement and Payment:** Measurement will be from center to center of upstream and downstream structures, from center of structure to end of pipe, or other agreed upon stopping point for each lineal foot of sewer line televised. The Contractor’s unit proposal price per lineal foot for the television inspection of sewer lines shall be considered as full compensation for furnishing all labor, equipment, and materials and for performing all work associated with the television inspection of the various sewer lines. There will be no separate or extra compensation for re-televisioning lines that show the cleaning or televising to be unsatisfactory, acquiring the location information required for the television inspection records, for recording and keeping said records for stopping and/or backing up the television camera to better view and analyze any unusual sewer line features or items, or for any other items of work that may be required. This work will be paid for at the contract unit price per FOOT for INTERNAL TELEVISION INSPECTION OF SEWER.

**CUT PROTRUDING TAPS**

During pre-insertion cleaning and televising, when the camera is prevented from proceeding because of a protruding tap, the Contractor, with the approval of the Owner or Authorized Representative, shall remove the protruding portion of the tap to allow the camera to pass for the televising and lining of the entire sewer segment. Any protruding taps cut on the way up to the one tap approved for cutting shall be considered incidental to the cutting of the one approved tap. The approved tap being cut must be recorded on the pre-insertion video in order to be approved for final payment. The protruding tap shall be cut using a method that prevents damage to the sewer service or sewer main. Any damage to the sewer service or sewer main that results from the cutting of a protruding tap shall be
corrected at the expense of the Contractor. Cutting of protruding taps will be measured for payment by count of approved taps cut. The cost for cutting protruding taps will be paid for at the contract unit price per EACH for CUT PROTRUDING TAPS.

**VILLAGE OF TINLEY PARK LOCAL VENDOR PURCHASING POLICY**

The Village of Tinley Park believes it is important to provide local vendors with opportunities to provide goods and services to the Village of Tinley Park. This belief is based upon the fact that the active uses of commercial properties in Tinley Park benefits the community through stabilization of property tax, the creation of local sales tax and the provision of employment opportunities for citizens of the community and surrounding region. In an effort to promote the aforementioned benefits, the Village of Tinley Park wishes to provide local vendors with preferential treatment when competing for contracts with the Village. A local vendor is defined as a business that has an actual business location within the Village of Tinley Park and is licensed by the Village. The Village will not award a contract to a local vendor when the difference between the local vendors bid and the otherwise lowest responsive and responsible bid exceeds the applicable percentage indicated as follows. As such, when considering contracts, the Village of Tinley Park reserves the right to forego the lowest responsive and responsible bid exceeds the applicable percentage indicated as follows. As such, when considering contracts, the Village of Tinley Park reserves the right to forego the lowest responsive and responsible bid in favor of a local vendor under the following circumstances:

<table>
<thead>
<tr>
<th>Contract Value</th>
<th>Range (up to a maximum of)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 to $250,000</td>
<td>5%</td>
</tr>
<tr>
<td>$250,000 to $500,000</td>
<td>4%</td>
</tr>
<tr>
<td>$500,000 to $750,000</td>
<td>3%</td>
</tr>
<tr>
<td>$750,000 to $1,000,000</td>
<td>2%</td>
</tr>
<tr>
<td>$1,000,000 to $2,000,000</td>
<td>1%</td>
</tr>
</tbody>
</table>

Under no circumstances will any contract be awarded to a local vendor when the local vendor’s bid exceeds the lowest responsive and responsible bid by $25,000 or more.

This policy shall ONLY apply if formal notice of the aforementioned criteria is provided as part of the bid specifications. In addition, it should be noted that the Village of Tinley Park shall not be obligated to forego the low bidder in favor of the local vendor under any circumstances. However, this policy simply provides the Village with the option of doing so when applicable. Furthermore, this policy shall not apply in any situation where any portion of the contract amount is being paid with funds other than Village monies. Specifically, this policy shall not apply in any situation where the Village has received a grant or otherwise received a source of funds other than its own funds.

**RESPONSIBLE BIDDER**

For any construction project undertaken by the Village to which the Illinois Prevailing Wage Act, 820 ILCS 130/0.01 et seq. is applicable, in order to be considered a “responsible bidder” on Village Public Works Projects, a bidder must comply with the following criteria, and submit acceptable evidence of such compliance, in addition to any other requirements as determined from time to time by the Village for the specific type of work to be performed:

(a) Compliance with all applicable laws and Village Codes and Ordinances prerequisite to doing business in Illinois and in the Village;

(b) Compliance with:

a. Submittal of Federal Employer Tax Identification Number or Social Security Number (for individual), and

b. Provisions of Section 2000e of Chapter 21, Title 42 of the United States Code and Federal Executive Order No. 11246 as amended by Federal
Executive Order No. 11375 (known as the Equal Employment Opportunity Provisions);

(c) Furnishing certificates of insurance indicating at least the following coverages at minimum limits established by the Village: general liability, workers’ compensation, completed operations, automobile, hazardous occupation, product liability, and professional liability;

(d) Compliance with all provisions of the Illinois Prevailing Wage Act, including wages, medical and hospitalization insurance and retirement for those trades covered by the Act;

(e) Participation in apprenticeship and training programs approved by and registered with the United States Department of Labor’s Bureau of Apprenticeship and Training;

(f) Compliance with the applicable provisions of the Illinois Human Rights Act and the rules of the Illinois Human Rights Commission, including the adoption of a written sexual harassment policy;

(g) Furnishing of required performance and payment bonds;

(h) Furnishing certification of no delinquency in the payment of any tax administered by the Illinois Department of Revenue;

(i) Furnishing certification that the bidder is not barred from bidding or contracting as a result of a violation of either Section 33E or 33E-4 of Chapter 720, Article 5 of the Illinois Compiled Statutes; and

(j) Furnishing evidence that the bidder has not only the financial responsibility but also the ability to respond to the needs of the Village by the discharge of the contractor’s obligations in accordance with what is expected or demanded under the terms of the contract.
Exhibit