

EXHIBIT A



2026 SANITARY SEWER CLEANING AND TELEVISIONING

REL Project 26-R0509

ADDENDUM NO. 1

June 29, 2026

**2026 Sanitary Sewer Cleaning
and Televising**

CITY OF CREST HILL

PROPOSAL DUE DATE: 10:00 AM, July 1, 2026

This addendum forms a part of the Contract Documents and amends the original documents and the Plans and Special Provisions. Where any part of the contract documents is amended, the unaltered provisions are to remain in effect.
This is the only notice you receive, with no follow up by mail.

Updates to the Contract Specifications

Project Completion Date:

**The completion date for the project is being revised from
October 30, 2026 to March 30, 2027.**

I acknowledge the receipt of this addendum by signing the acknowledgement. This addendum needs to be signed and included with bid. Failure to properly acknowledge this addendum as noted above may result in disqualification of the associated bid.

End of Addendum No. 1

I acknowledge the receipt of Addendum No. 1 for the referenced project:

Signed:

Name _____

Zakub Kamm

Name of

Company _____

SEWERTECH LLC

**Ronald J Wiedeman City
Director of Engineering
City of Crest Hill
(815)-741-5122**

CREST HILL
WILL COUNTY, ILLINOIS
NOTICE TO CONTRACTORS

City of Crest Hill (OWNER) is requesting Bids for the construction of the following Project:

2026 Sanitary Sewer Cleaning and Televising

Bid proposals will be received via electronic bid through QuestCDN by the City of Crest Hill until 10:00 A.M. June 24, 2026.

The Project includes the following Work: The City of Crest Hill is accepting proposals to perform cleaning and internal television inspection of sanitary sewers and manholes and the lawful removal and disposal of accumulated and recovered materials at various locations throughout the City.

The Contract Documents may be examined without charge at the office Robinson Engineering Ltd.- Contact Mallory Weisbrodt at mweisbrodt@reltd.com QuestCDN #10235402

Complete digital Project Bidding Documents are available at [Public Bidding Opportunities | Crest Hill, IL](#), or at www.questcdn.com. To be considered a plan holder for bids, register with QuestCDN.com for a free Regular membership and download the digital Bidding Documents for \$42 by inputting Quest project number (10235402) on the website's project search page. Downloading the documents and becoming a plan holder is recommended as plan holder's receive automatic notice of addenda, other bid updates and access to vBid, online bidding via QuestCDN.

Please contact QuestCDN.com at (952) 233-1632 or info@questcdn.com for assistance with free membership registration, downloading digital bidding documents and vBid questions.

To access the electronic bid form, download the digital bidding documents and click the 'Online Bid' button or Online Bidding 'Available' button on the bid posting page. Bids will ONLY be received and accepted through vBid via QuestCDN.com. Prospective bidders must be on the plan holder list through QuestCDN for bids to be accepted

A bid bond in an amount not less than 10% 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 and payment bond in a sum equal to 100% of the amount authorized with sureties to be approved by the Mayor and City Council 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 Engineering Department or Mayor and City Council 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 Illinois Department of Labor. The Contractor shall also comply with all applicable Federal, State and local regulations.

PROPOSAL and CONTRACT

PROPOSAL

TO THE OWNER, CITY OF CREST HILL

1. Proposal of SEWERTECH LLC
(name and address of bidder)
1730 EPPING PLACE, SCHAMBURG, IL 60194
SEWERTECH LLC @ GMAIL.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 120 calendar days after the date of the execution of the contract by both parties, or by OCT 31 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: _____

CITY OF CREST HILL

The amount of the bond, check or draft is FIFTEEN THOUSAND
(\$ 15,000.00)

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) \$ 384,000.00
(c) For whom? VILLAGE OF WINFIELD
3. Do you have sufficient equipment to perform this work? YES
If so, list major items: 3 VACCON UNITS
2 CUES CCTV UNITS
4. Give Bank reference: CHASE BANK
Address: 600 N. MEACHAM RD. SCHAUMBURG, IL 60173
5. List names and addresses of major suppliers:
ES EQUIPMENT
920 NATIONAL AVE
ADDISON, IL 60101
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 14 calendar days.

CERTIFICATE OF ELIGIBILITY TO BID

I, JAKUB KAWA (SEWETECH 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: 6/30/2026

By: JAKUB KAWA
(Name of Contractor)

PARTNER
(Title)

CORP Awarded Schedule of Prices

Local Agency City of Crest Hill

Location _____

Description Bid Tabulation

Schedule for Single Bid

(For complete information covering these items, see plans and specifications)

TOTAL COST ESTIMATE					\$149,950.00
Item Number	Items	Unit	Quantity	Unit Price	Total
1	SANITARY SEWER TO BE CLEANED, 8"	FOOT	24,600	\$1.25	\$30,750.00
2	SANITARY SEWER TO BE CLEANED, 10"	FOOT	2,900	\$1.50	\$4,350.00
3	SANITARY SEWER TO BE CLEANED, 12"	FOOT	5,000	\$1.75	\$8,750.00
4	SANITARY SEWER TO BE CLEANED, 15"	FOOT	3,200	\$2.00	\$6,400.00
5	SANITARY SEWER TO BE CLEANED, 18"	FOOT	6,000	\$2.00	\$12,000.00
6	SANITARY SEWER TO BE CLEANED, 21"	FOOT	300	\$2.00	\$600.00
7	SANITARY SEWER TO BE CLEANED, 24"	FOOT	4,200	\$3.00	\$12,600.00
8	SANITARY SEWER TO BE CLEANED, 27"	FOOT	900	\$3.00	\$2,700.00
9	INTERNAL TELEVISION INSPECTION OF SEWER	FOOT	47,100	\$1.00	\$47,100.00
10	RAILROAD RIGHT-OF-WAY ENTRY PERMIT	L SUM	1	\$4,700.00	\$4,700.00
11	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1	\$5,000.00	\$5,000.00
12	RAILROAD FLAGGER	DOL	1	\$15,000.00	\$15,000.00

SIGNATURES

(If an individual)

Signature of Bidder

Business Address

(If a co-partnership)

Firm Name SEWERTECH LLC (SEAL)

Signed by Jakub Kawa (SEAL)

Business Address 1730 EPPING PL. SCHAUMBURG, IL 60194

Insert

Names and
Addresses of
All Members
of the Firm

JAKUB KAWA

32W170 CEDAR LN. WAYNE, IL 60184

KAROL NASUTA

1730 EPPING PL. SCHAUMBURG, IL 60194

(If a corporation)

Corporate Name

Signed By

President

Business Address

(Corporate Seal)

Insert

Names of
Officers

President

Secretary

Treasurer

Attest:

Attestor's Title:

Phone Number

BIDDER'S CERTIFICATE

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

2026 SANITARY SEWER CLEANING & TELEVISIONING
Name of Project

for the Village/City/Town of CREST HILL, County of Will,

State of IL 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

By: SEWERTECH LLC
Company Name

Date: 6-30-2026

CONTRACT

1. THIS AGREEMENT, made and concluded this 3rd day of August, 2026, between the
City of Crest Hill, acting by and through its Mayor and City Council
known as the party of the first part, and Sewertech 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 CITY OF CREST HILL, ILLINOIS
(Party of the First Part)

By: _____

Title: Mayor Raymond R. Soliman

Attest: _____

Title: City Clerk Christine Vershay-Hall

MUNICIPAL SEAL

Executed by Municipality

FOR THE CONTRACTOR
(Party of the Second Part)

Sewertech LLC

By: *Zakari Kunn*

Title: PARTNER

Attest: *H. J. [Signature]*

Attester's Title: PARTNER

CORPORATE SEAL

Executed by Contractor

CONTRACT BOND

KNOWN ALL MEN BY THESE PRESENTS, that we, Sewertech LLC
ILLINOIS, a corporation organized under the laws of the State of
ILLINOIS, and licensed to do business in the State of Illinois, as principal, and
WEST BEND MUTUAL ^(Contractor's State), a corporation organized and existing under the laws of the State
of WISCONSIN ^(Surety's State), with authority to do business in the State of Illinois, as Surety, are held
and firmly bound unto the City of Crest Hill, State of Illinois, in the penal sum of
One Hundred Forty-Nine Thousand Nine Hundred Fifty and No/100 Dollars
(\$ 149,950.00), lawful money of the United States, well and truly to be paid unto
said City of Crest Hill, for the payment of which we bind ourselves, our successors and
assigns, jointly, severally, and firmly by these presents.

Executed by Contractor

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 City of Crest Hill and
acts through its Mayor and City Council for the construction of the work designated
26-R0509: 2026 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

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 18th day of AUGUST A.D. 2026

Contractor's corporate name: Sewertech LLC

By: Johno Kavan
President

CORPORATE SEAL

Attest: H. Neely

Attester's Title: PARTNER

Surety's corporate name: West Bend Mutual

By: Marie Brooks
Attorney-in-fact

CORPORATE SEAL

By: Marie Brooks
Attorney-in-fact

APPROVED THIS _____ DAY OF _____ A.D. 20____

CITY OF CREST HILL, ILLINOIS

By: _____

Title: Mayor Raymond R. Soliman

ATTEST FOR CITY OF CREST HILL, ILLINOIS

MUNICIPAL SEAL

By: _____

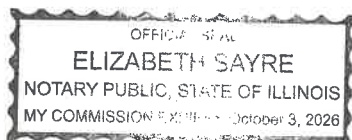
Title: City Clerk Christine Vershay-Hall

STATE OF IL)
COUNTY OF Kane) SS

I, Elizabeth Sayre, a Notary Public in and for said County in the State aforesaid, do hereby certify that JAKUB KAWA and KAROL NAWA, to me personally known to be president and PARTNER, respectively, of SEWERTECH 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 PARTNER 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 18th DAY OF August A.D. 2026

SEAL



Elizabeth Sayre
Notary Public

Executed by Contractor's Notary

STATE OF IL)
COUNTY OF Kane) SS

I, Elizabeth Sayre, a Notary Public in and for said County in the State aforesaid, do hereby certify that Marie Brooks who is personally known to me to be the same person who signed the above and foregoing instrument as the Attorney in Fact for West Bend Mutual appeared before me this day in person and acknowledged that he signed the name of SEWERTECH LLC 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 18th DAY OF August A.D. 2026

SEAL



Elizabeth Sayre
Notary Public

Executed by Surety's Notary

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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.

ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, Pennsylvania 19103
ASSHTO	The American Association of State Highway and Transportation Officials 917 National Press Building Washington, D.C. 20004
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, Colorado 80235
NSF	National Sanitation Test Laboratory Foundation Box 1478 Ann Arbor, Michigan
ANSI	American National Standards Institute 1430 Broadway New York, New York 10018
IDOT	Illinois Department of Transportation 2300 South Dirksen Parkway Springfield, Illinois 62764
FHWA	Federal Highway Administration DOT Building, 400 Seventh St., S.W. Washington, D.C. 20590
OSHA	Occupational Safety and Health Act
MWRDGC	The Metropolitan Water Reclamation District of Greater Chicago 100 East Erie Street Chicago, Illinois 60611

REL Robinson Engineering, Ltd

ISO Insurance Services Office

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 place 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	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 of 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 L.
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 7-2.02O 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 pneumophila, 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: robinsoneng@trustlayer.io

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 an 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.

7-27 SAMPLE INSURANCE CERTIFICATE

EMAIL ALL CERTIFICATES TO: robinsoneng@trustlayer.io

ACORD		CERTIFICATE OF LIABILITY INSURANCE		DATE (MM/DD/YYYY)		
THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS 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		CONTACT NAME: PHONE (A/C, H, Ext): FAX (A/C, Ext): EMAIL: ADDRESS:		INSURER(S) AFFORDING COVERAGE		
INSURED YOUR NAME AND ADDRESS		INSURER A: CARRIERS MUST BE RATED		NAIC#		
		INSURER B: A, VI OR BETTER				
		INSURER C:				
		INSURER D:				
		INSURER E:				
		INSURER F:				
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.						
INSR LTR	TYPE OF INSURANCE	ADD. SUB. (S) (S) (S)	POLICY NUMBER	POLICY EFF. (MM/DD/YYYY)	POLICY EXP. (MM/DD/YYYY)	LIMITS
	GENERAL LIABILITY					EACH OCCURRENCE \$ 1,000,000
	☒ COMMERCIAL GENERAL LIABILITY					EXCESS TO POLICY \$ ANY LIMIT
	CLAIMS-MADE ☒ OCCUR					MED EXP (Any one person) \$ ANY LIMIT
			POLICY NUMBER	EFF DATE	EXP DATE	PERSONAL AUTO INJURY \$ 1,000,000
						GENERAL AGGREGATE \$ 2,000,000
						PRODUCTS - COMPOUND \$ 2,000,000
						\$
	GEN'L AGGREGATE LIMIT APPLIES PER POLICY ☒ PRO ☐ LOC					
	AUTOMOBILE LIABILITY					COMBINED SINGLE LIMIT (Per accident) \$ 1,000,000
	☒ ANY AUTO					BODILY INJURY (Per person) \$
	☒ ALL OWNED AUTOS		POLICY NUMBER	EFF DATE	EXP DATE	BODILY INJURY (Per accident) \$
	☒ HIREN AUTOS					PROPERTY DAMAGE (Per accident) \$
	☒ SCHEDULED AUTOS					\$
	☒ NON-OWNED AUTOS					
			POLICY NUMBER	EFF DATE	EXP DATE	EACH OCCURRENCE \$ 5,000,000
	UMBRELLA LIAB					AGGREGATE \$ 5,000,000
	EXCESS LIAB					\$
	RETENTIONS					
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY					☒ AC STATUS - 100% - 1.50
	ANY PROPRIETORS/OWNERS/EXECUTIVES OFFICER/OWNER EXCLUDED? (Mandatory in NJ)		POLICY NUMBER	EFF DATE	EXP DATE	E.L. EACH ACCIDENT \$ 500,000
	If yes, describe under DESCRIPTION OF RETENTIONS below.					E.L. DISEASE - EA EMPLOYEE \$ 500,000
						E.L. DISEASE - POLICY LIMIT \$ 500,000
	POLLUTION					\$1,000,000/1,000,000 AGG
	PROFESSIONAL					\$1,000,000/2,000,000 AGG
endorsement or amendments / LOCATIONS / MEMBERS (Attach ADDENDUM, Additional Remarks 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 noncontributory basis when required by written contract (Owner and Robinson Engineering Ltd.) 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.						
CERTIFICATE HOLDER			CANCELLATION			
OWNER			SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.			
			AUTHORIZED REPRESENTATIVE			

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ACORD 25 (2018/05)

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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

Original Contract Amount		Daily Charge	
From more than	To and Including	<u>Calendar Day</u>	<u>Work Day</u>
\$ 0	100,000	\$ 475	\$ 675
100,000	500,000	750	1,050
500,000	1,000,000	1,025	1,425
1,000,000	3,000,000	1,275	1,725
3,000,000	6,000,000	1,425	2,000
6,000,000	12,000,000	2,300	3,450
12,000,000	And over	5,800	8,125

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

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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 an 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 Sheeting 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

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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.
- B. Ductile iron pipe (DIP) joints shall conform to American National Standard C111/A21.50-90 for Rubber Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.

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 adaption 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

PIPE DIAMETER, INCHES

Length of Sewer Pipe In Feet	4	6	8	10	12	15	18	21	24
25	0:04	0:10	0:18	0:28	0:40	1:02	1:29	2:01	2:38
50	0:09	0:20	0:35	0:55	1:19	2:04	2:58	4:03	5:17
75	0:13	0:30	0:53	1:23	1:59	3:06	4:27	6:04	7:55
100	0:18	0:40	1:10	1:50	2:38	4:08	5:56	8:05	10:34
125	0:22	0:50	1:28	2:18	3:18	5:09	7:26	9:55	11:20
150	0:26	0:59	1:46	2:45	3:58	6:11	8:30		
175	0:31	1:09	2:03	3:13	4:37	7:05			
200	0:35	1:19	2:21	3:40	5:17				12:06
225	0:40	1:29	2:38	4:08	5:40			10:25	13:36
250	0:44	1:39	2:56	4:35			8:31	11:35	15:07
275	0:48	1:49	3:14	4:43			9:21	12:44	16:38
300	0:53	1:59	3:31				10:12	13:53	18:09
350	1:02	2:19	3:47			8:16	11:54	16:12	21:10
400	1:10	2:38			6:03	9:27	13:36	18:31	24:12
450	1:19	2:50			6:48	10:38	15:19	20:50	27:13
500	1:28			5:14	7:34	11:49	17:01	23:09	30:14

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 A8Z 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 2-1.02.

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 for 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*

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

*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. Automatic Air Valves:
 - 1. Val-Matic Valve & Mfg. Corporation
 - 2. GA Industries
 - 3. APCO
 - 4. Engineer-approved equal
- B. Eccentric Plug Valves:
 - 1. DeZURIK
 - 2. GA Industries
 - 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

B.	Operator worms, steel	ASTM A 29/A29M Grade Designation 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. Valves 4 in. (100 mm) and larger employing a bottom float guide shall be provided with a resilient bumper 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 manufactured by Val-Matic Manufacturing Corporation, Elmhurst, IL, USA; GA Industries, Cranberry Township, PA, 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 meeting the requirements of AWWA C517 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, or ductile iron at least equal to ASTM A536 Grade 65-45-12. 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 on exposed valves and stainless steel buried valves.

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 bi-directional seat leakage shop test on each eccentric plug valve in accordance with Section 5 of AWWA C517. Demonstrate that there is no leakage past the plug.

Give each eccentric plug valve hydrostatic shop pressure tests in accordance with Section 5 of AWWA C517. 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 cast or ductile iron body; bronze or stainless steel renewable seat rings; bronze, cast or ductile iron disc with replaceable bronze or rubber disc rings; bronze disc hinge bushings; and stainless steel hinge 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.

PREVAILING WAGES

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Overtime																
Trade Title	Rg	Type	C	Base	Foreman	M-F	Sa	Su	Hol	H/W	Pension	Vac	Trng	Other Ins	Add OT 1.5x owed	Add OT 2.0x owed
ASBESTOS ABT-GEN	All	ALL		51.40	52.40	1.5	1.5	2.0	2.0	18.32	17.71	0.00	0.91	0.00	0.00	0.00
ASBESTOS ABT-MEC	All	BLD		42.02	45.38	1.5	1.5	2.0	2.0	16.44	16.64	0.00	0.92		3.37	6.73
BOILERMAKER	All	BLD		62.06	67.64	2.0	2.0	2.0	2.0	7.07	27.81	0.00	3.69	2.72	0.00	39.95
BRICK MASON	All	BLD		53.06	58.37	1.5	1.5	2.0	2.0	12.95	26.26	0.00	1.57	0.00	4.23	8.45
CARPENTER	All	ALL		56.71	62.38	2.0	2.0	2.0	2.0	13.64	30.98	1.77	1.04		0.00	0.00
CEMENT MASON	All	ALL		48.85	50.85	2.0	1.5	2.0	2.0	13.37	33.80	0.00	0.80	0.00	0.00	0.00
CERAMIC TILE FINISHER	All	BLD		49.09	49.09	1.5	1.5	2.0	2.0	13.25	17.61	0.00	1.37	0.00	5.57	11.14
CERAMIC TILE LAYER	All	BLD		57.04	62.04	1.5	1.5	2.0	2.0	13.25	21.60	0.00	1.50	0.00	7.63	15.26
COMMUNICATION TECHNICIAN	All	BLD		46.00	50.60	1.5	1.5	2.0	2.0	17.54	18.15	0.00	0.75	2.37	0.00	0.00
CONCRETE SPECIALIST	All	BLD		51.81	58.21	1.5	1.5	2.0	2.0	12.95	27.56	0.00	1.57	0.00	4.88	9.75
CONCRETE SPECIALIST WELDER	All	BLD		54.40	58.21	1.5	1.5	2.0	2.0	12.95	27.56	0.00	1.57	0.00	4.88	9.75
ELECTRIC PWR EQMT OP	All	ALL		64.58	70.87	1.5	1.5	2.0	2.0	12.99	22.45	0.00	3.66	0.00	0.00	0.00
ELECTRIC PWR GRNDMAN	All	ALL		50.37	70.87	1.5	1.5	2.0	2.0	10.13	17.51	0.00	2.85	0.00	0.00	0.00
ELECTRIC PWR LINEMAN	All	ALL		64.58	70.87	1.5	1.5	2.0	2.0	12.99	22.45	0.00	3.66	0.00	0.00	0.00
ELECTRICIAN	All	BLD		56.00	61.04	1.5	1.5	2.0	2.0	18.13	22.93	0.00	1.35	5.40	0.00	0.00
ELEVATOR CONSTRUCTOR	All	BLD		70.68	79.52	2.0	2.0	2.0	2.0	16.28	21.36	5.65	0.80		0.00	0.00
GLAZIER	All	BLD		53.55	55.05	1.5	2.0	2.0	2.0	16.04	26.64	0.00	2.30	0.00	0.00	0.00
HEAT/FROST INSULATOR	All	BLD		56.02	59.38	1.5	1.5	2.0	2.0	16.44	19.88	0.00	0.92		4.99	9.97
IRON WORKER	All	ALL		52.00	57.20	2.0	2.0	2.0	2.0	14.61	30.95	0.00	1.10		0.00	0.00
LABORER	All	ALL		51.40	52.15	1.5	1.5	2.0	2.0	18.32	17.71	0.00	0.91	0.00	0.00	0.00
LATHER	All	ALL		56.71	62.38	2.0	2.0	2.0	2.0	13.64	30.98	1.77	1.04		0.00	0.00
MACHINIST	All	BLD		60.39	64.39	1.5	1.5	2.0	2.0	11.43	9.95	1.85	1.47	0.00	0.00	0.00
MARBLE FINISHER	All	ALL		40.21	54.60	1.5	1.5	2.0	2.0	12.95	23.81	0.00	0.98	0.00	3.00	6.00
MARBLE SETTER	All	BLD		52.00	57.20	1.5	1.5	2.0	2.0	12.95	25.57	0.00	1.25	0.00	3.88	7.76
MATERIAL TESTER I	All	ALL		41.40		1.5	1.5	2.0	2.0	18.32	17.71	0.00	0.91	0.00	0.00	0.00
MATERIALS TESTER II	All	ALL		46.40		1.5	1.5	2.0	2.0	18.32	17.71	0.00	0.91	0.00	0.00	0.00

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MILLWRIGHT	All	ALL		56.71	62.38	2.0	2.0	2.0	2.0	13.64	30.98	1.77	1.04		0.00	0.00
OPERATING ENGINEER	All	BLD	1	64.80	68.80	2.0	2.0	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	BLD	2	63.50	68.80	2.0	2.0	2.0	2.0	24.70	21.55	2.00	2.75	0.00	0.00	0.00
OPERATING ENGINEER	All	BLD	3	60.95	68.80	2.0	2.0	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	BLD	4	59.20	68.80	2.0	2.0	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	BLD	5	68.55	68.80	2.0	2.0	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	BLD	6	65.80	68.80	2.0	2.0	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	BLD	7	67.80	68.80	2.0	2.0	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	FLT	1	73.95	73.95	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	FLT	2	72.45	73.95	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	FLT	3	67.95	73.95	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	FLT	4	63.45	73.95	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	FLT	5	75.45	73.95	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	FLT	6	63.45	73.95	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	HWY	1	63.00	67.00	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	HWY	2	62.45	67.00	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	HWY	3	60.40	67.00	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	HWY	4	59.00	67.00	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	HWY	5	57.80	67.00	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	HWY	6	66.00	67.00	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
OPERATING ENGINEER	All	HWY	7	64.00	67.00	1.5	1.5	2.0	2.0	24.70	21.55	2.00	2.75		0.00	0.00
Painter	All	ALL		54.30	61.09	1.5	1.5	1.5	2.0	16.26	17.59	0.00	1.86	0.00	0.00	0.00
PAINTER - SIGNS	All	BLD		48.16	54.11	1.5	1.5	2.0	2.0	8.20	16.81	0.00	0.00	0.00	0.00	0.00
PILEDRIIVER	All	ALL		56.71	62.38	2.0	2.0	2.0	2.0	13.64	30.98	1.77	1.04		0.00	0.00
PIPEFITTER	All	BLD		58.50	61.50	1.5	1.5	2.0	2.0	15.15	22.85	0.00	3.12	0.00	0.00	0.00
PLASTERER	All	BLD		51.10	54.17	1.5	1.5	2.0	2.0	18.43	22.10	0.00	1.25	0.00	0.00	0.00
PLUMBER	All	BLD		60.50	64.15	1.5	1.5	2.0	2.0	19.10	17.94	0.00	1.98		0.00	0.00
ROOFER	All	BLD		52.00	57.00	1.5	1.5	2.0	2.0	12.80	18.19	0.00	1.14	0.00	0.00	0.00
SHEETMETAL WORKER	All	BLD		58.83	63.54	1.5	1.5	2.0	2.0	17.16	19.90	0.00	1.79	2.62	0.00	0.00
SPRINKLER FITTER	All	BLD		63.20	65.95	1.5	1.5	2.0	2.0	15.45	19.95	0.00	1.15	0.00	0.00	0.00

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STONE MASON	All	BLD		53.06	58.37	1.5	1.5	2.0	2.0	12.95	26.26	0.00	1.57	0.00	4.23	8.45
SURVEY WORKER	All	BLD		58.45	59.45	1.5	1.5	2.0	2.0	19.10	14.40	0.00	1.59		0.00	0.00
SURVEY WORKER	All	HWY		58.45	59.45	1.5	1.5	2.0	2.0	19.10	14.40	0.00	1.59		0.00	0.00
TERRAZZO FINISHER	All	BLD		51.44	51.44	1.5	1.5	2.0	2.0	13.25	18.87	0.00	1.41	0.00	4.45	8.89
TERRAZZO MECHANIC	All	BLD		55.35	58.85	1.5	1.5	2.0	2.0	13.25	20.26	0.00	1.46	0.00	4.70	9.39
TRAFFIC SAFETY WORKER I	All	HWY		43.40	45.40	1.5	1.5	2.0	2.0	10.08	10.08	0.00	1.05	0.00	0.00	0.00
TRAFFIC SAFETY WORKER II	All	HWY		44.40	46.40	1.5	1.5	2.0	2.0	10.08	10.08	0.00	1.05	0.00	0.00	0.00
TRUCK DRIVER	All	ALL	1	47.95	48.50	1.5	1.5	2.0	2.0	12.15	14.31	0.00	0.35	0.00	0.00	0.00
TRUCK DRIVER	All	ALL	2	48.10	48.50	1.5	1.5	2.0	2.0	12.15	14.31	0.00	0.35		0.00	0.00
TRUCK DRIVER	All	ALL	3	48.30	48.50	1.5	1.5	2.0	2.0	12.15	14.31	0.00	0.35	0.00	0.00	0.00
TRUCK DRIVER	All	ALL	4	48.50	48.50	1.5	1.5	2.0	2.0	12.15	14.31	0.00	0.35	0.00	0.00	0.00
TUCKPOINTER	All	BLD		52.53	53.53	1.5	1.5	2.0	2.0	11.05	23.16	0.00	1.46	0.00	0.00	0.00

Legend

Rg Region

Type Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers

C Class

Base Base Wage Rate

OT M-F Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.

OT Sa Overtime pay required for every hour worked on Saturdays

OT Su Overtime pay required for every hour worked on Sundays

OT Hol Overtime pay required for every hour worked on Holidays

H/W Health/Welfare benefit

Vac Vacation

Trng Training

Other Ins Employer hourly cost for any other type(s) of insurance provided for benefit of worker.

Explanations WILL COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

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EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS TECHNICIAN

Installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice, sound and vision production and reproduction, telephone and telephone interconnect, facsimile, equipment and appliances used for domestic, commercial, educational and entertainment purposes, pulling of wire through conduit but not the installation of conduit.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of

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interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

OPERATING ENGINEER - BUILDING

Class 1. Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson Attachment; Batch Plant; Benoto (requires Two Engineers); Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Spider Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Heavy Duty Self-Propelled Transporter or Prime Mover; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, One, Two and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Lubrication Technician; Manipulators; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes: Squeeze Cretes-Screw Type Pumps; Gypsum Bulker and Pump; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-Form Paver; Straddle Buggies; Operation of Tie Back Machine; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators (remodeling or renovation work); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Low Boys; Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

Class 5. Assistant Craft Foreman.

Class 6. Gradall.

Class 7. Mechanics; Welders.

Will County Prevailing Wage Rates posted on 5/21/2026

OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

Class 1. Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines; ABG Paver; Backhoes with Caisson Attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Tower Cranes of all types; Creter Crane; Spider Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dredges; Elevators, Outside type Rack & Pinion and Similar Machines; Formless Curb and Gutter Machine; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Truck Mounted; Hoists, One, Two and Three Drum; Heavy Duty Self-Propelled Transporter or Prime Mover; Hydraulic Backhoes; Backhoes with shear attachments up to 40' of boom reach; Lubrication Technician; Manipulators; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Rock/Track Tamper; Roto Mill Grinder; Slip-Form Paver; Snow Melters; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Operation of Tieback Machine; Tractor Drawn Belt Loader; Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Traffic Barrier Transfer Machine; Trenching; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole Drills (Tunnel Shaft); Underground Boring and/or Mining Machines 5 ft. in diameter and over tunnel, etc; Underground Boring and/or Mining Machines under 5 ft. in diameter; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; Hydro Excavating (excluding hose work); Laser Screed; All Locomotives, Dinky; Off-Road Hauling Units (including articulating) Non Self-Loading Ejection Dump; Pump Cretes; Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper - Single/Twin Engine/Push and Pull; Scraper - Prime Mover in Tandem (Regardless of Size); Tractors pulling attachments, Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than Asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper-Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Vacuum Trucks (excluding hose work); Welding Machines (2 through 5); Winches, 4 Small

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Electric Drill Winches.

Class 5. SkidSteer Loader (all); Brick Forklifts; Oilers.

Class 6. Field Mechanics and Field Welders

Class 7. Dowell Machine with Air Compressor; Gradall and machines of like nature.

OPERATING ENGINEER - FLOATING

Class 1. Craft Foreman; Master Mechanic; Diver/Wet Tender; Engineer; Engineer (Hydraulic Dredge).

Class 2. Crane/Backhoe Operator; Boat Operator with towing endorsement; Mechanic/Welder; Assistant Engineer (Hydraulic Dredge); Leverman (Hydraulic Dredge); Diver Tender.

Class 3. Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs. or more); Tug/Launch Operator; Loader/Dozer and like equipment on Barge, Breakwater Wall, Slip/Dock, or Scow, Deck Machinery, etc.

Class 4. Deck Equipment Operator, Machineryman/Fireman (4 Equipment Units or More); Off Road Trucks; Deck Hand, Tug Engineer, Crane Maintenance (50 Ton Capacity and Under) or Backhoe Weighing (115,000 pounds or less); Assistant Tug Operator.

Class 5. Friction or Lattice Boom Cranes.

Class 6. ROV Pilot, ROV Tender

SURVEY WORKER

Operates survey equipment (such as levels, transits, data collectors, GPS and robotic total stations) for the purpose of performing construction layout and/or grade checking.

SURVEY FOREMAN

Operates survey equipment (such as levels, transits, data collectors, GPS and robotic total stations) for the purpose of performing construction layout and/or grade checking; oversees survey crew operations; and/or coordinates work of survey crews.

TRAFFIC SAFETY Worker I

Traffic Safety Worker I - work associated with the delivery, installation, pick-up and servicing of safety devices during periods of roadway construction, including such work as set-up and maintenance of barricades, barrier wall reflectors, drums, cones, delineators, signs, crash attenuators, glare screen and other such items, and the layout and application or removal of conflicting and/or temporary roadway markings utilized to control traffic in construction zones, as well as flagging for these operations.

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TRAFFIC SAFETY WORKER II

Work associated with the installation and removal of permanent pavement markings and/or pavement markers including both installations performed by hand and installations performed by truck.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled Dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turntrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turntrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic-- Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

LANDSCAPING

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Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

MATERIAL TESTER & MATERIAL TESTER/INSPECTOR I AND II

Notwithstanding the difference in the classification title, the classification entitled "Material Tester I" involves the same job duties as the classification entitled "Material Tester/Inspector I". Likewise, the classification entitled "Material Tester II" involves the same job duties as the classification entitled "Material Tester/Inspector II".

SPECIAL PROVISIONS

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**CITY OF CREST HILL
2026 SANITARY SEWER CLEANING AND TELEVISIONING
SPECIAL PROVISIONS**

GENERAL

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction", adopted January 1, 2022; 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 which apply to and govern the proposed improvement, 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 sanitary sewers and manholes and the lawful removal and disposal of accumulated and recovered materials, all in the City of Crest Hill, Illinois (Owner).

The Contractor shall be responsible to be sufficiently familiar 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.

COMPLETION SCHEDULE

It is anticipated that the contract will be awarded in June 2026. All work contained within this contract, including restoration of surface areas disturbed by the Contractor, if any, shall be completed within 120 calendar days from the date of contract award.

It is the Contractor's responsibility to ensure that the contract documents and insurance requirements are met in a timely manner as no work will be allowed until this information is received and correct. No adjustment to the completion date will be made if this requirement is not met.

Failure to complete the work on time may result in assessment of liquidated damages in accordance with Section 8-9, "FAILURE TO COMPLETE THE WORK ON TIME" of the General Requirements & Covenants of this contract.

FUNDING LIMITS

The quantities called for in this contract indicate the amount of work to be expected. The actual amounts for the various items may vary depending upon actual field conditions. The Owner reserves the right to reduce or increase the scope of project quantities and to delete entire line

items. It shall be understood and agreed upon that the unit prices for these items shall prevail throughout the period of the contract and that no additional compensation per unit price or otherwise will be allowed for any increase or decrease in the quantities, including but not limited to, decreases due to the deletion of an entire location/section of the improvement. No increases in unit prices will be allowed if method of construction changes due to a decrease in quantity.

Under no circumstances can the awarded dollar amount be exceeded during the project without written authorization from the Owner. The Contractor is responsible for tracking quantities to ensure this does not happen.

PREQUALIFICATION

The Contractor shall have sufficient experience, as determined by the Owner and their representatives, in the field of sewer cleaning and televising to warrant release of the bid documents. The Contractor shall provide such documentation as is deemed necessary upon request that would demonstrate the Contractor has completed at least five (5) sewer cleaning and televising projects for a municipality or sanitary district over the past three (3) years with a minimum contract dollar value of \$100,000. The Contractor must use National Association of Sewer Services Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) certified operators for the televising of the sewer on this project and must supply the NASSCO certification numbers for the operators on the job.

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 Contract must comply with all requirements of the Act, including but not limited to, all wage, notice and record keeping duties.

INSURANCE REQUIREMENTS

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 7.02E Pollution Liability **WILL** be required as part of this project.

Section 7.02F Professional Liability **WILL NOT** be required as part of this project.

PARTIAL PAYMENTS

Division 1 GENERAL REQUIREMENTS AND COVENANTS Section 9-6 PARTIAL PAYMENTS shall be modified as follows: 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 an amount retained until after the completion of the entire Work to the satisfaction of the Owner,

and the balance certified to the Owner for payment. The amount retained will be in accordance with 30ILCS 550/1.

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.

GUARANTEE

All workmanship, materials and equipment shall be guaranteed for a period of one (1) year from the date of written acceptance by the Owner. Upon receipt of notice from the Owner of failure of any part of the system during the guarantee period, new replacement parts shall be furnished and installed by the Contractor at no additional cost to the Owner.

WORK HOURS

The Contractor may prosecute work between the hours of 7:00 a.m. and 6:00 p.m., Monday thru Friday. No work will be permitted between the hours of 6:00 p.m. and 7:00 a.m., on Saturdays or Sundays, or on holidays, without prior written permission of the Owner.

NOTIFICATION REQUIREMENTS

The Contractor shall provide two (2) business days of advanced written notice to: 1.) the City of Crest Hill and the Engineer prior to the start of the work 2.) those properties with connections to the sewer sections to be cleaned and televised within the forthcoming workday via door hangers, and 3.) any other properties that may potentially be adversely affected by the cleaning and televising operations via door hangers. The notification shall be of a form and method as approved by the Owner.

IDOT RIGHT-OF-WAY

No work shall be performed in the IDOT ROW until all necessary permits have been obtained by the Contractor from the Illinois Department of Transportation. The costs for obtaining all permits will be considered included in the contract and shall include any necessary bonds or insurance required. **Plainfield Road and N Broadway Street are under IDOT's jurisdiction.**

WILL COUNTY RIGHT-OF-WAY

No work shall be performed in the Will County ROW until all necessary permits have been obtained by the Contractor from the Will County Division of Transportation. The costs for obtaining all permits will be considered included in the cost of the various pay items and shall include any necessary bonds or insurance required. **Caton Farm Road** is under the jurisdiction of the Will County Division of Transportation.

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 §107.09 and §107.14 of the Standard Specifications for Road and Bridge Construction and the Highway Standards: 701001-02, 701006-05, 701011-04, 701101-05, 701301-04, 701427-05, 701501-06, 701502-09, 701602-10, 701606-10, 701701-10, 701801-06, 701901-11.

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, instead, all traffic control work required by the Standard Specifications shall be considered included in the cost of various contract pay items.

RAILROAD RIGHT-OF-WAY ENTRY PERMIT

A. Description: The Contractor shall be responsible for entering into an agreement with Canadian National Railway Company (CN) for proposed work within the railroad right-of-way. All costs associated with the CN Right of Entry (ROE) Agreement (copy for both enclosed) including but not limited to the formulation, execution and filing of the ROE agreement shall be the responsibility of the Contractor.

All coordination with the railroad shall be the responsibility of the Contractor. Enclosed, for the Contractor's convenience, is a copy of CN ROE Agreement Information form. Please start work on the Railroad permit, insurance, and any necessary safety training within one week after the contract award date to ensure the permit is approved at the time inspection activities will commence. For railroad flagging, see the special provision below.

B. Measurement and Payment: Any and all costs associated with respect to CN Railroad Right-of-Entry Agreement including but not limited to formulation, execution and filing of the Right-of-Entry agreement, application fee, adhering to their Insurance requirements, safety training, etc. shall be the responsibility of the Contractor, which shall be paid for at the contract unit price per LSUM for RAILROAD RIGHT-OF-WAY ENTRY PERMIT.

RAILROAD PROTECTIVE LIABILITY INSURANCE

A. Description: The Contractor shall be responsible for providing the necessary railroad protective liability insurance required by Canadian National Railway Company (CN) as detailed in the Right of Entry Information included in this Contract or as otherwise specified by CN.

B. Measurement and Payment: All costs associated with respect to CN insurance requirements shall be the responsibility of the Contractor, which shall be included in the cost of the RAILROAD PROTECTIVE LIABILITY INSURANCE pay item.

RAILROAD FLAGGER

A. Description: This work shall be performed in accordance with Sections 107.12 and 109.05 of the Standard Specifications.

The flagging costs incurred for the work associated at the various rail crossings at the Canadian National Railway Company (CN) properties will be reimbursed by the City of Crest Hill in accordance with Section 109.05 of the Standard Specifications. The Contractor is responsible for coordinating and providing pre-payment for flagging services, if necessary, per the requirements by CN and as outlined in the Right of Entry (ROE) License Agreement. The number of days flagging is needed shall be kept to a minimum and the Owner/Engineer should review and approve the scheduling for flagging services in advance. The Contractor will be reimbursed by the Owner for the actual number of flagging days used. The Contractor is required to conduct operations at all times in full compliance with the rules, regulations and requirements of CN.

The Contractor shall give thirty (30) days advance written notice to the Engineering Superintendent of the Railroad or their authorized representative prior to commencement of any construction work on the improvement affecting the railroad property. The Contractor shall notify the Railroad sufficiently in advance of when the protective services are required. The Contractor shall make every effort to notify the Railroad in advance if a previously requested flagger will not be needed for any reason.

Any costs for flagging protection provided by the Railroad at the Contractor's request for those days when the Contractor does not work shall be borne by the Contractor.

B. Measurement and Payment: An allowance for Flaggers will be made on this project. This work shall be paid for at the contract unit price per DOLLARS for RAILROAD FLAGGER, which the Contractor shall enter as \$15,000. The need for flaggers in the railroad's property will be at the direction of CN. No additional compensation will be granted for downtime when the flaggers are not present when requested. The Contractor will be reimbursed for flagger time used with no markup.

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 pipes 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 City of Crest Hill Public Works Director and Engineer at the end of each working day. The Contractor will not be responsible for the cost of the water used.

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 and the Engineer 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 included in the cost of various contract pay items.

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.

PROJECT PROGRESS COMMUNICATION

Communication with the Owner and the Engineer is imperative to the success of the project. The following written and verbal communications are required as part of the contract:

- Each Monday by noon during the project, the Contractor shall send an email to the Owner and Engineer with an excel spreadsheet delineating the work completed for the previous week and the work plan for the current week.
- Contractor is to contact the Owner's representative anytime their schedule changes that inhibits them from working as per the schedule.

SEWER FLOW CONTROL

The Contractor shall be responsible for maintaining sewer flow necessary for the continuation of sewer service during construction and/or inspection. 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 by-pass pumping capabilities. Any bypass pumping that may be required will be considered included in the contract. 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.

The cost of compliance with this requirement shall not be compensated for separately but shall be considered included in the cost of various contract pay items.

SANITARY SEWER TO BE CLEANED

A. Description: This item of work shall consist of the cleaning of sewers and adjacent structures, i.e., manhole cleaning with high-velocity hydro-cleaning equipment at locations as shown on the plans or as directed by the Owner or Engineer.

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.

When, in the opinion of the Owner or Engineer, hydro-cleaning equipment cannot satisfactorily clean or remove obstructions in the pipe, such as root penetrations, mineral deposits, heavy debris, etc., 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 included in the contract.

If any debris remains on the benches, walls, or inverts 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 Engineer immediately. The Owner or Engineer shall then determine an alternative cleaning method or choose not to clean that specific sewer section.

B. Cleaning Precautions: During sewer cleaning operations, satisfactory 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 Engineer for use, extreme care shall be taken to ensure that the existing sewer is not damaged during the operations.

C. 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 of 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.

It is the sole responsibility of the Contractor to properly dispose of all collected sewer debris daily. This work shall be done at the Contractor's own expense and considered included in the cost of various contract pay items. 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.

D. 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 when 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 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.

E. 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.

F. Measurement and Payment: The cost of this work, regardless of the number of set-ups, passes, or types of cleaning equipment used, including structure cleaning and heavy cleaning, shall be paid for at the contract unit price bid per FOOT for SANITARY SEWER TO BE CLEANED, [DIAMETER].

HEAVY CLEANING OF SEWER

Heavy cleaning shall be deemed necessary, when in the opinion of the Engineer, continued use of high velocity hydro-cleaning does not meet the industry standard of 95% clean and cannot be satisfactorily utilized due to obstructions present in the sewer, i.e., heavy root penetrations, mineral deposits, built up debris in the line, etc.; that would prevent optimal viewing of the pipeline.

The Contractor shall then select such appropriate heavy cleaning equipment as listed under "Mechanical Cleaning Equipment" that would be capable of removing all dirt, grease, rocks, roots, mineral deposits, internal deposits, and other deleterious materials from the sewer line while preventing damage to that line.

It shall be understood that the cost for heavy cleaning, if necessary, shall be included in the SANITARY SEWER TO BE CLEANED, [DIAMETER], pay item and that no additional compensation shall be allowed.

INTERNAL TELEVISION INSPECTION OF SEWER

A. Description: 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 Engineer.

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 Engineer, 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 skilled certified technician or supervisor who shall be located at the control panel in the mobile television inspection studio. The operator must be certified by NASSCO for PACP. The control of the television equipment may be accomplished by means of remote-control winches or by telephone or other suitable means of communication 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 always 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 always 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-televisé that section of sewer at no additional cost. When directed to do so by the Owner or Engineer, 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 faster speed than that specified by the Owner or Engineer will not be acceptable.

The television control technician shall be able to adjust the brightness of the lighting system built into the 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-televised 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 pipes, poor service line connections, or open pipe joints and are usually locations of probable infiltration and trouble. The Owner or Engineer shall determine when the high-pressure jet cleaner shall be utilized for this type of work.

B. Televising Equipment: The television camera used for 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 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 sizes 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 and in color. 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.

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 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 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 Engineer 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 be turned on or off as the Owner or Engineer 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 Engineer, or television control technician, to instantly review both the audio and video quality of the video productions 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.

C. Digital Video Format: Digital Video Format (i.e., mpeg or avi) delivered one file per sewer line section shall be provided on two separate external USB 3.0 Portable Solid-State Drives (SSD) in digital format. All digital video and PDF report files shall be named in a manner such that the "to manhole" and "from manhole" is precisely defined for linkage to GIS. For example, a pipe segment with an upstream manhole number of 123 and a downstream manhole number of 456 shall be named "123-456.mpg" and "123-456.pdf". Two (2) copies of the finished video recordings on external hard drives and PDF reports shall be delivered to the Engineer, the cost of which shall not be paid for separately but shall be included in the cost of various contract pay items.

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 Engineer. 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:

1. Sewer line location (street name and address, structure to structure numbers, etc.)
2. Description and location of defects observed in the sewer line
3. Description and location of service laterals
4. Length of each sewer line section televised
5. 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. Two (2) hard drives containing all the video and report files shall be delivered to the Engineer. The hard drives shall be labeled "**CITY OF CREST HILL – 2026 SANITARY SEWER CLEANING AND TELEVISIONING – REL 26-R0509**".

D. Spreadsheet: 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 MS Excel format and shall have hyperlinks to the video files and the associated PDF report for each section of sewer televised. It shall include the following information for each record:

- Date Televised
- Length Surveyed
- Pipe Segment Reference (Pipe ID)
- Upstream Manhole ID
- Upstream Manhole Rim to Invert
- Downstream Manhole ID
- Downstream Manhole Rim to Invert
- MPEG Video
- PDF Report
- Data Folder Location
- City, Village or Town
- Street Name
- Location Details
- Pipe Height (Diameter)
- Pipe Width
- Pipe Shape
- Pipe Material
- Additional Information
- Structural Quick
- Structural Index
- O&M Quick
- O&M Index
- Overall Quick
- Overall Index
- REL Project Number

E. 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 Engineer 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 MS Access Database format as well as in PDF report format that includes the following information:

- Date and Time televised
- Name of Inspection company
- Name of TV control technician
- NASSCO certification number of TV control technician
- REL 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 Engineer)
- Downstream Manhole ID (provided by the Engineer)
- 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)
- Sewer service line location on the periphery of the sewer pipe (clock position)
- Sewer service line status (active/capped)
- Pipe damage and character, type, and location of such damage
- NASSCO structural, O+M and Overall pipe severity ranking
- NASSCO Quick Rating
- Other problems or remarks

The submittal of the MS Access database containing all television inspection observations as well as the PDF copies of the report shall be submitted on the two (2) hard drives and shall be considered included in the contract and must be submitted on or before the completion dates specified in the contract documents.

F. Final Project Reports: Two (2) hard copies of the final project reports shall be prepared by the Contractor and submitted to the Engineer 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:

1. Sewer line section television inspection logs or records and a summary of information on the logs or records.
2. Field maps showing field notes and 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."

3. 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 the Contractor's costs for preparation and submittal of the final project reports shall be considered included in the cost of various contract pay items.

G. Measurement and Payment: Measurement for payment will be made from center to center of upstream and downstream structures, from center of structure to end of pipe/inspection, or other agreed upon stopping point for each foot of sewer line televised. The Contractor's unit proposal, price per 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-televising 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.

Where obstructions within the sewer line prevent the passage of the television camera and other equipment, the Contractor shall reset his equipment so it can pass through the sewer from the other end of the sewer section and thereby complete the inspection of the sewer. This work all will be paid for at the contract unit price per FOOT for INTERNAL TELEVISION INSPECTION OF SEWER.

FIELD DRAWINGS

The Contractor shall provide the Owner and Engineer with updated field notes detailing the work as the sanitary manhole and sanitary sewer utilities were televised, denoting any changes from the pipe schedule as shown on the exhibits. Any notes regarding the pipe diameter, pipe length, and location of manholes shall be included. The cost for providing this information will be considered included in the cost of the project. Final payment will not be made to the Contractor until these drawings are reviewed and approved by the Owner.

The cost for Field Drawings shall not be paid for separately but shall be considered included in the cost of various contract pay items.

EQUIPMENT RETRIEVAL

The Contractor shall promptly retrieve at the end of the internal inspection 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.

To avoid equipment retrieval difficulty, the Contractor is encouraged at their 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 included in the cost of various contract pay items, and shall not be compensated for separately.

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.

CNRR APPLICATION REQUIREMENTS



SAFETY GUIDELINES FOR CONTRACTORS AND NON-CN PERSONNEL

Introduction

This document is a condensed version of CN's mandatory safety training for Contractors and non-CN personnel. It should be noted that this document is not a substitute for the mandatory safety training for Contractors and non-CN personnel including eRailsafe or Contractor Orientation as the case may be. For the purposes of this document "Contractor" may also apply to individuals on CN property, whether under contract to CN or not.

Contractor's employees or subcontractors performing work within the CN right-of-way must familiarize themselves with CN's Contractor Safety Package, complete a Contractor Orientation Course and must be registered on the Contractor Completion Database which can be found at the following website: www.contractororientation.com. If you have been contracted by CN and are completing work on behalf of CN, you are required to ensure anyone working on the project within CN right of way, or within 30 feet of the nearest rail (whichever is greater), has completed eRailSafe. This course can be found at the following website: www.erailsafecanada.com

These guidelines are not to be considered as a substitute for the applicable government regulations. These guidelines are the minimum requirement and must be exceeded where the hazard or government regulations warrant.

It is not possible to deal with every hazard in this one document. These guidelines are to be employed in conjunction with Government Acts, Regulations, local Ordinances, CN Safety and Operating Rules Standards, and good judgment to facilitate the safe completion of the work.

Additional information regarding safe work practices may be included in contract documents and specifications. In the event of a discrepancy between these guidelines and the contract, the contract shall govern.

CN's Basic Safety Requirements

The Contractor's attention is drawn to the following highlights from CN's "Basic Safety Requirements":

1. Take all reasonable measures to ensure the protection of employees, customers, property, and the general public.
2. Address promptly all environmental and safety concerns.
3. Analyze all accidents or incidents resulting in, or having potential for, loss or injury, and take remedial action promptly to prevent recurrence.
4. Require all persons granted access to Company property to comply with applicable Risk Management policies, standards, and procedures.
5. Provide employees with appropriate training to enable them to work safely.
6. Inspect personal protective equipment (PPE), tools and equipment before use to ensure that they are in good working condition.
7. Contractor's employees or subcontractors performing work within the CN right-of-way must familiarize themselves with CN's Contractor Safety Package, complete a Contractor Orientation Course and must be registered on the Contractor Completion Database which can be found at the following website: <https://contractororientation.com> If you have been contracted by CN and are completing work on behalf of CN, you are required to ensure anyone working on the project within CN right of way has completed eRailSafe. This can be found at the following website: www.erailsafecanada.com

CN's Risk Management policy is premised on the following:

- to work in a safe manner is a condition of employment/Contract;
- all accidents or incidents resulting in loss or injury are preventable;
- it is possible to eliminate or safeguard all operating conditions that may result in injury, property damage, or other losses;
- employees will be provided with appropriate training to enable them to work safely;
- employees and management must work jointly in efforts to promptly resolve and improve safety and health conditions in the workplace.

GENERAL RULES AND INFORMATION

"Expect the movement of a train, engine, rail car or track unit at any time, on any track, in either direction. Protect yourself and others from the movement of trains, engines, railcars and track units and do not expect them to stop."

If any situation arises which affects the safe movement of trains, CN must be contacted immediately at:

1-800-465-9239.

Alternatively, contact CN's Network Operations Centre in Edmonton at:

1-800-661-3963.

Before any digging is performed on CN property, proper clearance and instructions must be obtained through the Information Technology Command Centre (ITCC Network Management Centre) at:

1-800-661-3687 or 1-800-NO1-FOTS.

In an emergency, any object waved violently by anyone on or near the track is a signal for trains to stop.

Violation of CN's mandatory Contractor Safety training or contravention of these guidelines may result in the immediate removal of the Contractor or the offending personnel from CN property.

Compliance with Government Regulations

Contractors shall follow all applicable Federal, Provincial, and Municipal Acts, Regulations, Laws and Codes, including but not limited to those related to the licensing of workers, occupational health and safety, transportation or handling of dangerous substances, inspection and certification of equipment. As CN is a federally regulated enterprise, Contractors are advised that work undertaken on CN right-of-way may be governed by Federal regulation.

The Contractor must become familiar with all applicable regulations and must ensure compliance by workers at the job site. Supplementary instructions may be issued by CN representatives from time to time.

Contractor's Responsibility

1. Before entering upon CN right-of-way, the Contractor must have all documentation properly executed and available for review by CN personnel at the working site. (i.e. Permits, Licenses, Contract Documents, Contractor Safety Approved identification card and/or Waivers).
2. Daily briefings must be held at every work site to review the contents of these guidelines and any unique conditions at the site relating to safety. A record must be kept of such briefings by the Contractor's responsible person at the work site. Work site briefings must be updated regularly as the job conditions change
3. Unless explicitly permitted by CN, no equipment or vehicle may enter upon the operated right-of-way.
4. Unless explicitly permitted by CN, no work shall take place within thirty (30) feet of the nearest rail except in the presence of a CN Protecting Foreman. The CN Protecting Foreman is concerned only with the safe movement of trains and will not be responsible for the safety of the Contractor, the Contractor's personnel or the Contractor's equipment.
5. Contractor's personnel must not crawl under, climb over or pass through standing railway equipment.
6. Contractor's personnel must not cross a track within thirty (30) feet, of standing railway equipment.
7. CN has many power and/or communication cables buried within the CN right-of-way. The Contractor shall be sure of their location before making any excavation, driving stakes or otherwise penetrating the ground surface. In the event of any excavation work that strikes an underground cable adjacent to CN's track, the contractor must make immediate contact with CN
8. In accordance with CN's safety standards, Contractor's personnel must wear CN required personal protective equipment at all times while on CN right-of-way. Such equipment will include hard hats, safety glasses, reflective apparel, safety footwear (protective footwear shall meet or exceed CSA Z195 and/or ASTM F2413, shall cover and support the ankle and have a defined heel. In

Canada, the defined heel must be a minimum of 9 mm (3/8 inch) and shall not exceed 25 mm (1 inch). In the US, the defined heel must be a minimum of 12 mm (1/2 inch) and shall not exceed 25mm (1 inch). Boots must be equipped with laces, which must be laced to the top and tied. Hearing and respiratory protection and fall arrest equipment shall be worn where signs are posted or when a potential hazard exists.

9. No CN plant, signal, structure, equipment or property of any kind may be tampered with, modified or removed.
10. "Hi-rail" equipment shall only be operated on the track by personnel qualified in the latest version of the "Canadian Rail Operating Rules".
11. Horseplay, practical jokes, fighting or any other activity that may create a hazard will not be tolerated.
12. Contractor's personnel must immediately abide by instructions from CN personnel.

Approaching Train

1. On the approach of a train, the Protecting Person will communicate to the Contractor's Responsible Person, either by radio or by personal contact, that a train is approaching.
2. After receiving the train information from the Protecting Person, the Contractor's Responsible Person must ensure that all workers, equipment and materials are "Clear Of The Track" (as defined in 5.3.5. below) then communicate this to the Protecting Person.
3. The Protecting Person will not authorize any trains through the working limits nor authorize cancellation of protection before receiving confirmation that all workers have been alerted, stopped working and the track is clear of workers and machinery.
4. After the train has passed, no one is to foul or occupy the track until the Protecting Person has given the authorization. Authorization will be communicated to the Contractor's Responsible Person.

Clear Of The Track

To be Clear of the Track shall be defined as:

1. All work has been stopped.
2. All workers are made aware of the approaching train and route to be followed.
3. All workers, equipment and material have been positioned beyond the clearance limits or at any other location deemed safe by CN. (at least 5 meters (15 feet) from the nearest rail of the track on which the train is to pass with additional allowances for curvature and super elevation).
4. All off-track equipment by special approval less than 5 (15 feet) meters of the nearest rail has stopped working and operators have left their equipment.
5. All off-track equipment more than 5 meters (15 feet) from the nearest rail has stopped working. Operators may remain in their cabs unless directed otherwise by the Contractor's Responsible Person. All equipment must be properly secured against unintentional movement
6. All on-track equipment has been moved into the siding or other track as per the Protecting Person's instruction. Operators will leave their equipment unless directed otherwise by the Contractor's Responsible Person. All unattended equipment must be properly secured against unintentional movement
7. Booms, cranes or other similar equipment have been immobilized and the boom is parallel to the railway track(s), and clear of the nearest rail be 5 meters (15 feet)
8. Provided there is no possible way for the worker to become unintentionally foul of a passing train, and at the discretion of the CN Supervisor, workers may continue working.

POLICY TO PREVENT WORKPLACE ALCOHOL AND DRUG PROBLEMS

Policy standards

The Contractor, subcontractors, employees, suppliers and visitors must remain free from any adverse effects of alcohol or other drugs and conduct themselves in an appropriate manner while on CN business or premises. The Contractor must ensure that all those having access to the site adhere to the following standards when on CN business or premises, including vehicles and equipment:

1. No use, possession, distribution or sale of illegal drugs or drug paraphernalia.
2. No use, possession, distribution or sale of beverage alcohol or any form of alcohol.
3. Responsible use of prescribed and over-the-counter medications.
4. No distribution, offering or sale of prescription medications.
5. To report for duty and remain during the entire period of duty free of the negative effects of alcohol and other drugs, including the after effects of such use.

Consequences of violation

Failure to meet these standards will be considered a breach of the contract. This may at CN's sole discretion, trigger the suspension or termination of the contract.

Policy violation procedures

Where CN has reasonable grounds to believe any individual in the employ of the Contractor or a supplier is on duty in an unsafe condition or otherwise in violation of the Policy, or where during the preliminary phase of any investigation such an individual has been identified as being directly involved in the chain of acts or omissions leading up to an accident or incident:

1. CN will escort the individual(s) to a safe place.
2. CN will notify the Contractor or supplier.
3. The Contractor will investigate the situation.
4. The Contractor must satisfy CN that there has been no policy breach.
5. If a policy breach has occurred, the individual will not be allowed to continue providing services to CN without written permission from a CN official, and he/she will be required to adhere to any conditions governing his/her return.

Firearms

Firearms (loaded or empty) are not permitted on CN property, except for CN Police officers and other designated persons performing authorized work and when authorized to do so. In all cases, any firearms must be accompanied with a written authorization from the Chief of CN Police and the person should have in his possession all pertinent government permits.

Explosives

No explosives will be permitted on CN property without written CN approval.

Vehicles

Contractor's vehicles on the site must be in safe operating condition. Operators must observe all site speed limits. Unattended vehicles must not be left running unnecessarily. Where they must be left running, the parking brake must be applied. The operator is responsible for the safety of all passengers and the stability of materials being transported.

All vehicles will be parked in a pre-determined area and where required, a designated Contractor entrance shall be used.

Smoking in the Workplace

Smoking is not permitted in any CN interior workplace or motor vehicle.

Security

Contractor's personnel will proceed directly to the Contractor's work location. Contractor's employees must remain at their designated work site and must not wander about the site.

The Contractor shall not permit persons other than the Contractor's personnel to enter the site without the prior written authority of the CN representative.

Emergency Evacuation Procedures

Prior to commencing work, all Contractor's employees must be familiar with the emergency evacuation plan for that work site. The Contractor shall issue written emergency and rescue procedures to the Contractor's personnel and shall post such procedures on the job site.

Unsafe Conditions or Practices

Contractors shall correct or report any unsafe conditions or practices they observe. All such conditions or practices shall be reported to the CN representative at the work site as soon as practical.

Reporting Accidents/Incidents

All accidents/incidents occurring on CN property, that result in or had the potential of causing serious injury, lost work days, vehicle or property damage must be reported to the CN representative within twenty-four (24) hours. All such incidents will be fully investigated by the Contractor.

The Contractor shall subsequently provide a written report to CN (i.e. Company Officer assigned as Liaison to Contractor) within seven (7) days detailing the nature of the incident, the cause(s), regulatory authorities notified, and a specific action plan to prevent recurrence.

Treatment of Injured Personnel (Contractors)

Contractors shall ensure the following is provided for their personnel as required by CN and in accordance with applicable government regulations:

1. Adequate first-aid supplies and equipment.
2. Qualified personnel to render first-aid treatment.

Audio and Visual Recording Equipment

Cameras and audio-visual equipment are not permitted on CN property without prior approval. Use of personal electronic devices such as smart phones for the purpose of recording video, photographic or audio information is prohibited while on CN property.

Summary

In conclusion, CN requires the full cooperation of the Contractor and the Contractor's employees with these guidelines and all other applicable regulations. Should there be any doubt as to the meaning or interpretation of these guidelines, consult with the CN representative responsible for the worksite.

Contractor Acknowledgement

Contractor/Sub-contractor personnel must read and understand CN's "Safety Guidelines for Contractors and Non-CN Personnel". The Contractor/Sub-contractor must also follow the appropriate Contractor Safety training.



Diane R Lewis
Public Works Officer (IL, IA, PA)

17641 S Ashland Ave
Homewood IL, 60430
T 708-332-3557
Email: Diane.Lewis@cn.ca

Right of Entry Information

Cost is \$1000.00 for application

Railroad Company requires everyone (contractor, consultants, etc.) working on Railroad Company property to have a Right-of-Entry (ROE) License Agreement. ROE license agreement applications are handled by email. Once Railroad Company receives the information requested below, and if application is approved, Railroad Company will draw up a ROE License Agreement, and will forward electronic copy by email for applicant's execution. ROE License Agreement will be delayed if Railroad Company receives the required documents separately, incomplete, or inaccurate. Railroad Company will return a fully executed digital copy of the ROE License Agreement by email for Applicant's files and records. No work may occur on Railroad Company property nor will flagging protection be provided until ROE License Agreement has been fully executed by both parties and returned. Please contact Railroad Company a minimum of three (3) weeks prior to the project start date.

Please use this form and return by email to submit application request for a Right of Entry agreement.

Legal Name of contractor -

Contact name -

Contact email -

Street Address -

City, State, Zip -

Telephone -

Reason for ROE - **Cleaning and televising of the sanitary sewer that runs along the railroad easement between crossings. All work is done within the sanitary sewer manholes.**

Duration of ROE (Include start and finish dates) -

Location of project (City, State) with nearest railroad milepost or crossing id number -

Will there be subcontractors on this project (list all subs) -

Does your work require a traffic shift in opposing lane over a railroad at-grade crossing -

Include a map showing the project location

Email the completed form to: Diane.Lewis@cn.ca

Note: Fully executed ROE may take up to 3+ weeks to obtain

Safety Training Required

ALL contractor personal will have to comply with CN safety requirements including and before entering upon the property of the Railroad for performance of any work, secure permission from the Engineering Superintendent of the Railroad Company or his authorized representative for the occupancy and use of the Railroad's property and shall confer with the Railroad relative to requirements for railroad clearances, operation and general safety regulations. Outside contractors and subs, who are not employed by CN or doing work for CN, are required to register with www.contractororientation.com and complete the basic safety and security tests. Contractor Orientation provides the basic safety, security and PPE requirements for CN. You may find more information on registering with contractor orientation on the contractor orientation website. Once you register, follow the CN links and you will be required to take the course labeled **CN Contractor Security / Safety Course**.

EXCEPTION: CN has exempted those it classifies as "Delivery Persons" from this training. This will include contractors such as UPS, FedEx, trucking companies, etc. who merely access the property to supply materials or equipment.

Insurance Requirements

Railroad Company allows outside parties to come onto Railroad Company property to perform work, such as survey or inspection work, installation of pipelines and wirelines, and other work for projects necessitating the occupancy of Railroad Company. Before commencing work, and until the license of allowing such occupancy ends or is terminated, outside parties shall provide and maintain the following insurance in form and amount with companies satisfactory to and as approved by Railroad Company.

1. Minimum insurance required of outside party:
 - A. Statutory Workers Compensation and Employer's Liability Insurance.
 - B. Automobile Liability Insurance in an amount not less than \$1,000,000 combined single limit.
 - C. Commercial General Liability Insurance (Occurrence Form) in an amount not less than \$5,000,000 per occurrence, with an aggregate limit of not less than \$10,000,000. The policy must name Railroad Company and its parents as additional insureds in the following form:

Wisconsin Central Ltd. and its Parents
Attn: Diane Lewis
17641 S Ashland Ave
Homewood IL, 60430
715.332-3557 (office)
Diane.Lewis@cn.ca

The policy must not contain any provisions excluding coverage for injury, loss or damage arising out of or resulting from doing business or undertaking construction or demolition on, near, or adjacent to railroad track or facilities, and using endorsement CG 2417 10 01 or equivalent approved by Railroad Company.

- D. When outside party is required by Railroad Company or Governing Authority to purchase Railroad Protective Liability Insurance to cover work on, near or adjacent to railroad track or facilities, and outside party is not being hired for this project by

Railroad Company, outside party must procure Railroad Protective Liability Insurance in the following form;

This coverage shall be written on an Occurrence Form with limits of not less than \$5,000,000 per occurrence for Bodily Injury, Personal Injury and Physical Damage to Property, with an aggregate limit of not less than \$10,000,000. The policy must name:

Wisconsin Central Ltd. and its Parents
Attn: Diane Lewis
17641 S Ashland Ave
Homewood IL, 60430
715.332-3557 (office)
Diane.Lewis@cn.ca

- E. Pollution Insurance – AS REQUIRED AND DETERMINED BY PROJECT.
 - F. All policies described above must include description of operations, Railroad Company milepost, highway or street name, city and state of location, project number, and Railroad Company contact person on the certificate.
- 2. Before commencing work, outside party shall deliver to Railroad Company a certificate of insurance evidencing the foregoing coverages and, if requested by Railroad Company, true and complete copies of the policies described above. If the policy is being issued in conjunction with, or as a result of, a city, county or state contract, the policy should be initially submitted to the respective city, county or state agency that will review it first and then forward it to Railroad Company.
 - 3. Common Policy Provisions. Each policy described in paragraph 1, parts A through E above, must include the following provisions:

CN 24-Hour Emergency Contact Number:

1-800-465-9239

Cable Locates:

CN utilities are not part of Digger's Hotline. **Please request a cable locate by using the Flagging - Cable Locate Form. \$975.00 Fee.**

Flagging Protection:

Rates: \$2,500 for each basic day (up to 8 hours, includes 2 hours to set up flags)
 \$275.00 for each overtime hour
 Weekend or Holiday work is \$275.00 per hour with an 8 hour minimum or
 \$2,200.00 plus any overtime.

Flagging must be **prepaid** based on the estimated number of days needed.

Usually only one flagman is required at the work site.

Flagman protection is required when there is any work being done within 25 feet of the centerline of the closest rail, but if you will be using cranes with booms larger than 25' but are working away from

the ROW, flagman protection will be required, just in case a crane topples over and violates that 25' rule.

CN's US Flagging group is the contact for arranging flagman protection on your upcoming project. CN requires at least a ten business day notice prior to the start of work, so arrangements can be made through our flagging contractor. Please complete the attached form and send to the address below along with prepayment. The sooner the form is sent to CN, the more likely you will get a flagger for the days you request.

CN – US Flagging
17641 S. Ashland Ave
Homewood, IL 60430
Phone: (248) 914-9695
Email: Flagging_US@cn.ca

Section A

AUTHORIZATION AND CONSENT General Conditions

1. "Railroad" refers to Canadian National Railway Company or such of its affiliates or associates (within the meaning ascribed to those terms under the *Canada Business Corporations Act*) to whose property this Authorization and Consent relates.
2. This Agreement is entered into as of this [date]_____ between Railroad, having its registered office at 935 de la Gauchetière West, Montreal, Quebec, H3B 2M9, and [Company Name]_____ ("Company"), having a place of business at [Address]_____.
3. The Railroad, solely to the extent of its right, title and interest, without any warranty, expressed or implied, at law, under contract or otherwise, hereby grants to Company and its authorized employees, servants, agents or contractors, Authorization and Consent to enter upon the property described under Exhibit "A" hereto (the "Railroad property") for the sole purpose described under Exhibit "A" hereto. This Authorization and Consent shall only extend to such actions as are necessary or required to fulfill the purpose described under Exhibit "A" hereto.
4. This Authorization and Consent shall terminate forthwith upon expiration of the term noted in Exhibit "A" hereto, it being understood that Railroad shall have entire discretion to revoke this Authorization and Consent at any time prior to the expiration of the term, upon notice to that effect to the Company, which notice shall be effective forthwith upon receipt by the Company or at such later date indicated by Railroad in the aforesaid notice.
5. The Railroad grants this consent subject to the understanding that Company and its authorized employees, servants, agents or contractors who enter upon Railroad property will:
 - 5.1. See that any activities (including any work performed) conducted on said Railroad property are done in accordance with Generally Accepted Practices, in compliance with Applicable Laws and in such manner and at such time as not to interfere with or obstruct or interfere with Railroad's operation, trains or the functioning of its signal and communications systems or any fiber optic cable system or unduly delay the safe passage of Railroad's trains;
 - 5.2. For the purposes hereof, the following expression shall have the meanings hereinafter noted:

"Applicable Laws" means the applicable and enforceable statutes, regulations, policies, directives, orders, approvals and other legal requirements of an Authority or of the common law in effect from time to time, including, without limitation, those, together with the guidelines of an Authority, relating to the protection, conservation or restoration of the natural environment;

"Authority" means the federal, provincial, municipal, state, county and, generally local governments, the courts, administrative and quasi-judicial boards and tribunals and any other organizations or entities with the lawful authority to regulate, or having a power or right conferred at law or by or under a statute;

"Generally Accepted Practices" means the generally accepted practices, methods and acts which at the time such practice, method or act is employed, and in the exercise of reasonable judgment in light of the facts known at such time, would be expected to accomplish the desired result in a workmanlike manner;
 - 5.3. Observe, abide by and comply with any and all guidelines, directives and policies adopted from time to time by Railroad including, without limitation (i) Railroad's drug and alcohol policy; and (ii) Safety Guidelines for Contractors and Non-CN Personnel.
 - 5.4. Take due precautions against injury and damage to persons or property located upon said Railroad property; and

- 5.5. Return said Railroad property to the same condition, reasonable wear and tear excepted, as existed prior to such work, failing which Railroad, after providing written notice to Company, and allowing Company a reasonable amount of time to return the Railroad property to the same condition, may do so at Company's sole cost and expense.

Work

(This section shall apply to all work carried out under the authority of this Authorization and Consent)

6. Any work carried out under the authority of this Authorization and Consent or while on Railroad property as a result of this Authorization and Consent, shall be carried out at those locations described in Exhibit "A" or shown on the Plan attached hereto as Exhibit "B" and, as the case may be, in the manner described therein."
7. Company agrees to advise Railroad's representative identified in Exhibit "A" hereto (the "Representative") or such other representative designated from time to time by Railroad as to the dates and times when the work will be conducted on Railroad property and to provide him with at least ten (10) working days advance notice before entering upon Railroad property to commence any work or for any other purpose. Company agrees to assume the costs of engineering services, Railroad's Representative's costs and its designee, signal locates, flagman, track labor and all other associated costs incurred by Railroad. Railroad shall, at its option, invoice Company directly for such costs or, if any of those services have been provided by a third party, Railroad may direct such third party to invoice directly Company, in which case Company undertakes and agrees to pay such third party forthwith upon receipt of (i) Railroad's direction to pay such third party; (ii) proper invoice for the relevant services.

The Railroad, its employees, agents or representatives shall have the right to view and inspect any activity or work on Railroad's property. If, in the sole opinion of Railroad, any activity or work is undesirable for any safety-related reason, Railroad shall notify Company, its authorized employees, servants, agents or contractors and if appropriate corrective action is not taken, Railroad shall have the right to terminate this Agreement at once.

8. Railroad shall have the right to restrict Company's activity on Railroad's property in any way that Railroad may deem necessary from time to time to assure normal railroad operations or for safety reasons and, after consultation with Company, shall also have the right to require Company, its authorized employees, servants, agents or contractors to comply with Railroad's instructions and take any safety precautions that Railroad may reasonably deem necessary from time to time. No work shall be performed or equipment located within twenty-five (25) feet of the centerline of the nearest railroad track without flagging protection being provided by Railroad, at the Company's expense. Said work must be arranged no less than ten (10) business days in advance of starting work.
9. Company shall not suffer or permit any construction lien or similar lien to be filed or registered against Railroad property. If such a lien shall at any time be filed or registered, Company shall forthwith procure its discharge at its sole costs and expenses. Railroad shall have the right, if Company fails to forthwith procure such discharge, to discharge any lien filed or registered at any time against Railroad property, and any amount paid by Railroad in so doing together with all reasonable costs and expenses of Railroad including its legal fees and costs shall be paid to Railroad by Company on demand.

Confidentiality

10. Company covenants and agrees that any information of whatsoever nature (whether such information is written, verbal or otherwise), relating to Railroad, its operations, properties, business, assets, liabilities and financial condition (together with any and all memoranda, notes, reports, documents based upon and relating to such information, all copies and extracts thereof and all studies and data prepared on the basis of such information), is strictly confidential and Company represents and warrants that neither Company nor those for whom it is responsible at law will release the reports or any of the information contained therein (including to

any Authority), without the express written consent of Railroad, and Company shall refuse all requests for such reports or information in the absence of Railroad's express written consent, unless compelled to do so by competent judicial or administrative authority and only to the extent that (i) Company gives Railroad timely notice of any proceeding and/or hearing related thereto; and (ii) Company has taken no action that would hinder Railroad from seeking a protective order to prevent such disclosure of its confidential information. Company further undertakes and agrees to share with Railroad, at no cost to Railroad, any and all conclusions, studies, reports or data incorporating, based upon or relying on any such information.

Indemnity

11. Company agrees to indemnify and save harmless Railroad, its affiliates and associates (within the meaning ascribed to those terms under the *Canada Business Corporations Act*) and their employees, servants, and agents (collectively the "Indemnitee") from and against claims, demands, suits, judgments, actions, liens and other encumbrances, settlements, liability, costs and expenses (including, without limitation, court costs, experts' fees and attorneys' fees) when the injury, death, damage, loss or destruction is caused by the breach of contract or warranty, violation of statute, intentional misconduct or negligent act or omission of the indemnitor, its employees, agents, contractors or subcontractors or when such act or omission is the kind for which one is made strictly liable, whether such claim arises in equity, at common law, or by statute, or under the law of contracts, torts (including without limitation, negligence and strict liability without regard to fault) or property of every kind or character (including Railroad property) ("Claims") and including, without limitation, Claims for personal injury or bodily injury to or death of any person, emotional distress, real and personal property damage and including derivative, consequential, indirect damages and economic loss, and also including, without limitation, Claims arising in favor of or brought by any of Company's employees, agents, contractors or representatives, or by any governmental agency or any other third party. Company shall not, however, be responsible for any such Claims to the extent it is solely caused by the gross negligence or wilful misconduct of the Indemnitee.

Insurance

12. Company shall provide and keep in force and effect throughout the term of this Authorization and Consent such insurance, in amounts and for risks as Railroad may prescribe from time to time including, if applicable, the kinds and minimum amounts of insurance set out under Exhibit "C" – "General requirements".
13. If Company, its contractors or any subcontractors shall perform subsurface work, Company, its contractors or any subcontractors shall provide and keep in force and effect throughout the term of this Authorization and Consent the insurance specified under Exhibit "C" – "Sub-Contractor Insurance Coverage".

Company's contractor will not enter Railroad property without having in its possession a certificate certifying that contractor has obtained all of the insurance coverage required hereunder. The Railroad may at any time require the contractor to furnish said certificate and failure to so may result in removal from Railroad property, cancellation of agreement and other consequences including without limiting damages or consequential losses resulting from the non-completion of the work, as Railroad may determine. Said insurance shall state that no material changes will be made to the policies unless Railroad is given a prior written notice of thirty (30) days before such change or cancellation. Any insurance coverage required under the terms and conditions of this contract shall in no manner restrict or limit the liabilities assumed by Company nor shall they release Company from any of its obligations under this contract.

Exceptions

14. Any exception or variation to the terms and conditions of this Authorization and Consent shall be specifically identified in Exhibit "A" hereto. No such exception or variation shall be binding upon Railroad unless Exhibit "A" is properly initialed by Railroad's duly authorized representative(s).

Miscellaneous

15. Company shall not have the right to transfer and/or assign this Authorization and Consent or any of its rights hereunder without Railroad's prior written consent, which consent Railroad shall have entire discretion to withhold or delay.
16. All notices provided for under this Authorization and Consent shall be in writing and sent by pre-paid registered mail, fax or hand-delivered to the other party at the addresses herein first noted or at such other address as either party may notify the other from time to time.

Such notices, if given by mail, shall be deemed to have been received on the third business day following the postage thereof; if by fax or hand delivery, at the date and time the fax is sent or the hand delivery is made.

17. Either party's exercise or failure to exercise any rights under this Agreement shall not relieve the other party of any responsibility under this Agreement.
18. In the event of conflict between the terms hereof and the terms of any other agreement between Railroad and Company, the most stringent standards and conditions shall govern.
19. This Authorization and Consent shall be governed by the laws of the jurisdiction where Railroad property accessed under the authority hereof is located, as noted under Exhibit "A" hereto.

The parties have executed this Agreement this _____ day of _____, 200__.

RAILROAD

Print Name:
Title:

COMPANY

Print Name:
Title:

Exhibit A
Authorization and Consent Form

Railroad property: _____

Limited Access Purpose: For the limited purpose of _____
[insert detailed description].

Term: A term of _____

number of days/months/years], beginning on
[commencement date] and terminating on
[termination date], unless sooner terminated
as provided hereunder.

Representative: _____
(name and
address)

Insurance	General Requirements	None required
	(Relief from Insurance Requirements requires prior approval from CN Law Department)	☐
	Sub-Contractor Insurance Coverage	Required
		☐

**Exceptions/
Variations** _____
(Variation in insurance coverage requires prior approval from Risk Management Department) _____

Exhibit B

(Appended hereto)

Exhibit C

General Requirements

(a) Comprehensive General Liability insurance in an amount of no less than five million dollars (\$5,000,000), or such greater amounts as Railroad may reasonably require from time to time, combined single limit for bodily/personal injury including death and/or damage to or destruction of property (including loss of use) caused by an accident or an occurrence and also including contingent employers liability, products and completed operations coverage, non-owned automobile liability and contractual liability endorsement specifically granting coverage for all liability assumed under this agreement. This insurance shall name Railroad as additional insured and shall contain cross liability clause and shall specifically include liability for operations within or around railroads and railway tracks; and

(b) To the extent Company carries out work on its own behalf or on behalf of Railroad, it shall provide and cause its contractors to provide and keep in force and effect throughout the term of this Authorization and Consent, in addition to the insurance listed above (which, for greater clarity it shall also cause its contractors to provide and keep in force and effect as aforesaid), the following kinds and minimum amounts of insurance:

- Automobile Liability insurance on all licensed vehicles owned by, hired, leased to or on behalf of the Company's contractor in an amount no less than five million dollars (\$5,000,000) per occurrence.
- Professional Liability insurance with limits of not less than \$5,000,000 per claim and a deductible of not more than \$25,000 or for such greater amounts as Railroad may from time to time reasonably require.
- If available in the jurisdiction covered by this Agreement Worker's Compensation insurance in amounts not less than the statutory limits and employer's liability in an amount no less than five million dollars (\$5,000,000).

Sub-Contractor Insurance Coverage

(a) Commercial General Liability Insurance:

The policy is to have a minimum limit of liability of \$5,000,000 and is to contain the following coverages and provisions:

- Personal Injury;
- Broad Form Property Damage;
- Occurrence (not claims made) Format;
- Broad Form Contractual Coverage;
- Product and Completed Operations;
- Unlicensed Vehicles on and off premises owned or controlled by the Owner;
- Non-owned Automobile Insurance;
- Cross Liability and Severability of Interest Clause;
- Owners and Contractors Protective Coverage;
- Named Perils Pollution Coverage
- No XCU exclusions; and
 - Hold harmless and waiver of subrogation against the Contracting Authority and Railway;
 - Insurance shall specifically include liability for operations within or around railroads and railway tracks;
- 30 Day Cancellation clause.

(b) Automobile Liability:

The policy is for coverage for vehicles being utilized for the services being provided to Railroad and is to have a minimum limit of liability of \$5,000,000.

(c) Environmental Impairment Liability Insurance

The policy is to have a minimum limit of liability of \$5,000,000 and must contain the following coverage and provisions:

- Third Party Personal and Bodily Injury;
- Property Damage including Third Party Clean-up Costs;
- Defense Costs;
- Covering Gradual Pollution and Sudden and Accidental Events;
- Covering off site Clean-up Costs;
- Extended Discovery Period - up to two years;
- Coverage not "Site-Specific" but rather covers all operations and locations outlined in the Contract Specifications;
- Covering Wastes and Materials to be recycled, stored, reconditioned or decontaminated, on or off premises Owned or Occupied by the Insured;
- Cross Liability and Severability of Interest Clauses;
- Contractual Liability;
- 30 day Notice of Cancellation; and
 - Blanket Contractors Pollution Coverage.

(d) All Risk Builders Risk Insurance

All risks contractor's equipment insurance covering construction machinery and equipment used by the Sub-Contractor for the performance of the Work, as well as any structures being built or assembled, shall be in a form acceptable to the Contractor and Railroad and shall not allow subrogation claims by the Insurers against the Contractor and Railroad. The policies shall be endorsed to provide the Contractor with not less than thirty (30) days written notice in advance of cancellation, change or amendment restricting coverage.

Section B

RIGHT OF ENTRY FORM FOR CONTRACTORS General Conditions

1. "Railroad" refers to Canadian National Railway Company or such of its affiliates or associates (within the meaning ascribed to those terms under the *Canada Business Corporations Act*) to whose property this Authorization and Consent relates.
2. This Agreement is entered into as of this [date] _____ between Railroad, having its registered office at 935 de la Gauchetière West, Montreal, Quebec, H3B 2M9, and [Company Name] _____ ("Company"), having a _____ place of business at [Address]. _____
3. The Railroad, solely to the extent of its right, title and interest, without any warranty, expressed or implied, at law, under contract or otherwise, hereby grants to Company and its authorized employees, servants, agents or contractors, Authorization and Consent to enter upon the property described under Exhibit "A" hereto (the "Railroad property") for the sole purpose described under Exhibit "A" hereto.
4. This Authorization and Consent shall terminate forthwith upon expiration of the term noted in Exhibit "A" hereto, it being understood that Railroad shall have entire discretion to revoke this Authorization and Consent at any time prior to the expiration of the term, upon notice to that effect to the Company, which notice shall be effective forthwith upon receipt by the Company or at such later date indicated by Railroad in the aforesaid notice.
5. The Railroad grants this consent subject to the understanding that Company and its authorized employees, servants, agents or contractors who enter upon Railroad property will:
 - 5.1. See that any activities conducted on said Railroad property are done in a good workmanlike manner, in compliance with applicable laws, statutes, regulations, policies, directives, orders, approvals and other legal requirements and in such manner and at such time as not to obstruct or interfere with Railroad's operation, trains or the functioning of its signal and communications systems or any fiber optic cable system or unduly delay the safe passage of Railroad's trains;
 - 5.2. Observe, abide by and comply with any and all guidelines, directives and policies adopted from time to time by Railroad including, without limitation (i) Railroad's drug and alcohol policy; and (ii) Safety Guidelines for Contractors and Non-CN Personnel; and
 - 5.3. Return said Railroad property to the same condition, reasonable wear and tear excepted, as existed prior to such work, failing which Railroad, after providing written notice to Company, and allowing Company a reasonable amount of time to return the Railroad property to the same condition, may do so at Company's sole cost and expense.
6. No work shall be performed or equipment located within twenty-five (25) feet of the centerline of the nearest railroad track without flagging protection being provided by Railroad, at the Company's expense. Said work must be

arranged no less than ten (10) business days in advance of starting work.

Indemnity

7. Company agrees to indemnify and save harmless Railroad, its affiliates and associates and their employees, servants, and agents (collectively the "Indemnitee") from and against claims, demands, suits, judgments, actions, liens and other encumbrances, settlements, liability, costs and expenses (including, without limitation, court costs, experts' fees and attorneys' fees) when the injury, death, damage, loss or destruction is caused by the breach of contract or warranty, violation of statute, intentional misconduct or negligent act or omission of the Company, its employees, agents, contractors or subcontractors or when such act or omission is the kind for which one is made strictly liable, whether such claim arises in equity, at common law, or by statute, or under the law of contracts, torts (including without limitation, negligence and strict liability without regard to fault) or property of every kind or character (including Railroad property) ("Claims") and including, without limitation, Claims for personal injury or bodily injury to or death of any person, emotional distress, real and personal property damage and including derivative, consequential, indirect damages and economic loss, and also including, without limitation, Claims arising in favor of or brought by any of Company's employees, agents, contractors or representatives, or by any governmental agency or any other third party. Company shall not, however, be responsible for any such Claims to the extent it is solely caused by the gross negligence or wilful misconduct of the Indemnitee.

Insurance

(Required when Company accesses the property with equipment, including vehicles)

8. Company shall provide and keep in force and effect throughout the term of this Authorization and Consent:
 - 8.1. Comprehensive General Liability insurance in an amount of no less than five million dollars (\$5,000,000), or such greater amounts as Railroad may reasonably require from time to time, combined single limit for bodily/personal injury including death and/or damage to or destruction of property (including loss of use) caused by an accident or an occurrence and also including contingent employers liability, products and completed operations coverage, non-owned automobile liability and contractual liability endorsement specifically granting coverage for all liability assumed under this agreement. This insurance shall name Railroad as additional insured and shall contain cross liability clause and shall specifically include liability for operations within or around railroads and railway tracks;
 - 8.2. Automobile Liability insurance on all licensed vehicles owned by, hired, leased to or on behalf of the Company in an amount no less than five million dollars (\$5,000,000) per occurrence; and
 - 8.3. If available in the jurisdiction covered by this Agreement Worker's Compensation insurance in amounts not less than the statutory limits and

employer's liability in an amount no less than five million dollars (\$5,000,000).

- 8.4. Company's contractor will not enter Railroad property without having in its possession a certificate certifying that contractor has obtained all of the insurance coverage required hereunder. The Railroad may at any time require the contractor to furnish said certificate and failure to so may result in removal from Railroad property, cancellation of agreement and other consequences including without limiting damages or consequential losses resulting from the non-completion of the work, as Railroad may determine. Said insurance shall state that no material changes will be made to the policies unless Railroad is given a prior written notice of thirty (30) days before such change or cancellation. Any insurance coverage required under the terms and conditions of this contract shall in no manner restrict or limit the liabilities assumed by Company nor shall they release Company from any of its obligations under this contract.

Miscellaneous

9. Company shall not have the right to transfer and/or assign this Authorization and Consent or any of its rights hereunder without Railroad's prior written consent, which consent Railroad shall have entire discretion to withhold or delay.
10. This Authorization and Consent shall be governed by the laws of the jurisdiction where Railroad property accessed under the authority hereof is located, as noted under Exhibit "A" hereto.

The parties have executed this Agreement this _____ day of _____, 200__.

RAILROAD

Print Name:
Title:

COMPANY

Print Name:
Title:

Railroad property: _____

Limited Access
Purpose:

For the limited purpose of _____

[insert detailed description].

Equipment
Involved
(including
vehicles)

Yes

☐

Note: If access to the property involves equipment, including vehicles, Company must provide and keep in force and effect throughout the term of this Authorization and Consent, the insurance set forth under Section 8 hereof.

No

☐

Term:

A term of _____ [number of days/months/years], beginning on [commencement date] _____ and terminating on [termination date] _____, unless sooner terminated as provided hereunder.

Representative:
(name and
address)

Section C

SAFETY AND RELATED REQUIREMENTS AND INSTRUCTIONS FOR WORK ON RAILWAY RIGHT-OF-WAY ("CN RIGHT-OF-WAY") BY NON-CN PERSONNEL

Introduction

The objective of this document is to outline CN's Safety Guidelines for Contractors and non-CN personnel. For the purposes of this document "Contractor" may also apply to individuals on CN property, whether under contract to CN or not.

These guidelines are not to be considered as a substitute for the applicable government regulations. These guidelines are the minimum requirement and must be exceeded where the hazard or government regulations warrant.

It is not possible to deal with every hazard in this one handbook. These guidelines are to be employed in conjunction with Government Acts, Regulations, local Ordinances and good judgment to facilitate the safe completion of the work.

Additional information regarding safe work practices may be included in contract documents and specifications. In the event of a discrepancy between these guidelines and the contract, the contract shall govern.

CN's Basic Safety Requirements

The Contractor's attention is drawn to the following highlights from CN's "Basic Safety Requirements":

1. Take all reasonable measures to ensure the protection of employees, customers, property, and the general public.
2. Address promptly all environmental and safety concerns.
3. Analyze all accidents or incidents resulting in, or having potential for, loss or injury, and take remedial action promptly to prevent recurrence.
4. Require all persons granted access to Company property to comply with applicable *Risk Management* policies, standards, and procedures.
5. Provide employees with appropriate training to enable them to work safely.
6. Inspect personal protective equipment (PPE), tools and equipment before use to ensure that they are in good working condition.
7. Contractors' employees or sub-contractors are required to familiarize themselves with the Contractor Safety Video entitled "Consider Yourself one of Us " and the "Safety Guidelines for Contractors Annex D".

CN's Risk Management policy is premised on the following:

- to work in a safe manner is a condition of employment/Contract
- all accidents or incidents resulting in loss or injury are preventable;
- it is possible to eliminate or safeguard all operating conditions that may result in injury, property damage, or other losses;
- employees must be provided with appropriate training to enable them to work safely;
- employees and management must work jointly in efforts to promptly resolve and improve safety and health conditions in the workplace;

GENERAL RULES AND INFORMATION

"Expect the movement of a train, engine, rail car or track unit at any time, on any track, in either direction. Protect yourself and others from the movement of trains, engines, railcars and track units and do not expect them to stop."

If any situation arises which affects the safe movement of trains, CN must be contacted immediately at:

1-800-465-9239

Alternatively, contact CN's Network Operations Centre in Edmonton at:

1-800-661-3963

Before any digging is performed on CN property, proper clearance and instructions must be obtained through the Information Technology Command Centre (ITCC Network Management Centre) at:

1-800-661-3687 or 1-800-NO1-FOTS

In an emergency, any object waved violently by anyone on or near the track is a signal for trains to stop.

Violation of CN's "Risk Management Policy" or contravention of these guidelines may result in the immediate removal of the Contractor or the offending personnel from CN property.

Compliance with Government Regulations

Contractors shall follow all applicable Federal, Provincial, State, and Municipal Acts, Regulations, Laws and Codes, including but not limited to those related to the licensing of workers, occupational health and safety, transportation or handling of dangerous substances, inspection and certification of equipment. As CN is a federally regulated enterprise, Contractors are advised that work undertaken on CN right-of-way may be governed by Federal regulation.

The Contractor shall become familiar with CN's Risk Management Policy as well as all applicable regulations and shall ensure compliance by workers at the job site. Supplementary instructions may be issued by CN representatives from time to time.

Instructions

1. Before entering upon CN right-of-way, the Contractor must have all documentation properly executed and available for review by CN personnel at the working site (Permits, Licenses, Contract Documents, Contractor Safety Approved Sticker and/or Waivers).
2. Periodic briefings must be held at every work site to review the contents of these guidelines and any unique conditions at the site relating to safety.
3. Unless explicitly permitted by CN, no equipment or vehicle may enter upon the operated right-of-way.
4. Unless explicitly permitted by CN, no work shall take place within eight (8) meters or approximately twenty-five (25 feet) of the centerline of the nearest rail except in the presence of a CN assigned person. CN assigned persons are concerned only with the safe movement of trains and will not be responsible for the safety of the Contractor, the Contractor's personnel or the Contractor's equipment.
5. Equipment operating within eight (8) meters or approximately twenty five (25 feet) of the nearest rail must come to a complete stop prior to the passage of engines, railcars, or track units.
6. No vehicle or heavy equipment may be situated or moved closer than five (5) meters or fifteen (15 feet) from the nearest rail unless a CN assigned person has placed a block on train movements.
7. Upon the passage of a train, Contractor's personnel shall stand no closer than five (5) meters or fifteen (15 feet) from any switch stand and, if possible, on the opposite side of the track.

8. Contractor's personnel shall not crawl under, climb over or pass through standing railway equipment.
9. Contractor's personnel shall not cross a track within eight (8) meters or approximately twenty five (25 feet) of standing railway equipment.
10. CN has many power and/or communication cables buried within the CN right-of-way. The Contractor shall be sure of their location before making any excavation, driving stakes or otherwise penetrating the ground surface (Please refer to previous page for contact number to call for authority).
11. In accordance with CN's safety standards, contractor's personnel must wear CN required personal protective equipment at all times while on CN right-of-way. Such equipment will include hard hats, safety footwear, (protective footwear shall meet or exceed CSA Z195 and/or ANSI 41.1, shall cover and support the ankle and have a defined heel a minimum of 13 mm (1/2 inch) and shall not exceed 25 mm (1 inch), boots must be equipped with laces, which must be laced to the top and tied) safety glasses and reflective apparel. Hearing and respiratory protection and fall arrest equipment shall be worn where signs are posted or when a potential hazard exists.
12. No CN plant, signal, structure, equipment or property of any kind may be tampered with, modified or removed.
13. "Hi-rail" equipment shall only be operated on the track by personnel qualified in the latest version of the "Canadian Rail Operating Rules".
14. Horseplay, practical jokes, fighting or any other activity that may create a hazard will not be tolerated.
15. Contractor's personnel shall immediately abide by instructions from CN personnel.

Drug and Alcohol Policy

Contractor's personnel will be bound by the provisions of CN's "Policy to Prevent Workplace Alcohol and Drug Problems" while on CN property. All employees are required to report and remain fit for duty, free of the negative effects of alcohol and other drugs. It is prohibited to be on duty or to be in control of a vehicle or equipment while under the influence of alcohol or other drugs, including the after-effects of such use.

1. **Policy Standards:** The Contractor is to ensure that all employees and employees of sub-contractors adhere to the following standards when on CN business or premises:
 1. No use, possession, distribution, offering or sale of illegal drugs or drug paraphernalia.
 2. No use, possession, distribution, offering or sale of alcohol.
 3. Responsible use of prescribed and over-the-counter medications.
 4. No trafficking, distribution, offering or sale of prescription medications.
 5. Report fit for duty and remains fit for duty.
2. **Policy Violation Procedures:** Where a CN representative has reasonable grounds to believe any individual in the employ of the Contractor is on duty in an unfit condition, or where during the preliminary phase of an investigation an individual has been identified as being directly involved in the chain of acts or omissions leading up to an accident or incident:
 1. The Contractor will be notified.
 2. The Contractor will be required to conduct the individual(s) to a safe place.
 3. The Contractor will be expected to investigate the situation.
 4. The Contractor must satisfy CN that there was not a policy breach.
 5. The individual(s) will not be allowed to return to any position with CN without the written permission of a CN official and will be required to adhere to any conditions regarding their return.

3. **Consequences of Violation:** Failure of the Contractor, its employees or sub-contractors to meet these standards will be considered a breach of contract.

Firearms

Firearms (loaded or empty) are not permitted on CN property, except for CN Police officers and other designated persons performing authorized work and when authorized to do so. In all cases, any firearms must be accompanied with a written authorization from the Chief of CN Police and the person should have in his possession all pertinent government permits.

Explosives

No explosives will be permitted on CN property without written CN approval.

Vehicles

Contractor's vehicles on the site must be in safe operating condition. Operators must observe all site speed limits. Unattended vehicles must not be left running unnecessarily. Where they must be left running, the hand brake must be applied. The operator is responsible for the safety of all passengers and the stability of materials being transported.

Smoking in the Workplace

Smoking is not permitted in any CN interior workplace or motor vehicle.

Security

All vehicles will be parked in a pre-determined area and where required, a designated Contractor entrance shall be used.

Contractor's personnel will proceed directly to the Contractor's work location. Contractor's employees must remain at their designated work site and must not wander about the site.

The Contractor shall not permit persons other than the Contractor's personnel to enter the site without the prior written authority of the CN representative.

Emergency Evacuation Procedures

Prior to commencing work, all Contractor's employees must be familiar with the emergency evacuation plan for that work site. The Contractor shall issue written emergency and rescue procedures to the Contractor's personnel and shall post such procedures on the job site.

Unsafe Conditions or Practices

Contractors shall correct or report any unsafe conditions or practices they observe. All such conditions or practices shall be reported to the CN representative at the work site as soon as practical.

Reporting Accidents / Incidents

All accidents / incidents occurring on CN property, that result in or had the potential of causing serious injury, lost work days, vehicle or property damage must be reported to the CN representative within 24 hours. All such incidents will be fully investigated by the Contractor.

The Contractor shall subsequently provide a written report to CN (i.e. Company Officer assigned as Liaison to Contractor) within seven (7) days detailing the nature of the incident, the cause(s), regulatory authorities notified, and a specific action plan to prevent recurrence.

Treatment of Injured Personnel (Contractors)

Contractors shall ensure the following is provided for their personnel as required by CN and in accordance with applicable government regulations:

1. Adequate first-aid supplies and equipment.

2. Qualified personnel to render first-aid treatment.

Personal Identification

When not accompanied by a CN representative, Contractor's personnel shall carry an identification card on their person. Such identification card will be issued by the Contractor and will be of standard business card size (3-1/2" X 2"). It will contain the following information:

1. Contractor's name, address and telephone number,
2. CN representative responsible for the job,
3. Employee's full name and personal identification details (e.g. Driver's License No.)
4. Name of Contractor's representative issuing the card.

Such personnel shall also have a CN approved sticker (CN Safety Guidelines for Contractors Sticker) affixed to Contractor's personnel hardhat.

Audio and Visual Recording Equipment

Cameras and audio-visual equipment are not permitted on CN property without prior approval.

Summary

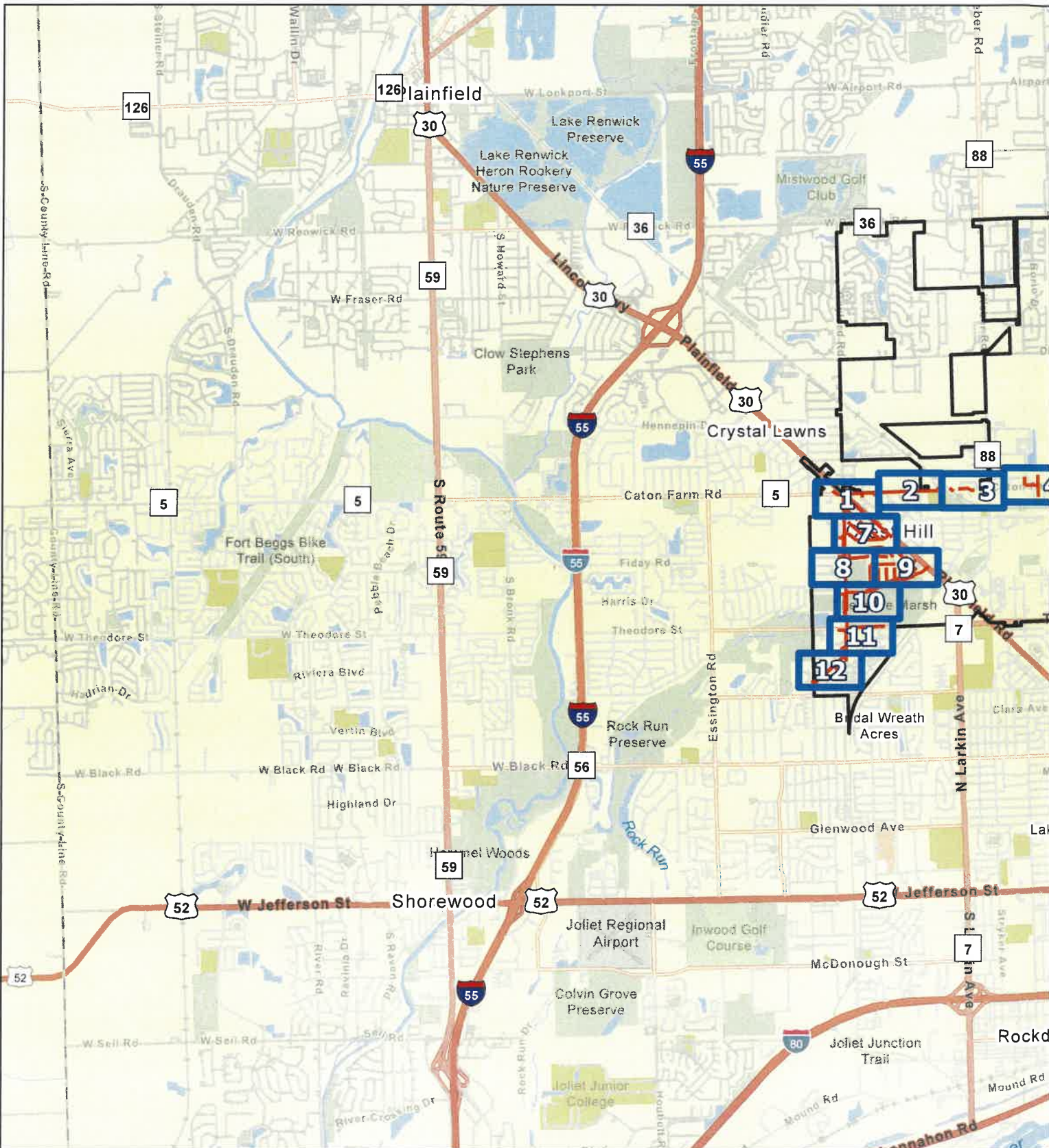
In conclusion, CN requires the full cooperation of the Contractor and the Contractor's employees with these guidelines and all other applicable regulations. Should there be any doubt as to the meaning or interpretation of these guidelines, consult with the CN representative responsible for the worksite.

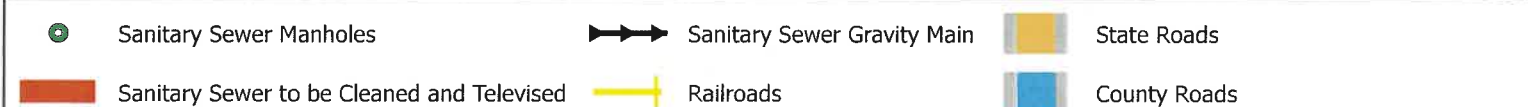
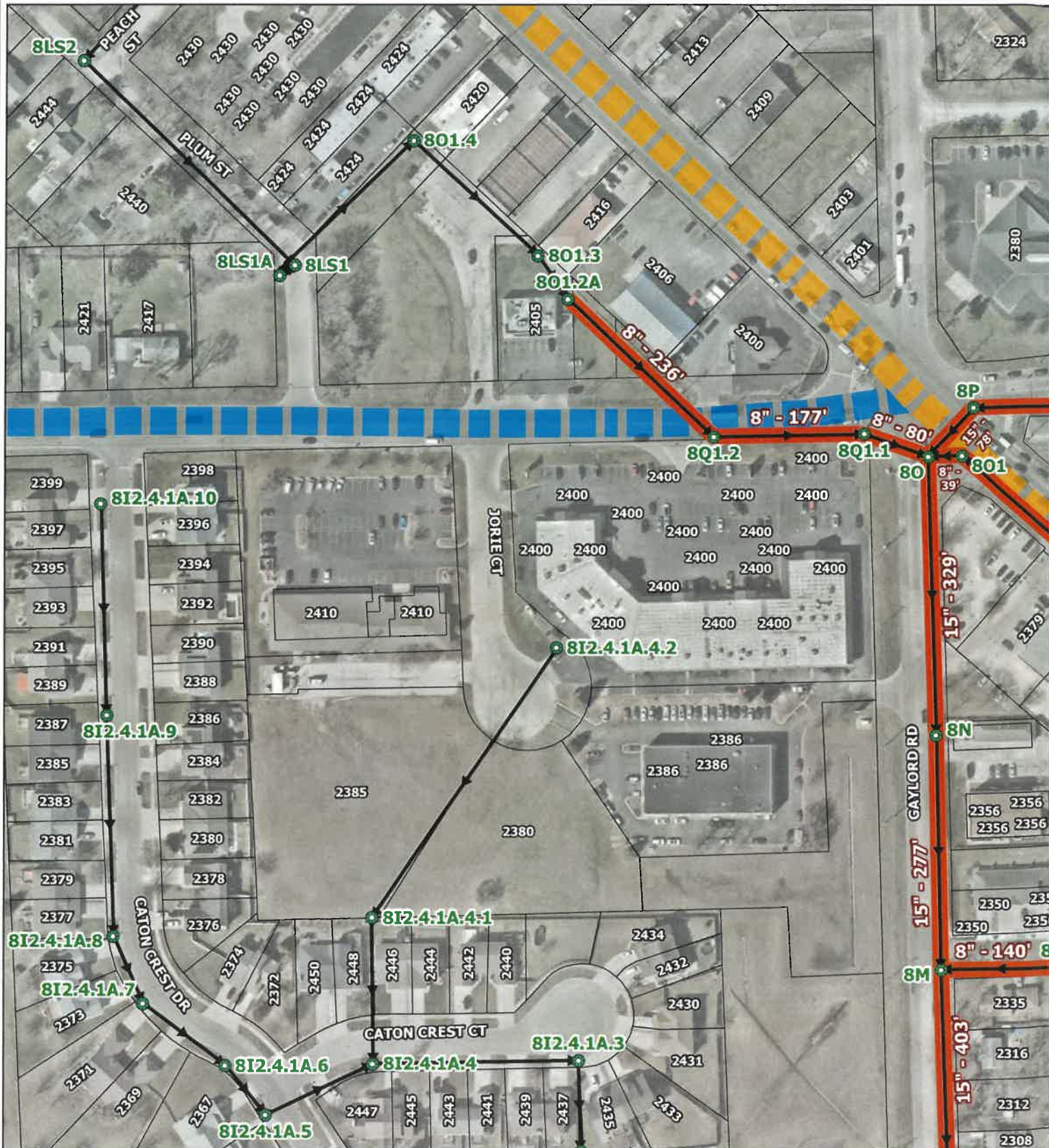
Contractor Acknowledgement

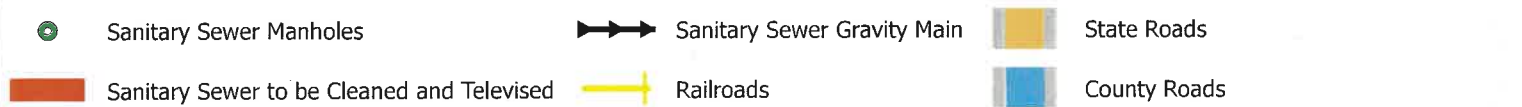
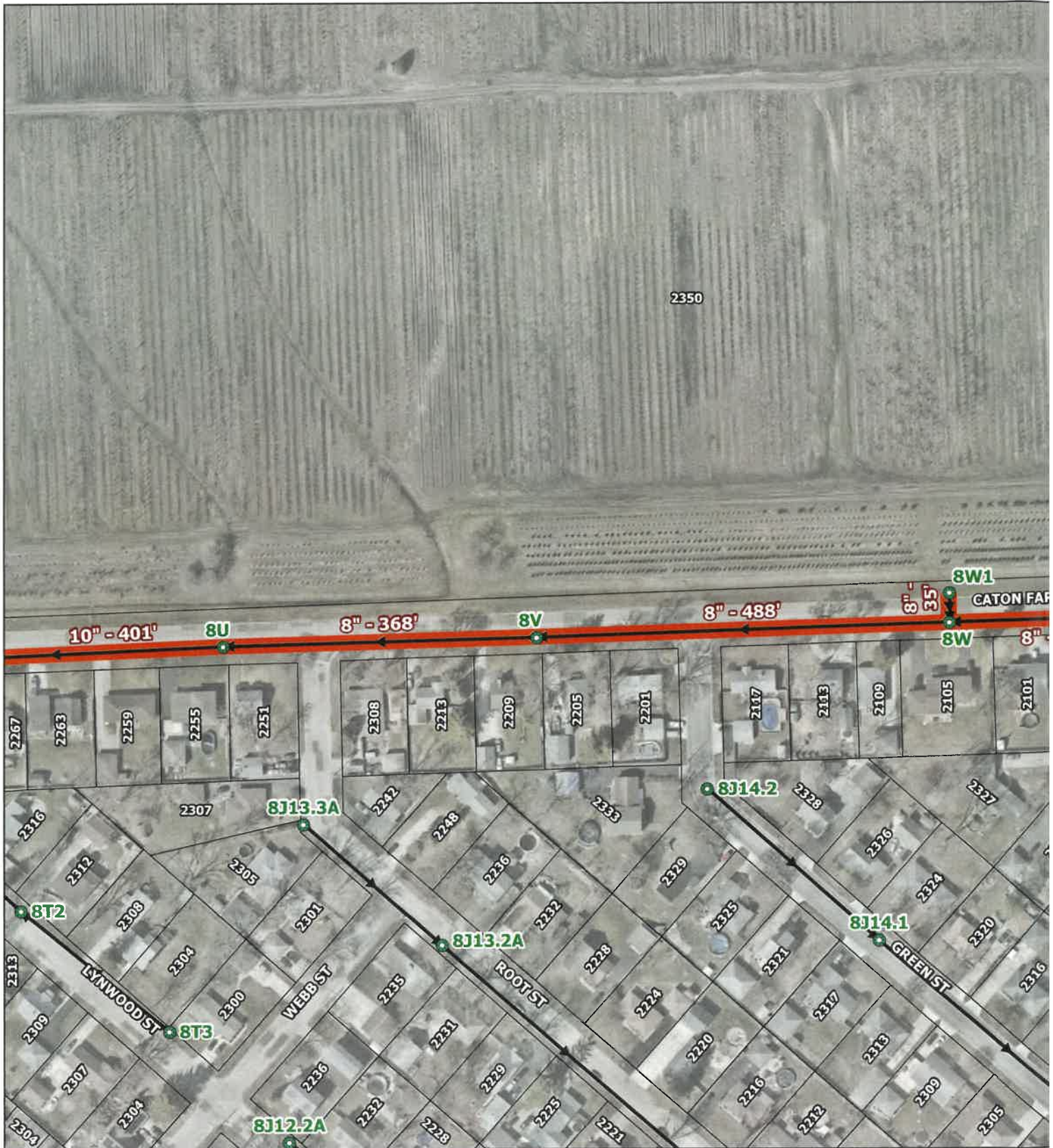
Contractor/sub-contractor personnel must read and understand CN "[Safety Guidelines for Contractors and Non-CN Personnel](#)":

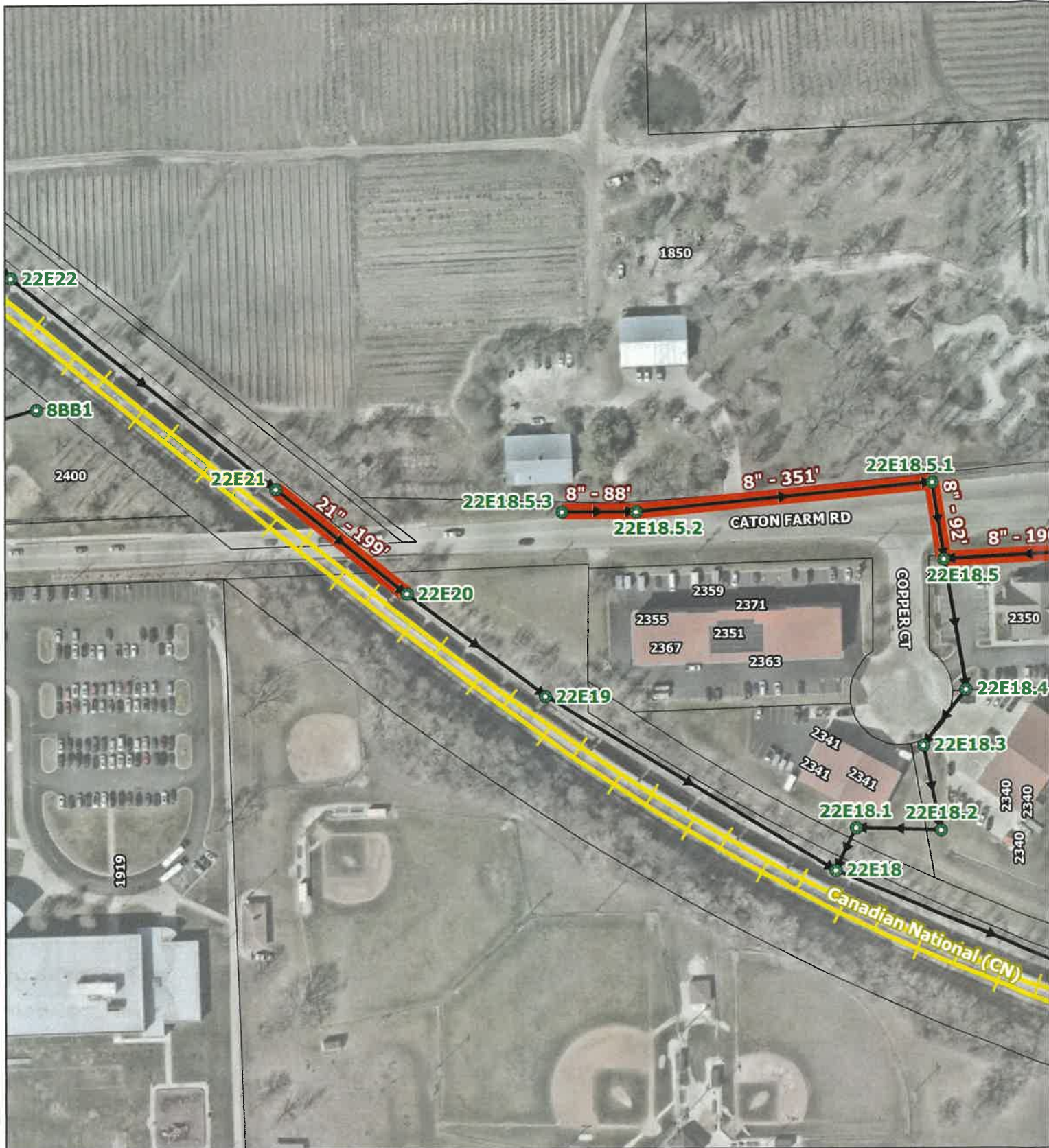
The contractor/sub-contractor must sign the proper document to confirm compliance to the above.

EXHIBITS









Sanitary Sewer Manholes



Sanitary Sewer Gravity Main



State Roads



Sanitary Sewer to be Cleaned and Televised



Railroads



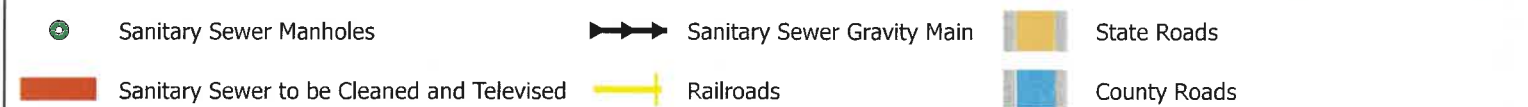
County Roads

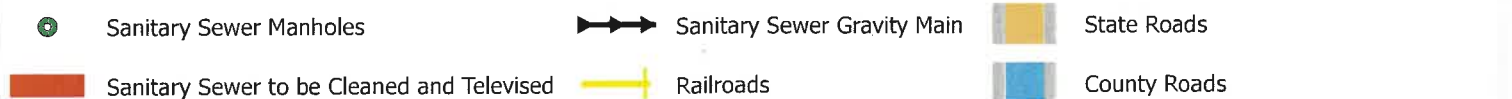


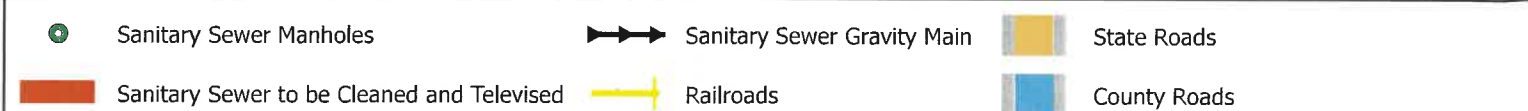
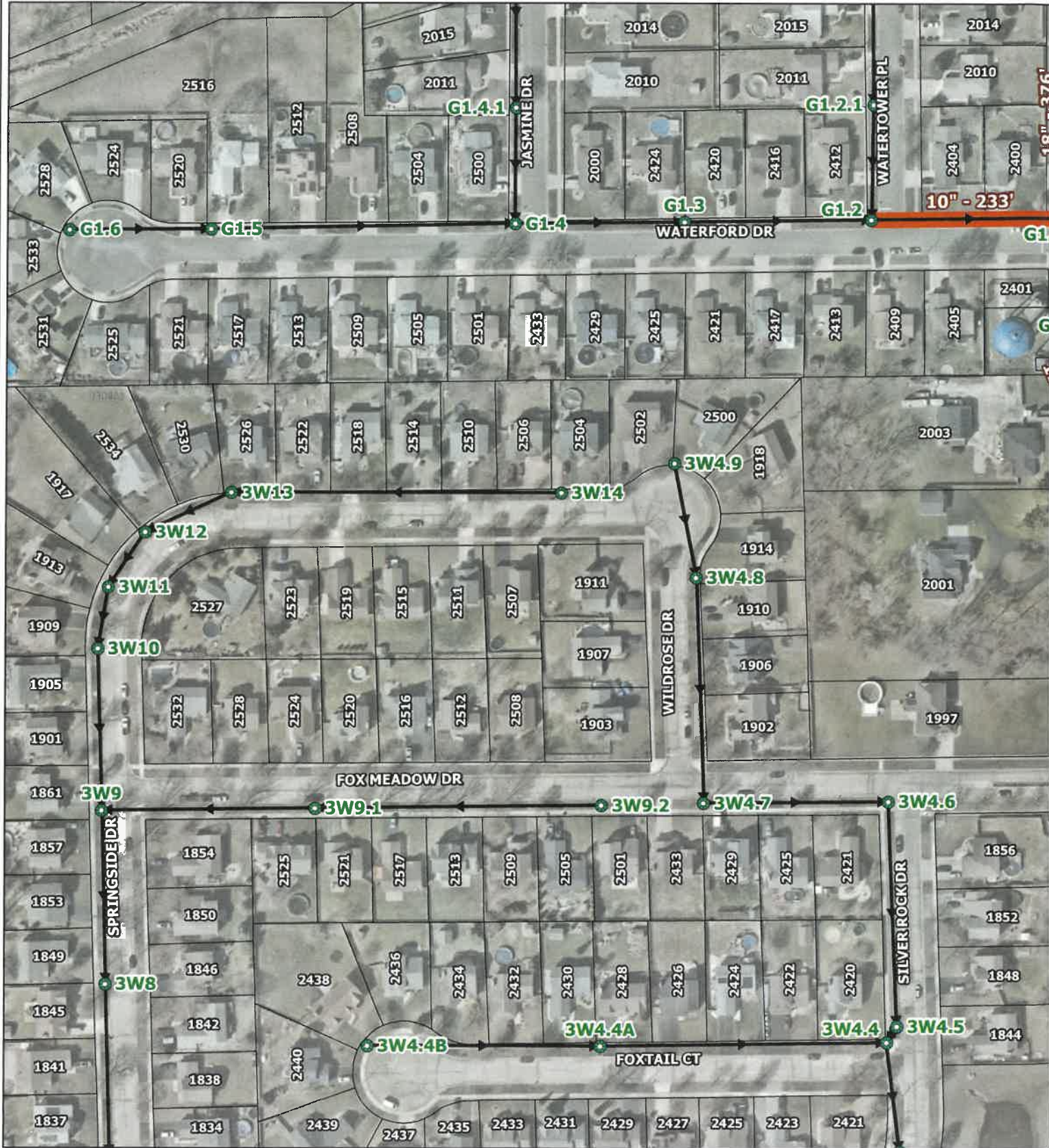
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|  Sanitary Sewer Manholes |  Sanitary Sewer Gravity Main |  State Roads |
|  Sanitary Sewer to be Cleaned and Televised |  Railroads |  County Roads |

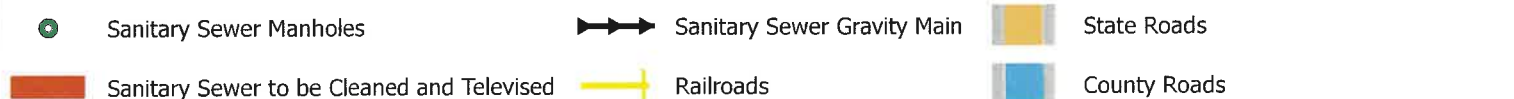
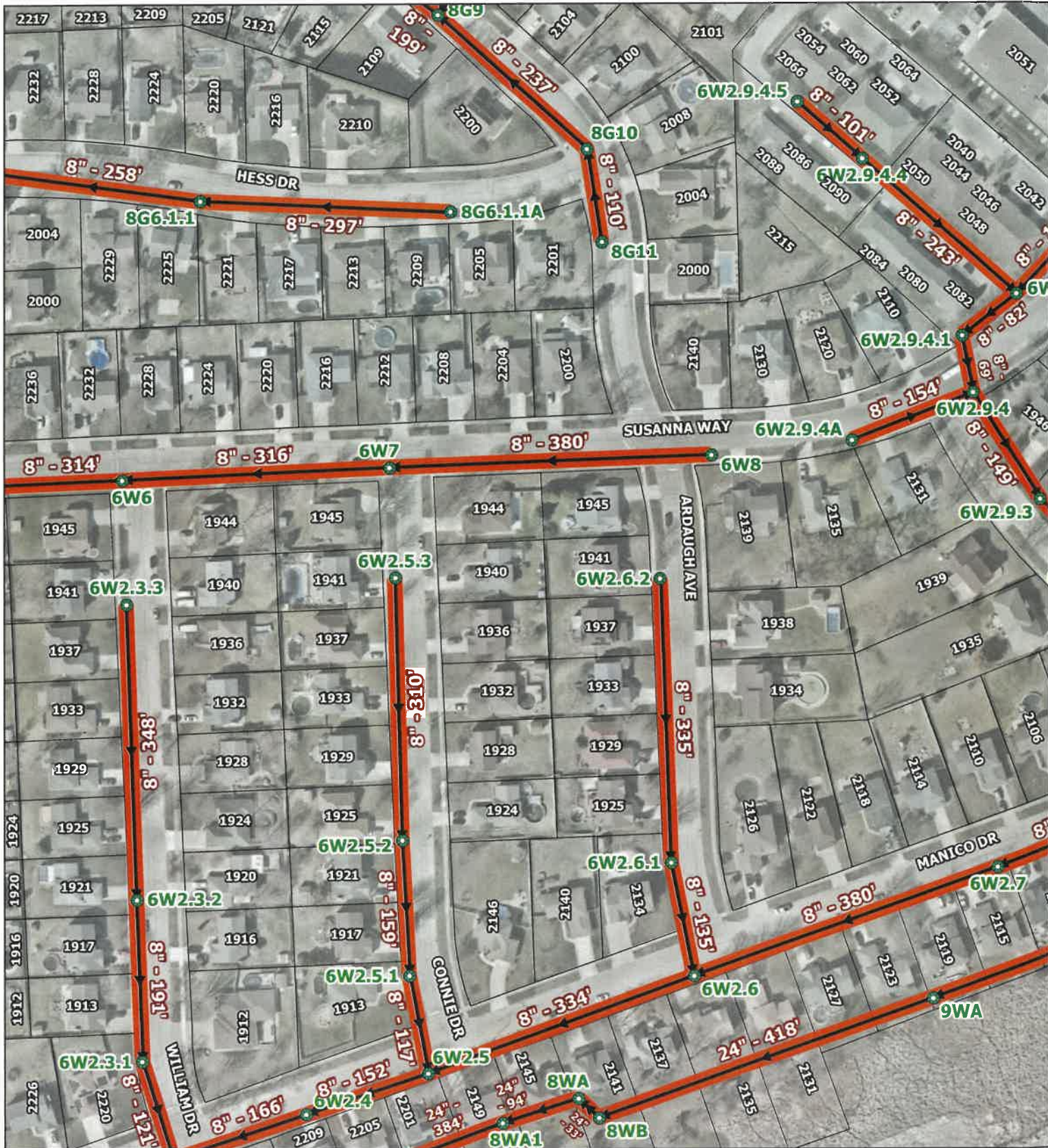


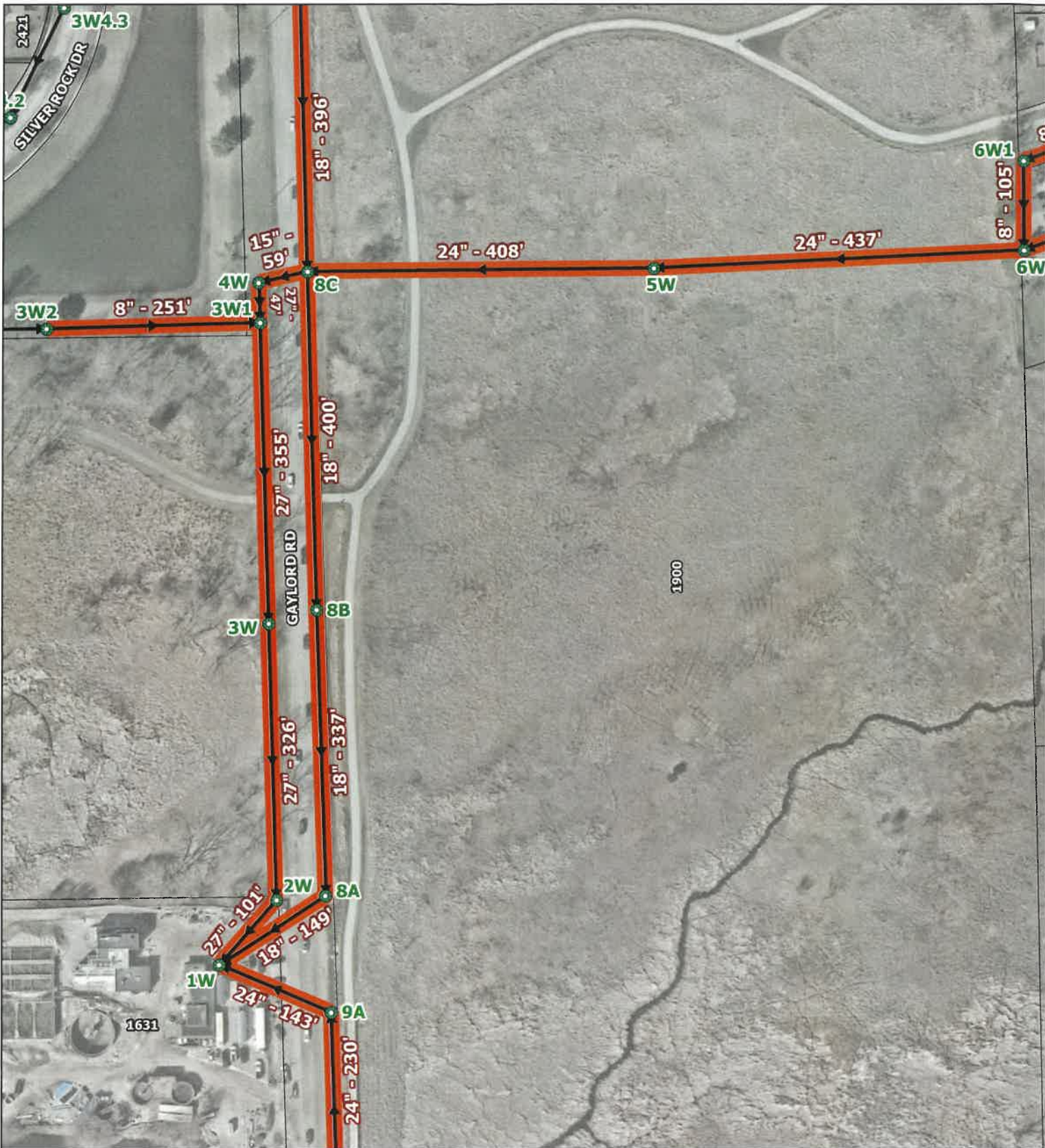
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|  Sanitary Sewer Manholes |  Sanitary Sewer Gravity Main |  State Roads |
|  Sanitary Sewer to be Cleaned and Televised |  Railroads |  County Roads |



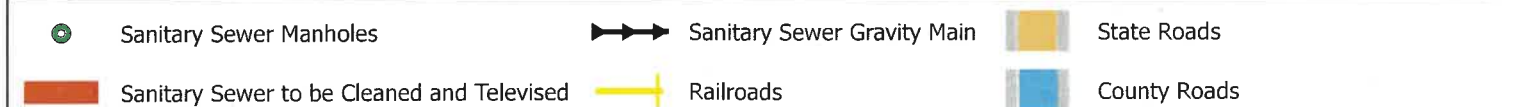


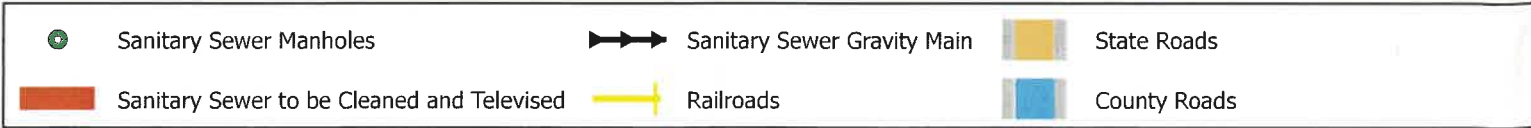






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|--|---|--|
|  Sanitary Sewer Manholes |  Sanitary Sewer Gravity Main |  State Roads |
|  Sanitary Sewer to be Cleaned and Televised |  Railroads |  County Roads |





SUPPLEMENTAL INFORMATION



City of Crest Hill
2026 Sanitary Sewer Cleaning and Televising
Pipe Schedule by USMH

USMH	DSMH	Street	Length (FT)	DIA. (IN)	Pipe ID	Material	Page #
10WA	9WA	MANICO DR	493	24	357	PVC	9
10WB	10WA	MANICO DR	55	24	356	PVC	9
11W	10WB	MANICO DR	307	24	355	UNKNOWN	9
13W	11W	PLAINFIELD RD	333	24	354	UNKNOWN	9
22E18.5.1	22E18.5	CATON FARM RD	92	8	2030	PVC	3
22E18.5.2	22E18.5.1	CATON FARM RD	351	8	2029	PVC	3
22E18.5.3	22E18.5.2	CATON FARM RD	88	8	2028	PVC	3
22E18.6	22E18.5	CATON FARM RD	196	8	1458	UNKNOWN	3
22E21	22E20	CATON FARM RD	199	21	1464	UNKNOWN	3
22E3.3	22E3.2	OAKLAND AVE	388	8	1674	UNKNOWN	5
22E3.4	22E3.3	CATON FARM RD	312	8	1673	UNKNOWN	5
22E9.6	22E9.5	CATON FARM RD	436	18	954	UNKNOWN	4
22E9.6.1	22E9.6	CATON FARM RD	20	10	1671	UNKNOWN	4
22E9.6.2	22E9.6.1	CATON FARM RD	110	10	1670	UNKNOWN	4
22E9.6.3	22E9.6.2	CATON FARM RD	401	10	1669	UNKNOWN	4
22E9.6.4	22E9.6.3	LEN KUBINSKI DR	323	10	1668	UNKNOWN	4
22E9.7	22E9.6	CATON FARM RD	436	18	1638	UNKNOWN	4
2W	1W	GAYLORD RD	101	27	400	UNKNOWN	10
3W	2W	GAYLORD RD	326	27	397	UNKNOWN	10
3W1	3W	GAYLORD RD	355	27	367	UNKNOWN	10



City of Crest Hill
2026 Sanitary Sewer Cleaning and Televising
Pipe Schedule by USMH

USMH	DSMH	Street	Length (FT)	DIA. (IN)	Pipe ID	Material	Page #
3W2	3W1	GAYLORD RD	251	8	368	UNKNOWN	10
4W	3W1	GAYLORD RD	47	27	396	UNKNOWN	10
5W	8C	GAYLORD RD	408	24	365	UNKNOWN	10
6W	5W	MANICO DR	437	24	364	UNKNOWN	10
6W1	6W	MANICO DR	105	8	363	PVC	10
6W2	6W1	MANICO DR	144	8	362	UNKNOWN	10
6W2.10	6W2.9	MANICO CT	215	8	570	UNKNOWN	9
6W2.2	6W2.3	MANICO DR	154	8	556	UNKNOWN	10
6W2.3.1	6W2.3	MANICO DR	121	8	560	UNKNOWN	9,10
6W2.3.2	6W2.3.1	WILLIAM DR	191	8	559	UNKNOWN	9
6W2.3.3	6W2.3.2	WILLIAM DR	348	8	558	UNKNOWN	9
6W2.4	6W2.3	MANICO DR	166	8	557	UNKNOWN	9,10
6W2.5	6W2.4	MANICO DR	152	8	916	UNKNOWN	9
6W2.5.1	6W2.5	MANICO DR	117	8	563	UNKNOWN	9
6W2.5.2	6W2.5.1	CONNIE DR	159	8	562	UNKNOWN	9
6W2.5.3	6W2.5.2	CONNIE DR	310	8	561	UNKNOWN	9
6W2.6	6W2.5	MANICO DR	334	8	564	UNKNOWN	9
6W2.6.1	6W2.6	MANICO DR	135	8	566	UNKNOWN	9
6W2.6.2	6W2.6.1	ARDAUGH AVE	335	8	567	UNKNOWN	9
6W2.7	6W2.6	MANICO DR	380	8	565	UNKNOWN	9



City of Crest Hill
2026 Sanitary Sewer Cleaning and Televising
Pipe Schedule by USMH

USMH	DSMH	Street	Length (FT)	DIA. (IN)	Pipe ID	Material	Page #
6W2.8	6W2.7	MANICO DR	199	8	569	UNKNOWN	9
6W2.9	6W2.8	MANICO DR	181	8	568	UNKNOWN	9
6W2.9.1	6W2.9	MANICO DR	65	8	572	UNKNOWN	9
6W2.9.2	6W2.9.1	CARA DR	160	8	571	UNKNOWN	9
6W2.9.2A1	6W2.9.2	CARA DR	144	8	575	UNKNOWN	9
6W2.9.2A2	6W2.9.2A1	PLAINFIELD RD	278	8	574	UNKNOWN	9
6W2.9.3	6W2.9.2	CARA DR	151	8	573	UNKNOWN	9
6W2.9.4	6W2.9.3	SUSANNA WAY	149	8	576	UNKNOWN	9
6W2.9.4.1	6W2.9.4	SUSANNA WAY	69	8	579	UNKNOWN	9
6W2.9.4.2	6W2.9.4.1	SUSANNA WAY	82	8	580	UNKNOWN	9
6W2.9.4.3	6W2.9.4.2	SUSANNA WAY	144	8	581	UNKNOWN	9
6W2.9.4.4	6W2.9.4.2	SUSANNA WAY	243	8	583	UNKNOWN	9
6W2.9.4.5	6W2.9.4.4	SUSANNA WAY	101	8	582	UNKNOWN	9
6W2.9.4A	6W2.9.4	CARA DR	154	8	578	UNKNOWN	9
6W3	6W2	SYBIL DR	233	8	555	UNKNOWN	8,10
6W4	6W3	SYBIL DR	349	8	554	UNKNOWN	8
6W5	6W4	SYBIL DR	329	8	553	UNKNOWN	8
6W6	6W5	SUSANNA WAY	314	8	552	UNKNOWN	8,9
6W7	6W6	WILLIAM DR	316	8	551	UNKNOWN	9
6W8	6W7	ARDAUGH AVE	380	8	577	UNKNOWN	9



City of Crest Hill
2026 Sanitary Sewer Cleaning and Televising
Pipe Schedule by USMH

USMH	DSMH	Street	Length (FT)	DIA. (IN)	Pipe ID	Material	Page #
7W	6W	MANICO DR	531	24	361	UNKNOWN	10
8A	1W	GAYLORD RD	149	18	399	UNKNOWN	10
8AA	8Z	CATON FARM RD	397	8	744	TRUSS	2
8AA1	8AA	CATON FARM RD	52	8	743	TRUSS	2
8B	8A	GAYLORD RD	337	18	398	UNKNOWN	10
8BB	8AA	CATON FARM RD	148	8	742	TRUSS	2
8C	4W	GAYLORD RD	59	15	366	UNKNOWN	10
8C	8B	GAYLORD RD	400	18	883	UNKNOWN	10
8D	8C	GAYLORD RD	396	18	882	UNKNOWN	8,10
8E1	8D	GAYLORD RD	398	18	881	UNKNOWN	8
8F	8E1	GAYLORD RD	394	18	880	UNKNOWN	8
8G	8F	GAYLORD RD	406	18	538	UNKNOWN	8
8G1	8G	GAYLORD RD	48	8	539	UNKNOWN	8
8G10	8G9	ARDAUGH AVE	237	8	585	UNKNOWN	9
8G11	8G10	HESS DR	110	8	584	UNKNOWN	9
8G2	8G1	ARDAUGH AVE	132	8	540	UNKNOWN	8
8G2.1	8G2	NOONAN ST	282	8	543	UNKNOWN	8
8G2.1.1	8G2.1	HESS DR	300	8	544	UNKNOWN	8
8G2.1.2	8G2.1.1	HESS DR	288	8	545	UNKNOWN	8
8G2.1.3	8G2.1.2	HESS DR	209	8	546	UNKNOWN	8



City of Crest Hill
2026 Sanitary Sewer Cleaning and Televising
Pipe Schedule by USMH

USMH	DSMH	Street	Length (FT)	DIA. (IN)	Pipe ID	Material	Page #
8G2.2	8G2.1	NOONAN ST	107	8	542	UNKNOWN	8
8G3	8G2	ARDAUGH AVE	299	8	541	UNKNOWN	8
8G4	8G3	ARDAUGH AVE	301	8	592	UNKNOWN	7,8
8G5	8G4	ARDAUGH AVE	153	8	591	UNKNOWN	7
8G6.1	8G6	MACHER ST	300	8	589	UNKNOWN	7,8
8G6.1.1	8G6.1	HESS DR	258	8	548	UNKNOWN	8,9
8G6.1.1A	8G6.1.1	HESS DR	297	8	550	UNKNOWN	9
8G6.1A	8G6.1	HESS DR	184	8	547	UNKNOWN	8
8G7	8G6	ARDAUGH AVE	238	8	588	UNKNOWN	7
8G8	8G7	ARDAUGH AVE	152	8	587	UNKNOWN	7
8G6	8G5	ARDAUGH AVE	226	8	590	UNKNOWN	7
8G9	8G8	MACHER ST	199	8	586	UNKNOWN	7,9
8G9.1	8G9	ARDAUGH AVE	172	8	897	UNKNOWN	7,9
8G9.2	8G9.1	ARDAUGH AVE	164	8	896	UNKNOWN	7
8H	8HA	GAYLORD RD	197	18	917	UNKNOWN	7
8HA	8G	GAYLORD RD	278	18	525	UNKNOWN	7,8
8I	8H	GAYLORD RD	55	18	915	UNKNOWN	7
8I1	G3	GAYLORD RD	195	12	521	UNKNOWN	7
8J	8I	GAYLORD RD	198	18	524	UNKNOWN	7
8J	G4	GAYLORD RD	68	18	830	UNKNOWN	7



City of Crest Hill
2026 Sanitary Sewer Cleaning and Televising
Pipe Schedule by USMH

USMH	DSMH	Street	Length (FT)	DIA. (IN)	Pipe ID	Material	Page #
8J1	8J	GAYLORD RD	153	12	829	UNKNOWN	7
8J2	8J1	SWEETBRIAR ST	170	12	828	UNKNOWN	7
8J3	8J2	SWEETBRIAR ST	249	12	827	UNKNOWN	7
8J4	8J3	SWEETBRIAR ST	186	12	826	UNKNOWN	7
8J5	8J4	SWEETBRIAR ST	269	12	825	UNKNOWN	7
8J5.1	8J5	SWEETBRIAR ST	353	8	773	CIPP	7
8J5.2	8J5.1	WEBB ST	386	8	775	CIPP	7
8J5.3	8J5.2	UNIVERSITY ST	319	8	774	CIPP	7
8J6	8J5	UNIVERSITY ST	221	12	824	UNKNOWN	7
8J7	8J6	SWEETBRIAR ST	253	12	823	UNKNOWN	7
8J7.1	8J7	SWEETBRIAR ST	385	8	776	CIPP	7
8J7.2	8J7.2A	WEBB ST	88	8	771	CIPP	7
8J7.2A	8J7.1	PARKROSE ST	323	8	772	CIPP	7
8J7.2B	8J7.2A	PARKROSE ST	97	8	764	CIPP	7
8J7.3	8J7.2	PARKROSE ST	297	8	770	CIPP	7
8J8	8J7	SWEETBRIAR ST	170	12	822	UNKNOWN	7
8J9	8J8	SWEETBRIAR ST	253	10	819	UNKNOWN	7
8J9.1	8J9	PLAINFIELD RD	48	8	778	CIPP	7
8J9.2	8J9.1	PLAINFIELD RD	393	8	777	CIPP	7
8J9.3	8J9.2	PLAINFIELD RD	402	8	769	UNKNOWN	7



City of Crest Hill
2026 Sanitary Sewer Cleaning and Televising
Pipe Schedule by USMH

USMH	DSMH	Street	Length (FT)	DIA. (IN)	Pipe ID	Material	Page #
8J9.4	8J9.3	PLAINFIELD RD	407	8	768	UNKNOWN	1,7
8J9A	8J9	PLAINFIELD RD	180	8	811	UNKNOWN	7
8K	8J	GAYLORD RD	396	15	831	UNKNOWN	7
8L	8K	GAYLORD RD	104	15	832	UNKNOWN	7
8M	8L	GAYLORD RD	403	15	833	UNKNOWN	1,7
8M1	8M	GAYLORD RD	140	8	767	UNKNOWN	1
8M2	8M1	PARKROSE ST	204	8	766	CIPP	1
8M3	8M2	PARKROSE ST	345	8	765	CIPP	1,7
8N	8M	GAYLORD RD	277	15	834	UNKNOWN	1
8O	8N	GAYLORD RD	329	15	835	UNKNOWN	1
8O1	8O	CATON FARM RD	39	8	763	UNKNOWN	1
8O1.2A	8Q1.2	CATON FARM RD	236	8	491	UNKNOWN	1
8O2	8O1	PLAINFIELD RD	402	8	762	UNKNOWN	1
8O3	8O2	PLAINFIELD RD	218	8	761	CIPP	1
8O4	8O3	PLAINFIELD RD	408	8	760	CIPP	1
8P	8O	CATON FARM RD	78	15	758	UNKNOWN	1
8Q	8P	CATON FARM RD	378	12	757	UNKNOWN	1
8Q1.1	8O	CATON FARM RD	80	8	759	UNKNOWN	1
8Q1.2	8Q1.1	CATON FARM RD	177	8	492	UNKNOWN	1
8R	8Q	CATON FARM RD	318	10	756	UNKNOWN	1



City of Crest Hill
2026 Sanitary Sewer Cleaning and Televising
Pipe Schedule by USMH

USMH	DSMH	Street	Length (FT)	DIA. (IN)	Pipe ID	Material	Page #
8R1	8R	CATON FARM RD	180	8	782	UNKNOWN	1
8S	8R	CATON FARM RD	94	10	755	UNKNOWN	1
8T	8S	CATON FARM RD	388	10	754	UNKNOWN	1
8T1	8T	CATON FARM RD	143	8	816	UNKNOWN	1
8T1A	8T	CATON FARM RD	41	8	753	UNKNOWN	1
8U	8T	CATON FARM RD	401	10	752	UNKNOWN	1,2
8V	8U	CATON FARM RD	368	8	751	UNKNOWN	2
8W	8V	CATON FARM RD	488	8	750	UNKNOWN	2
8W1	8W	CATON FARM RD	35	8	749	UNKNOWN	2
8WA	8WA1	MANICO DR	94	24	888	UNKNOWN	9
8WA1	7W	MANICO DR	384	24	360	UNKNOWN	9,10
8WB	8WA	MANICO DR	33	24	359	PVC	9
8X	8W	CATON FARM RD	258	8	748	UNKNOWN	2
8Y	8X	CATON FARM RD	242	8	747	UNKNOWN	2
8Z	8Y	CATON FARM RD	330	8	746	UNKNOWN	2
8ZA	8Z	CATON FARM RD	23	8	745	UNKNOWN	2
9A	1W	GAYLORD RD	143	24	401	UNKNOWN	10
9B	9A	GAYLORD RD	230	24	403	UNKNOWN	10,11
9C	9B	GAYLORD RD	281	24	402	UNKNOWN	11
9C1	9C	GAYLORD RD	399	15	454	UNKNOWN	11



City of Crest Hill
2026 Sanitary Sewer Cleaning and Televising
Pipe Schedule by USMH

USMH	DSMH	Street	Length (FT)	DIA. (IN)	Pipe ID	Material	Page #
9C2	9C1	THEODORE ST	370	15	455	UNKNOWN	11
9C3	9C2	THEODORE ST	36	15	457	UNKNOWN	11
9C4	9C3	THEODORE ST	396	15	456	UNKNOWN	11
9C5	9C4	THEODORE ST	93	15	459	UNKNOWN	11
9C6	9C5	THEODORE ST	199	15	458	UNKNOWN	11
9D	9C	GAYLORD RD	61	21	453	UNKNOWN	11
9DA	9D	CEDARWOOD DR	63	18	452	UNKNOWN	11
9DA1	9DA	THEODORE ST	324	10	417	UNKNOWN	11
9E1	9DA	CEDARWOOD DR	127	12	451	UNKNOWN	11
9F	9E1	CEDARWOOD DR	399	12	450	UNKNOWN	11
9G	9F	CEDARWOOD DR	83	12	890	UNKNOWN	11
9G1	9G	CEDARWOOD DR	268	8	448	UNKNOWN	11
9H	9G	CEDARWOOD DR	330	12	449	UNKNOWN	11,12
9H1	9H	CEDARWOOD DR	306	8	446	UNKNOWN	12
9I	9H	CEDARWOOD DR	294	12	447	TRUSS	12
9J	9I	CEDARWOOD DR	334	12	862	TRUSS	12
9J1	9J	CEDARWOOD DR	207	8	859	TRUSS	12
9K	9J	CEDARWOOD DR	381	12	861	TRUSS	12
9K1	9K	CEDARWOOD DR	75	8	893	UNKNOWN	12
9KA	9K	CEDARWOOD DR	142	12	892	TRUSS	12



City of Crest Hill
2026 Sanitary Sewer Cleaning and Televising
Pipe Schedule by USMH

USMH	DSMH	Street	Length (FT)	DIA. (IN)	Pipe ID	Material	Page #
9KB	9KA	CEDARWOOD DR	280	8	855	UNKNOWN	12
9L	9KA	CEDARWOOD DR	151	12	435	TRUSS	12
9M	9L	CEDARWOOD DR	221	12	436	TRUSS	12
9M1	9M	CEDARWOOD DR	15	8	433	UNKNOWN	12
9M2	9M1	CEDARWOOD DR	349	8	434	UNKNOWN	12
9M3	9M2	CEDARWOOD DR	399	8	860	UNKNOWN	12
9N	9M	CEDARWOOD DR	231	12	432	TRUSS	12
9N1	9M	CEDARWOOD DR	262	8	431	UNKNOWN	12
9WA	8WB	MANICO DR	418	24	358	PVC	9
G1	8F	GAYLORD RD	113	18	537	UNKNOWN	8
G1.1	G1	GAYLORD RD	120	18	536	PVC	8
G1.2	G1.1	WATERFORD DR	233	10	527	UNKNOWN	8
G2	G1.1	GAYLORD RD	376	18	526	PVC	7,8
G3	G2	GAYLORD RD	347	18	523	PVC	7
G4	G3	GAYLORD RD	152	18	522	UNKNOWN	7
SV103	SV102	S BROADWAY ST	611	18	1844	UNKNOWN	6

Table of Contents

Manhole 22E21 1

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Manhole 22E21

Easement Along Railroad

Nearest Address: 4052 Ellington Avenue







Manhole 22E20

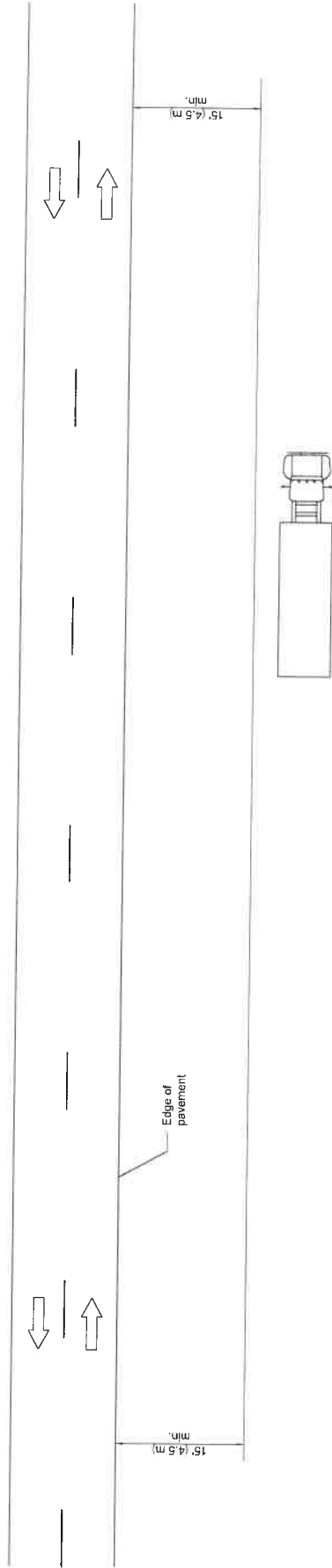
Easement Along Railroad

Nearest Address: 4052 Ellington Avenue





STANDARD DRAWINGS



TYPICAL APPLICATIONS

- Landscaping work
- Utility work
- Fencing contracts and maintenance
- Cleaning culverts

GENERAL NOTES

This Standard is used where at all times all vehicles, equipment, work and other activities are more than 15' (4.5 m) from the edge of pavement.

When the work operation requires that two or more work vehicles cross the 15' (4.5 m) clear zone in any one hour, traffic control shall be according to Standard 701006.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-05	Revised title and notes.

**OFF-RD OPERATIONS,
2L, 2W, MORE THAN
15' (4.5 m) AWAY**

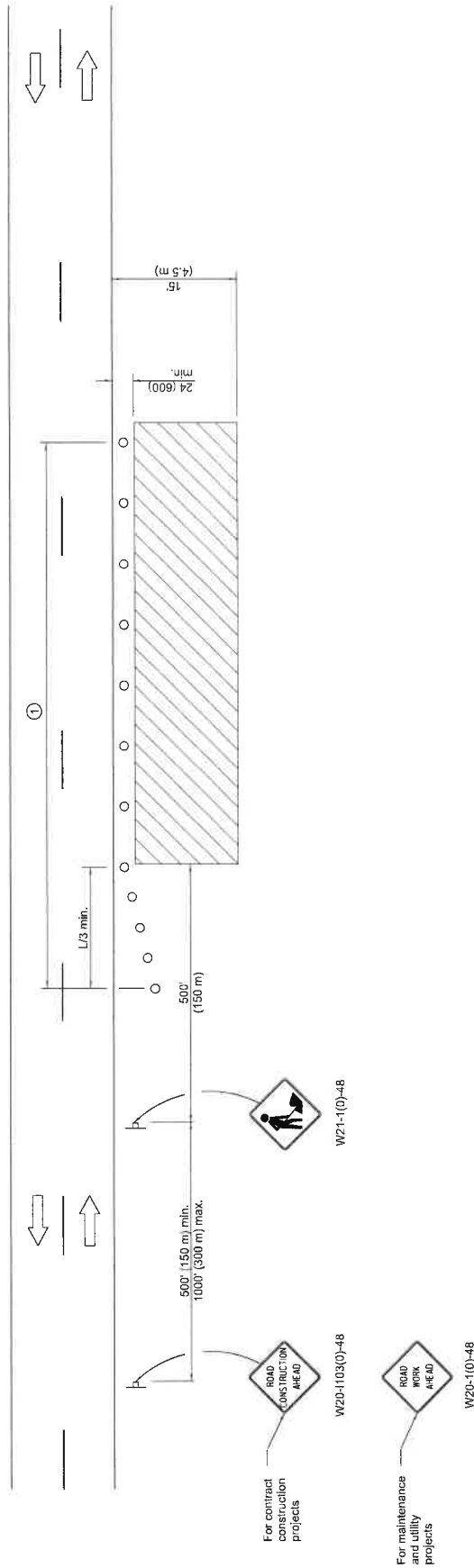
STANDARD 701001-02

Illinois Department of Transportation

ISSUED 1-1-97

APPROVED January 1, 2008
ENGINEER OF OPERATIONS

APPROVED January 1, 2008
ENGINEER OF DESIGN AND ENVIRONMENT



TYPICAL APPLICATIONS

Utility operations
 Culvert extensions
 Site slope changes
 Shoulder installation
 Delineator installation
 Landscaping operations
 Shoulder repair
 Sign installation and maintenance

SYMBOLS

Work area
 Sign
 Cone, drum or barricade

GENERAL NOTES

This Standard is used where any vehicles, equipment, workers or materials will be on the roadway for a period of 15' (4.5 m) to 24' (600) from the edge of pavement.

Calculate L as follows:

SPEED LIMIT

FORMULAS
 English (Metric)

40 mph (70 km/h)
 L = $\frac{WS^2}{60}$
 or less:

45 mph (80 km/h)
 L = $\frac{WS^2}{60}$
 or greater:

W = Width of offset
 in feet (meters).

S = Normal posted speed
 mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

**OFF-RD OPERATIONS, 2L, 2W,
 15' (4.5 m) TO 24" (600 mm)
 FROM PAVEMENT EDGE**

STANDARD 701006-05

DATE	REVISIONS
1-1-14	Revised workers sign number to agree with current MUTCD.
1-1-13	Omitted text "WORKERS" sign.

Illinois Department of Transportation

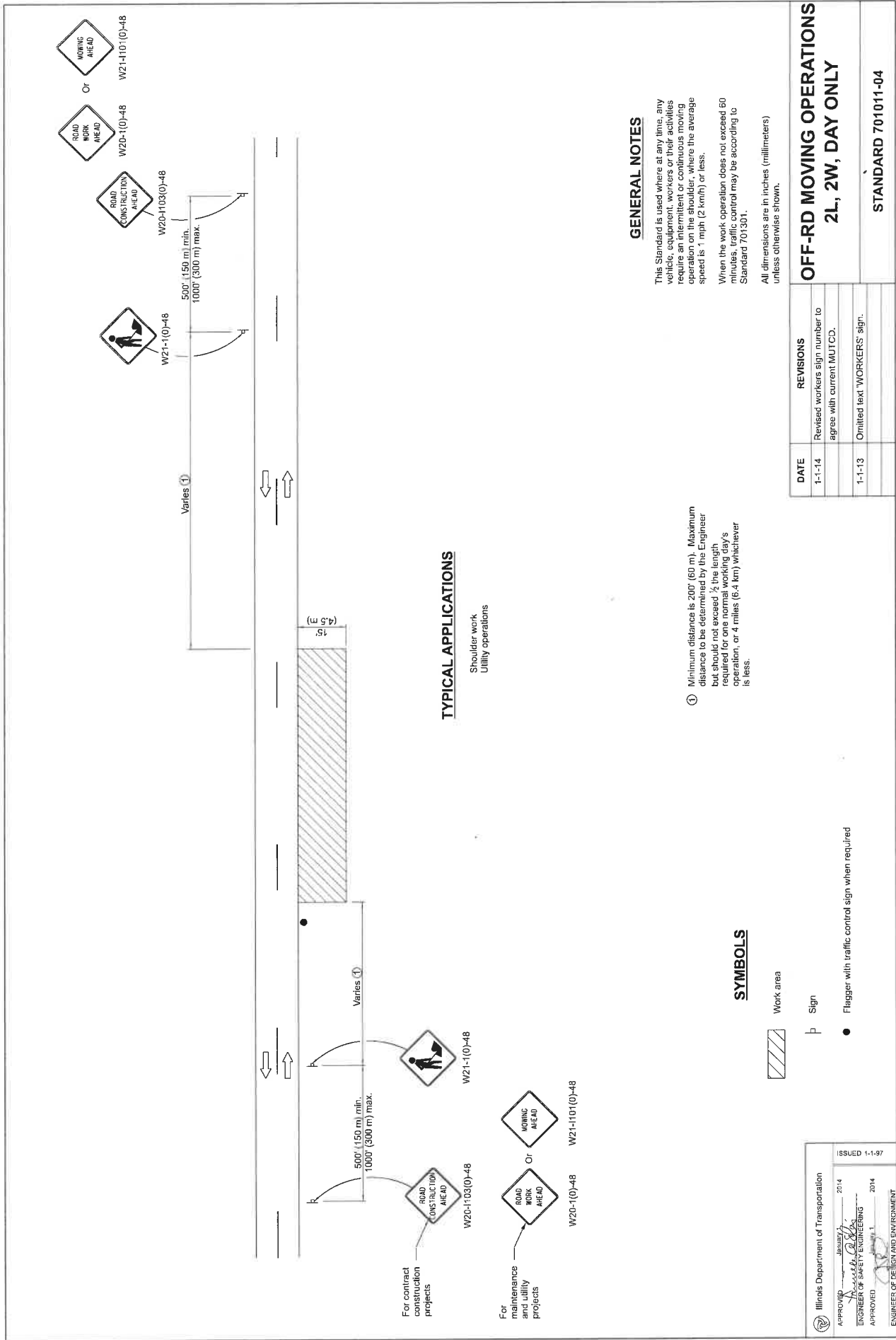
APPROVED January 2, 2014

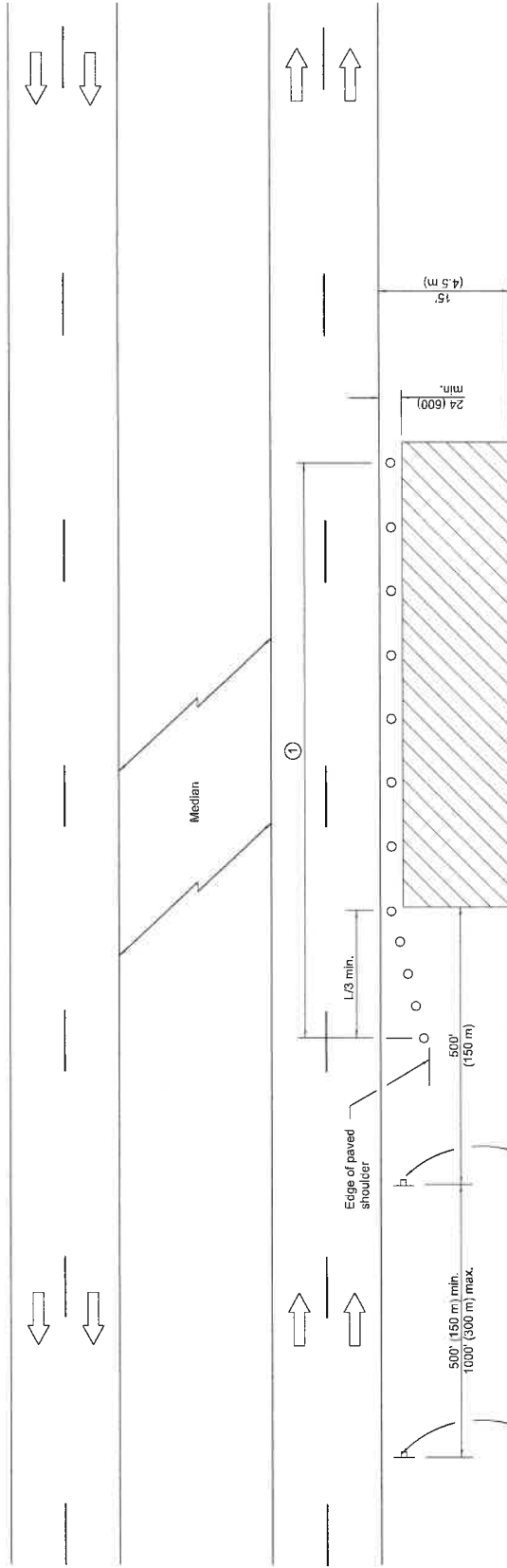
ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2014

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97





For contract
construction
projects

W20-1103(0)-48

For maintenance
and utility
projects

W20-1104-48

W21-1101-48

GENERAL NOTES

This Standard is used where any vehicles, equipment, workers or their activities will encroach in the area 15' (4.5 m) to 24' (600) from the edge of pavement.

Calculate L as follows:

SPEED LIMIT

40 mph (70 km/h)
or less:

English
(Metric)

$L = \frac{WS^2}{60}$
 $L = 150$

45 mph (80 km/h)
or greater:

English
(Metric)

$L = \frac{WS^2}{60}$
 $L = 0.65(W)(S)$

W = Width of offset
in feet (meters).

S = Normal posted speed
mph (km/h).

All dimensions are in inches (millimeters)
unless otherwise shown.

TYPICAL APPLICATIONS

- Utility operations
- Culvert extensions
- Site slope changes
- General restoration and maintenance
- Drainage installation
- Landscaping operations
- Shoulder repair
- Sign installation and maintenance

- ① When the work operation exceeds one hour, cones, drums or barricades shall be placed at 25' (8 m) centers for L/5 distance, and at 50' (15 m) centers through the remainder of the work area.

SYMBOLS

- Work area
- Sign
- Cone, drum or barricade

OFF-RD OPERATIONS, MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE

DATE	REVISIONS
4-1-16	Corrected typo in title.
1-1-14	Revised workers sign number to agree with current MUTCD.

STANDARD 701101-05

Illinois Department of Transportation

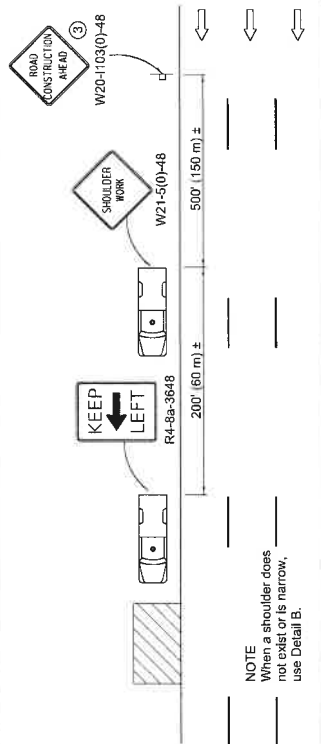
2016

APPROVED
ENGINEER OF SAFETY ENGINEERING

2016

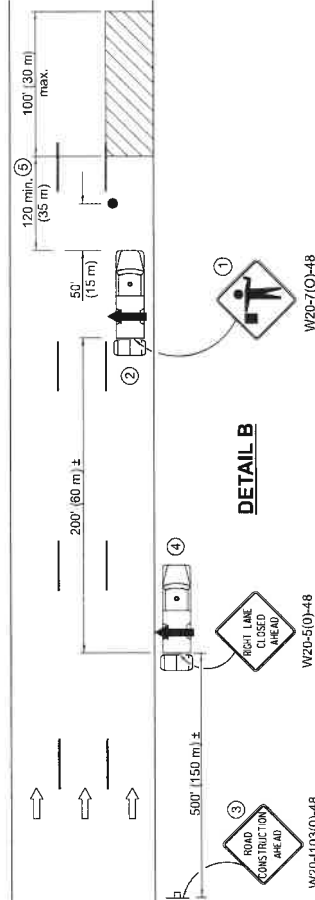
APPROVED
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



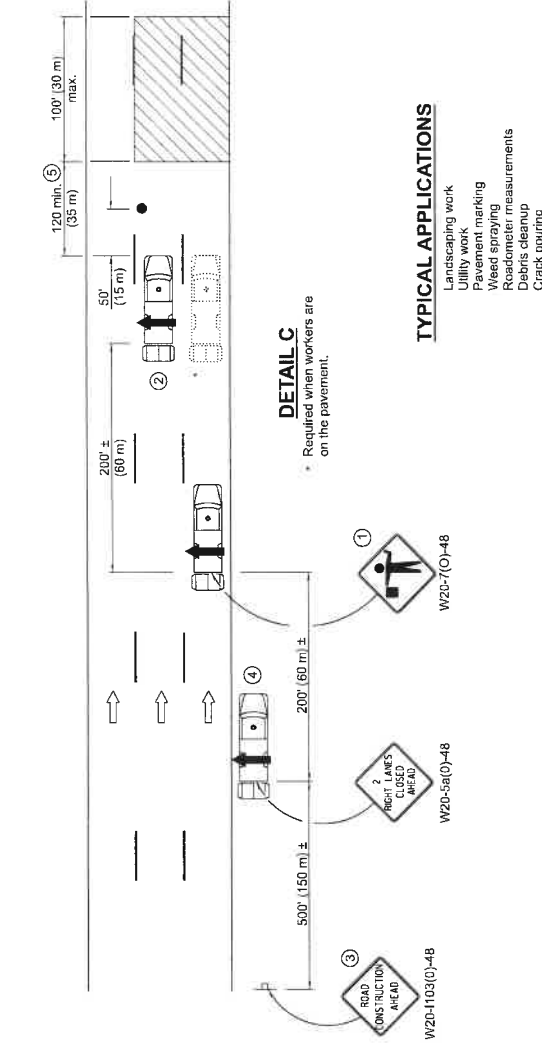
NOTE
When a shoulder does not exist or is narrow, use Detail B.

DETAIL A



SYMBOLS

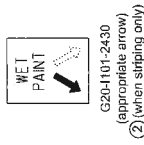
- ↑ Arrow board
- ▨ Work area
- Truck with flashing amber light
- Truck/Trailer mounted attenuator
- Flagger with traffic control sign
- ⊥ Sign



Required when workers are on the pavement.

TYPICAL APPLICATIONS

- Landscaping work
- Utility work
- Pavement marking
- Weed spraying
- Roadmeter measurements
- Debris cleanup
- Crack pouring



GENERAL NOTES

This Standard is used where any vehicle, equipment, workers or their activities will require:

- 1) stationary operations up to 1 hour, or
- 2) a continuous or intermittent moving operation where the average speed of movement is greater than 1 mph (2 km/h).

This Standard is also applicable when work is being performed in the left lane(s) or on the median shoulder. Under these conditions, KEEP RIGHT signs shall be substituted for KEEP LEFT signs and arrow board indications shall be directed to the right.

All dimensions are in inches (millimeter) unless otherwise shown.

DATE	REVISIONS
1-1-17	Revised NOTE on DETAIL A to use DETAIL B in lieu of DETAIL C.
4-1-16	Revised general notes. Added note
	(5) Revised distance between work and lead truck.

- Truck with flashing amber light
- Truck/Trailer mounted attenuator
- Flagger with traffic control sign
- ⊥ Sign

Illinois Department of Transportation	ISSUED 1-1-11
APPROVED: [Signature]	2017
ENGINEER OF SAFETY PROGS. AND ENGINEERING	
APPROVED: [Signature]	2017
ENGINEER OF DESIGN AND ENVIRONMENT	

LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS ≤ 40 MPH

STANDARD 701427-05



① Refer to SIGN SPACING TABLE for distances.

- | Work area | Refer to SIGN SPACING TABLE for distances. |
|--|--|
| Cone, drum or barricade (not required for moving operations) | ① |
| Sign on portable or permanent support | ② |
| Flagger with traffic control sign | ③ |
| Barricade or drum with flashing light | ④ |
| Type III barricade with flashing lights | ⑤ |

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an urban area.

All dimensions are in inches (millimeters) unless otherwise shown.

	DATE	REVISIONS
	1-1-11	Revised flagger sign.
	1--09	Switched units to English (metric). Corrected sign No.'s.

**URBAN LANE CLOSURE,
2L, 2W, UNDIVIDED**

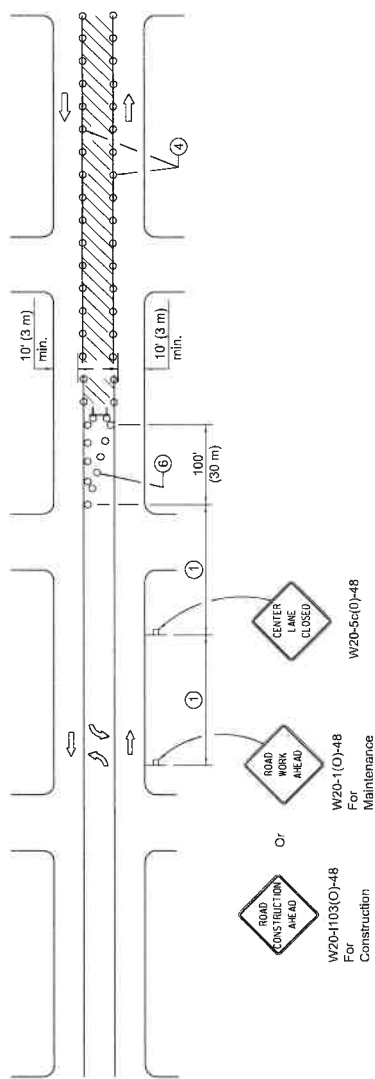
STANDARD 701501-06

ISSUED 1-1-97

ILLINOIS Department of Transportation

APPROVED January 1, 1997 2011
ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 1997 2011
ENGINEER OF DESIGN AND ENVIRONMENT



CASE J

(Signs required for both directions)

Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

- 1 Refer to SIGN SPACING TABLE for distances.
- 2 Required for speeds > 40 mph (70 km/h).
- 3 Required if work exceeds 500' (164 m) or 1 block.
- 4 Cones at 25' (8 m) centers for 250' (75 m) in approach. (With cones, the work area shall be at least 50' (15 m) long. When drums or type II barricades are used, the interval between devices may be doubled.
- 5 For approved sideroad closures.
- 6 Cones, drums or barricades at 20' (6 m) centers in taper.
- 7 Use flagger sign only when flagger is present.

SYMBOLS

- Work area
- Barricade or drum with flashing light
- Flagger with traffic control sign
- Cone, drum or barricade
- Sign on portable or permanent support
- Type III barricade with flashing lights

GENERAL NOTES

This Standard is used to close one lane of an urban, two lane, two way roadway with a bidirectional turn lane.

Case I applies when no workers are present. When workers are present, two lanes shall be closed and traffic control shall be according to Standard 701501.

Calculate L as follows:

SPEED LIMIT	English	FORMULAS (Metric)
40 mph (70 km/h) or less:	$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater:	$L = \frac{W(S)}{S}$	$L = 0.65(W)(S)$

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

REVISIONS

DATE	REVISIONS
1-1-19	Revised to allow cones at night.
1-1-18	Corrected sign number for TWO WAY TRAFFIC sign for CASE II.

URBAN LANE CLOSURE, 2L, 2W, WITH BIDIRECTIONAL LEFT TURN LANE

(Sheet 1 of 2)

STANDARD 701502-09

Illinois Department of Transportation

APPROVED January 1, 2019

ENGINEER OF SAFETY PROC. AND ENGINEERING

APPROVED January 1, 2019

ENGINEER OF DESIGN AND ENVIRONMENT

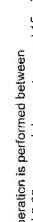
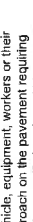
ISSUED 1-1-01



(Sheet 2 of 2)

STANDARD 701502-09

W20-1(O)-48



GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an Urban area.

If the work operation is performed between 9:00 a.m. and 3:00 p.m. and does not exceed 15 min. Traffic protection shall be as shown for Standard 701426.

Calculate L as follows:

SPEED LIMIT

40 mph (70 km/h)
or less:

English (Metric)
 WS^2
 $L = 60$

45 mph (80 km/h)
or greater:

$L = (W)(S)$
 $L = 0.65(W)(S)$

W = Width of offset
in feet (meters).

S = Normal posted speed
mph (km/h).

All dimensions are in inches (millimeters)
unless otherwise shown.

Refer to SIGN SPACING TABLE
for distances.

Required for speeds > 40 mph (70 km/h).

Required if work exceeds 500' (164 m)
or 1 block, repeat every 1 mile (1.6 km).

Cones at 25' (8 m) centers for 250' (75 m)
on approach. Additional cones may be
placed at 50' (15 m) centers. When drums
or type I or II barricades are used, the
interval between devices may be doubled.

For approved sideload closures.

Cones, drums or barricades at
20' (6 m) centers in taper.

Use flagger sign only when flagger is
present.

CASE I

SYMBOLS

Arrow board

Work area

Barricade or drum with steady
burning omnidirectional light

Flagger with traffic control sign

Cone, drum or barricade

Sign on portable or permanent support

Type III barricade with flashing lights

SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

Illinois Department of Transportation

APPROVED January 1, 2019

ENGINEER OF SAFETY PROGS. AND ENGINEERING

APPROVED January 1, 2019

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-13

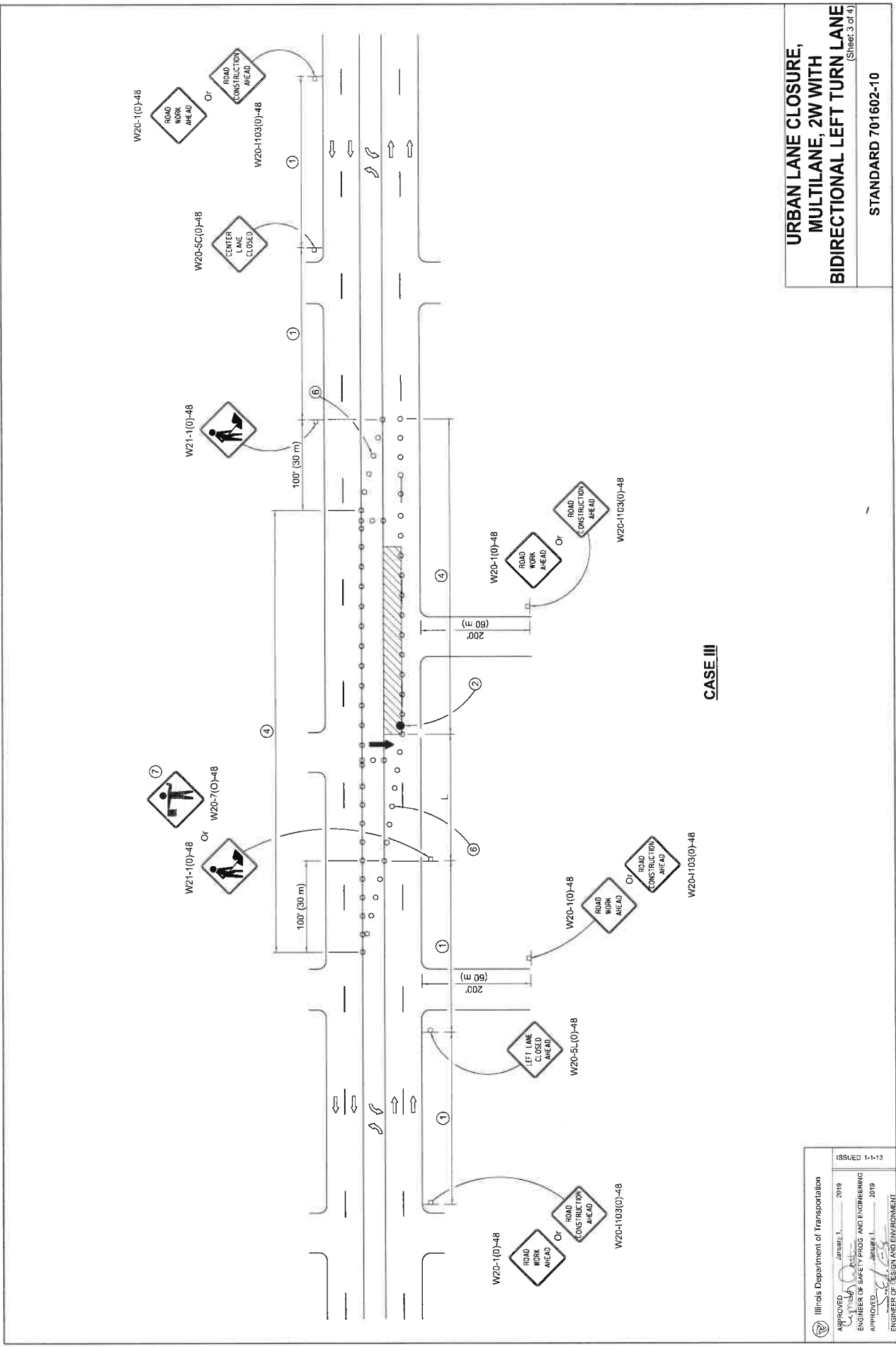
URBAN LANE CLOSURE, MULTILANE, 2W WITH BIDIRECTIONAL LEFT TURN LANE

(Sheet 1 of 4)

STANDARD 701602-10



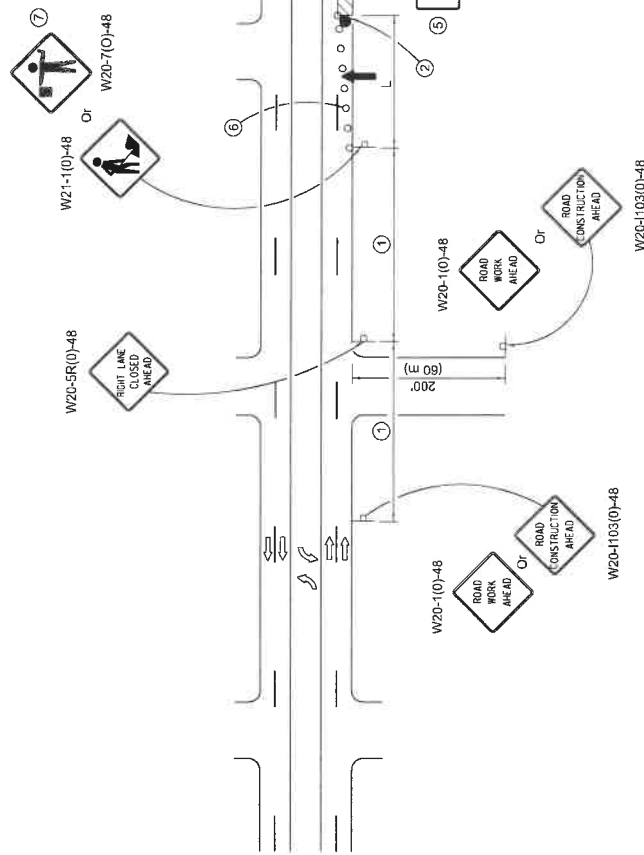
STANDARD 701602-10



**URBAN LANE CLOSURE,
MULTILANE, 2W WITH
BIDIRECTIONAL LEFT TURN LANE**
(Sheet 3 of 4)

STANDARD 701602-10

Illinois Department of Transportation	
APPROVED	2019
ENGINEER OF SAFETY PROG. AND ENGINEERING	2019
APPROVED	2019
ENGINEER OF DESIGN AND ENVIRONMENT	2019



CASE IV

**URBAN LANE CLOSURE,
MULTILANE, 2W WITH
BIDIRECTIONAL LEFT TURN LANE**
(Sheet 4 of 4)

STANDARD 701602-10

Illinois Department of Transportation

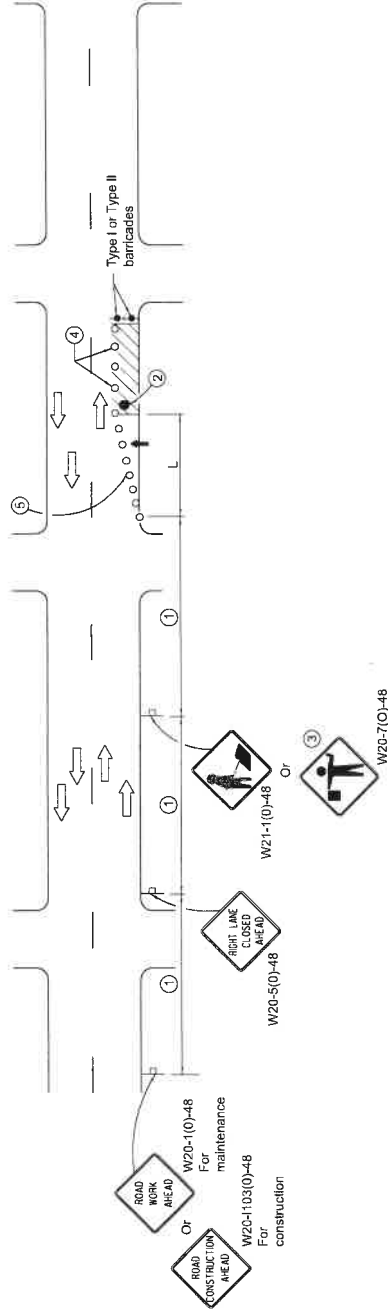
APPROVED: [Signature] 2019

ENGINEER OF SAFETY PROC. AND ENGINEERING

APPROVED: [Signature] 2019

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-13



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

SYMBOLS

- ↑ Arrow board
- Cone, drum or barricade
- ▤ Sign on portable or permanent support
- ▨ Work area
- Barricade or drum with flashing light
- Flagger with traffic control sign.

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an Urban area.

Calculate L as follows:

SPEED LIMIT

FORMULAS	
English	(Metric)
$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$
$L = (W)(S)$	$L = 0.65(W)(S)$

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

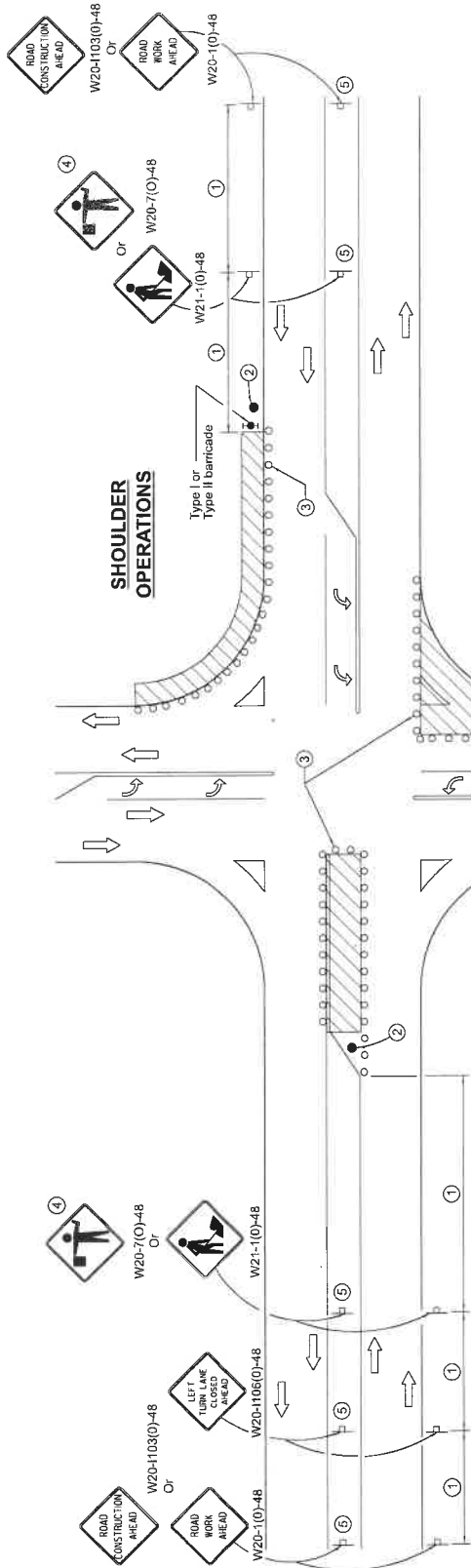
- 1 Refer to SIGN SPACING TABLE for distances.
- 2 Required for speeds > 40 mph.
- 3 Use flagger sign only when flagger is present.
- 4 Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- 5 Cones, drums or barricades at 20' (6 m) centers in taper.

DATE	REVISIONS
1-1-15	Renamed standard. Moved case on Sheet 2 to new Highway Standard.
1-1-14	Revised workers sign number to agree with current MUTCD.

URBAN SINGLE LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN

STANDARD 701606-10

Illinois Department of Transportation APPROVED: <i>[Signature]</i> January 1, 2015 ENGINEER OF SAFETY ENGINEERING		ISSUED 1-1-97 2015 2015 2015
APPROVED: <i>[Signature]</i> January 1, 2015 ENGINEER OF DESIGN AND ENVIRONMENT		



LEFT TURN LANE OR CENTER MEDIAN OPERATIONS

- 1 Refer to SIGN SPACING TABLE for distance.
- 2 Required for speed > 40 mph.
- 3 Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- 4 Use flagger sign only when flagger is present.
- 5 Omit this sign when median is less than 10' (3 m) or for bi-directional turn lanes.
- 6 Cones, drums or barricades at 20' (6 m) centers in taper.
- 7 Advanced arrow board required for speeds > 45 mph.
- 8 Three Type II barricades, drums or vertical barricades at 50' (15 m) centers.

SIGN SPACING	
Posted Speed	Sign Spacing
65	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

SYMBOLS

- Work area
- Cone, drum or barricade
- Sign on portable or permanent support
- Arrow board
- Barricade or drum with flashing light
- Flagger with traffic control sign

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement during shoulder operations or where construction requires lane closures in an urban area.

Calculate L as follows:

SPEED LIMIT	FORMULAS	
	English	(Metric)
40 mph (70 km/h) or less:	$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater:	$L = (W)(S)$	$L = 0.65(W)(S)$

W = Width of offset in feet (meters),
S = Normal posted speed in mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
4-1-16	Corrected sign number for LEFT TURN LANE CLOSED AHEAD.
1-1-14	Added devices at arrow board upstream from taper. Revised workers sign number.

URBAN LANE CLOSURE, MULTILANE INTERSECTION

STANDARD 701701-10

Illinois Department of Transportation

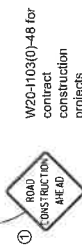
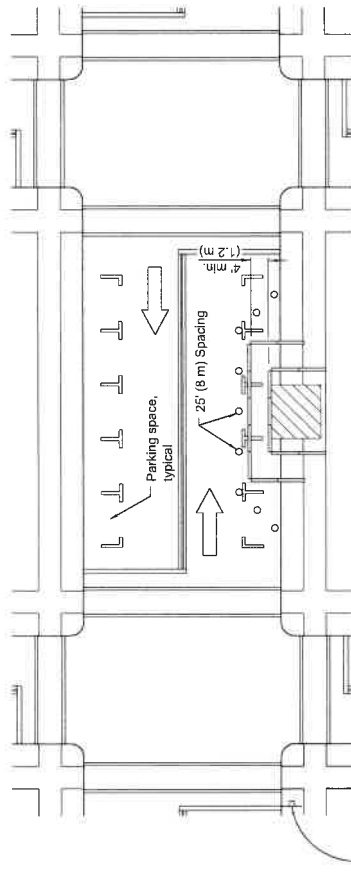
APPROVED *[Signature]* 2016

ENGINEER OF SAFETY ENGINEERING

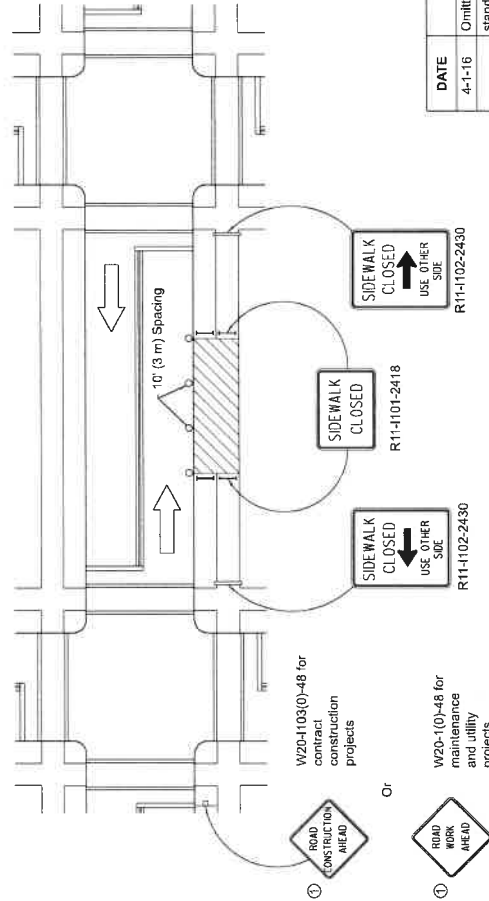
APPROVED *[Signature]* 2016

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-87



SIDEWALK DIVERSION



SIDEWALK CLOSURE

**SIDEWALK, CORNER OR
CROSSWALK CLOSURE**

DATE	REVISIONS
4-1-16	Omitted orange safety fence from standard as this is covered in the standard spec.
1-1-12	Added SIDEWALK DIVERSION. Modified appearance of plan views. Renamed Standard.

STANDARD 701801-06

(Sheet 1 of 2)

SYMBOLS

 Illinois Department of Transportation

2018

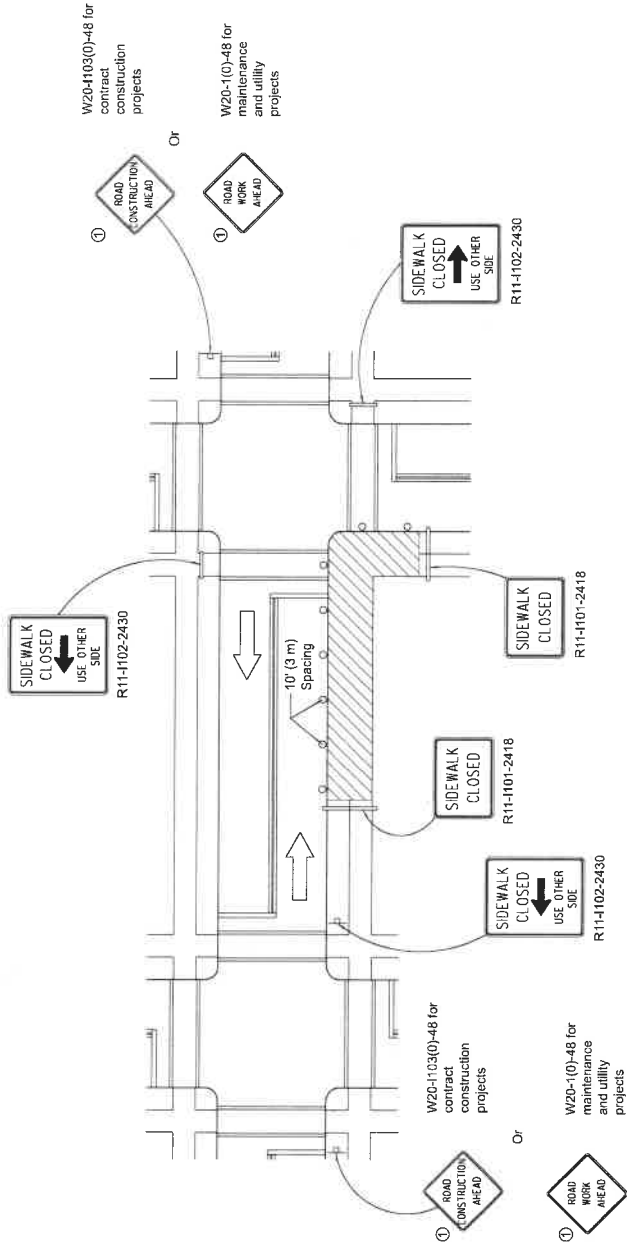
 ENGINEER OF SAFETY ENGINEERING

APPROVED _____ January 1, 2016

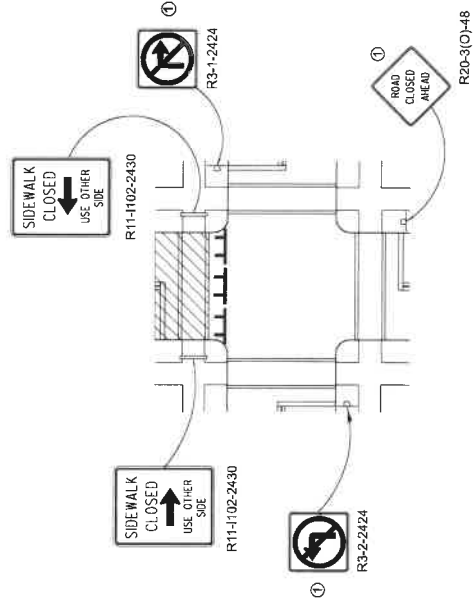
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

ENGINEER OF DESIGN AND ENVIRONMENT



CORNER CLOSURE



CROSSWALK CLOSURE

**SIDEWALK, CORNER OR
CROSSWALK CLOSURE**

STANDARD 701801-06

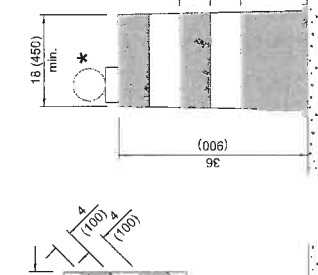
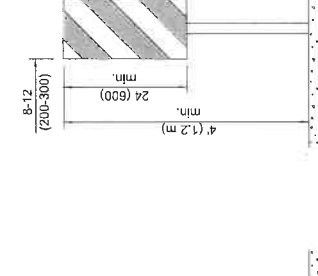
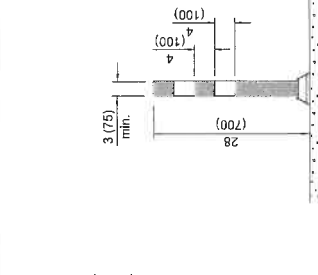
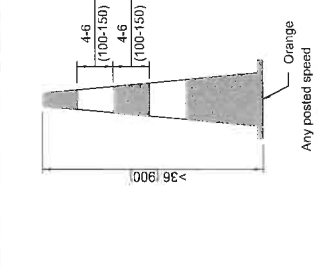
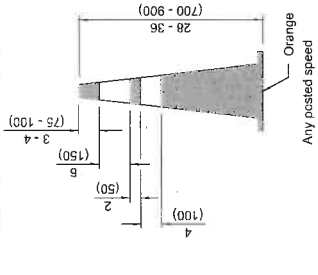
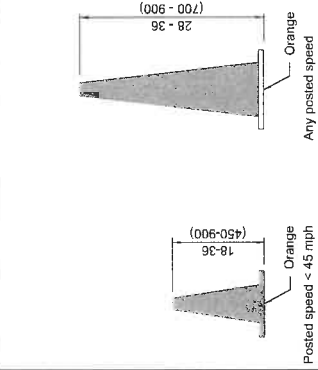
(Sheet 2 of 2)

Illinois Department of Transportation

APPROVED: *[Signature]* 2016
ENGINEER OF SAFETY ENGINEERING

APPROVED: *[Signature]* 2016
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



DAYTIME USE

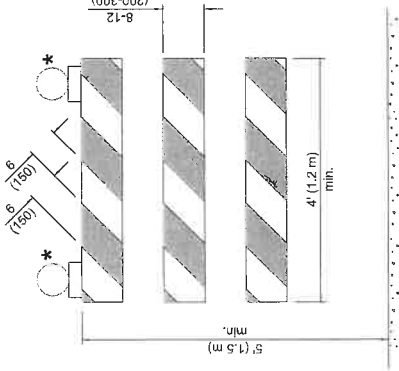
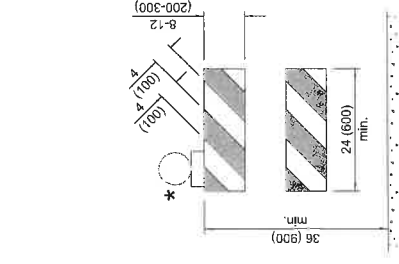
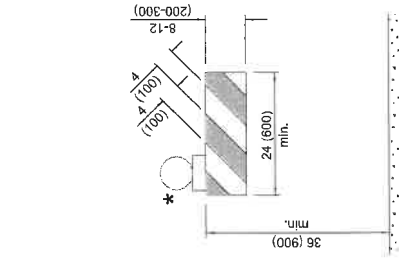
CONES

DAY OR NIGHTTIME USE

TUBULAR MARKER

VERTICAL PANEL POST MOUNTED

DRUM



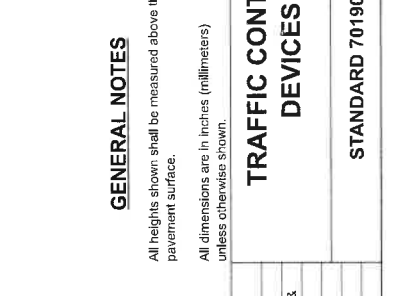
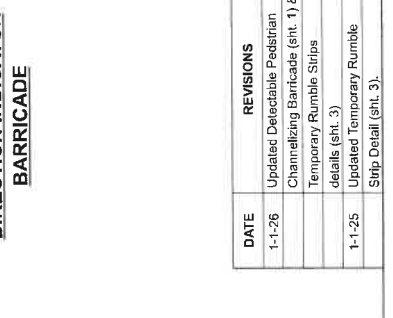
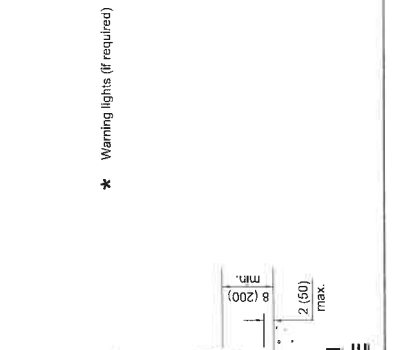
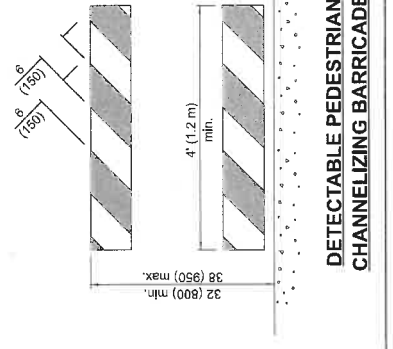
TYPE I BARRICADE

TYPE II BARRICADE

TYPE III BARRICADE

DIRECTION INDICATOR BARRICADE

VERTICAL BARRICADE



* Warning lights (if required)

GENERAL NOTES

All heights shown shall be measured above the pavement surface.
All dimensions are in inches (millimeters) unless otherwise shown.

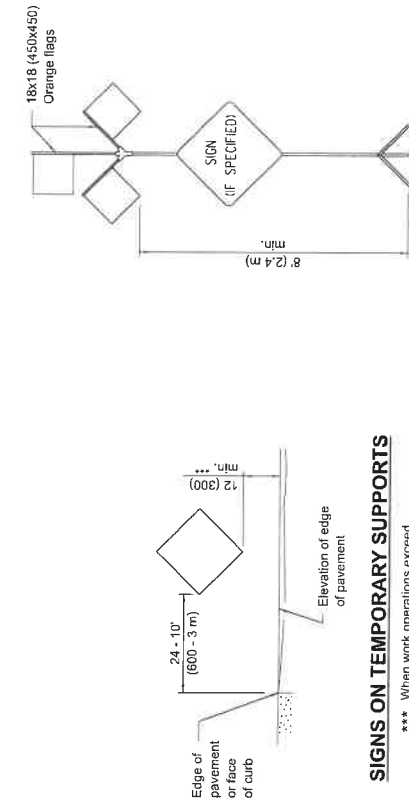
Illinois Department of Transportation	
APPROVED	2026
ENGINEER OF SAFETY PROGRAM AND ENGINEERING	2026
APPROVED	2026
ENGINEER OF DESIGN AND ENVIRONMENT	

DATE	REVISIONS
1-1-26	Updated Detectable Pedestrian Channelizing Barricade (sht. 1) & Temporary Rumble Strips details (sht. 3)
1-1-25	Updated Temporary Rumble Strip Detail (sht. 3)

TRAFFIC CONTROL DEVICES

(Sheet 1 of 3)

STANDARD 701901-11



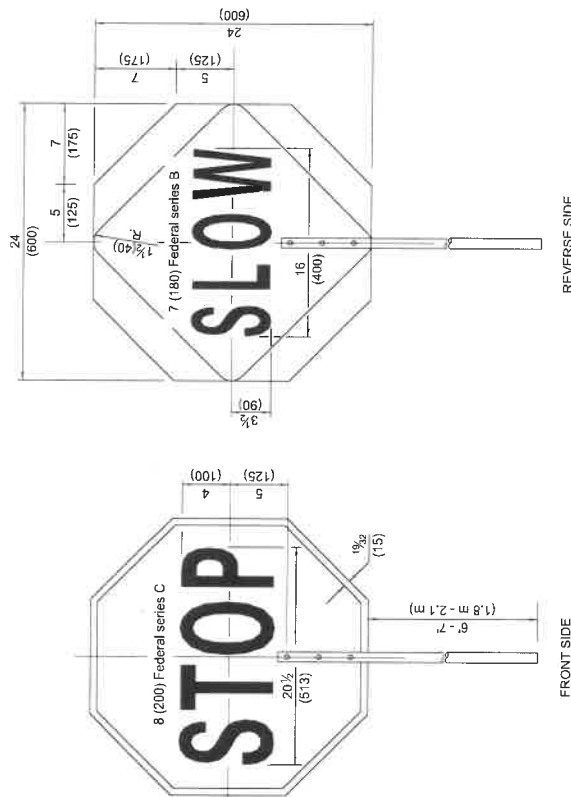
SIGNS ON TEMPORARY SUPPORTS

*** When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen completely above the devices.

POST MOUNTED SIGNS

★★ When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.

HIGH LEVEL WARNING DEVICE



FLAGGER TRAFFIC CONTROL SIGN

TRAFFIC CONTROL DEVICES

(Sheet 2 of 3)

STANDARD 701901-11

ROAD
CONSTRUCTION
NEXT X MILES

END
CONSTRUCTION

G20-I104(0)-6036

G20-I105(0)-6024

This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

WORK LIMIT SIGNING



Sign assembly as shown on Standards
or as allowed by District Operations.



This sign shall be used when the above sign assembly is used.

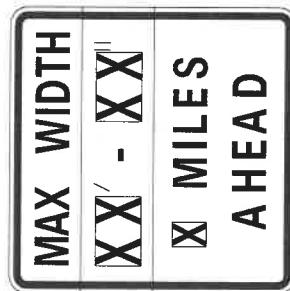
HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

**** R10-1108p shall only be used along roadways under the jurisdiction of the State.

WIDTH RESTRICTION SIGN

XX'-XX" width and X miles are variable.

W12-I103-4848

 Illinois Department of Transportation

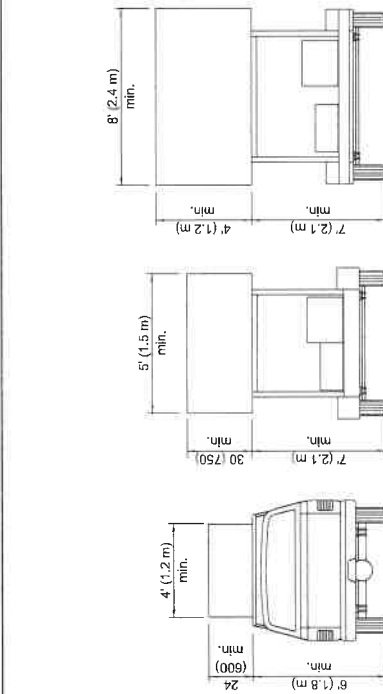
APPROVED	January 1, 2026
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Edmund

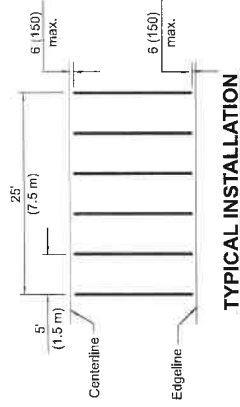
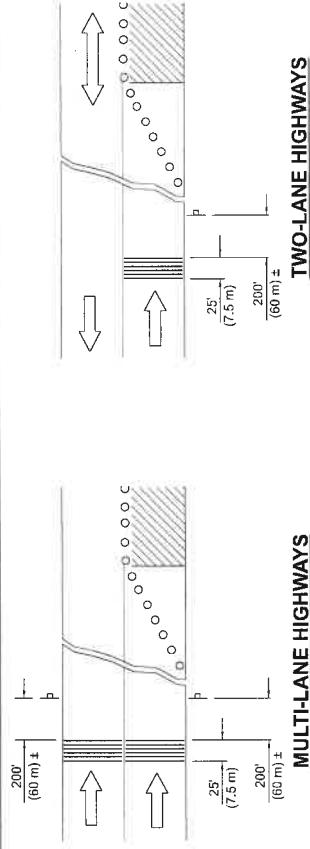
APPROVED January 1 2026

Sub Chg.
ENGINEER OF DESIGN AND EQUIPMENT

ISSUED 1-1-13

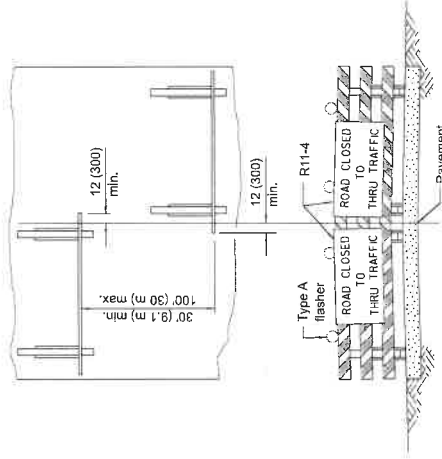


ARROW BOARDS



TYPICAL INSTALLATION

TEMPORARY RUMBLE STRIPS



ROAD CLOSED TO THRU TRAFFIC
ReflectORIZED striping shall appear on both sides of the barricades.

TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD

If a Type III barricade with an attached sign panel which meets NCHRP 350 or MASH is not available, the sign may be mounted on an NCHRP 350 or MASH temporary sign support directly in front of the barricade.

TRAFFIC CONTROL DEVICES

STANDARD 701901-11

(Sheet 3 of 3)

Illinois Department of Transportation		ISSUED 1-1-13	
APPROVED	January 1, 2024	APPROVED	January 1, 2024
ENGINEER OF SAFETY PROGRAM AND ENGINEERING		ENGINEER OF DESIGN AND ENVIRONMENT	