

PROJECT MANUAL
FOR
NORTH AVENUE TOWNHOMES
LIFT STATION PROJECT

CONTRACT NO. PW14-0058



VILLAGE OF VILLA PARK
VILLA PARK, ILLINOIS

ENGINEERING DIVISION
20 SOUTH ARDMORE AVENUE
VILLA PARK, ILLINOIS 60181-2696
T: 630.834.8505 F: 630.834.8509

MARCH 2015

**NOTICE: FEDERAL LABOR STANDARDS, PREVAILING
WAGE RATES, AND SECTION 3 REGULATIONS WILL APPLY
TO THIS PROJECT**

**MINORITIES AND WOMEN OWNED BUSINESSES (MBE/WBE)
ARE ENCOURAGED TO SUBMIT BIDS ON THIS PROJECT**

NOT FOR BID

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BIDDING AND CONTRACT DOCUMENTS

FOR

2015 NORTH AVENUE TOWNHOMES LIFT STATION PROJECT

VILLAGE OF VILLA PARK

MARCH 2015

I hereby certify that these Contract Documents were prepared under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Illinois.

Signature: _____

Vydas Juskelis

Date: _____

03/06/2015

License No.: _____

062-045747

Expiration: _____

11/30/2015



NOT FOR BID

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NOT FOR BRID

NOT FOR BID

PROJECT MANUAL
FOR
2015 NORTH AVENUE TOWNHOMES LIFT STATION PROJECT

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ADVERTISING FOR BIDS

NOT FOR BIDS

NOT FOR BID

SECTION 00030
ADVERTISEMENT FOR BIDS
VILLAGE OF VILLA PARK
Friday, March 06, 2015

PROJECT: 2015 NORTH AVENUE TOWNHOMES LIFT STATION PROJECT

This project consists of the phased demolition and replacement of the existing sanitary sewer lift station which serves the North Avenue Townhomes—a townhome complex located on the south side of North Avenue (Illinois State Route 64) between Joyce Avenue and Kramer Avenue in the Village of Villa Park. The project includes site clearing, bypass pumping, sheeting and shoring, construction layout, excavation and grading, demolition and removal of the existing mechanical piping, installation of a bypass, supply and installation of a pre-fabricated lift station including fiberglass wet well and valve vault, two (2) submersible sewage pumps with vortex impellers, one (1) sump pump, installation of new mechanical equipment and controls, standby generator, and all necessary piping and appurtenances, installation of a 4" ductile iron pipe force main constructed using open-cut excavation, installation of a 6" gravity overflow pipe constructed using open-cut excavation, installation of an 8" gravity sanitary sewer constructed using open-cut excavation, and installation of a sanitary manhole structure, as set forth in the Contract Documents.

BID DEADLINE: TUESDAY, MARCH 24, 2015, 10:00 A.M. LOCAL TIME

The Village reserves the right to extend the Bid Deadline from this date and time to accept Bids submitted after the Bid Deadline, as the Village, in its sole discretion, determines is in the best interest of the Village.

MANDATORY PRE-BID MEETING: A mandatory pre-bid meeting will be held at the offices of the Village of Villa Park Public Works Department, 11 West Home Avenue, Villa Park, Illinois, 60181, on **TUESDAY, MARCH 17, 2015, AT 10:00 A.M. LOCAL TIME.**

NOTICE: Separate, sealed proposals for the **2015 NORTH AVENUE TOWNHOMES LIFT STATION PROJECT** will be received by the Village of Villa Park, Illinois, at the reception desk of the Public Works Department, 11 West Home Avenue, Villa Park, Illinois, 60181, until the Bid Deadline. Immediately thereafter, the proposals will be publicly opened and read aloud at the offices of the Public Works Department. Notwithstanding the foregoing, the Village reserves the right to defer, postpone, delay, or reschedule the Bid Opening for such time and to such date as the Village, in its sole discretion, determines is in the best interest of the Village.

Proposals shall be submitted in accordance with the Contract Documents prepared by Village of Villa Park, Public Works Department, 11 West Home Avenue, Villa Park, Illinois, 60181.

MINORITIES AND WOMEN OWNED BUSINESS (MBE/WBE) ARE
ENCOURAGED TO SUBMIT BIDS ON THIS PROJECT.

FEDERAL LABOR STANDARDS AND PREVAILING WAGE RATES WILL
APPLY TO THIS PROJECT.

BID SECURITY: Bid security in the amount of not less than five percent (5%) of the Bid shall accompany each Bid in accordance with the Instructions to Bidders.

CONTRACT SECURITY: The Bidder to whom a Contract is awarded shall be required to furnish both a Performance Bond and a Payment Bond acceptable to the Village for one-hundred percent (100%) of the Contract Price, in accordance with the requirements of the Contract Documents.

RIGHTS RESERVED: The Village will select the lowest, most responsible bidder. The Village reserves the right to reject any and all Bids, to waive any informalities or technicalities in bidding, and to accept the Bid which best serves the interests of the Village. The Village shall, in its sole discretion, determine what does or does not constitute an informality or technicality, and, in submitting a Bid, Bidder agrees to be bound by that determination.

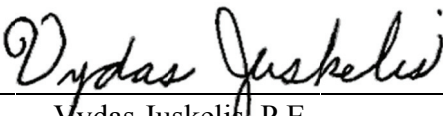
The Village may make such investigations as it deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Village all such information and data for this purpose as the Village may request. The Village reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Village that such Bidder is properly qualified to carry out the obligations of the Agreement and to complete the Work contemplated therein.

WAGE RATES: All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout. The PROJECT is subject to regulations contained in the Davis-Bacon Act (40 USC 276a through 276a-5) as defined by the United States Department of Labor, and the Employment of Illinois Workers on Public Works Act (30 ILCS 570).

CONTRACT DOCUMENTS: The Bidding Documents are on file for inspection at the office of the Village of Villa Park Public Works Department, 11 West Home Avenue, Villa Park, Illinois, 60181. The Bidding Documents may be obtained from the Village of Villa Park Public Works Department at the address listed above for a non-refundable fee of twenty dollars (\$20.00).

**PUBLISHED BY AUTHORITY OF THE VILLAGE OF VILLA PARK,
DUPAGE COUNTY, ILLINOIS.**

BY:


Vydas Juskelis, P.E.
Director of Public Works

INSTRUCTIONS TO BIDDERS

NOT FOR BID

NOT FOR BID

SECTION 00100
INSTRUCTIONS TO BIDDERS

SPECIAL NOTICE TO BIDDERS.

The **2015 NORTH AVENUE TOWNHOMES LIFT STATION PROJECT** consists of, as described in **Section 01010 "Summary of Work"**, Part 1 - GENERAL, 1.01 PROJECT DESCRIPTION.

This project consists of the phased demolition and replacement of the existing sanitary sewer lift station which serves the North Avenue Townhomes—a townhome complex located on the south side of North Avenue (Illinois State Route 64) between Joyce Avenue and Kramer Avenue in the Village of Villa Park. The project includes site clearing, bypass pumping, sheeting and shoring, construction layout, excavation and grading, demolition and removal of the existing mechanical piping, installation of a bypass, supply and installation of a pre-fabricated lift station including fiberglass wet well and valve vault, two (2) submersible sewage pumps with vortex impellers, one (1) sump pump, installation of new mechanical equipment and controls, standby generator, and all necessary piping and appurtenances, installation of a 4" ductile iron pipe force main constructed using open-cut excavation, installation of a 6" gravity overflow pipe constructed using open-cut excavation, installation of an 8" gravity sanitary sewer constructed using open-cut excavation, and installation of a sanitary manhole structure, as set forth in the Contract Documents.

ARTICLE 1. Defined Terms.

Terms used in these instructions to Bidders which are defined in the Standard General Conditions of the Construction Contract EJCDC C-700 have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to OWNER, as distinct from a sub-bidder, who submits a bid to a Bidder. The term "Successful Bidder" means the lowest, qualified, responsible and responsive Bidder to whom OWNER (on the basis of OWNER'S evaluation as hereinafter provided) makes an award. The term "Bidding Documents" includes the Advertisement for Bids, Instructions to Bidders, the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

ARTICLE 2. Copies of Bidding Documents.

2.01. Complete sets of the Bidding Documents in the number and for the non-refundable fee stated in the Advertisement for Bids may be obtained from the Village of Villa Park Public Works Department, 11 West Home Avenue, Villa Park, Illinois, 60181, during normal working hours.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03. OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

ARTICLE 3. Qualifications of Bidders.

3.01. Bidders shall comply with all applicable Federal, State and local laws and requirements, and shall further meet the qualifications prescribed in this and other sections of these specifications.

3.02 Bidder, in submitting a Bid, certifies that Bidder is in compliance with all applicable Federal, State and local laws and requirements, and that Bidder further meets the qualifications prescribed in this and other sections of these specifications. OWNER'S determination as to the compliance and qualifications of the Bidder shall be final, and Bidder, in submitting a Bid, agrees to be bound by that determination.

3.03. Bidder, in submitting a Bid, certifies that Bidder is in compliance with the following requirements and qualifications. Bidder further certifies that Bidder is able to provide written evidence of Bidder's compliance with the following requirements and qualifications. Bidder shall, upon request by OWNER, submit such written evidence within five (5) calendar days of OWNER'S request, as well as any other written evidence which OWNER may deem necessary for the purpose of evaluating Bidder's qualifications.

3.03.01. Bidder shall be qualified to do business in the State of Illinois.

3.03.02. Bidder shall possess either a valid Federal Employer Tax Identification Number (FEIN) or a valid Social Security Number (SSN).

3.03.03. Bidder shall be able to provide a street address and description of the Bidder's place of business, and the mailing address of the business, if different from the street address.

3.03.04. Bidder shall be able to provide the number of years Bidder has been engaged in the contracting business under the present firm name, and the name of the state where incorporated.

3.03.05. Bidder shall be able to provide a list of the property and equipment available to the Bidder.

3.03.06. Bidder shall be able to provide a financial statement demonstrating that the Bidder has the financial resources to meet all obligations related to the Work.

3.03.07. Bidder shall maintain insurance policies with the coverages required by the Contract, and with the minimum limits of coverage required by the Contract. Bidder shall be able to provide current certificate(s) of insurance for the insurance policies held by Bidder, demonstrating that Bidder holds insurance policies with the coverages required by the contract, and with the minimum limits of coverage required by the Contract.

3.03.08. Bidder shall have constructed a minimum of three (3) projects of a similar nature in the immediate past five (5) years. Bidder shall be able to provide a list of all projects of a similar nature constructed by Bidder in the immediate past five (5) years, which list shall contain the minimum of three (3) such projects, which list shall provide a description and the location(s) of all such projects, and shall contain the Bidder's performance record and references, as well as the names and current contact information, including addresses and telephone numbers, of persons who acted as owners' representatives for those projects and who have knowledge of those projects, and whom Bidder agrees OWNER may contact for the purpose of verifying Bidder's performance and references.

3.03.09. Bidder shall be able to provide a list of three (3) references (name, address and telephone number) with knowledge of the integrity and business practices of the bidder. Such references may not be persons who have been employed by Bidder as employees.

3.03.10. Bidder shall be able to provide a list of projects presently under Contract, the awarded Contract amount of each, the approximate adjusted Contract amount of each (if applicable), and the dollar amount or percent of completion of each.

3.03.11. Bidder shall be able to provide a list of Contracts which have resulted in lawsuits, whether against Bidder as a prime contractor, against Bidder as a subcontractor, or against Bidder as a party in any other capacity; or against subcontractors or suppliers performing work for Bidder or under Contract held by Bidder.

3.03.12. Bidder shall be able to provide a list of Contracts defaulted.

3.03.13. Bidder shall be able to provide a statement indicating whether or not Bidder has ever filed bankruptcy.

3.03.14. Bidder shall be able to provide a list of all officers of the firm, which list shall also indicate those officers who, while in the employ of the

firm or in the employ of previous firms, were associated with Contracts which resulted in lawsuits, Contracts defaulted, or firms which filed for bankruptcy.

3.03.15. Bidder shall maintain personnel guaranteed to be employed in the responsible charge of the Work, which personnel possess sufficient technical experience to ensure the satisfactory completion of the Work. Bidder shall be able to provide the names and technical experience of such personnel, as well as statements as to whether the personnel have or have not performed satisfactorily on other contracts of like nature and magnitude or comparable difficulty at similar rate of progress.

3.03.16. Bidder shall be able to provide a list of subcontractors and suppliers anticipated to be employed by Bidder for the purpose of completing the Work, including the firm name, street address and description of place of business; mailing address of business (if different); phone, fax and e-mail contact information of business; name of primary contact; and a list of any projects or contracts for which Bidder currently owes monies to said firm, which list shall include a description of the project or contract, the amount currently due to said firm, the period of time for which those monies have been owed, and the expected date of payment of those monies.

3.03.17. Bidder shall participate in active apprenticeship and training programs approved by and registered with the United States Department of Labor Bureau of Apprenticeship and Training for each of the trades of work contemplated under the Contract. Bidder shall be able to provide evidence of Bidder's participation in such apprenticeship and training programs.

3.03.18. Bidder shall only employ subcontractors who meet the requirements prescribed in this section and other sections of these specifications.

3.03.19. Bidder shall be able to provide such other information as may assist OWNER in determining whether the Bidder is adequately prepared to fulfill the Contract.

3.04. These requirements and qualifications are not intended to discourage bidding, to make it difficult for qualified Bidders to submit Bids, or to discourage beginning contractors. The purpose of these requirements and qualifications is to allow OWNER to obtain sufficient information about Bidder's financial state, available equipment, personnel, and previous work experience so that OWNER may mitigate the hazards involved in awarding contracts to parties who may not be qualified to perform the Work as specified.

ARTICLE 4. Examination of Contract Documents and Site.

4.01. It is the responsibility of each Bidder before submitting a Bid, to (a)

examine the Contract Documents thoroughly, (b) visit the site(s) to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work, (c) consider Federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work, (d) study and carefully correlate Bidder's observations with the Contract documents, and (e) notify ENGINEER of all conflicts, errors or discrepancies in the Contract documents. BIDDERS shall satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be performed.

4.02. No explorations or tests of subsurface conditions of any type have been undertaken at any site where work is to take place as a part of the Project. Bidders shall be responsible for scheduling, permitting and conducting any explorations or tests of subsurface conditions they deem necessary for evaluating or completing the Work set forth herein as a part of this Contract.

4.03. Information and data reflected in the Contract Documents with respect to Underground Facilities at or contiguous to the site is based upon information and data furnished to OWNER and ENGINEER by owners of such underground facilities or others, and OWNER does not assume responsibility for the accuracy of completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.

4.04. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, underground facilities and other physical conditions, and possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.02, 4.03 and 4.04 of the General Conditions.

4.05. Before submitting a Bid, each Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface and underground facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

4.06. On request in advance, OWNER will provide each Bidder access to the site to conduct such explorations and tests, as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.

4.07. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Contractor. Easements for permanent structures or permanent changes in existing structures, if required, are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents. Temporary construction easements, if required, are to be obtained and paid for by OWNER.

4.08. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

4.09. The Engineer for this project is RJN Group, Inc., 200 West Front Street, Wheaton, Illinois 60187; Phone: (630) 682-4700, Fax: (630) 682-4754.

4.10. The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him/her from fulfilling any of the conditions of the contract.

ARTICLE 5. Interpretations and Addenda.

5.01. All questions about the meaning or intent of the Contract documents are to be directed in writing to ENGINEER. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than two (2) days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will not be given, except as part of any pre-bid conference, or, if given, will be without legal effect.

5.02. Addenda may also be issued to modify the Bidding Documents as deemed advisable by OWNER or ENGINEER.

ARTICLE 6. Bid Bond.

6.01. Each Bid shall be accompanied by a BID BOND made payable to OWNER in an amount not less than five percent (5%) of the Bidder's maximum Bid price and in the form of a certified check, bank cashier's check or a Bid Bond issued by a surety meeting the requirements of Paragraph 5.01 of the General Conditions.

6.02. As soon as the BID prices have been compared, the OWNER will return the BONDS of all except the three lowest responsible BIDDERS. The Bid Bonds of the three lowest responsible BIDDERS, including the apparent Successful Bidder, will be retained until the apparent Successful Bidder has executed a Contract and furnished the required contract security, whereupon the Bid Bonds will be returned. If the apparent Successful Bidder fails to execute and deliver the Contract and furnish the required contract security within ten (10) calendar days after the Notice of Award is issued by OWNER, OWNER may annul the Notice of Award and the Bid Bond of that Bidder will be forfeited. When the Agreement is executed, the bonds of the two remaining unsuccessful BIDDERS will be returned.

ARTICLE 7. Contract Time.

The number of days within which, or the dates by which the Work is to meet the requirements for Substantial Completion as set forth in Paragraph SC 14.04 of the Supplementary Conditions, and also the number of days within which, or the dates by which the Work is to meet the requirements for Final Completion and be ready for final payment in accordance with Paragraph 14.07 of the General Conditions, (the Contract Time) are set forth in the Contract. **The Work shall meet the requirements for Substantial Completion within one-hundred and twenty (120) calendar days, including Saturdays, Sundays and holidays, from the date when the Contract Time commences to run, or within thirty (30) calendar days, including Saturdays, Sundays and holidays, from the date when Work first commences onsite, whichever is less. The Work shall meet the requirements for Final Completion within one-hundred and fifty (150) calendar days, including Saturdays, Sundays and holidays, from the date when the Contract Time commences to run, or within sixty (60) calendar days, including Saturdays, Sundays and holidays, from the date when Work first commences onsite, whichever is less.**

ARTICLE 8. Liquidated Damages.

Provisions for liquidated damages are set forth in the General or Supplementary Conditions, Bid Form and Contract.

ARTICLE 9. Substitute or "Or-Equal" Items.

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the specifications. Neither OWNER nor CONTRACTOR shall limit materials or equipment to only brand name products. Non-brand name materials or equipment of equal specification ("or-equal" items) do qualify and are acceptable. ENGINEER shall have sole discretion in determining whether a non-brand name product is of equal specification. Whenever CONTRACTOR wishes to substitute an "or-equal" item of material or equipment for a brand name item specified, CONTRACTOR shall make written application to ENGINEER requesting approval of such substitution. Such written application will not be considered by ENGINEER until after the Effective Date of the Contract. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in Paragraphs 6.05 of the General Conditions and may be supplemented in the General Requirements and other portions of these specifications.

ARTICLE 10. Subcontractors, Suppliers and Others.

10.01. If OWNER requests the identity of any Subcontractors, Suppliers, or other persons or organizations to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Contract, the apparent Successful Bidder, and any other Bidder so requested, shall within seven (7) calendar days after the Bid opening submit to OWNER a list of all such Subcontractors, Suppliers and other persons and organizations proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person or organization if requested by OWNER. If OWNER or ENGINEER after due investigation have reasonable objection to any proposed Subcontractor, Supplier, other person or organization, either may before the Notice of Award is given request the apparent Successful Bidder to submit an acceptable substitute in which case the apparent Successful Bidder shall submit an acceptable substitute, that Bidder's price will be increased (or decreased) by the difference in cost occasioned by such substitution and OWNER may consider such price adjustment in evaluating Bids and making the contract award. If apparent Successful Bidder declines to make any such substitution, OWNER may award the contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers and other persons and organizations. The declining to make requested substitutions will not constitute grounds for sacrificing the Bid security of any Bidder. Any Subcontractor, Supplier, other person or organization listed and to whom OWNER or ENGINEER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Contract as provided in Paragraph 6.06.B of the General Conditions.

10.02. No CONTRACTOR shall be required to employ any Subcontractor, Supplier, other person or organization against whom CONTRACTOR has reasonable objection.

ARTICLE 11. Bid Form.

11.01. The Bid Form is included with the Bidding Documents. Additional copies, if needed, may be obtained from ENGINEER.

11.02. All BIDS shall be submitted on the required BID form. All blank spaces for BID prices shall be filled in, in ink or typewritten, and the BID form shall be fully completed, including Alternate Bid Items, if any, and Schedule of Prices, and executed when submitted. Only one copy of the BID form is required.

11.03. Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.

11.04. Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

11.05. All names must be typed or printed below the signature.

11.06. The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).

11.07. The address and telephone number for communications regarding the Bid must be shown.

ARTICLE 12. Submission of Bids.

12.01 Bids shall be submitted at the time and place indicated in, and according to, the Advertisement or Invitation to Bid and shall be enclosed in an opaque, sealed envelope, marked with the Project name, name and address of the Bidder, and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it, and addressed to the Village of Villa Park, Public Works Department, 20 South Ardmore Avenue, Villa Park, Illinois 60181.

ARTICLE 13. Modification and Withdrawal of Bids.

13.01. Bids may be modified or withdrawn by notice to the party receiving Bids

at the place designated for receipt of Bids any time prior to opening of Bids. Such notice shall be in writing over the signature of the Bidder or by fax; if by fax written confirmation over the signature of the Bidder shall be mailed and postmarked on or before the date and time set for receipt of Bids, and it shall be worded so as not to reveal the amount of the original Bid. Should there occur any reason or reasons why the contract cannot be awarded within the specified period; the time may be extended as mutually agreed upon in writing by OWNER and the BIDDER.

13.02. Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders and other requirements as applicable.

13.03. After the Bid opening, no Bid may be modified, withdrawn, or cancelled by the Bidder during the time period noted in Article 15 without consent of the OWNER.

13.04. Bid Security shall be in an amount sufficient for the Bid as modified or resubmitted.

ARTICLE 14. Opening of Bids.

Bids will be opened and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any will be made available to Bidders after the opening of Bids.

ARTICLE 15. Bids to Remain Subject to Acceptance.

All bids will remain subject to acceptance for ninety (90) calendar days after the date of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to that date. The Acceptance period may be extended up to an additional ninety (90) calendar days upon written notice to all bidders by the OWNER.

ARTICLE 16. Award of Contract.

16.01. OWNER reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time or changes in the Work and to negotiate contract terms with the successful Bidder, and the right to disregard all nonconforming, non-responsive, unbalanced or conditional Bids. Also, OWNER reserves the right to reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet; any other pertinent standard or criteria established by OWNER. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the

indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

16.02. In evaluating Bids, OWNER will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such information as unit prices, total bids, alternates, and other data, as may be requested in the Bid form or prior to the Notice of Award. OWNER reserves the right to use, at its sole discretion, the Base Bid, or the Base Bid in combination with any or all Alternate Bids, to determine the lowest responsive bidder.

16.03. OWNER may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions. OWNER also may consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.

16.04. OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to OWNER'S satisfaction within the prescribed time.

16.05. If a Contract is to be awarded, award will be made to the lowest, most responsible BIDDER.

16.06. If a Contract is to be awarded, OWNER will give the Successful Bidder a Notice of Award within ninety (90) days after the day of the Bid Opening.

ARTICLE 17. Contract Security.

A Performance BOND and a Payment BOND, each in the amount of one-hundred percent (100%) of the CONTRACT PRICE, with corporate sureties approved by the OWNER, shall be required and shall be conditioned upon the proper and faithful performance by the Contractor of the work specified in accordance with the Contract. Paragraph 5.01 of the General Conditions and the Supplementary Conditions set forth OWNER'S requirements as to Performance and Payment Bonds.

When the Bidder to whom a Contract is awarded delivers the required number of executed counterparts of the Contract to OWNER, those counterparts shall each be accompanied by the required Performance and Payment Bonds.

Attorneys-in-fact who sign BID BONDS or payment BONDS and performance BONDS shall file with each BOND a certified and effective dated copy of their power of attorney.

Should any Change Orders be necessary and should the revised CONTRACT PRICE following execution of any Change Order exceed the bonded amount, the amounts of the Performance BOND and the Payment BOND shall be increased to match or exceed the revised CONTRACT PRICE. The costs of such increases shall be considered incidental to the Contract.

ARTICLE 18. Signing of Contract.

When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Contract with all other written Contract Documents attached. Within ten (10) calendar days thereafter CONTRACTOR shall sign and deliver the required number of counterparts of the Contract and attached documents to OWNER with the required Bonds. Within ten (10) calendar days thereafter OWNER shall deliver one (1) fully signed and executed counterpart to CONTRACTOR. Each counterpart is to be accompanied by a complete set of the Drawings with appropriate identification.

Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw his/her signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The OWNER shall issue the NOTICE TO PROCEED within ten (10) days of the execution of the Agreement.

Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may, upon written notice, terminate the Agreement without further liability on the part of either party.

ARTICLE 19. Wage Rates.

Each CONTRACTOR or Subcontractor performing Work on this Project shall comply in all respects with all laws governing the employment of labor, Social Security, and Unemployment Insurance of both the State of Illinois and Federal governments. There shall be paid each employee engaged in Work under this Contract with respect to the Project, no less than the prevailing rate of wages, which prevailing rate shall include both hourly cash wages plus fringe benefits, for the classifications of labor employed in compliance with the Illinois Prevailing

Wage Act, 820 ILCS 130/01 et seq., (“the Act”) as now existing or hereafter amended. A copy of “General Prevailing Hourly Rates” is hereinafter included.

CONTRACTOR shall pay prevailing wages at rates not less than those prevailing under the Davis-Bacon Act (40 USC 276a through 276a-5) as defined by the United States Department of Labor, and the Employment of Illinois Workers on Public Works Act (30 ILCS 570).

This project is paid for in part with Federal grant funds through the Community Development Block Grant (CDBG) Program. Davis-Bacon Wage Decisions apply and are included in these specifications. Davis-Bacon wages are superseded only in instances, by and where Illinois Prevailing Wage exceeds Davis-Bacon in wage, fringe benefits, and/or trade stipulations (monetary and/or non-monetary requirements). Should this project not start within ninety (90) days of award, the wage determinations shall be replaced with the most current decision.

In accordance with 820 ILCS 130/05, CONTRACTOR and each Subcontractor shall make and keep, for a period of not less than three (3) years, records of all laborers, workers and mechanics employed by them on the Project. Such records shall include each worker’s full name, street or mailing address, telephone number when available, full social security number, classification or classifications, the hourly wages paid in each period, the number of hours worked each day, and the starting and ending times of work each day.

CONTRACTOR and each Subcontractor shall submit at least monthly and in person certified payrolls to OWNER. The certified payrolls shall consist of a complete copy of the records. The certified payrolls shall be accompanied by statements signed by CONTRACTOR or Subcontractor which avers that:

- (i) such records are true and accurate;
- (ii) the hourly rate paid to each worker is not less than the general prevailing rate of hourly wages required; and
- (iii) CONTRACTOR or Subcontractor is aware that filing a certified payroll that he/she knows to be false is a Class B misdemeanor.

Upon two (2) business days’ notice, CONTRACTOR and each Subcontractor shall make available for inspection the records to OWNER, its officers and agents, and to the Director of Labor and his/her deputies and agents at all reasonable hours at a location within the State of Illinois. CONTRACTOR and each Subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by OWNER, its agents, or agents of the Department of Labor.

ARTICLE 20. Sales and Use Taxes.

OWNER is exempt from ILLINOIS State Sales and Use Taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Contract Price.

ARTICLE 21. Equal Employment Opportunity (EEO) Requirements.

21.01. In connection with the performance of Work under this Contract, CONTRACTOR agrees, and shall require his/her subcontractors to agree, that employers shall not discriminate against or intimidate, directly or indirectly, any employees or applicants for employment, on the basis of race, color, religion, creed, gender, sex, sexual orientation, national origin, age, familial status, or physical or mental disability unrelated to ability.

21.02. In connection with the performance of Work under this Contract, CONTRACTOR agrees, and shall require his/her subcontractors to agree, to conform to the Rules and Regulations of the ILLINOIS Fair Employment Practices Commission in effect on the date of Bid submission.

ARTICLE 22. Certification.

22.01. Bidder shall, at the time of the submission of Bid, and as part of the Bid, provide the following certification(s):

- Bidder shall provide certification, as required by Public Act 85-1295, of the fact that the firm is not barred from bidding on the contract as a result of a violation of Article 33-E of the Criminal Code (bid rigging and bid-rotating).

ARTICLE 23. Substance Abuse Prevention Certification.

23.01. CONTRACTOR and all Subcontractors performing work under this Contract shall provide certification that they have a Substance Abuse Prevention Program as required by Public Act 95-0635 and in accordance with the Contractor Certifications section of these Bidding Documents.

ARTICLE 24. Remedies

24.01. All claims, counter-claims, disputes and other matters in question between the recipient and the contractor arising out of, or relating to, a sub-agreement or its breach shall be decided by arbitration if the parties agree, or in a court of competent jurisdiction within the State.

ARTICLE 25. Subcontracts under Construction Contracts

25.01. The award or execution of all subcontracts by a prime contractor and the procurement and negotiation procedures used by the prime contractor shall comply with the following:

- i) All applicable provisions of Federal and State law;
- ii) All provisions of Illinois Administrative Code, Title 35, Section 662.620 regarding fraud and other unlawful or corrupt practices;
- iii) All provisions of Illinois Administrative Code, Title 35, Section 662.620 with respect to access to facilities, records, and audit of records;

ARTICLE 26. Cost Plus Pricing

26.01. *Cost-plus a percentage of cost and percentage of construction cost methods are prohibited from use on this project in any form or condition.*

ARTICLE 27. Pre-Bid Meeting

27.01. A mandatory pre-bid meeting will be held at the offices of the Village of Villa Park Public Works Department, 11 West Home Avenue, Villa Park, Illinois, 60181, on **TUESDAY, MARCH 17, 2015 AT 10:00 A.M. LOCAL TIME.**

27.02. The meeting will cover, among other items, the requirements of the Community Development Block Grant (CDBG) Program which is providing funding for this project.

END OF SECTION

NOT FOR BID

BID PACKAGE

NOT FOR BID

NOT FOR BID

SECTION 00300
BID FORM

PROJECT IDENTIFICATION:
2015 NORTH AVENUE TOWNHOMES LIFT STATION PROJECT
THIS BID IS SUBMITTED TO:

**Village of Villa Park
20 South Ardmore Avenue
Villa Park, ILLINOIS 60181**

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into a Contract with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract time indicated in his/her Bid and in accordance with the other terms and condition of the Contract Documents.
2. BIDDER accepts all of the terms and conditions of the Advertisement for Bids and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance as outlined in the Instructions to Bidders after the day of Bid opening. Bidder will sign and submit the Contract with the Bonds and other documents required by the Bidding Requirements within ten (10) days after the date of OWNER'S Notice of Award.
3. In submitting this Bid, BIDDER represents, as more fully set forth in the Contract, that:
 - (a) BIDDER has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

DATE

NUMBER

- (b) BIDDER has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
 - (c) BIDDER has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions, which are identified in the Supplementary Conditions as provided in Paragraphs 4.02 and 4.03 of the General Conditions, and accepts the determination set forth in Paragraph SC-4.02.A.1 of the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which BIDDER is entitled to rely.

- (d) BIDDER has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies (in addition to or to supplement those referred to in I above) which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance or furnishing of the work as BIDDER considers necessary for the performance or furnishing of the work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraphs 4.02 and 4.03 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports or similar information or data that will be required by BIDDER for such purposes.
- (e) BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by BIDDER in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.04 of the General Conditions.
- (f) BIDDER has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- (g) BIDDER has given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER.
- (h) BIDDER certifies, by submission of the bid, and in the case of a joint bid each party thereto certifies as to his/her own organization, that in connection with the bid:
- (i) The prices in the bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
 - (ii) Unless otherwise required by law, the prices which have been quoted in the bid have not knowingly been disclosed by the bidder, prior to opening, directly or indirectly to any other bidder or to any competitor; and
 - (iii) No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition.

(i) Each person signing the bid shall certify that:

- (i) He/she is the person in the bidder's organization responsible within that organization for the decision as to the prices being bid and that he/she has not participated, and will not participate, in any action contrary to (h)(i) through (h)(iv) above; or
- (ii) He/she is not the person in the bidder's organization responsible within that organization for the decision as to the prices being bid but that he/she has been authorized to act as agent for the person(s) responsible for such decision in certifying that such person(s) have not participated, and will not participate, in any action contrary to (h)(i) through (h)(iv) above, and as their agent shall so certify; and shall also certify that he/she has not participated, and will not participate, in any action contrary to (h)(i) through (h)(iv) above.

4. ITEM NO. 04, BID SCHEDULE, IS ON THE FOLLOWING TWELVE (12) PAGES (00300-05 through 00300-16).

NOT FOR BID

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BID SCHEDULE (PAGE 1 OF 6)

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the unit prices provided herein. BIDS shall include all applicable taxes and fees. OWNER reserves the right to increase or decrease quantities without any change in unit prices.

NO.	ITEM	UNITS	QUANTITY	UNIT PRICE BID	EXTENDED PRICE BID
1	REMOVAL OF EXISTING WET WELL AND APPURTENANCES	L SUM	1.00		
2	NEW LIFT STATION AND VALVE VAULT	L SUM	1.00		
3	SUBMERSIBLE NON-CLOG WASTEWATER PUMPS	L SUM	1.00		
4	ELECTRICAL EQUIPMENT	L SUM	1.00		
5	STANDBY GENERATOR	EACH	1.00		
6	BOLLARDS	EACH	12.00		
7	PUMP CONTROL PANEL, SCADA CONTROLS, AND INTEGRATION	L SUM	1.00		
8	BYPASS PUMPING	L SUM	1.00		

NOT FOR BID

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BID SCHEDULE (CONTINUED, PAGE 2 OF 6)

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the unit prices provided herein. BIDS shall include all applicable taxes and fees. OWNER reserves the right to increase or decrease quantities without any change in unit prices.

NO.	ITEM	UNITS	QUANTITY	UNIT PRICE BID	EXTENDED PRICE BID
9	TRENCH BACKFILL	CU YD	100.00		
10	4" DUCTILE IRON PIPE, CLASS 52, FORCE MAIN, 4 FT TO 8 FT DEEP	FOOT	24.00		
11	SANITARY MANHOLE, 48" DIA., TYPE A, 4 FT TO 12 FT DEEP, TYPE 1 FRAME, CLOSED LID	EACH	1.00		
12	8" PVC SANITARY SEWER, ASTM D2241 SDR 26, 8 FT TO 12 FT DEEP	FOOT	16.00		
13	6" PVC SANITARY SEWER, ASTM D2241 SDR 26, 4 FT TO 8 FT DEEP	FOOT	32.00		
14	6" PVC SANITARY SEWER CLEAN-OUT, ASTM D2241 SDR 26, 4 FT TO 8 FT DEEP	EACH	1.00		
15	BACKFLOW PREVENTER – 6 INCH	EACH	1.00		
16	TOPSOIL FURNISH AND PLACE 4"	SQ YD	50.00		

NOT FOR BID

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BID SCHEDULE (CONTINUED, PAGE 3 OF 6)

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the unit prices provided herein. BIDS shall include all applicable taxes and fees. OWNER reserves the right to increase or decrease quantities without any change in unit prices.

NO.	ITEM	UNITS	QUANTITY	UNIT PRICE BID	EXTENDED PRICE BID
17	CLASS 1 SEEDING	SQ YD	50.00		
18	EROSION CONTROL BLANKET	SQ YD	50.00		
19	SILT FENCE	FOOT	50.00		
20	INLET PROTECTION	EACH	2.00		
21	TREE PROTECTION	EACH	3.00		
22	FENCE REMOVAL AND REINSTALLATION	FOOT	40.00		
23	COMBINATION CURB AND GUTTER, TYPE B6.12	FOOT	25.00		
24	PAVEMENT REMOVAL	SQ YD	200.00		

NOT FOR BID

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BID SCHEDULE (CONTINUED, PAGE 4 OF 6)

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the unit prices provided herein. BIDS shall include all applicable taxes and fees. OWNER reserves the right to increase or decrease quantities without any change in unit prices.

NO.	ITEM	UNITS	QUANTITY	UNIT PRICE BID	EXTENDED PRICE BID
25	AGGREGATE BASE COURSE, TYPE A 6"	SQ YD	210.00		
26	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	63.00		
27	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TONS	54.00		
28	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	TONS	27.00		
29	TRAFFIC CONTROL AND PROTECTION	L SUM	1.00		
30	NON-SPECIAL WASTE DISPOSAL	TONS	165.00		
31	POROUS GRANULAR EMBANKMENT, SUBGRADE	CU YD	25.00		
32	REMOVAL & DISPOSAL OF UNSUITABLE MATERIAL	CU YD	25.00		

NOT FOR BID

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BID SCHEDULE (CONTINUED, PAGE 5 OF 6)

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the unit prices provided herein. BIDS shall include all applicable taxes and fees. OWNER reserves the right to increase or decrease quantities without any change in unit prices.

NO.	ITEM	UNITS	QUANTITY	UNIT PRICE BID	EXTENDED PRICE BID
33	PRE-CONSTRUCTION VIDEO RECORDING	L SUM	1.00		
34	POST CONSTRUCTION SEWER TELEVISIONING	L SUM	1.00		
35	CONSTRUCTION LAYOUT	L SUM	1.00		
36	SIGN PANEL – TYPE 2	SQ FT	16.00		
37	TEMPORARY CONSTRUCTION FENCE	FOOT	160.00		
38	JOB BOARD	L SUM	1.00		
39	SECURITY SYSTEM PACKAGE	EACH	2.00		

NOT FOR BID

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BID SCHEDULE (CONTINUED, PAGE 6 OF 6)

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the unit prices provided herein. BIDS shall include all applicable taxes and fees. OWNER reserves the right to increase or decrease quantities without any change in unit prices.

**TOTAL
OF BID**

_____ \$ _____
Written Bid Numerical Bid

The undersigned is aware that Federal Labor Standards, Prevailing Wage Rates, and Section 3 Regulations apply to all work performed on this Contract. It is the contractor's responsibility to comply with these requirements and to assure compliance by his/her subcontractors and/or any lower tier subcontracts required by this contract.

Respectfully submitted:

Signature Company

Printed Name Address

Title Telephone Number

Date E-Mail Address

(SEAL – if BID is by a corporation)

NOT FOR BID

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5. BIDDER accepts the provisions of the Contract regarding Contract Time, Substantial Completion, and Final Completion as provided in Paragraph 3.1 of the Contract.

BIDDER accepts the provisions of the Contract regarding liquidated damages in the event of failure to complete the Work on time as provided in Paragraph 3.2 of the Contract.

OWNER reserves the right to reject any Bid in which all of the items in the Bid are not properly filled out or in which any requirements are not properly met.

6. The following documents are attached to and made a condition of this bid:

- (a) Required Bid Security in the form of:

(Certified Check or Bid Bond)

In the amount of:

(Dollars or Percent)

- (b) A tabulation of Subcontractors and other persons and organizations required to be identified in this Bid in accordance with State laws applicable where the Work is to be performed.

- (c) Statement of the Bidder's qualification to do business in the State of Illinois.

7. Communications concerning this Bid shall be addressed to the Bidder as indicated below:

NAME: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

TELEPHONE NO: _____

FAX NO: _____

E-MAIL: _____

8. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

NOT FOR BID

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9. _____, having submitted a bid on a contract
(Name of Contractor)

for the **2015 NORTH AVENUE TOWNHOMES LIFT STATION PROJECT**, as generally described in the Advertisement for Bids, to the Village of Villa Park, hereby certifies that said contractor is not barred from bidding on the aforementioned contract as a result of a violation of either Section 33E-3 or 33E-4 of Article 33E of Chapter 720 of the ILLINOIS Compiled Statutes (70 ILCS 5/33E-3 and 5/33E-4).

By: _____
Authorized Agent of Contractor

Subscribed and sworn to before me

This _____ day of _____, 2015

Notary Public

SUBMITTED ON _____, 2015

CONTRACTOR'S LICENSE NO. _____

I hereby certify that, as Bidder, I/We have examined and carefully prepared this Bid from the Bidding Documents and have checked the same in detail before submitting this Bid, and that all statements herein are made on behalf of:

An Individual

By: _____ (SEAL)
(Individual's Name)

doing business as: _____

Business address: _____

Telephone No.: _____

Fax No: _____

E-mail address: _____

NOT FOR BID

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A Partnership

By: _____ (SEAL)
(Firm Name)

(General Partner)

Business address: _____

Phone No.: _____

Fax No: _____

E-mail address: _____

A Corporation

By: _____ (SEAL)
(Corporation Name)

(State of Incorporation)

By: _____
(Name of Person Authorized to Sign)

Title: _____

Attest: _____
(Secretary)

Business address: _____

Telephone No.: _____

Fax No.: _____

E-mail address: _____

NOT FOR BID

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A Joint Venture

By: _____
(Name)

Address: _____

Telephone No.: _____

Fax No.: _____

E-mail address: _____

By: _____
(Name)

Address: _____

Telephone No.: _____

Fax No.: _____

E-mail address: _____

(Each joint venture must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

Subscribed and sworn to me this

_____ Day of _____, 2015.

Notary or other officer authorized to administer oaths.

My commission expires: _____

Bidders should not add any conditions or qualifying statements to this Bid as otherwise the bid may be declared irregular as being not responsive to the advertisement. **BIDDERS SHALL USE THIS BID FORM IN SUBMITTING THEIR BIDS.**

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- 10.** ITEM NO. 10, DUPAGE COUNTY COMMUNITY DEVELOPMENT COMMISSION (CDC) CONDITIONS AND FEDERAL GRANT BID MANUAL LANGUAGE AND STATEMENTS, IS ON THE FOLLOWING THREE (3) PAGES (00300-27 through 00300-29).

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**DUPAGE COUNTY COMMUNITY
DEVELOPMENT COMMISSION (CDC) CONDITIONS
FEDERAL GRANT BID MANUAL LANGUAGE AND STATEMENTS**

Please read these conditions carefully and sign the acknowledgement on next page. Note that conditions listed below supersede any other conditions listed elsewhere in the manual. All these conditions apply to any labor providing contractors and any lower level subcontractors.

I. Labor Standards Notice *(also to be listed on the Front Cover)*

**FEDERAL LABOR STANDARDS AND DAVIS-BACON PREVAILING WAGE RATES
WILL APPLY TO THIS PROJECT.**

** Please refer to the Federal Requirements included in the Bid Manual for additional information on federal labor standards and Davis-Bacon prevailing wage requirements.*

II. Bid Security Statement

All bid proposals must be accompanied by a Bid bond, certified check, or bank cashier's check payable to the owner for five percent (5%) of the amount of the bid.

III. Performance and Payment Bond Statement

The successful bidder for the project will be required to enter into Performance and Payment bonds equal to 100% of the bid with approved sureties, which shall be conditioned upon the proper and faithful performance by the contractor of the work specified in accordance with the contract documents.

IV. Brand Name Only Statement

Neither owner nor contractor shall limit materials to only brand-name products. Non-brand name materials of equal specification do qualify and are acceptable.

V. Cost Plus Statement

Cost-plus a percentage of cost and percentage of construction cost methods are prohibited from use on this project in any form or condition.

VI. Change Order Statement

Should change orders be necessary, CDC staff must receive copies and explanation of necessity for review. Should change orders be necessary and they exceed the bonded amount, bonds must be increased to match the new contract total.

VII. Federal Wage Determination Statement

This project is paid for in part with Federal grant funds through the Community Development Block Grant Program. Davis-Bacon Wage Decisions apply and are included in this packet. Davis-Bacon wages are superseded only in instances, by and where Illinois Prevailing Wage

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exceeds Davis-Bacon in wage, fringe benefits, and/or trade stipulations (monetary and/or non-monetary requirements). Should this project not start within 90 days of award, the wage determinations shall be replaced with the most current decision.

VIII. Non-Discrimination Statement

Employers shall not discriminate, directly or indirectly, against employees or applicants for employment on the basis of race, color, religion, sex, national origin, age, familial status, or disability.

IX. WBE/MBE Encouragement Statement *(also to be listed on the Front Cover)*

Minority and Women Owned Business Enterprises (MBE/WBE) are encouraged to submit bids on this Project.

X. Signature Statement

The undersigned is aware that Federal Labor Standards and Davis-Bacon Prevailing Wage Rates apply to all work performed under this contract. It is the contractor's responsibility to comply with these requirements and to assure compliance by his/her subcontractors and any lower tier subcontractors providing labor for said project.

DuPage County Community Development Commission wishes an acknowledgement from the bidder that they have read and understand the conditions listed above.

Please sign below, print your company name, date this document, and submit it with the complete bid package.

Signature: _____

Company Name: _____

Date: _____

END OF SECTION

NOT FOR BID

COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) PROGRAM FEEDBACK REQUIREMENTS PAGE

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FEDERAL REQUIREMENTS



THIS BOOKLET IS BEING PROVIDED AS PART OF THE BID MANUAL FOR THIS PROJECT BECAUSE FEDERAL LABOR STANDARDS AND PREVAILING WAGE RATES WILL APPLY TO THIS PROJECT.

THIS BOOKLET CONTAINS:

- Required Contract Provisions for HUD Funded Capital projects in DuPage County, Illinois Page 1
 - Executive Order 11246 Page 13
 - HUD Federal Labor Standards Provisions Page 21
- HUD required general contractor and sub-contractor forms Page 26

Samples and instructions for required contractor forms to be filled out, signed, and turned in by all labor providers, including:

 - Ownership Form Page 27
 - Letter to the Office of Federal Contract Compliance Labor.....Page 28
 - Labor Relations Agreement Page 29
 - Apprentice Policy Recognition Form Page 31
 - Section 3 Forms Page 32
 - Certified Payroll and Statement of Compliance.....Page 39
- A copy of the latest Davis Bacon Federal Wage determination for wage rates in DuPage County Page 47

Supplied through the DuPage
Community Development Commission
421 N. County Farm Road
Wheaton, IL 60187

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**REQUIRED CONTRACT PROVISIONS FOR HUD FUNDED
CAPITAL PROJECTS IN DUPAGE COUNTY, ILLINOIS**

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NOT FOR BID

I. APPLICATION

- A. These *Required Contract Provisions* shall apply to all work performed on the contract by the Contractor with his own organization and with the assistance of workmen under his immediate superintendence and to all work performed on the contract by piece work, station work or by subcontract.
- B. The Contractor shall insert in each of his subcontracts all of the stipulations contained in these *Required Contract Provisions* and also a clause requiring his Subcontractors to include these *Required Contract Provisions* in any lower tier subcontracts which they may enter into, together with a clause requiring the inclusion of these provisions in any further subcontracts that may in turn be made. The *Required Contract Provisions* shall in no instance be incorporated by reference.
- C. A breach of any of the stipulations contained in these *Required Contract Provisions* may be grounds for termination of the contract.
- D. A breach of the following clauses may also be grounds for debarment as provided in 29 CFR, Part 5.6.
- E. All Bidders must sign the CDC Conditions and submit them with their complete bid package. This form is found in the Bid Specifications Manual.
- F. All bidders and their subcontractor shall be eligible for award of a federally assisted or insured contract. Should any subcontractor be found ineligible after award of a contract, its contract shall be terminated and the matter referred to the Department of Labor for its action.

II. EQUAL OPPORTUNITY PROVISIONS

A. *Equal Opportunity Clause*

Except as otherwise provided, DuPage County requires the inclusion of the following language as a condition of any grant, contract, loan insurance or guarantee involving federally assisted construction which is not exempt from the requirements of equal opportunity. The subgrantee hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR, Part 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan insurance or guarantee or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance or guarantee, the following opportunity Clause:

B. ***Activities and Contracts Not Subject to Executive Order 11246, As Amended*** (Applicable to federally assisted construction contracts and related subcontracts \$10,000 and under).

During the performance of this contract, the Contractor agrees as follows,

"The Contractor shall not discriminate against any employee or applicant for employment because of race, color religion, sex or national origin. The Contractor shall take affirmative action to ensure that the applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin.

Such action shall include, but not be limited to, the following; employment, upgrading, demotion or transfer; recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation and selection for training including apprenticeship. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by the DuPage County Community Development Specialist setting forth the provisions of this nondiscrimination clause. The contractor shall state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin”.

Contractors shall incorporate foregoing requirements in all subcontracts.

III. EXECUTIVE ORDER 11246 - Equal Employment Opportunity

Contracts/Subcontracts above \$10,000 Section 202 Equal Opportunity Clause

The complete Executive Order 11246 is included in this Federal Requirements booklet.

A. During the performance of this contract, the Contractor agrees as follows,

“The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause”.

B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

C. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Contract Compliance Officer advising the said labor union or worker's representatives of the contractor's commitment under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

D. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor.

E. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations and orders of the Secretary of Labor or pursuant thereto, and will permit access to his or her books, records and accounts by DuPage County, HUD and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

F. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive

Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor or as otherwise provided by law.

- G. The Contractor will include the provisions of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (A) through (G) in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as DuPage County or HUD may direct as means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event the Contractor becomes involved in or threatened with litigation with a subcontractor or vendor as a result of such direction by DuPage County or HUD, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

IV. NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY *(Executive Order 11246, applicable to contracts/subcontracts exceeding \$10,000)*

- A. The Offeror or Bidder's attention is called the "Equal Opportunity Clause" and the "Standard Equal Employment Opportunity Construction Contract Specifications" set Herein.
- B. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:
1. Until further notice the goal for women participation is 6.9% (Nationwide).
 2. Until further notice the goal for minority participation is 19.6% (Chicago PMSA).
- C. These goals are applicable to all Contractor's construction work (whether or not it is Federal or Federally assisted) performed in the covered area.
- D. The Contractor's compliance with the Executive Order and the regulations in 41 CFR, Part 60.4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR, Part 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of contract, the Executive Order and the regulations in 41 CFR, Part 60.4. Compliance with the goals will be measured against the total work hours performed.
- E. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the Subcontractor; employer identification number, estimated dollar amount of the

subcontract, estimated starting and completion dates of the subcontract, and the geographical area in which the contract is to be performed.

- F. As used in this Notice, and in the contract resulting from this solicitation, the “covered area” is Chicago PMSA.

V. FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (*Executive Order 11246*)

A. As Used In These Specifications:

1. “*Covered Area*” means the geographical area described in the solicitation from which this contract is resulted.
2. “*Director*” means Director, Office of Federal Contract Compliance Programs, United States Department of Labor or any person to whom the Director delegates authority.
3. “*Employer identification numbers*” means the Federal Social Security number used on the Employer’s Quarterly Federal Tax Return, U. S. Treasury Department Form 941.

B. “Minority” Includes:

1. *Black* - All persons having origins in any of the Black African racial groups not of Hispanic origin.
2. *Hispanic* – All persons of Mexican, Puerto Rican, Cuban, Central and South American or other Spanish Culture or origin, regardless of race.
3. *Asian and Pacific Islander* – All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands.
4. *American Indian or Alaskan Native* – All persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.

C. Subcontracts

1. Whenever the Contractor or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
2. If the Contractor is participating (pursuant to the 41 CFR, Part 60 4.5) in a Hometown Plan approved by the U. S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with the Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an

approved Plan does not excuse any covered Contractor or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

3. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 (I) through (XVI) of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
4. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.
5. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.
6. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following.

D. Equal Employment Opportunity Documentation

1. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in tall facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents and other on-site supervisory personnel are aware of any carrying out of the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
2. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of organization's responses.
3. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individuals were sent to the union hiring hall for referral and were not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason, therefore along with whatever additional actions the Contractor may have taken.

4. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
5. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under D (2) above.
6. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement by publicizing it in the company newspaper, annual report, etc; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
7. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and the disposition of the subject matter.
8. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.
9. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures and tests to be used in the selection process.
10. Encourage present minority and female employees to recruit other minority persons and women, and where reasonable, provide after school, summer and vacation employment to minority and female youth, both on the site and in other areas of Contractor's work force.
11. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR, Part 60, 3.
12. Conduct, at least annually, an inventory and evaluation of at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for (through appropriate training, etc.) such opportunities.

13. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
14. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to ensure privacy between the sexes.
15. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
16. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
17. Covered construction contractors performing contracts in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the contract is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office from Federal Procurement contracting officers.

E. Voluntary Associations

1. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations, D-1 through D-17. The efforts of a contractor association, joint contractor-union, contractor-community or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under D-1 through D-17 of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation shall not be a defense for the Contractor's non-compliance.
2. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive order if a specific minority group of women is under utilized).
3. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

4. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246, as amended.
5. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to the Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
6. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR, Part 60,4.8.
7. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation (if any), employee identification number when assigned, social security number, race, sex, status (e.g. mechanic, apprentice trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated rate of pay and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
8. Nothing herein provided shall be construed as a limitation upon the application of other laws, which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

F. *Civil Rights Act of 1964*

Under the Title VI of the Civil Rights Act of 1964, no person shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of or be subjected to discrimination under any program or activity receiving Federal financial assistance.

G. *Section 109 Of The Housing And Community Development Act Of 1974*

No person in the United States shall on the ground of race, color, national origin or sex be excluded from participation in, be denied the benefits of or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

H. *"Section 3" Compliance In The Provisions Of Training, Employment And Business Opportunities*

1. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 USC 1701u (Section 3).

2. The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to be the greatest extent feasible, be directed to low and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
3. The parties to this contract agree to comply with HUD's regulations in 24 CFR, Part 135, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with Part 135 requirements.
4. The Contractor agrees to send to each labor organization or representative of workers with which the Contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization of workers' representative of the Contractor's commitments under this Section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions and the qualifications for each, and the name and location of the person(s) taking applications for each of the positions, and the anticipated date the work shall begin.
5. The Contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR, Part 135, and agrees to take appropriate action as provided in the applicable provision of the subcontract in this Section 3 clause, upon a finding that the Subcontractor is in violations of the regulations in 24 CFR, Part 135. The Contractor will not subcontract with any Subcontractor where the Contractor has notice or knowledge that the Subcontractor has been found in violation of regulations under 24 CFR, Part 135.
6. The Contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR, Part 135 require employment opportunities to be directed, were not filled to circumvent the Contractor's obligations under 24 CFR, Part 135.
7. Noncompliance with HUD's regulations in 24 CFR, Part 135 may result in sanctions, termination of this contract for default and debarment or suspension from future HUD-assisted contracts.

VI. CONTRACT WORK HOURS AND SAFETY STANDARDS

As a condition of any grant, contract, loan, insurance or guarantee involving federally assisted construction, DuPage County requires the following language to be included in full in any contract subject to the Contract Work Hours and Safety Standards ACT. As used in the section, the terms "*laborers*" and "*mechanics*" include watchmen and guards.

"The subgrantee, in accordance with Title 29, CFR, Part 5, hereby agrees that it will ensure the inclusion in all construction contract documents and bid specifications".

A. *Overtime Requirements*

No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic in any workweek in which he is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of forty hours in such workweek.

B. *Violation and Liability for Unpaid Wages and Liquidated Damages*

In the event of any violation of the clause set forth in Subsection A, the Contractor and any Subcontractor responsible therefore shall be liable to any affected employee for his unpaid wages. In addition, such Contractor and Subcontractor shall be to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of the clause set forth in Subsection A, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in Subsection A.

C. *Withholding for Unpaid Wages and Liquidated Damages*

The DuPage County Community Development Specialist may withhold or cause to be withheld from any monies payable on account of work performed by the Contractor or Subcontractor such sums as may administratively be determined to be necessary to satisfy an liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in Subsection B.

D. *Subcontract*

The Contractor shall insert in any subcontracts the clauses set for in subsections A, B and C of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts they may in turn be made.

E. *Contractor's Responsibility*

The Contractor shall be responsible for compliance by any Subcontractor or lower tier subcontractor with the clauses set forth in Subparagraph A through D.

VII. SAFETY

In the performance of this contract, the Contractor shall comply with all applicable Federal, State and local laws governing safety, health and sanitation. The Contractor shall provide all safeguards, safety devices and protective equipment, and take any other needed actions, on his own responsibility or the DuPage County Community Development Specialist may determine reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

VIII. FALSE STATEMENTS CONCERNING PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers and workers on projects utilizing Federal funds, it is essential

that all persons concerned with the project perform their functions as carefully, thoroughly and honestly as possible. Willful falsification, distortion or misrepresentation with respect to any facts related to the project is a violation of Federal law.

IX. IMPLEMENTATION OF CLEAN AIR ACT

Contract requirements

- A. The Contractor stipulates that any facility to be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (PL 91-604, 42 U.S.C 1857, as amended by PL 95-95 and PL 95-960, 42 USC 4362, 7401 et Seq.), Executive Order 11738, and regulations in implementation thereof (40 CFR, Part 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities Pursuant to Title 40 CFR, Part 15.
- B. The Contractor agrees to comply with all the requirements of Section 114 of the Clean Air Act, as amended, relating to inspection, monitoring, entry reports and information, as well as, all other requirements specified in Section 114 and all regulations and guidelines listed there under.
- C. The Contractor shall promptly notify the Community Development Specialist of the receipt of any communication from the Director, Office of Federal Activities, or the EPA, indicating that a facility to be utilized for the contract is under consideration to be listed on the EPA Listing of Violating Facilities.
- D. The Contractor agrees to include or cause to be included the requirements of subparagraphs A through D of this section in every nonexempt subcontract and further agrees to take such action as the Government may direct as a means of enforcing such requirements.

X. LABOR STANDARDS

Except as otherwise provided, DuPage County requires the inclusion of the HUD Federal Labor Standards Provisions Form 4010 as a condition of any grant, contract, loan, insurance or guarantee involving federally assisted construction.

NOT FOR BID

EXECUTIVE ORDER 11246 EQUAL EMPLOYMENT OPPORTUNITY

SOURCE: The provisions of Executive Order 11246 of Sept. 24, 1965, appear at 30 FR 12319, 12935, 3 CFR, 1964-1965 Comp., p.339, unless otherwise noted.

Under and by virtue of the authority vested in me as President of the United States by the Constitution and statutes of the United States, it is ordered as follows:

Part I - Nondiscrimination in Government Employment

[Part I superseded by EO 11478 of Aug. 8, 1969, 34 FR 12985, 3 CFR, 1966-1970 Comp., p. 803]

Part II - Nondiscrimination in Employment by Government Contractors and Subcontractors

Subpart A - Duties of the Secretary of Labor

SEC. 201. The Secretary of Labor shall be responsible for the administration and enforcement of Parts II and III of this Order. The Secretary shall adopt such rules and regulations and issue such orders as are deemed necessary and appropriate to achieve the purposes of Parts II and III of this Order.

[Sec. 201 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

Subpart B - Contractors' Agreements

SEC. 202. Except in contracts exempted in accordance with Section 204 of this Order, all Government contracting agencies shall include in every Government contract hereafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advancements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24,

1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept. 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the contractor may request the United States to enter into such litigation to protect the interests of the United States." [Sec. 202 amended by EO 11375 of Oct. 13, 1967, 32 FR 14303, 3 CFR, 1966-1970 Comp., p. 684, EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 203. Each contractor having a contract containing the provisions prescribed in Section 202 shall file, and shall cause each of his subcontractors to file, Compliance Reports with the contracting agency or the Secretary of Labor as may be directed. Compliance Reports shall be filed within such times and shall contain such information as to the practices, policies, programs, and employment policies, programs, and employment statistics of the contractor and each subcontractor, and shall be in such form, as the Secretary of Labor may prescribe.

(b) Bidders or prospective contractors or subcontractors may be required to state whether they have participated in any previous contract subject to the provisions of this Order, or any preceding similar Executive order, and in that event to submit, on behalf of themselves and their proposed subcontractors, Compliance Reports prior to or as an initial part of their bid or negotiation of a contract.

(c) Whenever the contractor or subcontractor has a collective bargaining agreement or other contract or understanding with a labor union or an agency referring workers or providing or supervising apprenticeship or training for such workers, the Compliance Report shall include such information as to such labor union's or agency's practices and policies affecting compliance as the Secretary of Labor may prescribe: Provided, That to the extent such information is within the exclusive possession of a labor union or an agency referring workers or providing or supervising apprenticeship or training and such labor union or agency shall refuse to furnish such information to the contractor, the contractor shall so certify to the Secretary of Labor as part of its Compliance Report and shall set forth what efforts he has made to obtain such information.

(d) The Secretary of Labor may direct that any bidder or prospective contractor or subcontractor shall submit, as part of his Compliance Report, a statement in writing, signed by an authorized officer or agent on behalf of any labor union or any agency referring workers or providing or

supervising apprenticeship or other training, with which the bidder or prospective contractor deals, with supporting information, to the effect that the signer's practices and policies do not discriminate on the grounds of race, color, religion, sex or national origin, and that the signer either will affirmatively cooperate in the implementation of the policy and provisions of this Order or that it consents and agrees that recruitment, employment, and the terms and conditions of employment under the proposed contract shall be in accordance with the purposes and provisions of the order. In the event that the union, or the agency shall refuse to execute such a statement, the Compliance Report shall so certify and set forth what efforts have been made to secure such a statement and such additional factual material as the Secretary of Labor may require.

[Sec. 203 amended by EO 11375 of Oct. 13, 1967, 32 FR 14303, 3 CFR, 1966-1970 Comp., p. 684; EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 204 (a) The Secretary of Labor may, when the Secretary deems that special circumstances in the national interest so require, exempt a contracting agency from the requirement of including any or all of the provisions of Section 202 of this **Order** in any specific contract, subcontract, or purchase **order**.

(b) The Secretary of Labor may, by rule or regulation, exempt certain classes of contracts, subcontracts, or purchase orders (1) whenever work is to be or has been performed outside the United States and no recruitment of workers within the limits of the United States is involved; (2) for standard commercial supplies or raw materials; (3) involving less than specified amounts of money or specified numbers of workers; or (4) to the extent that they involve subcontracts below a specified tier.

(c) Section 202 of this **Order** shall not apply to a Government contractor or subcontractor that is a religious corporation, association, educational institution, or society, with respect to the employment of individuals of a particular religion to perform work connected with the carrying on by such corporation, association, educational institution, or society of its activities. Such contractors and subcontractors are not exempted or excused from complying with the other requirements contained in this **Order**.

(d) The Secretary of Labor may also provide, by rule, regulation, or order, for the exemption of facilities of a contractor that are in all respects separate and distinct from activities of the contractor related to the performance of the contract: provided, that such an exemption will not interfere with or impede the effectuation of the purposes of this **Order**: and provided further, that in the absence of such an exemption all facilities shall be covered by the provisions of this **Order**."

[Sec. 204 amended by EO 13279 of Dec. 16, 2002, 67 FR 77141, 3 CFR, 2002 Comp., p. 77141 - 77144]

Subpart C - Powers and Duties of the Secretary of Labor and the Contracting Agencies

SEC. 205. The Secretary of Labor shall be responsible for securing compliance by all Government contractors and subcontractors with this Order and any implementing rules or regulations. All contracting agencies shall comply with the terms of this Order and any implementing rules, regulations, or orders of the Secretary of Labor. Contracting agencies shall cooperate with the Secretary of Labor and shall furnish such information and assistance as the Secretary may require.

[Sec. 205 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 206. The Secretary of Labor may investigate the employment practices of any Government contractor or subcontractor to determine whether or not the contractual provisions specified in Section 202 of this Order have been violated. Such investigation shall be conducted in accordance with the procedures established by the Secretary of Labor.

(b) The Secretary of Labor may receive and investigate complaints by employees or prospective employees of a Government contractor or subcontractor which allege discrimination contrary to the contractual provisions specified in Section 202 of this Order.

[Sec. 206 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 207. The Secretary of Labor shall use his/her best efforts, directly and through interested Federal, State, and local agencies, contractors, and all other available instrumentalities to cause any labor union engaged in work under Government contracts or any agency referring workers or providing or supervising apprenticeship or training for or in the course of such work to cooperate in the implementation of the purposes of this Order. The Secretary of Labor shall, in appropriate cases, notify the Equal Employment Opportunity Commission, the Department of Justice, or other appropriate Federal agencies whenever it has reason to believe that the practices of any such labor organization or agency violate Title VI or Title VII of the Civil Rights Act of 1964 or other provision of Federal law.

[Sec. 207 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 208. The Secretary of Labor, or any agency, officer, or employee in the executive branch of the Government designated by rule, regulation, or order of the Secretary, may hold such hearings, public or private, as the Secretary may deem advisable for compliance, enforcement, or educational purposes.

(b) The Secretary of Labor may hold, or cause to be held, hearings in accordance with Subsection of this Section prior to imposing, ordering, or recommending the imposition of penalties and sanctions under this Order. No order for debarment of any contractor from further Government contracts under Section 209(6) shall be made without affording the contractor an opportunity for a hearing.

Subpart D - Sanctions and Penalties

SEC. 209. In accordance with such rules, regulations, or orders as the Secretary of Labor may issue or adopt, the Secretary may:

(1) Publish, or cause to be published, the names of contractors or unions which it has concluded have complied or have failed to comply with the provisions of this Order or of the rules, regulations, and orders of the Secretary of Labor.

(2) Recommend to the Department of Justice that, in cases in which there is substantial or material violation or the threat of substantial or material violation of the contractual provisions

set forth in Section 202 of this Order, appropriate proceedings be brought to enforce those provisions, including the enjoining, within the limitations of applicable law, of organizations, individuals, or groups who prevent directly or indirectly, or seek to prevent directly or indirectly, compliance with the provisions of this Order.

(3) Recommend to the Equal Employment Opportunity Commission or the Department of Justice that appropriate proceedings be instituted under Title VII of the Civil Rights Act of 1964.

(4) Recommend to the Department of Justice that criminal proceedings be brought for the furnishing of false information to any contracting agency or to the Secretary of Labor as the case may be.

(5) After consulting with the contracting agency, direct the contracting agency to cancel, terminate, suspend, or cause to be cancelled, terminated, or suspended, any contract, or any portion or portions thereof, for failure of the contractor or subcontractor to comply with equal employment opportunity provisions of the contract. Contracts may be cancelled, terminated, or suspended absolutely or continuance of contracts may be conditioned upon a program for future compliance approved by the Secretary of Labor.

(6) Provide that any contracting agency shall refrain from entering into further contracts, or extensions or other modifications of existing contracts, with any noncomplying contractor, until such contractor has satisfied the Secretary of Labor that such contractor has established and will carry out personnel and employment policies in compliance with the provisions of this Order.

(b) Pursuant to rules and regulations prescribed by the Secretary of Labor, the Secretary shall make reasonable efforts, within a reasonable time limitation, to secure compliance with the contract provisions of this Order by methods of conference, conciliation, mediation, and persuasion before proceedings shall be instituted under subsection (a)(2) of this Section, or before a contract shall be cancelled or terminated in whole or in part under subsection (a)(5) of this Section.

[Sec. 209 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 210. Whenever the Secretary of Labor makes a determination under Section 209, the Secretary shall promptly notify the appropriate agency. The agency shall take the action directed by the Secretary and shall report the results of the action it has taken to the Secretary of Labor within such time as the Secretary shall specify. If the contracting agency fails to take the action directed within thirty days, the Secretary may take the action directly.

[Sec. 210 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 211. If the Secretary shall so direct, contracting agencies shall not enter into contracts with any bidder or prospective contractor unless the bidder or prospective contractor has satisfactorily complied with the provisions of this Order or submits a program for compliance acceptable to the Secretary of Labor.

[Sec. 211 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 212. When a contract has been cancelled or terminated under Section 209(a)(5) or a contractor has been debarred from further Government contracts under Section 209(a)(6) of this Order, because of noncompliance with the contract provisions specified in Section 202 of this Order, the Secretary of Labor shall promptly notify the Comptroller General of the United States.

[Sec. 212 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

Subpart E - Certificates of Merit

SEC. 213. The Secretary of Labor may provide for issuance of a United States Government Certificate of Merit to employers or labor unions, or other agencies which are or may hereafter be engaged in work under Government contracts, if the Secretary is satisfied that the personnel and employment practices of the employer, or that the personnel, training, apprenticeship,

membership, grievance and representation, upgrading, and other practices and policies of the labor union or other agency conform to the purposes and provisions of this Order.

SEC. 214. Any Certificate of Merit may at any time be suspended or revoked by the Secretary of Labor if the holder thereof, in the judgment of the Secretary, has failed to comply with the provisions of this Order.

SEC. 215. The Secretary of Labor may provide for the exemption of any employer, labor union, or other agency from any reporting requirements imposed under or pursuant to this Order if such employer, labor union, or other agency has been awarded a Certificate of Merit which has not been suspended or revoked.

Part III - Nondiscrimination Provisions in Federally Assisted Construction Contracts

SEC. 301. Each executive department and agency, which administers a program involving Federal financial assistance shall require as a condition for the approval of any grant, contract, loan, insurance, or guarantee thereunder, which may involve a construction contract, that the applicant for Federal assistance undertake and agree to incorporate, or cause to be incorporated, into all construction contracts paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to such grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the provisions prescribed for Government contracts by Section 202 of this Order or such modification thereof, preserving in substance the contractor's obligations thereunder, as may be approved by the Secretary of Labor, together with such additional provisions as the Secretary deems appropriate to establish and protect the interest of the United States in the enforcement of those obligations. Each such applicant shall also undertake and agree (1) to assist and cooperate actively with the Secretary of Labor in obtaining the compliance of contractors and subcontractors with those contract provisions and with the rules, regulations and relevant orders of the Secretary, (2) to obtain and to furnish to the Secretary of Labor such information as the Secretary may require for the supervision of such compliance, (3) to carry out sanctions and penalties for violation of such obligations imposed upon contractors and subcontractors by the Secretary of Labor pursuant to Part II, Subpart D, of this Order, and (4) to refrain from entering into any contract subject to this Order, or extension or other modification of such a contract with a contractor debarred from Government contracts under Part II, Subpart D, of this Order.

[Sec. 301 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 302. "Construction contract" as used in this Order means any contract for the construction, rehabilitation, alteration, conversion, extension, or repair of buildings, highways, or other improvements to real property.

(b) The provisions of Part II of this Order shall apply to such construction contracts, and for purposes of such application the administering department or agency shall be considered the contracting agency referred to therein.

(c) The term "applicant" as used in this Order means an applicant for Federal assistance or, as determined by agency regulation, other program participant, with respect to whom an application for any grant, contract, loan, insurance, or guarantee is not finally acted upon prior to the effective date of this Part, and it includes such an applicant after he/she becomes a recipient of such Federal assistance.

SEC. 303. The Secretary of Labor shall be responsible for obtaining the compliance of such applicants with their undertakings under this Order. Each administering department and agency is directed to cooperate with the Secretary of Labor and to furnish the Secretary such

information and assistance as the Secretary may require in the performance of the Secretary's functions under this Order.

(b) In the event an applicant fails and refuses to comply with the applicant's undertakings pursuant to this Order, the Secretary of Labor may, after consulting with the administering department or agency, take any or all of the following actions: (1) direct any administering department or agency to cancel, terminate, or suspend in whole or in part the agreement, contract or other arrangement with such applicant with respect to which the failure or refusal occurred; (2) direct any administering department or agency to refrain from extending any further assistance to the applicant under the program with respect to which the failure or refusal occurred until satisfactory assurance of future compliance has been received by the Secretary of Labor from such applicant; and (3) refer the case to the Department of Justice or the Equal Employment Opportunity Commission for appropriate law enforcement or other proceedings.

(c) In no case shall action be taken with respect to an applicant pursuant to clause (1) or (2) of subsection (b) without notice and opportunity for hearing.

[Sec. 303 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 304. Any executive department or agency which imposes by rule, regulation, or order requirements of nondiscrimination in employment, other than requirements imposed pursuant to this Order, may delegate to the Secretary of Labor by agreement such responsibilities with respect to compliance standards, reports, and procedures as would tend to bring the administration of such requirements into conformity with the administration of requirements imposed under this Order: Provided, That actions to effect compliance by recipients of Federal financial assistance with requirements imposed pursuant to Title VI of the Civil Rights Act of 1964 shall be taken in conformity with the procedures and limitations prescribed in Section 602 thereof and the regulations of the administering department or agency issued thereunder.

Part IV - Miscellaneous

SEC. 401. The Secretary of Labor may delegate to any officer, agency, or employee in the Executive branch of the Government, any function or duty of the Secretary under Parts II and III of this Order.

[Sec. 401 amended by EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230]

SEC. 402. The Secretary of Labor shall provide administrative support for the execution of the program known as the "Plans for Progress."

SEC. 403. Executive Orders Nos. 10590 (January 19, 1955), 10722 (August 5, 1957), 10925 (March 6, 1961), 11114 (June 22, 1963), and 11162 (July 28, 1964), are hereby superseded and the President's Committee on Equal Employment Opportunity established by Executive Order No.

10925 is hereby abolished. All records and property in the custody of the Committee shall be transferred to the Office of Personnel Management and the Secretary of Labor, as appropriate.

(b) Nothing in this Order shall be deemed to relieve any person of any obligation assumed or imposed under or pursuant to any Executive Order superseded by this Order. All rules, regulations, orders, instructions, designations, and other directives issued by the President's Committee on Equal Employment Opportunity and those issued by the heads of various departments or agencies under or pursuant to any of the Executive orders superseded by this Order, shall, to the extent that they are not inconsistent with this Order, remain in full force and effect unless and until revoked or superseded by appropriate authority. References in such

directives to provisions of the superseded orders shall be deemed to be references to the comparable provisions of this Order.

[Sec. 403 amended by EO 12107 of Dec. 28, 1978, 44 FR 1055, 3 CFR, 1978 Comp., p, 264]

SEC. 404. The General Services Administration shall take appropriate action to revise the standard Government contract forms to accord with the provisions of this Order and of the rules and regulations of the Secretary of Labor.

SEC. 405. This Order shall become effective thirty days after the date of this Order.

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract in the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who

is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

NOT FOR BID

HUD REQUIRED GENERAL CONTRACTOR AND SUB-CONTRACTOR FORMS

THESE FORMS WILL NEED TO BE COMPLETED BY THE SUCCESSFUL BIDDER(S)

- ❑ Notification to the Office of Federal Contract Compliance Programs: This form applies to the successful bidder(s) and all subcontractors with contracts of \$10,000 or greater. Mail this form to U.S. Department of Labor. Copies to Owner and DuPage County.

ORIGINALS OF ALL OF THE FOLLOWING FORMS MUST BE SENT TO OWNER

- ❑ Ownership Form
- ❑ Contractor / Subcontractor Labor Relations Agreement
- ❑ Apprenticeship Policy Recognition Form
- ❑ Section 3 Forms
 - Complete as applicable
- ❑ Certified Payroll (Weekly Reports) (Two page form with payroll on first page and statement of compliance on second page.)

Note: DuPage County Community Development Commission (CDC) is the DuPage County office responsible for administering HUD funds. This project is funded in whole or part via a grant of HUD funds from DuPage County to the Owner / Subgrantee.

Informational Materials Attached: Sample Labor Relations Agreement; Section 3 Initiative and Compliance summary; Instructions for Completing Certified Payrolls and Statement of Compliance; Categorizing Foremen, Supervisors, Owners, and Other Employees on Certified Payrolls; Sample Payroll; Sample Statement of Compliance.

HUD = United States Department of Housing and Urban Development

NOT FOR BID

OWNERSHIP FORM

(To be completed by business owners)

Any contractor working on a federally funded project must be cleared through the Excluded Parties List System (EPLS) for identifying businesses and individuals that have been debarred or are otherwise ineligible to be paid with federal funds. Please complete this information so that such clearance may be performed by CDC staff.

PART 1 Business Information:

Legal Business Name			
Owner Name			
Address of Business			
Telephone #		Fax #	
Webpage (if available)		FIN (IRS) #	
Trade(s)			

Indicate whether business is:

- Sole Proprietorship _____ Date Established: _____ BRC² _____
- Limited Liability Company _____
- Partnership _____ Date of Agreement: _____ BRC _____
- Corporation¹ _____ Date of Incorporation: _____ TIN³ _____

¹ Does not include affiliates, wholly owned subsidiaries or divisions.² Business Registration Certificate Number³ Tax Identification Number

Has the firm done or is it currently doing business under another name?

Yes: _____ No: _____

If yes, please provide the name and explain:

Is the spouse of the owner also involved in the business in any capacity (Vice President, secretary, etc)?

Yes: _____ No: _____

If yes, please provide name and the title of the spouse:

Identify the names of all owners/principals of the company:

Name	Title	Business Name (if applicable)

Is the firm in Good Standing with the State of Illinois? (This will be confirmed by CDC through a check of CyberDrive Illinois.)

Yes: _____ No: _____

If no, please explain:

PART 2 Other Concerns:

☐	Business is owned by a minority person:	☐ African American	☐ Hispanic American
	☐ Other (Specify):	☐ Native American	☐ Asian/Pacific American
☐	Business is woman owned.		

I certify that the above information is complete and accurate.

Owner Signature

Date

Print Name

Title

NOT FOR BID

**NOTIFICATION TO THE OFFICE OF FEDERAL
CONTRACT COMPLIANCE PROGRAMS (OFCCP)**

To be completed and mailed within 10 business days of contract signing. Send original to the Office of Federal Contract Compliance and photocopy to DuPage County Address at bottom of letter.

Date: _____

Michael Thomas, District Director
Office of Federal Contract Compliance Programs
U.S. Department of Labor – Employment Standards Administration
Chicago District Office
230 S. Dearborn St., Room 434
Chicago, IL 60604

Please be advised that the following contract in excess of \$10,000 has been awarded:

Program: _____

Contractor: _____

Contractor Address: _____

Contractor Telephone: _____

Contractor Employer ID Number: _____

\$ Amount of Contract: _____

Construction Start Date: _____

Construction Completion Date: _____

Project No. _____

Project Location: _____

Signed: _____

Printed Name: _____

Title: _____

CC: DuPage County Community Development
421 N. County Farm Rd, Room 3-100
Wheaton, IL 60187

CC: _____

Attn: _____

Attn: _____

CONTRACTOR/SUBCONTRACTOR LABOR RELATIONS AGREEMENT (LRA)

Project Name	Non-Profit Agency New Facility Construction	Project #	CD13-01
Project Address	1 Main Street, Town, IL 60000	Contract Amount	100,000
Contractor Name	Jones Construction Company	Type	☐ GC ☒ Subcontractor
If SUBCONTRACTOR provide name of contracting company		Tom's General Contracting Company	
Address of Business	123 Main Street, Town, IL 60000		
Contact Person	Samuel Jones	Title	Owner/President
Telephone #	111-111-1111	Fax #	222-222-2222
Email Address	sam.jones@jonesco.com	FIN (IRS) #	12-3456789

1. Is the contractor named above supplying materials only? ☒ No (continue to question 2.) ☐ Yes (Material suppliers do not have to complete this form, but any labor subcontractors hired for installation of these materials must be disclosed and must complete all HUD forms.)

2. The following persons are hereby authorized to complete and sign all payroll forms and records for the above project:

Name/Title:	Samuel Jones / Owner/President	Signature:	<i>Samuel Jones</i>
Name/Title:	Jane Jones / Payroll Administrator	Signature:	<i>Jane Jones</i>

3. I ☒ HAVE ☐ HAVE NOT received a copy of the applicable Davis-Bacon wage rates for the above project and I understand that Federal Prevailing Wage Rates apply to this project.

4. In the section below, please list the hourly wage and fringe benefits by job classification and group number of each trade employed by your company. Mark how benefits are paid. Total wages must meet Davis-Bacon minimums.

Job Classification # (for DuPage)	CARP0555-005 (Building)
Group # (if applicable)	n/a
Hourly Wage Rate:	\$41.52
Hourly Fringe Benefits:	\$25.47
Fringe Benefits paid	☐ in cash ☒ into plan(s)
TOTAL (wages + fringe)	\$66.99

Job Classification # (for DuPage)	LABO0002-003
Group # (if applicable)	1
Hourly Wage Rate:	\$35.20
Hourly Fringe Benefits:	\$21.45
Fringe Benefits paid	☐ in cash ☒ into plan(s)
TOTAL (wages + fringe)	\$56.65

Job Classification # (for DuPage)	
Group # (if applicable)	
Hourly Wage Rate:	
Hourly Fringe Benefits:	
Fringe Benefits paid	☐ in cash ☐ into plan(s)
TOTAL (wages + fringe)	\$0.00

Job Classification # (for DuPage)	
Group # (if applicable)	
Hourly Wage Rate:	
Hourly Fringe Benefits:	
Fringe Benefits paid	☐ in cash ☐ into plan(s)
TOTAL (wages + fringe)	\$0.00

Job Classification # (for DuPage)	
Group # (if applicable)	
Hourly Wage Rate:	
Hourly Fringe Benefits:	
Fringe Benefits paid	☐ in cash ☐ into plan(s)
TOTAL (wages + fringe)	\$0.00

Job Classification # (for DuPage)	
Group # (if applicable)	
Hourly Wage Rate:	
Hourly Fringe Benefits:	
Fringe Benefits paid	☐ in cash ☐ into plan(s)
TOTAL (wages + fringe)	\$0.00

WARNING: U.S. CRIMINAL CODE, SECTION 1010, TITLE 18, U.S.C., PROVIDES IN PART: "WHOEVER...MAKES, PASSES, UTTERS, OR PUBLISHES ANY STATEMENT, KNOWING THE SAME TO BE FALSE...SHALL BE FINED NOT MORE THAN \$5,000 OR IMPRISONED NOT MORE THAN TWO YEARS, OR BOTH."

The undersigned certifies that (s)he is an owner/officer of the contractor and further certifies compliance with all Federal EEO requirements:

Samuel Jones

04/01/2013

Signature
Samuel Jones
Print Name

Date
Owner/President
Title

CONTRACTOR/SUBCONTRACTOR LABOR RELATIONS AGREEMENT (LRA)

Project Name	Project Name	Project #	
Project Address		Contract Amount	
Contractor Name		Type	☐ GC ☐ Subcontractor
<i>If SUBCONTRACTOR provide name of contracting company</i>			
Address of Business			
Contact Person		Title	
Telephone #		Fax #	
Email Address		FIN (IRS) #	

1. Is the contractor named above supplying materials only? ☐ No (continue to question 2.) ☐ Yes (Material suppliers do not have to complete this form, but any labor subcontractors hired for installation of these materials must be disclosed and must complete all HUD forms.)

2. The following persons are hereby authorized to complete and sign all payroll forms and records for the above project:

Name/Title:		Signature:	
Name/Title:		Signature:	

3. I ☒ HAVE ☐ HAVE NOT received a copy of the applicable Davis-Bacon wage rates for the above project and I understand that Federal Prevailing Wage Rates apply to this project.

4. In the section below, please list the hourly wage and fringe benefits by job classification and group number of each trade employed by your company. Mark how benefits are paid. Total wages must meet Davis-Bacon minimums.

Job Classification # (for DuPage)	
Group # (if applicable)	
Hourly Wage Rate:	
Hourly Fringe Benefits:	
<i>Fringe Benefits paid</i>	☐ in cash ☐ into plan(s)
TOTAL (wages + fringe)	\$0.00

Job Classification # (for DuPage)	
Group # (if applicable)	
Hourly Wage Rate:	
Hourly Fringe Benefits:	
<i>Fringe Benefits paid</i>	☐ in cash ☐ into plan(s)
TOTAL (wages + fringe)	\$0.00

Job Classification # (for DuPage)	
Group # (if applicable)	
Hourly Wage Rate:	
Hourly Fringe Benefits:	
<i>Fringe Benefits paid</i>	☐ in cash ☐ into plan(s)
TOTAL (wages + fringe)	\$0.00

Job Classification # (for DuPage)	
Group # (if applicable)	
Hourly Wage Rate:	
Hourly Fringe Benefits:	
<i>Fringe Benefits paid</i>	☐ in cash ☐ into plan(s)
TOTAL (wages + fringe)	\$0.00

Job Classification # (for DuPage)	
Group # (if applicable)	
Hourly Wage Rate:	
Hourly Fringe Benefits:	
<i>Fringe Benefits paid</i>	☐ in cash ☐ into plan(s)
TOTAL (wages + fringe)	\$0.00

Job Classification # (for DuPage)	
Group # (if applicable)	
Hourly Wage Rate:	
Hourly Fringe Benefits:	
<i>Fringe Benefits paid</i>	☐ in cash ☐ into plan(s)
TOTAL (wages + fringe)	\$0.00

WARNING: U.S. CRIMINAL CODE, SECTION 1010, TITLE 18, U.S.C., PROVIDES IN PART: "WHOEVER...MAKES, PASSES, UTTERS, OR PUBLISHES ANY STATEMENT, KNOWING THE SAME TO BE FALSE...SHALL BE FINED NOT MORE THAN \$5,000 OR IMPRISONED NOT MORE THAN TWO YEARS, OR BOTH."

The undersigned certifies that (s)he is an owner/officer of the contractor and further certifies compliance with all Federal EEO requirements:

Signature

Date

APPRENTICESHIP POLICY RECOGNITION FORM

This form has been provided by the DuPage Community Development Commission (CDC) for the contractor's benefit to fully understand the requirements that surround the use of apprentices and trainees on federally funded projects. You are encouraged by the CDC to assign apprentices to this project and this document discloses key requirements that will help contractors avoid infractions which necessitate wage restitution. By filling out this form, you are only demonstrating your awareness of the policies regarding apprentices and government work. After completing this form, please return it to the property owner to hand into to the CDC.

Project Name	Project Name		Project #	
Project Address			Contract Amount	
Contractor Name			Type	☐ GC ☐ Subcontractor
<i>If SUBCONTRACTOR provide name of contracting company</i>				
Address of Business				
Contact Person			Title	
Telephone #			Fax #	
Email Address			FIN (IRS) #	

Federal regulations stipulate that apprentices and trainees (hereinafter "apprentices") assigned to a federally funded project are required to be accompanied by a qualified journeyman worker of the same trade. This means that apprentices are not to perform work on the *project* without proper supervision. Superintendents, company inspectors, managing supervisors, foremen, or any other person employed as contractor administration, do not qualify as a labor-mentoring agent. On each certified payroll, a journeyman's hours must match an apprentice's hours each day. There are no exceptions to this policy.

Should an apprentice perform work *alone* on the premises of the above stated project, Davis-Bacon Wage Determinations will apply and the apprentice must be paid the minimum prevailing wage for his or her time. Restitution must be paid to the employee in the manner of the difference between the prevailing wage and the apprentice's wage.

Do you plan on using apprentices for the above referenced project?	☐ Yes	☐ No
Are your apprentices registered with the Bureau of Apprenticeship and Training?	☐ Yes	☐ No

If not, you must register all apprentices with the Bureau. You can reach the local office at: (312) 596-5500. Return evidence of registration to the property owner.

List below the names and status of the apprentices likely planned for work on this project. Listing does not bind the contractor to assigning these apprentices and trainees:

Apprentice/Trainee Name	Year/Level	Registered	Wage/hour

I am now fully aware of the federal apprentice/trainee policies involving the above referenced project and will keep a copy of this disclaimer in the project file:

Signature	Date
Print Name	Title

DU PAGE COUNTY SECTION 3 INITIATIVE AND COMPLIANCE

Federal grant funds awarded by DuPage County to this project are subject to Section 3 compliance as provided in 24 CFR Part 135. The purpose of Section 3 is to ensure that employment and economic opportunities shall, to the greatest extent feasible, and consistent with existing Federal, State, and local laws and regulations, be directed to low-income persons and business concerns which provide opportunities for low-income persons. Section 3 designation is a person whose household income is 80% or less of area median family income (hereinafter, "low-income" or "Section 3 resident"). All contractors providing labor are subject to Section 3 and must complete the following documents (as applicable):

- 0) SECTION 3 CLAUSE: Acknowledgement to be signed by all Section 3 covered contractors (must be signed if the contract is over \$100,000).
- 1) FEDERAL SECTION 3 BUSINESS CONCERN SELF CERTIFICATION (FORM 1): To be completed by all contractors. Describes contractors' Section 3 status based on the following categories:
 - A. Business owned by Section 3 resident;
 - B. 30% of permanent full-time employees are Section 3 residents;
 - C. Subcontract 25% of award amount to Section 3 Business Concerns.
- 2) FEDERAL SECTION 3 RESIDENT SELF CERTIFICATION (FORM 2): To be completed by all business owners claiming Section 3 under category A and/or all Section 3 employees working on this project (Section 3 family income limits are included on the form);
- 3) PERMANENT EMPLOYEE / NEW HIRES LIST (FORM 3): To be completed by all business owners claiming Section 3 under category B or hiring new employees;
- 4) FEDERAL SECTION 3 BUSINESS CONCERN SUBCONTRACTING PLAN (FORM 4): To be completed by all business owners claiming Section 3 under category C;
- 5) FEDERAL SECTION 3 BUSINESS REPORTING (FORM 5): To be completed by all contractors. Information required to complete the federal reporting requirements.

DuPage County is responsible for executing compliance and reporting the outcomes of these efforts. Specifically, under this regulation, DuPage County is responsible for:

- 1) Informing any tier of subrecipients, developers, general contractors, contractors, and subcontractors of the requirements of Part 135;
- 2) Monitor the performance of all tiers in respect to the requirements and objectives of Part 135;
- 3) Notify potential contractors and subcontractors of Section 3 covered opportunities open for bid; and
- 4) Collect and report documentation in respect to all efforts made by tiers to achieve Section 3 participation.

Tiers receiving contracts greater than \$100,000 are covered by Section 3. As related to this project, and to the greatest extent feasible, these tiers are responsible for:

- 1) Contracting or hiring locally
- 2) Contracting at least 10% of the total project cost with Section 3 business concerns
 - a. Businesses which are majority owned by low-income persons qualify
 - b. Businesses which employ at least 30% full-time low-income employees qualify
 - c. Businesses which offer 25% of all subcontracts to Section 3 businesses qualify
- 3) Hiring, at least 30% of all new employees from low-income households
- 4) Refraining from entering into contracts with businesses in violation of Section 3
- 5) Documenting all efforts, actions taken, results, and/or impediments to achieving Section 3 obligations for submission to the DuPage Community Development Commission

Any tier contracting for \$100,000 or less is not responsible for complying with Section 3; however, it is encouraged that any contractor or new hire which qualifies as Section 3 be documented and reported to meet the numerical objectives as a whole.

Noncompliance involving the disregard of actions to be taken and/or documentation of those efforts, whether successful or not, may result in delayed or non-payment of Federal grant awards.

For more information about Section 3 and to access DuPage County's Section 3 certification forms, visit: http://www.dupageco.org/Community_Services/Community_Development_Commission/31074/

SECTION 3 CLAUSE

The requirements of Section 3 apply to contractors and subcontractors performing work on construction or rehabilitation projects for which the contract/subcontract amount exceeds \$100,000. Any tier contracting for \$100,000 or less is not required to comply; however, it is strongly encouraged.

TITLE 24 PART 135 ECONOMIC OPPORTUNITIES FOR LOW - AND VERY LOW - INCOME PERSONS 135.38 - Section 3 clause

All section 3 covered contracts shall include the following clause (referred to as the section 3 clause):

- A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.
- C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
- D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.
- E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.
- F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.
- G. With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

The undersigned agrees to comply with the Section 3 Guidelines when applicable as referenced by HUD regulations in 24 CFR per 135 as amended.

Authorized Signature

Date

Print

Title

Name

Business Name

Project #	
Date	

FEDERAL SECTION 3 BUSINESS CONCERN SELF CERTIFICATION (Form 1)

(To be completed by business owners)

PART 1 Business Concern Information:

Legal Business Name	Name		
Address of Business			
Contact Person		Title	
Telephone #		Fax #	
Email Address		FIN (IRS) #	
Trade(s)			

Business Partners/Owners Name	Title	Address

PART 2 Section 3 Federal Business Concern: The above business certifies that it qualifies as a Section 3 Business Concern based on: *(Please check the appropriate category below and provide requested supporting forms)*

☐ **A** Business is majority owned (at least 51%) by Section 3 Resident(s).
☐ Must provide signed *Federal Section 3 Resident Self Certification (Form 2)* for the owner(s)

or

☐ **B** At least 30% of the permanent, full-time employees are currently Section 3 Residents or were Section 3 Residents within the past 3 years.
☐ Must provide *Permanent Employee / New Hire List (Form 3)*; and
☐ Must provide *Federal Section 3 Resident Self Certifications (Form 2)* for all owners and Section 3 employees

or

☐ **C** Commitment to subcontract 25% of the dollar award to qualified Section 3 Business Concerns if awarded contract
☐ Must provide signed *Federal Section 3 Subcontracting Plan (Form 4)*; and
☐ Must provide signed *Federal Section 3 Business Concern Self Certifications (Form 1)* for all subcontractors

☐ **D** Check "D" if none of the categories above apply to your business.

PART 3 Other Business Concern:

☐ **Business is owned by a minority person:** ☐ African American ☐ Hispanic American
☐ Other (Specify): ☐ Native American ☐ Asian/Pacific American

☐ **Business is woman owned.**

PART 4 Business Owner Certification: This certification is valid for a period of 3 years (PLEASE READ CAREFULLY)

I authorize the information above to be added to a database of Section 3 Business Concerns that will enable my business to receive notice of contracting opportunities for future Section 3 covered projects. I understand that the Section 3 Business Concern list may provide additional employment opportunities, however inclusion on that list does not guarantee awarding of contracts. I further understand that this list may be accessed by DuPage County staff, developers and contractors working on Section 3 covered projects. ☐ Yes ☐ No

I certify that I will ensure that Section 3 information and its requirements are provided to all employees and lower tier subcontractors involved in the project. Under penalty of perjury I also certify that to the best of my knowledge and belief, data in this form and its attachments are true and correct, and the business will comply with all regulations and guidelines applicable to DuPage County's funding programs. I agree to furnish to DuPage County any requested documentation in support of verification of this self-certification. Furthermore, I acknowledge that this form is a public document subject to the Freedom of Information Act.

Owner Signature

Date

Print Name

Title

Project #	
Date	

FEDERAL SECTION 3 RESIDENT SELF CERTIFICATION (Form 2)

(To be completed by each business owner if claiming Section 3 under category A of Form 1 and/or all Section 3 employees/residents)

PART 1 Resident Information:

Name			
Home Address			
Telephone #		Email	
Name of Employer			

Job Category:	☐ Business Owner/Professional	☐ Office/Clerical
	☐ Technician	☐ Trade: _____

Employee Experience/ Training/ Job Skills:	

PART 2 Income Survey:

How many persons live in your home?	_____ persons

What is the total yearly income of ALL persons, 18 years and older, living in your household?	\$_____ total yearly household income

Note: Total yearly income means all funds (salaries, dividends, interest, etc.) received during the year, before taxes.**Please note that in order to qualify as a Section 3 Resident, the total yearly household income must be less than the 2013 Section 3 income limits listed below.**

Persons in Household	1	2	3	4	5	6	7	8
80% AMI (gross income)	\$41,250	\$47,150	\$53,050	\$58,900	\$63,650	\$68,350	\$73,050	\$77,750

PART 3 Resident Certification: This certification is valid for a period of 3 years (PLEASE READ CAREFULLY)

I authorize the information above to be added to a database of Section 3 Residents that will enable me to receive notice of employment for future Section 3 covered projects. I understand the Section 3 Resident list may provide additional employment opportunities, however inclusion on that list does not guarantee employment. I further understand that this list may be accessed by DuPage County staff, developers and contractors working on Section 3 covered projects; however no personal information will be made available to the developers, contractors, or public. ☐ **Yes** ☐ **No**

Under penalty of perjury I certify that I, _____ (print name), am a legal resident of DuPage County and qualify as a Section 3 Resident because I meet the income limits as published on this form OR I am a public housing resident. I agree to furnish to DuPage County any requested documentation in support of verification of this self-certification.

Signature _____	Date _____

Print Name _____

Project #	
Date	

PERMANENT EMPLOYEE / NEW HIRES LIST (Form 3)

(To be completed by business owners if claiming Section 3 under category B of Form 1 or business owners hiring new employees)

PART 1 Business Concern Information:

Legal Business Name	Name		
Address of Business			
Contact Person		Title	
Telephone #		Fax #	
Email Address		FIN (IRS) #	

PART 2 List all full-time employees: (Attach additional sheets as needed.)

Employee Name	New Hire (yes/no)	Trade	Section 3 (yes/no)*
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

Total number of all employees:	

Have you, or do you, anticipate hiring new employees for this project?	☐ Yes	☐ No

* Provide Section 3 Resident Self Certification (Form 2) for all employees that qualify as Section 3 Residents. Please note that in order to qualify as a Section 3 Resident, the total yearly household income must be less than the 2013 Section 3 income limits listed below.

Persons in Household	1	2	3	4	5	6	7	8
80% AMI (gross income)	\$41,250	\$47,150	\$53,050	\$58,900	\$63,650	\$68,350	\$73,050	\$77,750

PART 3 Certification: (PLEASE READ CAREFULLY)

Under penalty of perjury I certify that I am an owner/officer of the business and further certify that to the best of my knowledge and belief, data in this form and its attachments are true and correct, and the business will comply with all regulations and guidelines applicable to DuPage County's funding programs. I agree to furnish to DuPage County any requested documentation in support of verification of this form. Furthermore, I acknowledge that this form is a public document subject to the Freedom of Information Act.

Authorized Signature	Date

Print Name	Title

Project #	
Date	

FEDERAL SECTION 3 BUSINESS CONCERN SUBCONTRACTING PLAN (Form 4)

(To be completed by business owners only if claiming Section 3 under category C of Form 1)

PART 1 Business Concern Information:

Legal Business Name	Name		
Address of Business			
Contact Person		Title	
Telephone #		Fax #	
Email Address		FIN (IRS) #	

PART 2 Subcontractors:

Name of Subcontractor	Type of Contract (trade)	Estimated Contract Amount	Section 3 Business Concern (yes/no) *
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

* Provide Section 3 Business Concern Self Certification (Form 1) for all subcontractors that qualify as Section 3.

PART 3 Business Concern Contract and Subcontract(s) Amounts:

Total contract amount	\$	Estimated amount to be subcontracted	\$
Amount to be subcontracted to Section 3 businesses:	\$	% of subcontracts that are Section 3	%

PART 4 Certification: (PLEASE READ CAREFULLY)

Under penalty of perjury I certify that I am an owner/officer of the business and further certify that to the best of my knowledge and belief, data in this form and its attachments are true and correct, and the business will comply with all regulations and guidelines applicable to DuPage County's funding programs. I agree to furnish to DuPage County any requested documentation in support of verification of this form. Furthermore, I acknowledge that this form is a public document subject to the Freedom of Information Act.

Signature

Date

Print

Title

Project #	
Date	

FEDERAL SECTION 3 BUSINESS REPORTING (Form 5)

(To be completed by business owners - General Contractor & Subcontractors – only if awarded contract)

PART 1 Business Concern Information:

Please complete this form pertaining to the dollar amount your business has contracted for under this project.

Legal Business Name	Name		
Address of Business			
Contact Person		Title	
Telephone #		Fax #	
Email Address		FIN (IRS) #	
Project Name		General or Subcontractor	
Contract Amount	\$	Number of Subs Hired	

PART 2 Employment and Training Data:

Please provide any employment and training figures concerning New Hires and Section 3 status:

Job category	Number of New Hires	Number of Section 3 New Hires	Number of Section 3 Trainees or Apprentices
Professionals			
Technicians			
Office/Clerical			
Construction Trade (Specify below):			
Other Categories (Specify below):			

PART 3 Contracting Data:

Construction Contracts:

Total dollar amount of your contract on this project:	\$
Total dollar amount subcontracted to Section 3 businesses:	\$
Percentage of total dollar amount subcontracted to Section 3 businesses:	
Total number of Section 3 Certified Businesses receiving contracts:	

Non-construction Contracts (engineering, architectural):

Total dollar amount of non-construction contracts received on this project:	\$
Total dollar amount subcontracted to non-construction Section 3 businesses:	\$
Percentage of total dollar amount subcontracted to non-construction Section 3 businesses:	
Total number of non-construction Section 3 businesses receiving contracts:	

PART 4 Certification: (PLEASE READ CAREFULLY)

Under penalty of perjury I certify that I am an owner/officer of the business and further certify that to the best of my knowledge and belief, data in this form and its attachments are true and correct, and the business will comply with all regulations and guidelines applicable to DuPage County's funding programs. I agree to furnish to DuPage County any requested documentation in support of verification of this form. Furthermore, I acknowledge that this form is a public document subject to the Freedom of Information Act.

Authorized Signature

Date

CATEGORIZING FOREMEN, SUPERVISORS, OWNERS, AND OTHER EMPLOYEES ON CERTIFIED PAYROLLS

Non-labor employees on or off the jobsite need not report their wage rates, however some exceptions do apply:

Non-Covered Job Classifications

Workers performing normal duties of the following job classifications are not subject to wage requirements:

1) Project Superintendent	5) Water Carrier
2) Project Engineer	6) Messenger
3) Project Foreman*	7) Clerical Workers
4) Watchman	8) Other Non-Labor Employees

* Exception is the Working Foreman. A Working Foreman is one who devotes more than 20 percent of time during a work week to mechanic or labor duties, and who must be paid the applicable rate for the hours so worked.

Supervisors, Owners, and Other Salaried Employees Providing Full-Time Supervision

- 1) Supervisors
 - a. Hours worked by these employees must be reported although wage rates need NOT be reported.
 - b. The term "Salary" may appear in place of wage rate for any salaried employee.
- 2) Owners
 - a. Owners who perform labor-work on a federally funded project along side journeymen employees must also report hours worked.
 - b. Like supervisors owners need not report salary, with exception to #3:
- 3) Self-Employed, Sole-Laborer Owners
 - a. Owners who are either the only laborer or mentoring an apprentice or trainee MUST report wage rate and weekly wage for work performed.
 - b. Certified payrolls MUST also be completed and signed by the General Contractor.

Apprentices and Trainees

- 1) Apprentices and Trainees may be paid a lower wage rate than Prevailing Wage under the following conditions:
 - a. The apprentice or trainee is supervised hour for hour by a journeyman of the same trade.
 - b. Journeyman to apprentice ratio set by the local union is maintained
 - c. Supervisors, superintendents or any other management employee does not count as appropriate supervision.
- 2) If an apprentice or trainee is found unsupervised:
 - a. Employer will be contacted by phone and mail.
 - b. Restitution to meet the Davis-Bacon wage determination for hours worked will be required.
 - c. Non-compliance can and will hold up further payouts.

INSTRUCTIONS FOR COMPLETING PAYROLL FORM, WH-347

[WH-347](#) (PDF) OMB Control No. 1235-0008, Expires 01/31/2015.

General: Form WH-347 has been made available for the convenience of contractors and subcontractors required by their Federal or Federally-aided construction-type contracts and subcontracts to submit weekly payrolls. Properly filled out, this form will satisfy the requirements of Regulations, Parts 3 and 5 (29 C.F.R., Subtitle A), as to payrolls submitted in connection with contracts subject to the Davis-Bacon and related Acts.

While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) requires contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) Regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Under the Davis-Bacon and related Acts, the contractor is required to pay not less than prevailing wage, including fringe benefits, as predetermined by the Department of Labor. The contractor's obligation to pay fringe benefits may be met either by payment of the fringe benefits to bona fide benefit plans, funds or programs or by making payments to the covered workers (laborers and mechanics) as cash in lieu of fringe benefits.

This payroll provides for the contractor to show on the face of the payroll all monies to each worker, whether as basic rates or as cash in lieu of fringe benefits, and provides for the contractor's representation in the statement of compliance on the payroll (as shown on page 2) that he/she is paying for fringe benefits required by the contract and not paid as cash in lieu of fringe benefits. Detailed instructions concerning the preparation of the payroll follow:

Contractor or Subcontractor: Fill in your firm's name and check appropriate box.

Address: Fill in your firm's address.

Payroll No.: Beginning with the number "1", list the payroll number for the submission.

For Week Ending: List the workweek ending date.

Project and Location: Self-explanatory.

Project or Contract No.: Self-explanatory.

Column 1 - Name and Individual Identifying Number of Worker: Enter each worker's full name and an individual identifying number (e.g., last four digits of worker's social security number) on each weekly payroll submitted.

Column 2 - No. of Withholding Exemptions: This column is merely inserted for the employer's convenience and is not a requirement of Regulations, Part 3 and 5.

Column 3 - Work Classifications: List classification descriptive of work actually performed by each laborer or mechanic. Consult classification and minimum wage schedule set forth in contract

specifications. If additional classifications are deemed necessary, see Contracting Officer or Agency representative. An individual may be shown as having worked in more than one classification provided an accurate breakdown or hours worked in each classification is maintained and shown on the submitted payroll by use of separate entries.

Column 4 - Hours worked: List the day and date and straight time and overtime hours worked in the applicable boxes. On all contracts subject to the Contract Work Hours Standard Act, enter hours worked in excess of 40 hours a week as "overtime".

Column 5 - Total: Self-explanatory

Column 6 - Rate of Pay (Including Fringe Benefits): In the "straight time" box for each worker, list the actual hourly rate paid for straight time worked, plus cash paid in lieu of fringe benefits paid. When recording the straight time hourly rate, any cash paid in lieu of fringe benefits may be shown separately from the basic rate. For example, "\$12.25/.40" would reflect a \$12.25 base hourly rate plus \$0.40 for fringe benefits. This is of assistance in correctly computing overtime. See "Fringe Benefits" below. When overtime is worked, show the overtime hourly rate paid plus any cash in lieu of fringe benefits paid in the "overtime" box for each worker; otherwise, you may skip this box. See "Fringe Benefits" below. Payment of not less than time and one-half the basic or regular rate paid is required for overtime under the Contract Work Hours Standard Act of 1962 if the prime contract exceeds \$100,000. In addition to paying no less than the predetermined rate for the classification which an individual works, the contractor must pay amounts predetermined as fringe benefits in the wage decision made part of the contract to approved fringe benefit plans, funds or programs or shall pay as cash in lieu of fringe benefits. See "FRINGE BENEFITS" below.

Column 7 - Gross Amount Earned: Enter gross amount earned on this project. If part of a worker's weekly wage was earned on projects other than the project described on this payroll, enter in column 7 first the amount earned on the Federal or Federally assisted project and then the gross amount earned during the week on all projects, thus "\$163.00/\$420.00" would reflect the earnings of a worker who earned \$163.00 on a Federally assisted construction project during a week in which \$420.00 was earned on all work.

Column 8 - Deductions: Five columns are provided for showing deductions made. If more than five deduction are involved, use the first four columns and show the balance deductions under "Other" column; show actual total under "Total Deductions" column; and in the attachment to the payroll describe the deduction(s) contained in the "Other" column. All deductions must be in accordance with the provisions of the Copeland Act Regulations, 29 C.F.R., Part 3. If an individual worked on other jobs in addition to this project, show actual deductions from his/her weekly gross wage, and indicate that deductions are based on his gross wages.

Column 9 - Net Wages Paid for Week: Self-explanatory.

Totals - Space has been left at the bottom of the columns so that totals may be shown if the contractor so desires.

Statement Required by Regulations, Parts 3 and 5: While the "statement of compliance" need not be notarized, the statement (on page 2 of the payroll form) is subject to the penalties provided by 18 U.S.C. § 1001, namely, a fine, possible imprisonment of not more than 5 years, or both. Accordingly, the party signing this statement should have knowledge of the facts represented as true.

Items 1 and 2: Space has been provided between items (1) and (2) of the statement for describing any deductions made. If all deductions made are adequately described in the "Deductions" column above, state "See Deductions column in this payroll." See "FRINGE BENEFITS" below for instructions concerning filling out paragraph 4 of the statement.

Item 4 FRINGE BENEFITS - Contractors who pay all required fringe benefits: If paying all fringe benefits to approved plans, funds, or programs in amounts not less than were determined in the applicable wage decision of the Secretary of Labor, show the basic cash hourly rate and overtime rate paid to each worker on the face of the payroll and check paragraph 4(a) of the statement on page 2 of the WH-347 payroll form to indicate the payment. Note any exceptions in section 4(c).

Contractors who pay no fringe benefits: If not paying all fringe benefits to approved plans, funds, or programs in amounts of at least those that were determined in the applicable wage decision of the Secretary of Labor, pay any remaining fringe benefit amount to each laborer and mechanic and insert in the "straight time" of the "Rate of Pay" column of the payroll an amount not less than the predetermined rate for each classification plus the amount of fringe benefits determined for each classification in the application wage decision. Inasmuch as it is not necessary to pay time and a half on cash paid in lieu of fringe benefits, the overtime rate shall be not less than the sum of the basic predetermined rate, plus the half time premium on basic or regular rate, plus the required cash in lieu of fringe benefits at the straight time rate. In addition, check paragraph 4(b) of the statement on page 2 the payroll form to indicate the payment of fringe benefits in cash directly to the workers. Note any exceptions in section 4(c).

Use of Section 4(c), Exceptions

Any contractor who is making payment to approved plans, funds, or programs in amounts less than the wage determination requires is obliged to pay the deficiency directly to the covered worker as cash in lieu of fringe benefits. Enter any exceptions to section 4(a) or 4(b) in section 4(c). Enter in the Exception column the craft, and enter in the Explanation column the hourly amount paid each worker as cash in lieu of fringe benefits and the hourly amount paid to plans, funds, or programs as fringe benefits. The contractor must pay an amount not less than the predetermined rate plus cash in lieu of fringe benefits as shown in section 4(c) to each such individual for all hours worked (unless otherwise provided by applicable wage determination) on the Federal or Federally assisted project. Enter the rate paid and amount of cash paid in lieu of fringe benefits per hour in column 6 on the payroll. See paragraph on "Contractors who pay no fringe benefits" for computation of overtime rate.

Public Burden Statement: We estimate that it will take an average of 55 minutes to complete this collection of information, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection of information, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, ESA, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W., Washington, D.C. 20210.

Note: In order to view, fill out, and print PDF forms, you need Adobe® Acrobat® Reader® version 5 or later, which you may download for free at www.adobe.com/products/acrobat/readstep2.html. To save the completed forms on your workstation, you need to use the "Save As" method to save the file.

For example, move your mouse cursor over the PDF link and click on your "RIGHT" mouse button. This will cause a menu to be displayed, from which you will select the proper save option -- depending upon which browser you are using:

- For Microsoft IE users, select "Save Target As"
- For Netscape Navigator users, select "Save Link As"

Once you've selected the proper save option for your browser, and have saved the file to a location you specified, go to your program menu and start the Adobe Acrobat® Reader. Once open, locate the PDF file you saved and open it directly in Acrobat®.

Date 04/13/2013
I, Samuel Jones Owner / President
(Name of Signatory Party) (Title)
do hereby state:

(1) That I pay or supervise the payment of the persons employed by
Jones Construction Company on the
(Contractor or Subcontractor)
Non-Profit Agency New Facility Construction; that during the payroll period commencing on the
(Building or Work)
7 day of April 2013, and ending the 13 day of April 2013,
all persons employed on said project have been paid the full weekly wages earned, that no rebates have
been or will be made either directly or indirectly to or on behalf of said

Jones Construction Company from the full
(Contractor or Subcontractor)
weekly wages earned by any person and that no deductions have been made either directly or indirectly
from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part
3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948,
63 Stat. 108, 72 Stat. 967; 40 U.S.C. § 3145), and described below:

See Deductions column in this payroll

(2) That any payrolls otherwise under this contract required to be submitted for the above period are
correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the
applicable wage rates contained in any wage determination incorporated into the contract; that the
classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide
apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of
Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a
State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:
(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☒ - in addition to the basic hourly wage rates paid to each laborer or mechanic listed in
the above referenced payroll, payments of fringe benefits as listed in the contract
have been or will be made to appropriate programs for the benefit of such
employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ - Each laborer or mechanic listed in the above referenced payroll has been paid,
as indicated on the payroll, an amount not less than the sum of the applicable
basic hourly wage rate plus the amount of the required fringe benefits as listed
in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION
James Smart - Laborer	Probationary Employee, not yet qualified for pension/welfare benefits - \$56.65 hourly rate

REMARKS:

NAME AND TITLE Samuel Jones, Owner / President	SIGNATURE <i>Samuel Jones</i>
THE WILLFUL FALSIFICATION OF ANY OFFENSE AGAINST THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.	



Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

NAME OF CONTRACTOR ☐	OR SUBCONTRACTOR ☐	ADDRESS		OMB No.: 1235-0008 Expires: 01/31/2015

[illegible]

While completion of Form WH-347 is optional, it is mandatory for covered contractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a), The Copeland Act (29 U.S.C. § 3145) contractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W.

Date _____

I, _____ (Name of Signatory Party) _____ (Title)
do hereby state:

(1) That I pay or supervise the payment of the persons employed by _____ on the _____
(Contractor or Subcontractor)
_____ (Building or Work); that during the payroll period commencing on the _____
_____ day of _____, _____, and ending the _____ day of _____, _____,
all persons employed on said project have been paid the full weekly wages earned, that no rebates have
been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly
from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part
3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948,
63 Stat. 108, 72 Stat. 967; 40 U.S.C. § 3145), and described below:

00400-53

(2) That any payrolls otherwise under this contract required to be submitted for the above period are
correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the
applicable wage rates contained in any wage determination incorporated into the contract; that the
classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide
apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of
Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a
State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:
(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ - in addition to the basic hourly wage rates paid to each laborer or mechanic listed in
the above referenced payroll, payments of fringe benefits as listed in the contract
have been or will be made to appropriate programs for the benefit of such
employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ - Each laborer or mechanic listed in the above referenced payroll has been paid,
as indicated on the payroll, an amount not less than the sum of the applicable
basic hourly wage rate plus the amount of the required fringe benefits as listed
in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE
THE WILLFUL FALSIFICATION OF ANY OFFENSE AGAINST THE ABOLITION OF SLAVERY ACT, THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.	

NOT FOR BID

Federal Wage Decision

Will be provided by addendum.

NOT FOR BID

CONTRACTUAL DOCUMENTS

NOT FOR BID

NOT FOR BID

SECTION 00500
CONTRACT

THIS CONTRACT is dated as of the _____ day of _____ in the year 2015 by and between the **VILLAGE OF VILLA PARK, ILLINOIS** (hereinafter called OWNER) and _____ (hereinafter called CONTRACTOR). OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1. WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows: **2015 NORTH AVENUE TOWNHOMES LIFT STATION PROJECT**

ARTICLE 2. ENGINEER

The Village of Villa Park Village Engineer or his/her designee(s) are hereinafter referred to as "ENGINEER" and shall act as OWNER'S representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3. CONTRACT TIME

3.01. The Work shall meet the requirements for Substantial Completion as defined in Article 1 of the Supplementary Conditions within one-hundred and twenty (120) calendar days, including Saturdays, Sundays and holidays, from the date when the Contract Time commences to run as provided in Paragraph 2.03 of the General Conditions, or within thirty (30) calendar days, including Saturdays, Sundays and holidays, from the date when Work first commences onsite, whichever is less. The Work shall meet the Requirements for Final Completion and be ready for final payment in accordance with Paragraph 14.07 of the General Conditions within one-hundred and fifty (150) calendar days, including Saturdays, Sundays and holidays, from the date when the Contract Time commences to run, or within sixty (60) calendar days, including Saturdays, Sundays and holidays, from the date when Work first commences onsite, whichever is less.

3.02. Failure to Complete the Work on Time. OWNER and CONTRACTOR recognize that time is of the essence to the contract and that OWNER will suffer financial loss if the Work is not completed within the timeframe stipulated in the Contract as specified in Paragraph 3.1 above or within such extended time as may have been allowed in accordance with Article 12 of the General Conditions. Should CONTRACTOR fail to complete the Work within the timeframe stipulated in the contract or within such extended time as may have been allowed, CONTRACTOR shall be liable and shall pay OWNER the amount shown in the following schedule of deductions, not as a penalty but as liquidated damages, for each day of overrun in the contract time or such extended time as may have been allowed. This liquidated damages provision, as an obligation to the Owner, shall further apply to the Contractor's Surety. Permitting Contractor or Surety to continue and finish the Work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of Owner of its rights under the Contract. The liquidated damages for failure to complete the contract on time are approximate, due to the impracticality of calculating and proving actual delay costs. This schedule of deductions establishes the cost of delay to account for administration, engineering, inspection, and supervision during periods of extended and delayed performance. The costs of delay represented by this schedule are understood to be a fair and reasonable estimate of the costs that will be borne by OWNER during extended and delayed performance by CONTRACTOR of the Work, remaining incidental work, correction of work improperly completed, or repair of work damaged as a result of CONTRACTOR.

Schedule of Deductions for Each
Day of Overrun in Contract Time

<u>Original Contract Amount</u>		<u>Daily Charges</u>
<u>From More Than</u>	<u>To and Including</u>	<u>Calendar Day</u>
\$ 0	\$ 100,000	\$ 1,000
100,000	500,000	2,000
500,000	1,000,000	5,000
1,000,000	3,000,000	10,000
3,000,000	6,000,000	20,000
6,000,000	12,000,000	30,000
12,000,000	And over	50,000

The liquidated damage amount specified will accrue and be assessed for each and every calendar day of overrun, including Saturdays, Sundays and holidays, beyond the number of calendar days stipulated for Substantial Completion in the Contract as specified in Paragraph 3.1 above, until the Work meets the requirements for Substantial Completion. The liquidated damage amount specified will accrue and be assessed for each and every calendar day of overrun,

including Saturdays, Sundays and holidays, beyond the number of calendar days stipulated for Final Completion in the Contract as specified in Paragraph 3.1 above, until the Work meets the requirements for Final Completion. OWNER will deduct these liquidated damages from any monies due or to become due to CONTRACTOR from OWNER.

ARTICLE 4. CONTRACT PRICE

4.01. OWNER shall pay CONTRACTOR for completion of the work in accordance with the Contract Documents in current funds as shown in the Bid Form as accepted by OWNER.

ARTICLE 5. PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

5.01. Progress Payments. OWNER will make monthly progress payments on account of the Contract Price on the basis of CONTRACTOR'S Application for Payment as recommended by ENGINEER. All progress payments will be on the basis of the progress of Work measure by the schedule of values provided for in the General Conditions and the Supplementary Conditions.

5.02. Final Payment. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07B of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said Paragraph 14.07C

ARTICLE 6. CONTRACTOR'S REPRESENTATIONS

CONTRACTOR makes the following representations:

6.01. CONTRACTOR has familiarized itself with the nature and extent of the Contract Documents, Work site locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

6.02. CONTRACTOR has studied carefully all reports of explorations and tests of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in Paragraphs 4.02 and 4.03 of the General Conditions, and accepts the determination set forth in Paragraph SC-4.02.A.1 of the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which CONTRACTOR is entitled to rely.

6.03. CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies (in addition to or to supplement those referred to in Paragraph 6.2 above) which pertain to the subsurface or physical conditions at or contiguous to the site or otherwise may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraphs 4.02 and 4.03 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by CONTRACTOR for such purposes.

6.04. CONTRACTOR has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect of said Underground Facilities are or will be required by CONTRACTOR in order to perform and furnish the Work at the Contract Price, with the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.04 of the General Conditions.

6.05. CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

6.06. CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he/she has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

ARTICLE 7. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire Contract between OWNER and CONTRACTOR concerning the Work consist of the following:

- 7.01.** This Contract
- 7.02.** Performance and Payment Bonds
- 7.03.** Standard General Conditions
- 7.04.** Supplementary Conditions

- 7.05.** Project Specifications
- 7.06.** Drawings
- 7.07.** Addenda
- 7.08.** Instructions to Bidders
- 7.09.** Advertisement for Bids
- 7.10.** CONTRACTOR'S Bid and Bid Bond
- 7.11.** Documentation submitted by CONTRACTOR prior to Notice of Award
- 7.12.** Notice of Award
- 7.13.** Notice to Proceed
- 7.14.** Change Orders
- 7.15.** The following which may be delivered or issued after the Effective Date of the Contract and are not attached hereto: All Written Amendments and other documents amending, modifying, or supplementing the Contract Documents pursuant to Paragraphs 3.04 of the General Conditions.

There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be amended, modified or supplemented as provided in Paragraphs 3.04 of the General Conditions.

ARTICLE 8. MISCELLANEOUS

8.01. Terms used in this Contract which are defined in Article 1 of the General Conditions will have the meanings indicated in the General Conditions.

8.02. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

8.03. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors,

assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

8.04. WAGE PROVISIONS

CONTRACTOR shall pay prevailing wages at rates not less than those prevailing under the Davis-Bacon Act (40 USC 276a through 276a-5) as defined by the United States Department of Labor, and the Employment of Illinois Workers on Public Works Act (30 ILCS 570).

ARTICLE 9. CERTIFICATION REGARDING DEBARMENT

9.01. _____, having executed a contract for
(Name of contractor)

the **2015 NORTH AVENUE TOWNHOMES LIFT STATION PROJECT**, as generally described in the Advertisement for Bids, with the Village of Villa Park, hereby certifies that said contractor is not barred from executing said contract as a result of a violation of either Section 33E-3 or 33E-4 of Article 33E of Chapter 720 of the ILLINOIS Compiled Statutes (720 ILCS 5/33E-3 and 5/33E-4)

By: _____
Authorized Agent or Contractor

Subscribed and sworn to before me

This _____ day of _____, 2015.

Notary Public

NOT FOR BID

This page intentionally left blank.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Contract in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by ENGINEER on their behalf.

This Contract will be effective on the _____ day of _____, 2015.

OWNER: VILLAGE OF VILLA PARK CONTRACTOR: _____

SIGNED: _____ SIGNED: _____

BY: DEBORAH BULLWINKEL BY: _____

TITLE: VILLAGE PRESIDENT TITLE: _____

Attest: _____ Attest: _____

Address for giving notices:

PUBLIC WORKS DEPARTMENT

VILLAGE OF VILLA PARK

20 SOUTH ARDMORE AVENUE

VILLA PARK, IL 60181-2696

Address for giving notices:

License No. _____
(If required by State or Municipal Law)

(CORPORATE SEAL)

(CORPORATE SEAL)

END OF SECTION

NOT FOR BID

CONTROLLER CERTIFICATION

NOT FOR BIDD

NOT FOR BID

SECTION 00550
CONTRACTOR CERTIFICATIONS

1. SUBSTANCE ABUSE PREVENTION CERTIFICATION

**VILLAGE OF VILLA PARK
CONTRACTOR AND SUBCONTRACTOR
SUBSTANCE ABUSE PREVENTION POLICY**

Pursuant to P.A. 95-0635 (the “Substance Abuse Prevention on Public Works Act”), employees of the Contractor and employees of any Subcontractor are prohibited from the use of drugs or alcohol, as defined in the Act, while performing work on any public works project.

Before the Contractor or Subcontractor commences work, the Contractor and any Subcontractor shall have in place a written Substance Abuse Prevention Program for the prevention of substance abuse among its employees which meets or exceeds the requirements in P.A. 95-0635 or shall have a collective bargaining agreement in effect dealing with the subject matter of P.A. 95-0635.

The Contractor and any Subcontractor shall file with the public body engaged in the construction of the public works: a copy of the substance abuse prevention program along with a cover letter certifying that their program meets the requirements of the Act or a letter certifying that the Contractor or Subcontractor has a collective bargaining agreement in effect dealing with the subject matter of this Act. The Substance Abuse Prevention Certification Form provided in this section must be completed by the Contractor and each Subcontractor to this Contract.

SAMPLE SUBSTANCE ABUSE PREVENTION CERTIFICATION FORM IS PROVIDED ON PAGE 00550-03.

NOT FOR BID

This page intentionally left blank.

[ON COMPANY LETTERHEAD]

Date

Village of Villa Park
Public Works Department
20 South Ardmore Avenue
Villa Park, Illinois 60181

RE: Substance Abuse Prevention Program

[complete either A or B below]

Pursuant to Public Act 95-0635, the undersigned hereby certifies that it is in compliance with the terms and provisions of the Substance Abuse Prevention on Public Works Act. In particular, the undersigned hereby represents and warrants to the Village of Villa Park as follows:

- A. The undersigned representative of the Contractor/Subcontractor certifies that the contracting entity has signed collective bargaining agreements that are in effect for all of its employees, and that deal with the subject matter of Public Act 95-0635.

Contractor/Subcontractor

Name of Authorized Representative (type or print)

Title of Authorized Representative (type or print)

Date: _____

Signature of Authorized Representative

- B. The undersigned representative of the Contractor/Subcontractor certifies that the contracting entity has in place for all of its employees not covered by a collective bargaining agreement that deals with the subject of the Act, the attached substance abuse prevention program that meets or exceeds the requirements of Public Act 95-0635.

[attach a copy of the program]

Contractor/Subcontractor

Name of Authorized Representative (type or print)

Title of Authorized Representative (type or print)

Date: _____

Signature of Authorized Representative

NOT FOR BID

BOUND FORMS

NOT FOR BID

NOT FOR BID

Performance Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place
of Business):

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: _____

Name and Title:

SURETY

Company: (Corp. Seal)

Signature: _____

Name and Title:

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: _____

Name and Title:

SURETY

Company: (Corp. Seal)

Signature: _____

Name and Title:

EJCDC No. 1910-28-A (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.

2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR shall have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.

3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:

3.1. The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and

3.2. The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and

3.3. The OWNER has agreed to pay the Balance of the Contract Price to:

3.3.1 The Surety in accordance with the terms of the Contract;

3.3.2 Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

4. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1. Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment Bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR's Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;

1. After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or

2. Deny liability in whole or in part and notify the OWNER citing reasons therefor.

5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To the limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

6.1. The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;

6.2. Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. DEFINITIONS.

12.1. Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3. CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY---Name, Address and Telephone)

AGENT or BROKER: OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

Payment Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place
of Business):

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: _____

Name and Title:

SURETY

Company: (Corp. Seal)

Signature: _____

Name and Title:

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: _____

Name and Title:

SURETY

Company: (Corp. Seal)

Signature: _____

Name and Title:

EJCDC No. 1910-28-B (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

- 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants; and
- 2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

- 4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
- 4.2. Claimants who do not have a direct contract with the CONTRACTOR:
 - 4.2.1 Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and
 - 4.2.2 Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and
 - 4.2.3 Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

5. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

- 6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
- 6.2. Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds to the completion of the Work.

9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS.

15.1. Claimant: An individual or entity having a direct contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the CONTRACTOR and the CONTRACTOR's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

15.3. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY---Name, Address and Telephone)

AGENT or BROKER: OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

GENERAL

CONDITIONS

NOT FOR BID

NOT FOR BID

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

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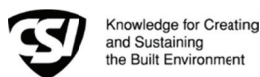
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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract

Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil,

petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and

easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor,

services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. Day

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents, or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or
- c. has been damaged prior to Engineer’s - recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. Furnish, Install, Perform, Provide

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 Copies of Documents

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 Starting the Work

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 Before Starting Construction

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 Preconstruction Conference

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 Initial Acceptance of Schedules

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it

provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 Intent

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 Reference Standards

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

- a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
- b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 Amending and Supplementing Contract Documents

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;
2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer's written interpretation or clarification.

3.05 Reuse of Documents

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or
2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 Electronic Data

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's

sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party..

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDI- TIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 Availability of Lands

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for

temporary construction facilities or storage of materials and equipment.

4.02 Subsurface and Physical Conditions

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 Differing Subsurface or Physical Conditions

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. Engineer's Review: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 Underground Facilities

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. Not Shown or Indicated

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 Reference Points

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 Hazardous Environmental Condition at Site

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning

the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against

all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 Performance, Payment, and Other Bonds

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 Licensed Sureties and Insurers

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 Certificates of Insurance

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

5.04 Contractor's Liability Insurance

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 Owner's Liability Insurance

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 Property Insurance

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 Waiver of Rights

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors,

partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 Receipt and Application of Insurance Proceeds

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order .

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 Acceptance of Bonds and Insurance; Option to Replace

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 Partial Utilization, Acknowledgment of Property Insurer

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 Supervision and Superintendence

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques,

sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

6.02 Labor; Working Hours

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 Services, Materials, and Equipment

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 Progress Schedule

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 Substitutes and “Or-Equals”

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or-equal” item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *“Or-Equal” Items:* If in Engineer’s sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an “or-equal” item, in which case review and approval of the proposed item may, in Engineer’s sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in Engineer’s sole discretion an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

- a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
- 2) will state:
- a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;
 - b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
 - c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
- 3) will identify:
- a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services;
- 4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements

for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. Special Guarantee: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. Contractor's Expense: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with

the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the

Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer,, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 Patent Fees and Royalties

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 Permits

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for

all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 Laws and Regulations

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 Taxes

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. Removal of Debris During Performance of the Work: During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. Cleaning: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. Loading Structures: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 Record Documents

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 Safety and Protection

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of

Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 Safety Representative

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 Hazard Communication Programs

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 Emergencies

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 Shop Drawings and Samples

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 Continuing the Work

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 Contractor's General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;
2. recommendation by Engineer or payment by Owner of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 Delegation of Professional Design Services

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 Related Work at Site

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 Coordination

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 Legal Relationships

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 Communications to Contractor

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 Replacement of Engineer

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status

under the Contract Documents shall be that of the former Engineer.

8.03 Furnish Data

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 Pay When Due

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 Lands and Easements; Reports and Tests

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 Insurance

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 Change Orders

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 Inspections, Tests, and Approvals

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 Limitations on Owner's Responsibilities

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the

performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 Undisclosed Hazardous Environmental Condition

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 Evidence of Financial Arrangements

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 Owner's Representative

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 Visits to Site

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 Project Representative

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 Authorized Variations in Work

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 Rejecting Defective Work

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as

provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 Shop Drawings, Change Orders and Payments

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 Determinations for Unit Price Work

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 Decisions on Requirements of Contract Documents and Acceptability of Work

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05.

The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 Limitations on Engineer's Authority and Responsibilities

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 Authorized Changes in the Work

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 Unauthorized Changes in the Work

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 Execution of Change Orders

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 Notification to Surety

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 Claims

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The

opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. Engineer's Action: Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 Cost of the Work

A. Costs Included: The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include

only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the

Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. Costs Excluded: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

C. Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form

acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by

Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an

allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee*: The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 Change of Contract Times

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 Delays

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or

arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 Notice of Defects

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 Access to Work

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 Tests and Inspections

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 Uncovering Work

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses,

and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 Owner May Stop the Work

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 Correction or Removal of Defective Work

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or

otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 Correction Period

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
 2. correct such defective Work; or
 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications .

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 Acceptance of Defective Work

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 Owner May Correct Defective Work

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other

contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 Schedule of Values

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 Progress Payments

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but

delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. there are other items entitling Owner to a set-off against the amount recommended; or

d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount

wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 Contractor's Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, , Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and

guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 Partial Utilization

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 Final Inspection

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 Final Payment

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral

satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and, will be paid by Owner to Contractor.

14.08 Final Completion Delayed

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 Waiver of Claims

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 Owner May Suspend Work

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 Owner May Terminate For Convenience

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and

recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 Methods and Procedures

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or
2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS

17.01 Giving Notice

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 Computation of Times

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 Cumulative Remedies

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 Survival of Obligations

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and

acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 Controlling Law

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 Headings

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

NOT FOR BID

SUPPLEMENTARY CONDITIONS

NOT FOR BID

NOT FOR BID

SECTION 00800
SUPPLEMENTARY CONDITIONS

GENERAL

The following supplements shall modify, change, delete from, and add to the "Standard General Conditions of the Construction Contract." 2002 Edition EJCDC C-700. Where any Article, Paragraph or Subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph or shall remain in effect and the supplementary provisions shall be considered as added thereto. Where any Article, Paragraph or Subparagraph in the General Conditions is amended, voided or superseded by any of the following paragraphs, the provisions of such Article, Paragraph or Subparagraph not so amended, voided or superseded shall remain in effect.

ARTICLE 1. DEFINITIONS

Amend the definition entitled "ENGINEER" to read:

"ENGINEER - the Village Engineer of Villa Park or his/her designee."

Amend the definition entitled "Substantial Completion" by adding the following immediately after the last sentence:

"Substantial Completion is a construction stage determined by the ENGINEER to be adequately completed in accordance with the Contract Documents so that the Owner may occupy and/or utilize the work for its intended purpose. Substantial completion for this Contract shall include all work items, excluding landscaping and punch list items."

Amend the definition entitled "OWNER" to read as follows:

"The Village of Villa Park."

ARTICLE 2. PRELIMINARY MATTERS

SC 2.01.B Delete Paragraph 2.01.B of the General Conditions in its entirety and insert the following in its place:

Evidence of Insurance:

"Before any Work at the Site is started, CONTRACTOR shall deliver to owner with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by the OWNER) which CONTRACTOR is required to purchase and maintain in accordance with ARTICLE 5."

SC 2.01 Add a new Paragraph 2.01.C immediately after Paragraph 2.01.B of the General Conditions which is to read as follows:

"The Agreement, Bonds, Evidence of Insurance, and such other portions of the Contract Documents as may be required shall be executed and delivered by CONTRACTOR to OWNER within 10 days after receipt of the Notice of Award. OWNER shall determine the number of counterparts required. OWNER will execute the counterparts. OWNER, CONTRACTOR, and ENGINEER shall each receive an executed counterpart of the Contract Documents and additional conformed copies distributed as required."

SC 2.03 Delete Paragraph 2.03 of the General Conditions in its entirety and insert the following in its place:

"The Contract Time will commence on the date established in the Notice to Proceed issued by OWNER to CONTRACTOR, but in no event shall the Contract Time commence to run later than the 30th day after the effective date of the Contract, unless agreement in writing is provided by the OWNER. A Notice to Proceed may be given at any time within the 30 days after the effective date of the Contract."

SC 2.06 Delete Paragraph 2.06 of the General Conditions in its entirety and insert the following in its place:

A. After delivery of the executed Contract to OWNER, but before CONTRACTOR starts the Work at the Site, a conference will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A.

B. The conference will be held at a location selected by OWNER. The conference will be attended by: CONTRACTOR'S Office Representative, CONTRACTOR'S General Superintendent, Any Subcontractors' or Suppliers' representatives whom CONTRACTOR may desire to invite or ENGINEER may request. Including OWNER'S Representatives and Local Utilities Representatives. A suggested format would include, but not be limited to, the following subjects:

1. Discuss proposed construction progress schedule to be submitted by CONTRACTOR in accordance with Section 01300 of the Specifications.
2. Check of required bonds and insurance certifications prior to Notice to Proceed.
3. Liquidated damages.
4. Shop drawing submittal and approval procedure.

5. Chain of command, direction of correspondence, and coordinating responsibility between CONTRACTORS.
6. Request for a weekly job meeting for all involved.
7. Equal opportunity requirements.
8. Laboratory testing of material requirements.
9. Inventory of material stored on-site provisions.
10. Progress payment procedure and estimate.

ARTICLE 4. AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

SC 4.02.A.1 Amend Subparagraph 4.02.A.1 of the General Conditions to read as follows: Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; including the following:

No pavement or subsurface investigation reports or information are available for this project.

ARTICLE 5 - BONDS AND INSURANCE

SC 5.01.C Add the following language at the end of Paragraph 5.01.C of the General Conditions:

"In addition, no further progress payments under the Agreement will be made by OWNER until CONTRACTOR complies with the provisions of this Article."

SC 5.03 through 5.06 Delete Paragraphs 5.03 through 5.06 inclusive of the General Conditions and insert the following:

SC 5.03 "CONTRACTOR'S Insurance Requirements:

A. CONTRACTOR shall not commence Work under the Contract until he/she has obtained all insurance required under this Article to provide protection from claims which may arise out of or result from CONTRACTOR'S performance of the Work and CONTRACTOR'S other obligations under the Contract Documents whether such performance is by CONTRACTOR, by any Subcontractor, by anyone directly or indirectly employed by them or by anyone for whose acts any of them may be liable. CONTRACTOR shall procure and maintain for the duration of the Contract insurance of such types and in such amounts as may be necessary

to protect himself and the interests of the OWNER against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the CONTRACTOR, his/her agents, representatives, employees, or subcontractors. As a minimum, CONTRACTOR shall secure and maintain the types of insurance as hereinafter specified, and shall submit evidence to OWNER on an annual basis that the insurance coverage are in force. The form and limits of such insurance, together with the underwriter thereof in each case, shall be acceptable to OWNER, but regardless of such acceptance it shall be the responsibility of CONTRACTOR to maintain adequate insurance coverage until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing defective Work in accordance with Paragraph 13.07 Failure of CONTRACTOR to maintain adequate coverage shall not relieve him/her of any contractual responsibility or obligation.

All insurance policies shall name the following as additional insureds:

- a) Village of Villa Park, 20 South Ardmore Avenue, Villa Park, Illinois 60181
- b) RJN Group, Inc., 200 West Front Street, Wheaton, Illinois 60187
- c) NWVP North Avenue Property Owners Association, 1001 West North Avenue, Unit A, Villa Park, Illinois 60181
- d) Ghanshayam & Daksha Patel, 242 Lynbrook Avenue, Bloomingdale, Illinois 60108
- e) Suresh and Alka Patel, 889 West North Avenue, Unit E, Villa Park, Illinois 60181
- f) Michael Adams, 724 East LeMoyne Avenue, Lombard, Illinois 60148
- g) Other parties as designated by OWNER

1. Public Liability and Property Damage Insurance

a. For CONTRACTOR

This insurance shall protect the CONTRACTOR from claims for bodily injury, personal injury, and property damage (except automotive equipment), which may arise because of the nature of the work, or from operations under this CONTRACT.

b. For OWNER and ENGINEER

The separate policy of insurance shall name the OWNER and its employees and officials and the ENGINEER as additional insured. The original insurance policy shall be

submitted for retention by the OWNER. This separate policy shall provide coverage to said OWNER and its employees and officials with respect to said work. Both bodily injury, personal injury, and property damage insurance must be on an occurrence basis, and said policy shall provide that the coverage afforded thereby shall be primarily coverage to the full limit of liability stated in the declarations, and if said OWNER and its employees and officials have other insurance against the loss covered by said policy, that other insurance shall be excess insurance only.

c. Property Insurance

CONTRACTOR shall purchase and maintain until final payment property insurance upon the work at the site to the full insurable value thereof. This insurance shall include the interests of OWNER, CONTRACTOR, and Subcontractors, (all of whom shall be listed as insured or additional insured parties), shall insure against the perils of fire and extended coverage, shall include "all-risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided in paragraph SC 5.3.4., and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property. If not covered under the "all-risk" insurance or otherwise provided in the Supplementary Conditions, CONTRACTOR shall purchase and maintain similar property insurance on portions of the work stored on and off the site or in transit when such portions of the work are to be included in an Application for Payment.

d. Amount of Coverage

Each of the above public liability and property damage policies of insurance shall provide coverage in the following minimum limits of liability:

- (1) One million dollars (\$1,000,000.00) combined single limit per occurrence for bodily injury or death to each person;
- (2) One million dollars (\$1,000,000.00) for property damage resulting from any one accident;

- (3) Five million dollars (\$5,000,000.00) general aggregate limit;

e. Subcontractors

The public liability and property damage insurance shall not be deemed to require the CONTRACTOR to have his/her Subcontractors named as co-insured in his/her policy of public liability and property damage, but the policy shall protect him/her from contingent liability, which may arise from the operations of his/her Subcontractors. Also, the CONTRACTOR, shall secure certificates of insurance as evidence that each Subcontractor carries insurance to provide coverage under this Contract to the same limits as is required by the CONTRACTOR. The CONTRACTOR shall submit copies of his/her Subcontractors insurance certificates to the OWNER as evidence of insurance coverage.

f. Included Coverage

The above public liability and property damage insurance shall also include the following coverage:

- (1) Comprehensive
- (2) Premises
- (3) Contractor's protective (Subcontractors to the CONTRACTOR) Liability.
- (4) Personal injury (false arrest, malicious prosecution and unlawful detention or imprisonment; libel, slander, and defamation of character; wrongful eviction, invasion of privacy and wrongful entry). Employee exclusion shall be removed.
- (5) Broad Form Property Damage.
- (6) XCU (explosion, collapse, underground damage). Exclusions deleted when applicable to operations performed by the CONTRACTOR or his/her Subcontractors.
- (7) Completed operation and product liability coverage for the life of the Contract and maintain such coverage for a period of three (3) years after final acceptance of the work by the OWNER.

- (8) CONTRACTOR Liability with respect to the hold harmless Agreement as herein stated.

g. Comprehensive Automobile Liability

This insurance shall cover owned, hired, and other non-owned automobiles and shall protect the CONTRACTOR from claims for bodily injury or property damage which may arise from the use of motor vehicles engaged in various operations under this Contract. The automobile insurance shall provide minimum limits of liability for bodily injury of \$500,000 for each person and \$1,000,000 each occurrence, and \$500,000 of property damage each occurrence.

h. Umbrella Policy

At the option of the CONTRACTOR, primary limits may be less than required, with an umbrella policy providing the additional limits needed. This form of insurance will be acceptable provided that the primary and umbrella policies both provide the insurance coverage herein required, and further provided that the umbrella policy minimum limits of coverage are \$5,000,000 per occurrence and \$5,000,000 aggregate. The umbrella coverage shall not apply to the OWNER'S protective policy.

2. Worker's Compensation Insurance

Before beginning the work, the CONTRACTOR shall furnish to the OWNER satisfactory proof that he/she has taken out, for the period covered by the work under this Contract, full worker's compensation insurance and, in addition, employee's liability insurance in an amount not less than \$1,000,000 for each occurrence, for all persons whom he/she may employ in carrying out the work contemplated under this Contract. In the event that the work of this Contract falls within the jurisdiction of the United States Longshoreman's and Harbor Workers Compensation Act and liability under Admiralty and Railroad Employees Federal Liability Act CONTRACTOR shall extend his/her worker's compensation insurance to provide and maintain in full force and effect during the period covered by this Contract insurance coverage under one or both of these Acts. Policies hereunder shall include an "all states" endorsement.

The insurer shall agree to waive all rights of subrogation against the OWNER, its officials, employees and volunteers for losses arising from work performed by CONTRACTOR for the OWNER.

3. Worker's Occupational Diseases Insurance

Worker's occupational disease insurance shall be taken out covering all persons whom the CONTRACTOR may employ in carrying out the work contemplated under this Contract.

4. Builder's Risk Insurance

"All Risk" builder's risk insurance, in an amount equal to the contract price, shall cover, but shall not be limited to, fire, lightning, windstorm, hail, explosion, riot, riot attending a strike, civil commotion, smoke damage, damage by aircraft or vehicles, vandalism and malicious mischief, theft, collapse, flood, and earthquake. This insurance shall name the OWNER and the Contractor as insured and shall include coverage, but not by way of limitation, for all damage or loss to the work and to appurtenances, to materials and equipment to be used on the project while the same are in transit, or stored on or off the project site, and to construction plant and temporary structures.

SC 5.07 Delete Paragraph 5.07 of the General Conditions in its entirety and insert the following:

SC 5.07 Waiver of Rights

A. "OWNER and CONTRACTOR waive all rights against each other for all losses and damages caused by any of the perils covered by the policies of insurance provided in response to paragraphs in this document and any other property insurance applicable to the work, and also waive all such rights against the Subcontractors, and all other parties named as insured in such policies for losses and damages so caused. As required by Paragraph 6.06.G, each Subcontract between CONTRACTOR and a Subcontractor will contain similar waiver provisions by the Subcontractor in favor of Owner, CONTRACTOR, and all other parties named as insured. None of the above waivers shall extend to the rights that any of the insured parties may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued."

B. "OWNER and CONTRACTOR intend that any policies provided in response to this document shall protect all of the parties insured and provide primary coverage for all losses and damages caused by the perils covered thereby.

Accordingly, all such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any of the parties named as insured or additional insured, and if the insurers require separate waiver forms to be signed by any Subcontractor, CONTRACTOR will obtain the same."

SC 5.08 and 5.09 Delete Paragraphs 5.08 and 5.09 of the General Conditions in their entirety.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

SC 6.05.G Add a new Paragraph 6.05 G immediately after Paragraph 6.05.F which is to read as follows:

"When substitutes are proposed and accepted by ENGINEER, and it is found that such substitutes alter the design or space requirements indicated on Drawings, CONTRACTOR shall be responsible for the costs involved to revise the design and construction, including the costs associated with the Work of other contractors due to such variance in design or space requirements. CONTRACTOR shall therefore thoroughly investigate the design parameters, conditions, and space requirements of potential substitutes with respect to the Contract Drawings and Specifications prior to requesting such substitutes, and shall submit evidence of such investigation to ENGINEER."

SC 6.06.A and 6.06.B Delete Paragraphs 6.06.A and 6.06.B of the General Conditions in their entirety and insert the following:

A. CONTRACTOR shall not employ any Subcontractor or other person or organization (including those who are to furnish the principle items of material or equipment), whether initially or as a substitute, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, other person or organization against whom he/she has reasonable objection.

B. Acceptance of any Subcontractor, other person or organization by OWNER shall not constitute a waiver of any right of OWNER to reject defective Work or Work not in conformance with the Contract Documents. If OWNER, after due investigation, has reasonable objection to any Subcontractor, other person or organization proposed by CONTRACTOR, CONTRACTOR shall submit an acceptable substitute. CONTRACTOR shall not, without the consent of OWNER, make substitution for any Subcontractor, other person or organization who has been accepted by OWNER.

SC 6.06.G Delete Paragraph 6.06 G of the General Conditions in its entirety and insert the following:

“All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the OWNER and contains waiver provisions as required by Paragraph SC 5.07 CONTRACTOR shall pay each Subcontractor a just share of any insurance monies received by CONTRACTOR on account of losses under policies issued pursuant to Paragraph SC 5.03.A.4.”

SC 6.08 Add the following language at the end of Paragraph 6.08 of the General Conditions which is to read as follows:

“Copies of all permits and licenses prepared or obtained by CONTRACTOR shall be submitted to OWNER prior to the commencement of construction. Copies of all permits and licenses obtained by OWNER shall be made available to CONTRACTOR and maintained by CONTRACTOR at project site.”

SC 6.20 Delete Article 6.20 of the General Conditions in its entirety and insert the following in its place:

“To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold the Village, its officials, agents, consultants, representatives and employees (the “Indemnified Village Parties”) and the Engineer harmless against all injuries, deaths, loss, damages, claims, patent claims, suits, liabilities, judgments, cost and expenses (the “Claims”), which may in anywise accrue against the Indemnified Village Parties, including attorney’s fees and court costs, arising in whole, in part, or as a consequence of the performance of the work by the Contractor, its employees or subcontractors. The Contractor shall, at its own expense, appear, defend and pay all charges of attorneys and all costs and other expenses arising therefrom or incurred in connection therewith, and, if any judgment shall be rendered against the Indemnified Village Parties, in any such action, the Contractor shall, at its own expense, satisfy and discharge the same. Without limiting the generality of the foregoing indemnity, the Contractor shall indemnify, defend and hold the Indemnified Village Parties harmless from all Claims brought pursuant to any statute, law, order, or decree, which Claim arises from or is related to the Contractor’s performance of the work. Contractor expressly understands and agrees that any performance bond or insurance policies required by this contract, or otherwise provided by the Contractor, shall in no way limit the responsibility to indemnify, keep and save harmless and defend the Indemnified Village Parties as herein provided.”

ARTICLE 8 - OWNER'S RESPONSIBILITIES

SC 8.01 Delete Paragraph 8.01 of the General Conditions in its entirety.

ARTICLE 10 - CHANGES IN THE WORK

SC 10.03 Amend the first sentence of Paragraph 10.03 of the General Conditions to read as follows:

"OWNER, after consideration and approval, may execute appropriate Change Orders (or Written Amendments) with CONTRACTOR covering."

And as so amended, Paragraph 10.03 remains in effect.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

SC 14.02.A.3 Amend Paragraph 14.02.A.3 of the General Conditions by deleting the word "Agreement" and inserting the words "Supplemental Conditions" in its place.

And as so amended, Paragraph 14.02.A.3 remains in effect.

SC 14.02.A.4 Add new Paragraphs 14.02.A.4 and 14.02.A.5 after Paragraph 14.02.A.3 of the General Conditions which are to read as follows:

4. "Retainage:

After each Application for Payment has been found acceptable by OWNER, OWNER will pay an amount equal to the value of the Work completed less any previous payments to CONTRACTOR. An amount will be retained on each payment in accordance with the following schedule:

(1) Ten percent (10%) until FINAL COMPLETION.

5. Per Public Act 87-773, effective January 1, 1993, which amended the Local Government Prompt Payment Act, the following is included:

"When CONTRACTOR receives any payment, CONTRACTOR shall pay each Subcontractor and material supplier in proportion to the work completed by each Subcontractor and material supplier their application less any retention. If CONTRACTOR receives less than the full payment due under the public construction contract, CONTRACTOR shall be obligated to disburse on a pro-rata basis those funds received, with CONTRACTOR, Subcontractor, and material suppliers each receiving a pro-rated portion based on the amount of payment. When, however, OWNER does not release the full payment due under the contract because there are specific areas of work or materials OWNER or CONTRACTOR is rejecting or because CONTRACTOR has otherwise determined such areas are not suitable for payment, then those specific Subcontractors or material suppliers involved shall not be paid for that portion of the work rejected or deemed not suitable for payment and all other Subcontractors and material suppliers shall be paid in full. If CONTRACTOR, without reasonable cause, fails to make any payment to his/her Subcontractors or

material suppliers within fifteen (15) calendar days after receipt of payment under the public construction contract, CONTRACTOR shall pay to his/her Subcontractors and material suppliers, in addition to the payment due them, interest in the amount of not less than two percent (2%) per month, calculated from the expiration date of the fifteen (15) day period until fully paid. This subsection shall also apply to any payments made by Subcontractors and material suppliers to their subcontractors and material suppliers and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain.”

SC 14.02.B.1 Amend the first sentence of Paragraph 14.02.B.1 of the General Conditions by deleting the words "ten days" and inserting the words "30 days" in its place.

And as so amended, Paragraph 14.02.B.1 remains in effect.

SC 14.02.B.5 Add two new Paragraphs 14.02.B.5.e and 14.02.B.5.f immediately after Paragraph 14.02.B.5.d of the General Conditions which are to read as follows:

- e. the CONTRACTOR failed to supply lien waivers for materials, equipment, and Subcontract Work completed to date.
- f. Of reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price.

And as so amended, Paragraph 14.02.B.5 remains in effect.

SC 14.04.B Delete Paragraph 14.04.B of the General Conditions in its entirety and replace it with the following:

B. Within a reasonable time after Contractor’s notification, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor.

And as so amended, Paragraph 14.04.B remains in effect.

SC 14.04.D Delete Paragraph 14.04.D in its entirety.

SC 14.04.E Amend Paragraph 14.04.E of the General Conditions by deleting the following words "on the tentative list." and insert the following words "required by the Contract Documents." in their place.

And as so amended, Paragraph 14.04.E remains in effect.

SC 14.05 Delete Paragraph 14.05.A.4 of the General Conditions in its entirety.

And as so amended, Paragraph 14.05 remains in effect.

SC 14.09 Delete Paragraph 14.09.A.1 of the General Conditions in its entirety.

And as so amended, Paragraph 14.09 remains in effect.

SC 14.10 Add a new paragraph immediately after Paragraph 14.09 of the General Conditions which is to read as follows:

“Liquidated Damages:

Should CONTRACTOR or Surety fail to complete the Work within the time set forth in paragraph 3.1 of the Contract Documents or within such extra time as may be allowed by extension, there shall be deducted from any monies due or that may become due CONTRACTOR or Surety the sum set forth in paragraph 3.2 of the Contract Documents for each and every calendar day, including Sundays and holidays, that the Work shall remain uncompleted. This sum shall be considered and treated not as a penalty but as fixed, agreed, and liquidated damages due OWNER from CONTRACTOR or Surety because of OWNER'S loss of income and other costs incurred resulting from the failure to complete the Work within the time specified. Permitting CONTRACTOR or Surety to continue and finish the Work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of OWNER of its rights under the Contract.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

SC 15.01 Amend the first sentence of Paragraph 15.01 of the General Conditions by deleting the words "and Engineer".

And as so amended, Paragraph 15.01 remains in effect.

SC 15.03 Amend the first sentence of Paragraph 15.4 of the General Conditions by deleting the words "and ENGINEER".

And as so amended, Paragraph 15.03 remains in effect.

SC 15.04 Delete Paragraph 15.04 of the General Conditions in its entirety and replace it with the following: "If through no act or fault of CONTRACTOR, the Work is suspended for a period of more than 120 consecutive days by OWNER or under an order of court, or other public authority, the CONTRACTOR may, upon seven days' written notice to OWNER, terminate the

Agreement and recover from OWNER payment on the same terms as provided in Paragraph 15.03.

ARTICLE 16 – DISPUTE RESOLUTION

SC 16.01 Delete Article 16 of the General Conditions in its entirety and insert the following in its place:

SC 16.01 Methods and Procedures

A. The OWNER and CONTRACTOR may request mutual mediation of any Claim submitted to ENGINEER for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. OWNER and CONTRACTOR shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

ARTICLE 17 - MISCELLANEOUS

SC 17.01 Amend Paragraph 17.01.A.2 of the General Conditions by inserting the words "(return receipt)" immediately following the words, "certified mail."

And as so amended, Paragraph 17.01 remains in effect.

SC 17.01 B Add a new Paragraph 17.01.B immediately after Paragraph 17.01.A of the General Conditions which is to read as follows:

“Whenever any provision of the Contract Documents requires the delivery of any Bond, Agreement, Certificate of Insurance or any other item, it shall be deemed to have been validly delivered if given in person to the individual, to a member of the firm or to an officer of the corporation for whom it is intended, or if given at or sent by registered or certified mail (return receipt), postage prepaid, to the last business address known to him/her who delivers the article.”

SC 17.02 Amend Paragraph 17.02 of the General Conditions by deleting the second sentence in its entirety.

And as so amended, Paragraph 17.02 remains in effect.

END OF SECTION

NOT FOR BID

NOT FOR BID

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SECTION 01110
SUMMARY OF WORK

PART I GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

The work to be performed is generally described in the Invitation to Bid and indicated in the Contract Documents. The proposed work is to be referred to in its totality as the Villa Park North Avenue Townhomes Lift Station and consists of the following:

Bid Package – New Lift Station and Controls, Sewer and Forcemain

The Work will consist of the phased demolition, and replacement of the existing Lift Station, including site clearing, bypass pumping, sheeting and shoring, construction layout, excavation and grading, demolition and removal of the existing mechanical piping, installation of a bypass, supply and installation of a prefabricated lift station including fiberglass wet well and valve vault, (2) two submersible sewage pumps with vortex impeller, (1) sump pump, installation of new mechanical equipment and controls, standby generator, and all necessary piping and appurtenances as set forth in the Contract Documents.

The Work will also consist of the installation of approximately 20 L.F. of 4" ductile iron pipe force main constructed using open-cut excavation. The project also consists of approximately 20 L.F. of open-cut 6" gravity overflow pipe, sanitary manhole structure, and 16 L.F. of open-cut 8" gravity sanitary sewer, as set forth in the Contract Documents.

1.02 CONTRACTOR'S DUTIES

- A. Except as specifically noted, provide and pay for:
 - 1. Labor, materials, and equipment.
 - 2. Tools, construction equipment, and machinery.
 - 3. Samples, shipping costs, and tests.
 - 4. Construction layout.
 - 5. Necessary utilities, such as water supply, electrical power, telephones, roads, fences, and sanitary facilities, including maintenance thereof.
 - 6. Other facilities and services necessary for proper execution and completion of work.
- B. Perform all the work described in these General Requirements except where specifically indicated to be done by others.
- C. Maintain structural integrity operation and working conditions of the sanitary sewer system during performance of the work.

- D. Pay legally required patent fees, sales, consumer, and use taxes.
- E. Secure and pay for legally required permits, licenses, and government fees.
- F. Give required notices.
- G. Employ workmen and foremen with sufficient knowledge, skill, and experience to perform the work assigned to them.
- H. Comply with codes, laws, ordinances, rules, regulations, orders, and other legal requirements of public authorities bearing on the conduct of the work.
- I. Submit written notice to Engineer of observed variance of Contract Documents from legal requirements. Any necessary changes will be adjusted as provided in the Contract for changes in the work.
- J. Enforce discipline and good order among Contractor and subcontractor employees. Any person employed by Contractor or subcontractors who does not perform his/her work in a skillful manner, is incompetent, or acts in a disorderly or intemperate manner shall, at the written request of Owner, be removed from the project immediately and shall not be employed in any portion of the work without the approval of Owner.
- K. Provide at all times facilities for access and inspection of the work by representatives of Owner and by official governmental agencies designated by Owner as having the right to inspect the work.
- L. Cooperate with other contractors who may be performing work of Owner, and with Owner's employees working in the vicinity of the work done under the Contract.
- M. Submit **shop drawings on all materials and equipment to be installed on the project.**
- N. Contractor shall submit to the Engineer proposed weekly schedule of activities and simultaneously distribute notices required by Owner to the residents under direction of the Engineer.

1.03 CONTRACTOR'S USE OF PREMISES

- A. Confine operations at site to areas permitted by law, ordinances, permits, and the Contract Documents.
- B. Do not load or permit any part of a structure to be subjected to any force that will endanger its safety.
- C. Comply with and enforce Owner's instructions regarding signs, advertisements, fires, and smoke.
- D. Assume responsibility for protection and safekeeping of products stored on premises.
- E. Do not discharge smoke, dust, or other contaminants into the atmosphere, or fluids or materials

into any waterway as will violate regulations of any legally constituted authority.

- F. Contractor shall move stored products which interfere with the operations of Owner or other Contractors.
- G. Contractor shall obtain and pay for a storage yard to store material and locate the contractor's trailer.
- H. No alcohol shall be consumed on the site.

1.04 EXISTING FACILITIES

- A. The existing facilities will be in continuous operation during the construction period.
- B. Submit for approval a construction sequence, and written explanations of the temporary facilities and appurtenances intended to be used in maintaining the uninterrupted operation of the existing sanitary sewer system and any other affected utilities.

1.05 DIMENSIONS OF EXISTING STRUCTURES

- A. Where the dimensions and locations of existing structures are of importance in the installation or connection of any part of the Work, Contractor shall verify such dimensions and locations in the field before the fabrication of any material or equipment which is dependent on the correctness of such information.

1.06 PARTIAL OWNER OCCUPANCY

- A. Owner, at its discretion, may place into service certain portions of the completed work.
- B. Provide proper access to Owner's personnel for this purpose.
- C. Use and operation of a completed portion by Owner will constitute acceptance of that work. Notify Owner when it should cover with its own insurance the work placed in beneficial use.
- D. Liability of Contractor for defects due to faulty construction will extend for three years after the work is placed in service.
- E. Payment will be made for that portion of the work placed in service by Owner, including any retained percentage of the amount due, immediately after the work is placed in service. The value of any uncompleted portion of the work placed in service will be excluded from the payment.

1.07 SEQUENCE OF CONSTRUCTION

- A. The Owner and Engineer will work closely with Contractor to coordinate efforts with other Village projects.
- B. The Contractor shall schedule work to cause as little inconvenience to the public as possible.
- C. Prior to final clean up and restoration, the Contractor shall ensure that all testing has been

completed and accepted by the Engineer.

D. The Contractor shall submit to the Engineer each week the next weeks proposed activities.

E. The Contractor will be responsible for conducting the work in a sequence and on a schedule that is conducive to timely completion of the Contractor's work. The recommended sequence of construction is as follows:

- **The Contractor** is to install a temporary bypass pumping system. **The bypass pumping is to remain operational at all times throughout the duration of construction.**
- **The Contractor** is to complete all site clearing and fencing within the limits of construction.
- **The Contractor** shall have existing utilities located and shall coordinate with the utilities as required for temporary relocates prior to excavation and the construction of shoring and sheeting systems.
- **The Contractor** shall demo the existing wet well and appurtenances.
- **The Contractor** is to supply and install the new prefabricated fiberglass lift station and valve vault, including all pumps, piping, and level controls.
- **The Contractor** is to complete the installation of the new motor control center and other control equipment needed to put the pumps at the new lift station in operation. Concurrent with this phase, the contractor shall coordinate with ComEd the new service to the lift station pump control panel.
- **The Contractor** is to complete the connection of the new lift station to the existing 8-inch sanitary sewer.
- **The Contractor** is to complete construction of the new sanitary manhole, 6-inch force main, and 6-inch gravity overflow pipe.
- After the new lift station and pumps have been tested and approved for operation, the connection from the new lift station to the new sanitary sewer manhole with 6-inch force main is to be established and ready to place into operation by **the Contractor**.
- After the installation of the new lift station has been completed, the new generator is to be installed by **the Contractor**.
- The work of the **Contractor** can be tested and approved by the Owner as completed. Upon approval of all piping, the work of the **Contractor** shall be considered substantially complete.

1.08 CONSTRUCTION RESTRICTIONS AND WORKING HOURS

A. Contractor shall at all times maintain vehicle access to all properties.

B. Contractor shall schedule and perform all work in accordance with the working hours stated in Article 7 of the Supplementary Conditions.

1.09 ABBREVIATIONS

A. The following abbreviations as used in the Contract Documents have the listed meanings:

A ampere
AASHTO American Association of State Highway and Transportation Officials
ACI American Concrete Institute
ANSI American National Standards Institute
AREA American Railroad Engineers Association
ASTM American Society for Testing and Materials
AWWA American Water Works Association

Bil basic impulse insulation level
BHP Brake Horse Power
BOD biochemical oxygen demand
btu British Thermal Unit

C degrees Celsius
cc cubic centimeter
cf cubic foot
cfm cubic feet per minute
Co. Company
conc. concrete
Corp. Corporation
CRSI Concrete Reinforcing Steel Institute
cu cubic
cy cubic yard

F degrees Fahrenheit
FIA Factory Insurance Association
FM Factory Mutual
fpm feet per minute
fps feet per second
ft feet
FS Federal Specifications

g gram
ga gauge
gal gallon
gpd gallons per day
gpm gallons per minute

H-O-A Hand-off-automatic
h hour
HP horsepower
hz hertz

IEEE Institute of Electrical and Electronic
..... Engineers
Inc. Incorporated

L..... Liter
lb pound
lbs..... pounds

max..... maximum
min minimum
mg/L..... milligrams per liter
mgd million gallons per day
mm..... millimeter
MS..... Military Specifications
NBBPVI National Board of Boiler and Pressure Vessel Inspectors
NBS..... National Bureau of Standards
NEC..... National Electrical Code
NEMA National Electrical Manufacturers Association
NFPA..... National Fire Protection Association
no number

OSHA Occupational Safety and Health Administration

ppm parts per million
psf..... pounds per square foot
psi..... pounds per square inch gauge
pvc..... polyvinyl chloride

sf..... square feet
sq..... square
SSPC..... Steel Structural Painting Counsel
sy square yard

V volt

UL Underwriters Laboratory
U.S. United States

END OF SECTION 01110

SECTION 01290
SCHEDULE OF VALUES
PART I GENERAL

1.01 SCHEDULE OF VALUES

- A. Submit a typewritten Schedule of Values on the form contained in this Document for use in computing and checking periodical payment estimates.
- B. No payment will be made until the Schedule has been submitted and accepted by Engineer and Owner.
- C. The Schedule as shown on the form contained in this Document may be expanded into greater detail if desired.

1.02 PROGRESS SCHEDULE

- A. Prepare a detailed progress schedule in graphic form showing proposed dates of starting and completing each major division of the work.
- B. The schedule shall be consistent with the time and order of work requirements of the Specifications, and shall be the basis of Contractor's operations.
- C. A condensed critical path method schedule is preferred, but another practicable form of presentation will be acceptable.
- D. Submit three copies to Engineer within 14 days after Notice to Proceed.
- E. Contractor and subcontractor responsibility shall be coded and annotated on the sequence of construction. In addition, a tabulation identifying each activity of the network diagram with a complete description and the planned duration in days shall be included.
- F. The schedules shall indicate the description, duration, sequence and interdependency of work activities. They shall include, but not be limited to, the following items:
 - 1. Mobilization and move in.
 - 2. Submittal preparation by the Contractor and review by the Engineer.
 - 3. Install dewatering system(s).
 - 4. Install Sheeting and Shoring system(s).
 - 5. Excavation, backfill, grading, paving, seeding, etc.
 - 6. Order, manufacture, delivery, and installation of critical material and major equipment.

7. Equipment installation, piping work.
8. Various plumbing activities.
9. Downtime for equipment installation during alteration periods.
10. Various electrical activities.
11. Construction of various facilities.
12. Subcontractor's items of work.
13. Performance tests and supervisory service activities.
14. Delivery and installation of Owner supplied equipment and material.
15. Modifications to existing structures to receive new work.
16. Removals.
17. All Contract stipulated milestone dates, substantial completion date, and final completion date.
18. Final cleanup.

1.03 CONTINGENCY

- A. Any contingency within the schedule, i.e., a difference in time between the project's early completion and required Contract completion date and float in the schedule, will belong to the Project and not to any of the parties to the Contracts.

1.04 FLOAT

- A. The Contractor shall not be permitted to sequester shared float through such strategies as extending duration estimates to consume available float time or extensive crew/resource sequencing, etc.
- B. Failure to submit the sequence of construction, or related reports or subsequent updates of the schedules shall be considered cause for withholding any partial payments otherwise due under the Contract.
- C. At the end of every two-month period, submit a revised schedule showing the current status of the work as compared to the projected status. The current application for a progress payment will not be processed until the revised schedule is delivered to Engineer.

1.05 DELAYS AND RECOVERY

- A. If at any time during the project, the Contractor fails to complete any activity by its latest scheduled completion date, he/she shall, within 5 days, submit to the Engineer a written statement as to how and when he/she will reorganize his/her work force to return to the schedule.
- B. Once the Contractor starts on any part of the work which affects public convenience, health, or safety, he/she shall diligently and expeditiously prosecute such work until it is no longer in any respect a public inconvenience, health or safety hazard.
- C. Whenever it becomes apparent from the current monthly progress evaluation and updated schedule data that any milestone interface completion dates and/or contract completion dates will not be met, the Contractor shall take some or all of the following actions:
 - 1. Increase construction manpower in such quantities and crafts as shall substantially eliminate the backlog of the work.
 - 2. Increase the number of working hours per shift, shifts per work day, work days per week, or the amount of construction equipment, or any combination of the foregoing sufficient to substantially eliminate the backlog of work.
 - 3. Reschedule work items to achieve concurrency of accomplishment.
- D. The addition of equipment or construction forces, increasing the working hours or any other method, manner or procedure to return to the current schedule shall not be considered justification for a Change Order or treated as an acceleration order.

PART 2 BASIS OF PAYMENT

2.01 BID PACKAGE – NEW LIFT STATION, SEWERS AND FORCEMAIN

All work to be completed in this Bid Package shall be paid for on the basis of the units noted in the Bid Schedule and specified in the subsequent sections of these Contract Documents.

- A. Removal of the existing wet well. This item shall consist of the decommissioning and removal of the existing wet well, lift station pumps, piping and appurtenances as indicated on the plans and specified in these Contract Documents. The work shall be paid for as a lump sum as **REMOVAL OF THE EXISTING WET WELL APPURTENANCES** to include all labor and materials necessary to complete this work and will generally consist of the following:
 - 1. Removal of existing pumps and salvaging of equipment, if any, as specified in Section 02220.
 - 2. Removal of the existing wet well structure.
 - 3. Removal of existing wet well piping, fittings, and valves.
 - 4. Disconnect and remove/abandon in place the existing service entrance conduit and wiring.

5. Coordinating with ComEd for meter socket removal and disconnect of the existing service.
 6. Disconnection from the existing sewer piping.
 7. Remove the existing gravity sewer and discharge pipes no longer to be used.
 8. Removal of existing Manhole 3-131.
 9. Salvage and storage or transport of removed items as specified.
 10. Proper disposal of equipment and materials not to be salvaged by the Owner.
- B. New Lift Station and valve vault. This item shall consist of the installation of a prefabricated fiberglass lift station and valve vault at the existing Lift Station (Kramer Ave, Villa Park) as indicated on the plans and specified in these Contract Documents. The work shall be paid for as a lump sum as **NEW LIFT STATION AND VALVE VAULT** to include all labor and materials necessary to complete this work and will generally consist of the following:
1. Coordinate with ComEd for the de-energizing of power lines as required for the construction.
 2. Earthwork, excavation, dewatering, and backfill for installation of the new lift station and valve vault.
 3. Shoring and other construction protection.
 4. Concrete work including cast-in-place concrete footing, control panel pad, generator pad, concrete fillets, reinforcing steel, and anchors.
 5. Prefabricated fiberglass structure as specified in the Plans and Section 02532.
 6. Access hatches.
 7. Wet well and valve vault flanged piping and fittings, plug valves, check valves, and bypass connection.
 8. One (1) 1/3 hp sump pump.
 9. One (1) 1 hp submersible propeller style mixer.
 10. Concrete fillets, Anchor bolts, guide rails, lifting chains, discharge elbow, and all other appurtenances as specified.
 11. Start-up and testing of new pumps.
- C. Pumps. This item shall consist of installation of two (2) 5 hp submersible wastewater pumps, as shown on the plans and specified in these Contract Documents. The work shall be paid for as a lump sum as **SUBMERSIBLE NON-CLOG WASTEWATER PUMPS** to include all labor and materials necessary to complete this work and will generally consist of the following:
1. Two (2) 5-hp submersible non-clog wastewater pumps and integral power cords.
 2. Start-up and testing of new pumps.
- D. Electrical equipment. This item shall consist of new mechanical and electrical equipment required to operate the North Ave Townhomes Lift Station as shown on the plans and specified in these Contract Documents. The work shall be paid for as a lump sum as **ELECTRICAL EQUIPMENT** to include all labor and materials necessary to complete this work and will generally consist of the following:
1. Demolition and removal of the existing lift station control panel and salvaging of electrical equipment as specified in Section 02220.
 2. Installation and coordination with electrical utility of new electrical service, meter fitting, and CT cabinet.

3. Conduits, conductors, terminal boxes, and control boxes for power circuits and control.
 4. Antenna pole and antenna
 5. Level transmitter, back-up floats, and control cabinet.
 6. Installation and assembly of motor control center and associated conduit and wiring.
 7. Installation of the PLC supplied by the Controls Integrator and associated conduit and wiring.
 8. Level transducer and backup float system for the new wet well.
 9. Coordination with the packaged lift station manufacturer and Systems Integrator.
- E. Standby Generator. This item shall consist of providing and installing a new stand-by generator and automatic transfer switch for the North Ave Townhomes Lift Station as shown on the plans and specified in these Contract Documents. The work shall be paid for as a lump sum as **STANDBY GENERATOR** to include all labor and materials necessary to complete this work and will generally consist of the following:
1. Standby generator assembly and automatic transfer switch (ATS).
 2. Coordination of new gas service installation and meter with NICOR.
 3. Start-up and testing of new generator and ATS.
- F. Controls and integration. This item shall consist of setting controls for new lift station, including operation of the Lift Station, and integration of new mechanical and electrical equipment into the programmable logic and existing SCADA system as shown on the plans and specified in these Contract Documents. The work shall be paid for as a lump sum as **PUMP CONTROL PANEL, SCADA CONTROLS, AND INTEGRATION** to include all labor and materials necessary to complete this work and will generally consist of the following:
1. Coordination with the packaged lift station manufacturer.
 2. Supply PLC for the lift station control panel.
 3. Installation of communication devices and conduits.
 4. Electrical relays.
 5. Configuration of HMI for controls.
 6. Services to be provided by the System Integrator, as specified in Section 26 45 01.
- G. Backflow Preventer. This item shall consist of providing and installing a new duckbill check valve/ backflow preventer for the North Ave Townhomes Lift Station as shown on the plans and specified in these Contract Documents. The work shall be paid for each **BACKFLOW PREVENTER** to include all labor and materials necessary to complete this work and will generally consist of the following:
1. Provide and install a duckbill check valve of the size indicated.
 2. Check valve shall be Tideflex Series TF-1 or approved equal.
- H. Fence Removal and Reinstallation. This item shall consist of the removal of the existing fence, setting aside all materials, and reinstallation of the fence prior to site restoration as shown on the plans and specified in these Contract Documents. The work shall be paid for as a lump sum as **FENCE REMOVAL AND REINSTALLATION** to include all labor and materials necessary to complete this work and will generally consist of the following:

1. Removal of the fence wood planks and posts and set aside during construction
 2. Reinstall the fence matching the existing construction following the completion of the lift station construction and prior to restoration. Replace the wood posts as needed.
 3. Pay item quantity includes the removal and reinstallation of the fence on the west side of the townhomes in the alley.
- I. **Construction Layout.** This item shall consist of providing surveyor services which are to construction staking and layout of the work items as required for the North Ave Townhomes Lift Station. The work shall be paid by lump sum for **CONSTRUCTION LAYOUT** to include all labor and materials necessary to complete this work and will generally consist of the following:
1. Engineer will provide survey control points to the contractor.
 2. Contractor will provide their own staking to establish horizontal and vertical control to establish for all of the work items.
- J. **Security System Package.** This item shall consist of providing and installing the controls for new lift station, including operation of the Lift Station, and integration of new mechanical and electrical equipment into the programmable logic and existing SCADA system as shown on the plans and specified in these Contract Documents. The work shall be paid for each **SECURITY SYSTEM PACKAGE** to include all labor and materials necessary to complete this work and will generally consist of the following:
1. Coordination with the security system package representative. The quotation for the materials to be provided is included in the Contract Documents.
 2. Supply the entire security system package(s) as indicated in the quotation.
 3. Installation of and conduits and power wiring to the security system. One package is to be installed on the antenna pole as indicated in the Plans. Second package is to be installed at a location to be determined in the field by the Owner.
 4. Start-up services as required.
- K. **Temporary Construction Fence.** This item shall consist of providing and installing temporary construction fence as described herein and in these Contract Documents. The work shall be paid for per linear foot as **TEMPORARY CONSTRUCTION FENCE** to include all labor and materials necessary to complete this work and will generally consist of the following:
1. Provide and install galvanized chain link fabric fence with with 2" x 11 gauge wire fill with tension bands. Wire ties every 12 inches. Fence shall include post stabilizers/ stands that will allow relocation of the fence and posts but will be large enough to resist tampering.
 2. Fence panels will be approximately 12' wide x 6' tall. Posts shall be 2" diameter.
 3. All fence components shall be galvanized steel.
- L. **Temporary Job Board.** This item shall consist of providing and installing temporary job board as described herein and in these Contract Documents. The work shall be paid for as lump sum as **TEMPORARY JOB BOARD** to include all labor and materials necessary to complete this work and will generally consist of the following:
1. Provide and install 4' x 4' plywood sign for publication of all workplace posters as required

per local and federal requirements.

2. Sign shall be placed on metal posts in a location near the work site area.
3. Sign shall be provided with weatherproofing to protect the posters and shall be maintained by the Contractor through the duration of the project.

M. Other items. All other work to be completed in this Bid Package and listed as separate bid items on the Bid Schedule shall be paid for on the basis of the units noted in the Bid Schedule and specified in the subsequent sections of these Contract Documents. IDOT Standard pay items that are not further described herein are indicated in the *Standard Specifications for Road and Bridge Construction*, latest edition.

END OF SECTION 01290

NOT FOR BID

SECTION 01310
PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes:

1. Coordination.
2. Administration of Project Meetings.
3. Pre-Construction Conference.
4. Documentation.
5. Control of Work.

B. Related Sections include the following:

1. Section 01110 – Summary of Work for other required submittals.
2. Section 01330 – Submittals for documents required to be reviewed.
3. Section 01450 – Testing Laboratory Services for testing and inspection services.
4. Section 01500 – Construction Facilities and Temporary Controls for Contractor requirements.

1.02 COORDINATION

A. General Coordination: Contract Documents are arranged for convenience only and do not necessarily determine which trades perform various portions of the Work. Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly execution of each part of the Work. Coordinate construction operations, included in different Sections that depend upon each other for proper execution of Work. Pay particular attention to the following:

1. Work of other Contractors.
2. Work of all subcontractors.
3. Changes with the Village.
4. Construction Schedule and Submittals Schedule with Project Manager, in addition to Village contracted services and Village employed services if used. Schedule and coordinate Work to minimize conflicts and expedite successful project completion.

5. Contingency Plans with Village.

1.03 ADMINISTRATION OF PROJECT MEETINGS

- A. Village will schedule weekly meetings to discuss progress and project coordination and make physical arrangements for meetings and preside at meetings either on-site or at an agreed upon location.

1.04 PRE-CONSTRUCTION CONFERENCE

- A. Village will schedule meeting prior to site mobilization for review of Conditions of the Contract and Division 1 – General Requirements.

- B. Attendance: Village, Engineer, Contractor, and subcontractors.

- C. Minimum Agenda:

1. Introductions: Identify meeting participants and project stakeholders not in attendance.
2. Refer to Conditions of the Contract for compliance requirements, procedures, documentation, and forms.
 - a. Workforce Training and Hiring Program, if applicable.
 - b. Good Faith Recruitment and Retention Practices, if applicable.
 - c. Monthly Employment Reports, if applicable.
 - d. Access to Records
3. Refer to Section 01110 – Summary of Work for requirements.
 - a. Safety: Emphasize that safety is the number one concern and overriding factor at all times.
 - b. Use of Premises: Discuss resolution to limitations on delivery, storage, staging, and parking.
 - c. Noise Limitations: Identify noisy work to be done after hours, whether Owner presence needed.
 - d. Security: Determine sign in/out procedures, key distribution, and Contractor personnel identification. Refer to Section 01500 – Temporary Facilities and Controls.
4. Refer to Section 01310 – Project Management and Coordination for meetings and documentation.

- a. Work Coordination: Establish procedures to schedule and coordinate Work under other Owner Contracts, including Owner contracted services and Owner employed services.
 - b. Change Management: Discuss procedures and forms for Change Orders, Construction Change Authorizations, and field decisions.
 - c. Project Record Documents: Discuss documentation procedures, maintenance, and periodic verification.
 - d. Progress Meetings: Establish time, place, and attendance requirements. The Village will attend the weekly meeting. Village Consultants will attend only when requested in advance.
5. Refer to Section 01330 – Submittal Procedures for documents required to be reviewed at the Pre-Construction Conference.
6. Refer to Section 01450 – Testing Laboratory Services for coordination of testing and inspection services.
7. Refer to Section 01500 – Construction Facilities and Temporary Controls for Contractor requirements.
 - a. Installation: Identify location and duration for temporary facilities, barriers, and signage.
 - b. Connection: Locate utility services and additional service requirements (e.g. Contractor phone, fax).
 - c. Village Material: Discuss the temporary use or non-use of Village material, equipment and personnel.
 - d. Security: Discuss Contractor's plan for site security.

1.05 DOCUMENTATION

- A. Documentation Requirements: Forward copies of accident, injury, or incident reports; inspection reports by authorities having jurisdiction; and notice of significant changes or impacts to Construction Schedule, Submittals Schedule, and Contingency Plans (if any) to the Village within 24 hours of those events.
- B. Record-Keeping Requirements: At site, maintain one clean unmarked copy of the following:
 1. Building permits if required, and Contract Documents including Project Manual and Drawings.
 2. Change Orders, Construction Change Authorizations, and minor changes in Work issued by Village, Request for Substitution with responses, supplemental instructions and Request for Information with responses.
 3. Current Contact List, Construction Schedule, Submittals Schedule, Schedule of Values, and approved submittals.
 4. Meeting notes, field test records, inspection reports, and safety incident reports.
- C. Project Record Documents: At site, maintain one marked up set of Contract Documents including Project Manual and Drawings that record changes in Work and deviations from

Contract Documents.

1. Label the markup set as "Project Record" and keep current, with no more than one week delay.
2. Record Change Orders, Construction Change Authorizations, and Minor Changes in the Work.
3. Record field changes in dimensions, connections, and/or materials used.
4. Record location of concealed items and utility lines.

1.06 CONTROL OF WORK

- A. Authority of the Engineer: The Engineer has full authority over the Work and its suspension. The Contractor shall perform all Work to complete satisfaction of the Engineer. The Engineer's determination shall be final on all matters, including but not limited to the following:

1. Quality and acceptability of Materials and workmanship
2. Measurement of unit price Work.
3. Timely and proper prosecution of the Work
4. Interpretation of Plans and Specifications
5. Payments due under the Contract

The Engineer's decision is final and, except as provided for adjustments of Contract Time and for claims for additional compensation within these Specifications, may be challenged only through litigation.

Work performed under the Contract will not be considered complete until it has passed Final Inspection by the Engineer and has been accepted by the Village.

Interim approvals issued by the Engineer will not discharge the Contractor from responsibility for errors in prosecution of the Work, for improper fabrication, for failure to comply with Contract requirements, or for other deficiencies, the nature of which are within the Contractor's control.

- B. Project Manager's Authority and Duties - The Engineer may designate a Project Manager as its representative on the Project, with authority to enforce the provisions of the Contract.

When the Engineer has designated a Project Manager, the Contractor shall direct all requests for clarification or interpretation of the Contract, in writing, to the Project Manager. The Project Manager will respond in writing within a reasonable time. Contract clarification or interpretation obtained from persons other than the Project Manager will not be binding on the Agency.

The Project Manager shall have the authority to appoint Inspectors and other personnel as required to assist in the administration of the Contract.

C. Inspectors' Authority and Duties – To the extent delegated under 1.6 (B) – Project Manager's Authority and Duties, Inspectors are authorized to represent the Engineer and Project Manager to perform the following:

1. Inspect Work performed and Materials furnished, including without limitation, the preparation, fabrication, or manufacture of Materials to be used;
2. Orally reject defective Materials and to confirm such rejection in writing;
3. By oral order, temporarily suspend the Work for improper prosecution pending the Village's Engineer's decision; and
4. Exercise additional delegated authority.

Inspectors are not authorized to:

1. Accept Work or Materials;
2. Alter or waive provisions of the Contract; or
3. Give instructions or advice inconsistent with the Contract Documents.

D. Contractor's Duty to Make Corrections – The Contractor shall perform all Work according to the Specifications and Plans. The Contractor shall correct Work that does not comply with the Specifications and Plans at its own expense. Inspection of the Work by the Village does not relieve the Contractor of responsibility for improper execution of the Work.

END OF SECTION 01310

NOT FOR BID

SECTION 01330
SUBMITTALS

PART I GENERAL

1.01 DESCRIPTION

- A. This section contains requirements for submittals of construction progress schedules, shop drawings, and other submittals required by Contract Documents.
- B. Submittal for Review:
 - 1. Submit required materials for Engineer's review in accordance with requirements of Contract Documents.

1.02 CONSTRUCTION PROGRESS SCHEDULES

- A. Prepare and submit construction progress schedule in accordance with requirements of General Conditions.
- B. No work shall be done between 5:00 p.m. and 7:00 a.m., or on Sundays or legal holidays without written permission of Owner. Work may be done on Saturdays and on an emergency basis with permission from Engineer.
- C. Prepare schedules in form of a horizontal bar chart, CPM, or other approved format.
 - 1. Provide separate horizontal bar for each item.
 - 2. Show dates for beginning and completion of each item of construction.
 - 3. Allow space for notations and future revisions.

1.03 SHOP DRAWINGS, CERTIFICATIONS AND SAMPLES

- A. Submit shop drawings, certifications, and samples required in specification sections.
- B. Contractor's responsibilities shall include:
 - 1. Review shop drawings, certifications, and samples prior to submittal.
 - 2. Determine and verify:
 - a. Field measurements.
 - b. Field construction criteria.

- c. Catalog numbers and similar data.
 - d. Conformance with specifications.
 - 3. Coordinate each submittal with requirements of work and of Contract Documents.
 - 4. Notify Engineer in writing, at time of submittal, of deviations in submittals from requirements of Contract Documents.
 - 5. Do not begin fabrication or other work which requires submittals until return of submittals with Engineer approval.
 - 6. Designate in construction progress schedule, dates for submittal and receipt of reviewed shop drawings, certifications and samples.
- C. Submittals shall contain:
- 1. Date of submittal and dates of previous submittals.
 - 2. Project title and number.
 - 3. Contract identification.
 - 4. Names of:
 - a. Contractor
 - b. Supplier
 - c. Manufacturer
 - 5. Identification of product, with identification numbers, and drawing and specification section numbers.
 - 6. Field dimensions, clearly identified.
 - 7. Identify details required on drawings and in specifications.
 - 8. Show manufacturer and model number, give dimensions, and provide clearances.
 - 9. Relation to adjacent or critical features of work or materials.
 - 10. Applicable standards, such as ASTM or Federal Specification numbers. Identification of deviations from Contract Documents.
 - 11. Identification of revisions on re-submittals.
 - 12. Eight (8) inch by three (3) inch blank space for Contractor and Engineer stamps.

13. Contractor's stamp, signed, certifying to review of submittal, verification of products, field measurement, field construction criteria, and coordination of information within submittal with requirements of work and Contract Documents.

D. Re-submittal requirements shall include:

1. Corrections or changes in submittals required by Engineer. Re-submittals are required until approved.
2. Shop drawings and product data:
 - a. Revise initial drawings or data and resubmit as specified for initial submittal.
 - b. Indicate changes which have been made other than those requested by Engineer.
3. Submit new samples as required for initial submittal.

E. Distribute reproductions of shop drawings and copies of product data which carry Engineer's stamp approval to:

1. Contractor's file.
2. Subcontractors.
3. Supplier or fabricator.

F. Engineer's duties include:

1. Review submittals with reasonable promptness and in accordance with schedule.
2. Affix stamp and signature, and indicate requirements for re-submittal or approval of submittal.
3. Return submittals to Contractor for distribution or for re-submittal.

1.04 PRECONSTRUCTION VIDEO RECORDING

- A. Provide color audio-video recording in digital format of construction areas prior to start of construction, as specified herein.
- B. Schedule video recording so that the project area is recorded within one week of the start of construction.
- C. Provide coverage of entire area where construction activities are to be undertaken in relation to this project.

- D. Make audio description simultaneously with video coverage. Include coverage, but not limited to, all existing roadways, curbs, driveways, sidewalks, parkways, landscaping and trees. Identify houses and buildings with their related coverage items, audibly and visually by address.
- E. Begin each video with the current date, project name, owner and location.
- F. Record at a rate of speed not exceeding 40 feet per second. Control panning rates and zoom-in and zoom-out rates to provide clarity of the viewed object during playback.
- G. Perform all video recording during times of good visibility.
- H. The Engineer has the authority to designate what areas may be omitted or added for audio-video coverage.
- I. Perform all video recording during regular business hours, unless otherwise specified by the private property owner or Engineer. Enter and leave private property in a professional and orderly, workmanship like manner.
- J. The Engineer has the authority to reject all or any portion of the videotape not conforming to these specifications. Digital recordings not found acceptable by the Engineer shall be re-recorded at no cost to the Owner.
- K. Construction will not be allowed to commence without approved (by Engineer) video recordings of the construction areas.

Upon acceptance of the video recordings by the Engineer they will become the property of the Owner.

1.05 TRAFFIC CONTROL PLAN

- A. See Section 01550 for submittal requirements.

1.06 TEST RESULTS

- A. Contractor shall provide test results to the Village as received.

1.07 WEEKLY WORK SCHEDULE

- A. Prepare a detailed weekly work schedule and submit the schedule to the Engineer on the Thursday before the schedule is to take effect.

1.08 CLOSEOUT SUBMITTALS

- A. Special guarantees and bonds.
- B. Contractor's Waiver of Liens
- C. Separate Waivers of Lien for subcontractors, suppliers, and others with lien rights against property of Owner.

- D. Final payment request.
- E. Red-line mark-ups noting all field changes.

PART 2 PRODUCTS

2.01 PRECONSTRUCTION VIDEO RECORDING

- A. Furnish all equipment, accessories and materials necessary to perform audio-video recording of entire construction area prior to the start of construction.
- B. Provide the total audio-video recording system and procedures as required to produce a finished product that will fulfill the technical requirements of the project. Produce the video portion of the recording with bright, sharp, clear pictures with accurate colors and free from distortion, tearing, rolls or other forms of picture imperfection. Produce the audio portion of the recording with proper volume, clarity and free from distortion.

PART 3 EXECUTION

3.01 SUBMITTAL REQUIREMENTS

- A. Provide complete copies of required submittals as follows:
 - 1. Construction progress schedule:
 - a. Two (2) copies of initial schedule
 - b. Two (2) copies of any revision
 - 2. Shop drawings: three copies.
 - 3. Other required submittals:
 - a. Three (3) copies of Operation and Maintenance Manuals
 - i. Submit for review by the Engineer
 - b. Two (2) copies of Record Drawings
 - i. Submit for review by the Engineer
- B. Deliver required copies of submittal to Engineer.

3.02 RECORD DRAWINGS

- A. The Contractor shall keep one (1) record copy of all Specifications, Drawings, Addenda, Field Modifications, Work Directive Changes or clarifications, permits, and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These

documents shall be kept current at all times and may be subject to the Engineer's review prior to approval of partial payments. These shall be available to the Engineer and shall be delivered to him or the Owner upon completion of the Project.

- B. Drawings: Graphically depict changes by modifying or adding to plans, details, sections, elevations, or schedules.
- C. Make changes on each sheet affected by changes.
 - 1. Dimensions:
 - a. Depths of various elements of foundation in relation to finish first floor datum.
 - b. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - c. Include state plane coordinates and elevations for all forcemain and sewer bends, valves, vaults, manholes, and forcemain and sewers in bore pits.
 - 2. Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
 - 3. Details not on original Drawings.
 - 4. Location and identification of exposed interior piping, including those shown schematically on Drawings.
 - 5. Size of equipment and location including connections.
 - 6. Electrical and Instrumentation:
 - a. Horizontal and vertical locations and size of underground cable, conduit, and duct runs dimensioned from established building lines.
 - b. Plan location and size of interior concealed and exposed feeders.
 - c. Size and location of access panels.
 - d. Variations from original Drawings.

PART 4 BASIS OF PAYMENT

4.01 PRE-CONSTRUCTION VIDEO RECORDING

- A. This work shall be paid for as **PRE-CONSTRUCTION VIDEO RECORDING**, as a lump sum, to include all materials and labor required to complete this task.

4.02 POST-CONSTRUCTION SEWER TELEVISION

- A. This work shall be paid for as **POST-CONSTRUCTION SEWER TELEVISION**, as a lump sum, to include all materials and labor required to complete this task.

END OF SECTION 01330

NOT FOR BID

SECTION 01410
REGULATORY REQUIREMENTS AND NOTICES

PART I GENERAL

1.01 CONTRACTOR'S RESPONSIBILITY FOR SAFETY

- A. The Contractor shall be solely and completely responsible for safety as set forth in the General Conditions. This requirement shall apply continuously and not be limited to normal working hours. Neither the Owner, nor the Engineer, nor their representatives are responsible for safety.

1.02 SAFE ACCESS TO THE WORK

- A. The Contractor shall at all times provide facilities for safe access to the work by the Owner, the Engineer, other contractors working on the project, their authorized representatives, and by all authorized government officials.

1.03 CONSTRUCTION SAFETY PROGRAM

- A. The Contractor shall develop, and maintain for the duration of the Contract, a safety program that will effectively incorporate and implement, as a minimum all required safety provisions. The Contractor shall employ a person who is qualified and experienced in construction safety and all necessary competent assistants whose prime responsibility will be accident prevention during construction. Such person(s) shall be at the worksite and be authorized to supervise and enforce compliance with the safety program. A written outline of the Contractor's safety program shall be submitted to the Engineer, prior to commencing any construction operation, for record purposes only.

1.04 SAFETY EQUIPMENT

- A. The Contractor shall maintain at the jobsite safety equipment applicable to the work as prescribed by the governing safety authorities, all articles necessary for giving first aid to the injured, and shall establish the procedure for the immediate removal to a hospital or a doctor's care of persons who may be injured on the jobsite.
- B. The Contractor shall do all work necessary to protect persons from hazards, including, but not limited to, surface irregularities or un-ramped grade changes in pedestrian sidewalks or walkways, and trenches or excavations in roadways. Barricades, lanterns, and proper signs shall be furnished as necessary to insure safety.
- C. The performance of all work and all completed construction, particularly with respect to ladders, platforms, structure openings, scaffolding, shoring, lagging, and machinery guards, shall be in accordance with the requirements of applicable governing safety authorities.
- D. During progress of the work, the Contractor shall at all times maintain satisfactory temporary chain link fencing, solid fencing, railing, barricades, or steel plates, as applicable, at all openings, obstructions, or other hazards in roadways, sidewalks, floors, roofs, walkways, and the like. All

barriers shall have adequate warning lights required for public safety.

1.05 ACCIDENT REPORTS

- A. If serious injury or damage occurs, the accident shall be reported immediately by telephone or messenger to the Engineer. In addition, the Contractor must promptly report in writing to the Engineer all accidents in connection with the work, giving full details, names, and statements of witnesses.
- B. If a claim is made by anyone against the Contractor or any subcontractor resulting from an accident, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim, including investigation and restitution.

1.06 TRAFFIC MAINTENANCE

- A. Comply with all regulations of the Owner regarding closing or restricting the use of roadways. No roadway shall be closed, except by express permission of the Owner. Conduct the work so as to assure the least possible obstruction to traffic and normal plant operations. Protect all obstructions within traveled roadways by installing signs, barricades, and lights.
- B. Where traffic will pass over backfilled areas before they are paved, the top of the area shall be maintained with temporary bituminous surfacing that will allow normal vehicular traffic to pass over. Temporary access driveways must be provided where required. Cleanup operations shall follow immediately behind backfilling and the work site shall be kept in an orderly condition at all times.
- C. The Contractor shall immediately clean up accidental spills of any type material which may be a hazard to safe movement of vehicular traffic. Where the type and amount of spilled material creates immediate and serious safety hazard, the Contractor shall immediately post flagmen, initiate cleanup and advise the Engineer of the spill.
- D. When flagmen and guards are required by regulation, or when deemed necessary for safety, they shall be furnished with orange wearing apparel and other regulation traffic-control devices.

1.07 SNOW REMOVAL

- A. The Contractor shall arrange his/her material storage and construction operation so as not to interfere in any way with the owner's normal snow removal activities.

1.08 ACCESS FOR EMERGENCY VEHICLES

- A. The Contractor shall maintain emergency vehicle access at all times to all areas of the plant site. The Contractor shall leave his/her night emergency telephone number or numbers at the plant administration office so that contact may be made easily at all times in case of emergency.

1.09 FIRE PREVENTION AND PROTECTION

- A. The Contractor shall execute all work in a fire-safe manner. He or she shall supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. The Contractor shall comply with applicable fire-prevention laws. Where these laws do not apply, applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed.

1.10 SECURITY

- A. The Contractor, if in his/her opinion deems it necessary to employ watchmen to safeguard the work, equipment, or the public, shall employ only licensed and uniformed watchmen, physically capable of adequately patrolling the whole of the work.

1.11 PROTECTION OF PROPERTY

- A. Public Safety and Convenience. Protection of Property. During its operations, the Contractor shall keep the site of the work and adjacent premises as free from material, debris, excessive dust, and rubbish as practical, and shall remove the same entirely and at once if, in the opinion of the Engineer, such material, debris, excessive dust, or rubbish constitutes a nuisance, a safety hazard, or is objectionable in any way to the public. The Contractor shall employ such means and methods as necessary to adequately protect all property against damage.
- B. The Contractor shall be liable for damages to property, real or personal, which may arise from its operations under this contract. In the event of damage to such property, the Contractor shall, at his/her own expense, immediately restore the property to a condition at least equal to its original condition and to the satisfaction of the Engineer.
- C. All existing structures in the vicinity of the work shall be protected against damage during performance of the work.
- D. The Contractor, prior to the end of a day's work, shall fill all trenches, remove all excess dirt from the street, and clean the work area to the satisfaction of the Engineer. No barricades shall remain blocking the street unless approved by the Engineer.
- E. All loss/damage claims to property as a result of the Contractor's work shall be reviewed by the Contractor and/or its insurance carrier within 30 days after the Contractor receives the claim. If the claim is denied in whole or part, the Contractor, or its insurance carrier must notify the property owner and the Village of the reasons for denial within 30 days of receipt of the claim. If there are special circumstances which require more than 30 days to process a claim, the property owner and the Village may be sent a notice within the 30 day period explaining why more time is needed. In all circumstances, however, failure on the part of the Contractor or the Contractor's insurance carrier to process a claim within 90 days of notification, will result in the Village determining the Contractor responsible for the claim and the Village shall, if need be, reimburse the property owner(s) for the claimed losses out of the Contractor's final payout.
- F. Before the final acceptance of the work, the Contractor shall remove all temporary work, equipment, unused and useless materials, rubbish and debris, and shall leave the work site in a neat and presentable condition wherever its operations have disturbed conditions which existed at the time the work began. The cost of this clean-up shall be incidental to the contract.

1.12 PROPERTY LOSSES FROM REMOVAL OR DISTURBANCE OF GROUNDWATER

- A. When the Contractor is excavating and encounters large amounts of water draining to the excavation, immediate steps shall be taken to control the water source. Large amounts of water, requiring control, shall be defined as those which adversely affect the performance of work under this Contract and/or amounts that have the potential of causing loss or damage to adjacent structures and their foundations. The work performed in controlling the water source shall be considered incidental and payment is included as a part of the appropriate lump sum or unit price stated in the Bid.
- B. Any footings, foundations, basement or house walls, concrete driveways or other structures that become unstable and vulnerable to collapse due to removal or disturbance of groundwater shall be supported immediately by the Contractor, at his/her own expense. This shall include, but not be limited to shoring, sheeting, bracing, underpinning, driving piles or sheeting, excavation, backfilling, placing new structural concrete beneath or adjacent to the unstable structure, or other means necessary to rectify the particular problem involved.
- C. All loss or damage arising from removal or disturbances of groundwater which may occur in the prosecution of the work shall be sustained and borne by the Contractor. If the Contractor fails to correct the damage or destruction resulting from his operations, the Owner, may, after the expiration of 30 days after notifying the Contractor in writing, proceed to repair, rebuild or otherwise restore such damaged property as may be deemed necessary, and the cost thereof shall be deducted from any compensation which may be (or become) due the Contractor under this Contract.

1.13 BASIS OF PAYMENT

- A. Unless otherwise specified the work in this Section shall be considered incidental and payment will be included as part of the appropriate lump sum or unit prices stated in the Bid.

END OF SECTION 01410

SECTION 01450
TESTING LABORATORY SERVICES

PART I GENERAL

1.01 TESTING LABORATORY SERVICES

- A. Coordinate the services of an independent testing laboratory to perform specified services.
- B. Obtain approval of Owner before employing laboratory.
- C. Laboratory shall meet "Recommended Requirements for Independent Laboratory Qualification" published by the American Council of Independent Laboratories.
- D. Laboratory shall meet basic requirements of ASTM E329, "Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction".
- E. Laboratory Duties
 - 1. Perform specified tests and services.
 - 2. Comply with specified standards, ASTM, other recognized authorities, and as specified.
 - 3. Ascertain compliance with requirements of Contract Documents and so note in writing on all reports.
 - 4. Promptly notify Engineer and Contractor of irregularities or deficiencies of work observed during performance of services.
 - 5. Promptly submit three copies of reports of inspections and tests to Engineer.
 - 6. Include in the reports date, project title and number, name and signature of inspector, date of inspection or sample, record of temperature and weather, date of test, identification of product and Specification Section, location in project, type of test, and observations regarding compliance with requirements.
- F. Contractor's Responsibilities
 - 1. Cooperate with laboratory personnel.
 - 2. Provide laboratory with samples of materials to be tested in required quantities.
 - 3. Furnish to the Engineer three copies of mill test results.
 - 4. Provide facilities for storage and curing of test samples.
 - 5. Provide Engineer with sufficient notice of tests to be performed at point of manufacture, assembly, or fabrication, to permit Engineer to witness tests if he so desires.

PART 2 QUALITY CONTROL

2.01 QUALITY CONTROL

A. TESTING LABORATORY SERVICES

1. All tests which require the services of a laboratory to determine compliance with the Contract Documents shall be performed by an independent commercial testing laboratory acceptable to Engineer. The laboratory shall be staffed with experienced technicians, properly equipped, and fully qualified to perform the tests in accordance with the specified standards.

a. Testing Laboratory Services Furnished by Contractor

- 1) Unless otherwise specified, Contractor shall be responsible for testing laboratory services in connection with compaction of backfill materials, concrete materials and mix designs, gradation tests for embedment, fill and backfill materials, and all other tests and engineering data required for Engineer's review of materials and equipment proposed to be used in the Work. Contractor shall obtain Engineer's acceptance of the testing laboratory before having services performed, and shall pay all costs for services.

b. Testing Laboratory Services Furnished by Owner

- 1) Unless otherwise specified, Owner shall pay all charges of testing laboratories for quality control tests made in the field or laboratory on concrete, moisture-density (Proctor) and relative density tests on embedment, fill, and backfill materials, in-place field density tests on embedment and fills, and other materials and equipment, during and after their incorporation in the Work. Field sampling and testing will be performed by Engineer or testing laboratory personnel, in the general manner indicated in the specifications, with minimum interference with construction operations. Engineer shall determine the exact time and location of field sampling and testing, and may require such additional sampling and testing as necessary to determine that materials and equipment conform with data previously furnished by Contractor and with the Contract Documents.
- 2) Arrangements for delivery of samples and test specimens to the testing laboratory will be made by Owner. The testing laboratory shall perform all laboratory tests within a reasonable time consistent with the specified standards and shall furnish a written report of each test.

END OF SECTION 01450

SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 DESCRIPTION

- A. Furnish, install and maintain temporary facilities and controls required for construction; remove on completion of work.

PART 2 PRODUCTS

2.01 MATERIALS - GENERAL

- A. Temporary construction materials may be new or used, but must be adequate in capacity for required usage, shall not create unsafe conditions, and shall not violate requirements of applicable codes and standards.

2.02 TEMPORARY WATER

- A. Arrange with Owner to provide water for construction purposes.
- B. Pay all costs for installation, maintenance and removal, and service charges for all water used. Service shall be metered separately to Contractor as required by municipality.

2.03 TEMPORARY SANITARY FACILITIES

- A. Provide temporary sanitary toilet facilities conforming to state and local health and sanitation regulations, in sufficient number for use by Contractor's employees.
- B. Maintain in sanitary condition and properly supplied with toilet paper.
- C. Remove from site before final acceptance of work.

2.04 TEMPORARY FIRE PROTECTION

- A. Fire hydrants shall remain accessible at all times to the Owner.

2.05 TEMPORARY SITE WORK

- A. Roadways shall be maintained along where construction has occurred or which are prepared for construction in a clean, drivable condition as determined by the Engineer. When directed by the Engineer, the Contractor shall immediately take corrective action to temporarily repair the roadway to the satisfaction of the Engineer.
- B. Provide and maintain temporary site drainage.

- C. Exercise caution to minimize increase in suspended solids and turbidity in surface waters within and adjacent to construction area. Spoils are not to be deposited in surface waters. Control and minimize sediment runoff and excavation erosion to surface waters.

2.06 DAMAGE TO EXISTING PROPERTY

- A. Be responsible for replacing or repairing damage to existing buildings, sidewalks, roads, parking lot surfacing, mail boxes, utilities, and other existing assets.
- B. Contractor shall take measures to insure that debris does not enter any of the Owner's facilities (including but not limited to sanitary and storm sewers, valve vaults and boxes). If debris does enter these facilities, the Contractor shall take immediate corrective action to remove all of the debris.

2.07 SECURITY

- A. Security will not be provided by Owner.
- B. Contractor shall be held responsible for loss or injury to persons or property where his work is involved, and shall provide such security take such precautionary measures as deemed necessary to protect Contractor's and Owner's interests.

2.08 TEMPORARY PARKING

- A. Make arrangements for parking area for employee's vehicles.
- B. Costs involved in obtaining this parking area shall be borne by Contractor.
- C. There shall be no parking on construction site unless designated or approved by Owner.

2.09 TEMPORARY FENCING

- A. Provide temporary fencing sufficient to prevent trespass by public into active construction areas as specified in IDOT Article 201.
- B. Materials shall be sufficiently durable to be effective for the duration of the work.
- C. Temporary Construction Fencing for pump station construction shall be as per standard details.

2.10 BEEPER AND PORTABLE PHONE

- A. The Superintendent of the job must have a beeper and portable phone, so he/she may be reached at all times during the working day.

2.11 FIELD OFFICES AND BUILDINGS

- A. If required by CONTRACTOR, erect where designated by OWNER, and maintain in good condition, temporary field office, tool, and storage building(s) or trailer(s) for CONTRACTOR'S use.
 - 1. Tool storage building(s) or trailer(s) shall be of ample size to provide space for tools and equipment.
 - 2. Building(s) or trailer (s) shall be neat and well constructed, surfaced with plywood, drop siding, masonite, or other similar material, well painted and void of advertisements.

PART 3 EXECUTION

3.01 GENERAL

- A. Provide and operate systems to ensure continuous service.
- B. Modify and extend systems as work progress requires.

3.02 REMOVAL

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.
- C. Restore existing or permanent facilities used for temporary services to specified, or to original condition.

PART 4 BASIS OF PAYMENT

4.01 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

- A. Unless otherwise specified the work in this Section shall be considered incidental and payment will be included as part of the appropriate lump sum or unit prices stated in the Bid.

END OF SECTION 01500

NOT FOR BID

SECTION 01510
TEMPORARY CONSTRUCTION UTILITIES

PART 1 GENERAL

1.01 DESCRIPTION

- A. Furnish, install and maintain temporary utilities required for construction; remove on completion of work.

PART 2 PRODUCTS

2.01 TEMPORARY BYPASS PUMPING

- A. When by-pass pumping is required, the Contractor shall provide, install, and maintain all pumps, piping, temporary flow reducers as necessary to divert the flow between the upstream and the downstream manholes. Contractor shall be responsible for providing all fuel and performing all routine maintenance for the temporary by-pass pumping set while at the job site. The temporary unit may be disconnected and removed from the site at the end of the construction.
- B. Provide two or more pumps. Required flow rate shall be met with largest pump out of service.
- C. Provide pumps to handle range of flow rates required for the flow stream being pumped.
- D. Existing influent flow range:
 - a. Average Daily Flow: 51,500 GPD (Gallons/Day)
 - b. Peak Daily Flow: 206,000 GPD (Gallons/Day)

PART 3 BASIS OF PAYMENT

- A. Bypass Pumping

Bypass pumping shall be paid for at the Contract unit price lump sum as **BYPASS PUMPING** to include all labor, materials, equipment, and ancillaries for the duration of the construction.

END OF SECTION 01510

NOT FOR BID

SECTION 01550
TRAFFIC REGULATION

PART 1 GENERAL

1.01 DESCRIPTION

- A. Contractor shall be solely responsible to keep work areas open to pedestrian and vehicular traffic to maximum extent practical and to provide safe passage of such traffic and continuous access for emergency vehicles.
- B. Provide, install, and maintain items such as barricades, beacons, warning signs, temporary pavement markings, lane delineators, temporary fencing, flag persons, and other appurtenances to protect pedestrian traffic, vehicular traffic, and Contractor's own work forces during construction operations.
- C. Remove temporary equipment and facilities when no longer required; restore area to original condition.

1.02 QUALITY ASSURANCE

- A. Requirements of regulatory agencies:
 - 1. Occupational Safety and Health Act (OSHA) applicable provisions.
- B. Reference standards:
 - 1. Part VI of the Manual on Uniform Traffic Control Devices (MUTCD) Latest Edition.
 - 2. Illinois Department of Transportation.
 - a. Standard Specifications for Road and Bridge Construction - Latest Edition.
 - b. Supplemental Specifications and Recurring Special Provisions - Latest Edition.
 - 3. Illinois Department of Transportation, Bureau of Design.
 - a. Highway Standards.
 - 4. Illinois Department of Transportation, Bureau of Local Roads.
 - a. BLR Standard 17-4 – Traffic Control Devices for Day Labor Construction.
 - b. BLR Standard 21-6 - Typical Applications of Traffic Control Devices for Construction on Rural Local Highways.

1.03 SUBMITTALS

A. Traffic control schedule:

1. Submit to Engineer for acceptance, traffic control schedule of street and walkway closings, partial closings, and detours prior to implementation.
2. Submit updates as necessary to keep Engineer fully informed of traffic routing.
3. Engineer will review schedules and updates only for maintenance of adequate traffic patterns within and through construction areas.
 - a. Engineer's review and acceptance shall not be construed as confirming adequacy of protection measures proposed.
 - b. Engineer will notify residents of construction schedules and traffic plans. Contractor shall be solely responsible for full protection of public and Contractor's own forces.
4. Work will not be allowed until Engineer has reviewed and accepted traffic control schedules and updates as well as their implementation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Traffic control materials shall conform to the following:

1. IDOT Standard Specifications, Article 701.
2. ILHYSTDS
 - 701301-02
 - 701501-03
 - 701801-03
 - 702001-06
3. OSHA applicable provisions.

PART 3 EXECUTION

3.01 GENERAL

- #### A. Provide traffic control as described in this section.

3.02 TRAFFIC CONTROL SCHEDULE

- #### A. Prepare plan for pedestrian and vehicular traffic control compatible with construction procedures employed in each construction area. Incorporate proposed construction sequencing to form continuous traffic control schedule.

- B. Include detailed descriptions of proposed procedures for pedestrian and vehicular traffic routing and protection in immediate construction area and surrounding area during both working and non-working hours.

3.03 VEHICULAR TRAFFIC CONTROL

- A. Provide traffic control for work in or adjacent to streets and alleys as described.
- B. General requirements:
 - 1. The minimum requirement for traffic control is described herein. Contractor shall institute any other measures necessary to ensure safety of vehicular and pedestrian traffic.
 - 2. For streets and alleys along or in which construction is occurring and for areas where construction vehicles are entering or leaving streets, warning signs informing traffic of construction activities ahead and restricting roadway to local traffic only shall be posted.
 - 3. When it is necessary to completely close a street, as determined by the Engineer, detour signs shall be posted under the supervision of the Engineer so that traffic can be properly rerouted around the construction site.
 - 4. For unpaved trenches (those not being used for vehicular traffic) and other disturbed areas in pavement: Provide flashing light barricades, Type I or II, to channelize traffic into undisturbed pavement.
 - 5. At cross-streets and alleys: Flashing light barricades, Type III, to screen off disturbed areas in trenches.
 - 6. Maintain and grade backfilled trenches uniformly to permit safe crossing by vehicles.
- C. During working hours:
 - 1. Driveways: Open to maximum practical extent. Maximum duration of closure - 4 hours except for replacement of driveway or construction across driveway.
 - 2. Sidewalks and crosswalks: Open to maximum practical extent.
 - 3. Alleys: Closed to through traffic; open to adjoining property to maximum practical extent.
 - 4. Two-lane streets: One lane continuously open in alternating directions controlled by flag persons.
- D. During non-working hours:
 - 1. Driveways: Open except for replacement of driveway.
 - 2. Sidewalks and crosswalks: Open except for replacement of walks.

3. Alleys: Open, one-way travel restrictions permitted.
4. Two-lane street: Both lanes continuously open.
- E. Barricade and warning sign arrangements shall conform to the following ILHWSTDS as minimum. The specific type of arrangement to be utilized shall be determined by Engineer.
 1. Full closure local traffic permitted BLR Standard 17-3
 2. Full closure no traffic permitted BLR Standard 17-4
 3. Full closure local traffic permitted BLR Standard 21-6
 4. Full closure no traffic permitted BLR Standard 21-6
- F. Provide more extensive warnings, markings, and controls in areas having special local conditions such as:
 1. High daily or hourly traffic volumes.
 2. Unusual turning patterns.
 3. Moderate to high pedestrian traffic.
 4. School zones.
 5. Hospitals or other emergency care facilities.
 6. Police, fire, ambulance, civil defense, or other emergency services.
 7. Public Works facilities.

3.04 PEDESTRIAN TRAFFIC CONTROL

- A. The minimum requirements for pedestrian traffic control are described herein. Contractor shall institute the requirements and any other measures necessary to protect pedestrians and residents from construction operations and from vehicular traffic traveling through construction area.
- B. During working hours, provide Type I or II barricades to protect public from open excavations, wet paint, wet concrete, other construction operations, stockpiled materials, construction equipment, and vehicular traffic.
- C. Control excavation operations so size of open excavation at end of each workday is minimized.
- D. Upon stopping construction operations for day, provide and install temporary fencing, 4 feet high minimum around open excavations and rough terrain areas. Lock and shutter construction equipment.

- E. Stockpile materials so as not to block streets, alleys, drives, sidewalks, and crosswalks. Grade backfilled trenches uniformly to permit safe crossing by pedestrians.

3.05 TRAFFIC CONTROL FOR CONTRACTOR'S EQUIPMENT

- A. Operate construction equipment in accordance with applicable traffic laws and safety regulations.
- B. Furnish equipment with warning lights and audible warning devices as minimum.
- C. Where equipment enters or leaves public roadways, provide warning signs and barricades. In moderate and high vehicular traffic volume areas, provide flag persons or temporary traffic signals to control traffic and aid travel of construction equipment. In moderate or high pedestrian traffic areas, provide flag persons to control traffic.

PART 4 BASIS OF PAYMENT

4.01 TRAFFIC CONTROL

- A. Unless otherwise specified the work in this Section shall be considered incidental and payment will be included as part of the appropriate lump sum or unit prices stated in the Bid.

END OF SECTION 01550

NOT FOR BID

SECTION 01570
PROTECTION OF ENVIRONMENT

PART 1 GENERAL

1.01 DESCRIPTION

- A. Contractor, in executing work, shall maintain work areas on-site and off-site free from environmental pollution that would be in violation of any federal, state or local regulations.

1.02 PROTECTION OF SEWERS

- A. Take adequate measures to prevent impairment of operation of existing sewer system. Prevent construction material, pavement, concrete, earth, or other debris from entering sewer or sewer structure.
- B. Divert sewage flow interfering with construction to sewers leading to wastewater treatment plant. Prior to commencing excavation and construction, submit to Engineer for review, detailed plans, including routing and connections, required to handle and dispose of sanitary wastes. By reviewing plan, Engineer neither accepts responsibility for adequacy thereof nor for damages to public or private property resulting there from, such responsibilities remain with Contractor.
- C. Inlet and Pipe Protection shall be provided by the use of inlet filters in accordance with the IDOT Standard Specifications Article 280.04 and Article 1081.15(h)
- D. The contractor shall inspect the work site to determine the number and dimensions of the various types of drainage structure frames (circular and rectangular) into which the inlet filters will be installed prior to ordering materials.
- E. The drainage structure inlet filter assembly shall be installed under the grate of the lip of the drainage structure frame with the fabric bag hanging down into the drainage structure.
- F. The drainage structure inlet filter assembly shall remain in place until the Engineer directs final removal of the assembly. The drainage structure inlet filter assembly shall remain the property of the Contractor.
- G. Final removal of the assembly shall include the disposal of debris or silt that has accumulated in the filter bag at the time of final removal.
- H. The drainage structure inlet filter assembly consists of a steel frame with a replaceable geotextile fabric bag attached with a steel band with locking cap that is suspended from the frame. A clean used bag and a steel frame in good condition, meeting the approval of the Engineer may be substituted for new materials.

- I. The drainage structure inlet filter assembly frame shall be rigid steel meeting the requirements of ASTM-A36. The frame shall include an overflow feature that is welded to the frame's ring. The overflow feature shall be designed to allow full flow of water into the structure if the filter bag is filled with sediment. The dimensions of the assembly frame shall allow the drainage structure grate to fit into the inlet filter assembly frame opening. The assembly frame shall rest on the inside lip of the drainage structure frame for the full variety of existing and proposed drainage structure frames that are present on this contract.
- J. The drainage structure inlet filter assembly bag shall be constructed of a polypropylene geotextile fabric with a minimum weight of four (4) ounces per square yard (135 grams per square meter), a minimum flow rate of 145 gallons per minute per square foot (0.0985 meters per second), and designed for a minimum silt and debris capacity of 2 cubic feet (0.57 cubic meters). The filter bag shall be reinforced with an outer polyester mesh fabric with a minimum weight of 4 ounces per square yard (135 grams per square meter). The filter bag shall be suspended from the steel frame with a stainless steel band and locking cap. The inlet filter assembly frame shall not cause the drainage structure grate to extend higher than 1/4 inch (0.64) centimeters above the drainage structure frame.
- K. Cleaning of drainage structure filter assembly shall be completed as needed or as directed by the Engineer, for the duration of the use of each drainage structure filter assembly. Cleaning of the inlet filter shall consist of inspecting, cleaning (includes removal and proper disposal, off-site, of debris and silt that has accumulated in the filter fabric bag), by vectoring, removing and dumping or any other method approved by the Engineer. During the project any drainage structure filter assemblies which are found to be faulty shall be removed and replaced by the contractor, no additional compensation shall be provided for this work.
- L. Contractor shall provide erosion control protection as necessary, including silt fence, excelsior roll, and temporary ditch checks all to be installed in accordance with IDOT Standard Specifications Article 280.

1.03 DISPOSAL OF EXCESS EXCAVATED AND OTHER WASTE MATERIALS

- A. Dispose of excess excavated material not required or suitable for backfill and other waste material in a lawful manner.

1.04 PROTECTION OF AIR QUALITY

- A. Minimize air pollution by wetting down bare soils during windy periods, requiring use of properly operating combustion emission control devices on construction vehicles and equipment used by Contractors, and encouraging shutdown of motorized equipment not actually in use.
- B. Trash burning will not be permitted on construction site.
- C. If temporary heating devices are necessary for protection of work, such devices shall be of type that will not cause air pollution.

1.05 USE OF CHEMICALS

- A. Chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, must show approval of either U.S. EPA or U.S. Department of Agriculture or any other applicable regulatory agency.
- B. Use of such chemicals and disposal of residues shall be in conformance with manufacturer's instructions.

1.06 NOISE AND DUST CONTROL

- A. Conduct operations to cause least annoyance to residents in vicinity of work, and comply with applicable local ordinances.
- B. Equip compressors, hoists, and other apparatus with such mechanical devices as may be necessary to minimize noise and dust. Equip compressors with silencers on intake lines.
- C. All engines and engine-driven equipment used for hauling or construction shall be equipped with an adequate muffler in constant operation and properly maintained to prevent excessive or unusual noise.
- D. Line storage bins and hoppers with material that will deaden sounds.
- E. Conduct operation of dumping rock and of carrying rock away in trucks so as to cause minimum of noise and dust.
- F. Construction shall be confined to a period beginning at 7:00 a.m. and ending at 5:00 p.m. Monday through Friday. These time regulations shall not apply to sawing contraction joints, as required in Article 420.05; to maintenance or operation of safety and traffic control devices such as barricades, signs, and lighting; or to construction of an emergency nature.

Exceptions: Any machine or device or part thereof which is regulated by or becomes regulated by Federal or Illinois noise standards shall conform to those standards.

Requests to modify or deviate from these requirements shall be submitted in writing by the Contractor and must be approved in writing by the Engineer.

- G. Provide unpaved streets, roads, detours, or haul roads used in the construction area with an application of water to minimize dust. The Engineer shall direct the Contractor as to when and where the water is required and to the rate of application. Keep paved areas clean and free of materials contributing to dust. Applicable environmental regulations for dust prevention will be strictly enforced.
 - 1. All watering described herein shall be done with a spray application. An open-end hose will not be acceptable. The method of watering shall meet the approval of the Engineer.

H. The Contractor is responsible for the maintenance of all work areas in a clean and safe condition in accordance with IDOTSPECS Article 107.15. In the event that, in the opinion of the Village, or the Engineer there is excessive dirt on the pavement the area is to be cleaned using a mechanical sweeper.

1. The Contractor shall clean the pavement of all dirt and debris at the end of each day's operations, and at other times as directed by the Engineer. The Contractor shall wash the street to control dust and maintain a clean work site, at the direction of the Engineer. If necessary, a mechanical street sweeper or high pressure water jetter may be required.

1.07 PILE AND SHEETING DRIVING NOISE

A. If piles are required, use only pile driver hammers with mufflers capable of significantly reducing noise and use barriers and/or shielding techniques as necessary to comply with applicable federal, state and local ordinances.

PART 2 BASIS OF PAYMENT

2.01 TEMPORARY EROSION CONTROL SEEDING

- A. Temporary Erosion Control Seeding will be paid per lump sum as **TEMPORARY EROSION CONTROL SEEDING** to include all labor and materials required to complete this task.
- B. Protection of drainage structures with inlet filters will be paid for at the contract unit price per each for **INLET PROTECTION** which shall be payment in full for all necessary labor, materials, equipment, tools and necessary disposal to complete the above work.
- C. Silt fencing will be paid for per linear foot as **SILT FENCE** to include all necessary labor, materials, equipment, tools and necessary disposal to complete the above work.

END OF SECTION 01570

SECTION 01600
MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Products.
- B. Transportation and handling.
- C. Storage and protection.
- D. Product options.
- E. Substitutions.

1.02 RELATED SECTIONS

- A. Section 01450 – Testing Laboratory Services.

1.03 PRODUCTS

- A. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- B. Provide interchangeable components of the same manufacturer for components being replaced.

1.04 TRANSPORTATION AND HANDLING

- A. Transport and handle Products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
- C. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.05 STORAGE AND PROTECTION

- A. Store and protect Products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.
- C. Store sensitive Products in weather tight, climate controlled, enclosures in an environment favorable to Product.

- D. For exterior storage of fabricated Products, place on sloped supports above ground.
- E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.
- G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

1.06 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

1.07 SUBSTITUTIONS

- A. Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this section.
- B. Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents
- D. A. request constitutes a representation that the Contractor:
 - 1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
 - 2. Will provide the same warranty for the Substitution as for the specified Product.

3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 5. Will reimburse Owner and Engineer for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
 3. The Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION 01600

NOT FOR BID

SECTION 01730
CUTTING AND PATCHING

PART I GENERAL

1.01 SECTION INCLUDES

- A. Requirements and limitations for cutting and patching of Work.

1.02 RELATED SECTIONS

- A. Section 02020 – Summary of Work.
- B. Section 01300 – Submittals.
- C. Section 01400 – Quality Control.
- D. Section 01600 – Material and Equipment: Product options and substitutions.
- E. Individual Product Specification Sections:
 - 1. Cutting and patching incidental to work of the section.
 - 2. Advanced notification to other sections of openings required in work of those sections.
 - 3. Limitations on cutting structural members.

1.03 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Visual qualities of sight exposed elements.
 - 4. Work of Owner or separate contractor.
- B. Include in request:
 - 1. Identification of Project.
 - 2. Location and description of affected Work.
 - 3. Necessity for cutting and patching.

4. Description of proposed Work and Products to be used.
5. Alternatives to cutting and patching.
6. Effect on work of Owner or separate contractor.
7. Written permission of affected separate contractor.
8. Date and time work will be executed.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Primary Products: Those required for original installation.
- B. Product substitution: For any proposed change in materials, submit request for substitution described in Section 01600 – Material and Equipment.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing Work, assess conditions affecting performance of work.
- C. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Provide temporary supports to ensure structural integrity of the Work.
- B. Provide devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for areas which may be exposed by uncovering work.
- D. Maintain excavations free of water.

3.03 CUTTING

- A. Execute cutting and fitting, including excavation and fill, to complete the Work.
- B. Uncover work to install improperly sequenced work.
- C. Remove and replace defective or non-conforming work.

- D. Remove samples of installed work for testing, when requested.
- E. Provide openings in the Work for penetration of mechanical and electrical work.
- F. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- G. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

3.04 PATCHING

- A. Execute patching to complement adjacent Work.
- B. Fit Products together to integrate with other Work.
- C. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- D. Employ original installer to perform patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.
- E. Restore work with new Products in accordance with requirements of Contract Documents.
- F. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- G. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION 01730

NOT FOR BID

SECTION 01780
OPERATION AND MAINTENANCE DATA

PART I GENERAL

1.01 GENERAL

- A. Furnish five (5) copies of manuals of instructions for operation and maintenance of each item of equipment furnished.
- B. Include instructions for all components of the equipment, whether manufactured by the supplier or not, including valves, controllers, and other miscellaneous components.

1.02 INCLUDED MATERIAL

- A. Parts list
- B. Exploded or sectional views
- C. Recommended lubrication and maintenance procedures
- D. Internal wiring and piping diagrams
- E. Detailed description of process, where applicable
- F. Operating procedures
- G. Equipment serial and model numbers.
- H. Other pertinent information of value to obtain peak performance

1.03 EQUIPMENT MAINTENANCE SCHEDULE

- A. In addition to the equipment operation and maintenance manuals, an equipment maintenance schedule shall be prepared for each piece of equipment. The schedule shall list routine preventive maintenance recommended by the equipment manufacturer. The schedule shall be listed as daily, weekly, monthly, quarterly, semi-annually, and annually.
- B. The items listed in the schedule shall be those maintenance functions that Contractor and equipment suppliers expect the plant operating personnel to follow in order to meet warranty provisions, when the equipment is turned over to Owner.
- C. The schedule for each piece of equipment shall be prepared in the same format. No photocopies or reproductions of the various equipment operation and maintenance manuals will be permitted.

1.04 ASSEMBLY

- A. Assemble in five (5) sets and bind in 3 or 4-inch post type, 3-hole, hard cover binders and electronically in Portable Document Format (PDF).
- B. Remove bindings of individual manuals.
- C. Insert index tabs labeled with the respective piece of equipment to separate individual manuals.
- D. Provide a table of contents at the front of each volume showing the equipment items in the order in which they appear in the volume. Each equipment item shall include the functional name, applicable Specifications Section, and the plan listing, if any.

- E. The preventive maintenance schedule shall be bound in the front of each section immediately following the index tab sheet. The schedule shall be identified with respect to the piece of equipment it is referring to.
- F. Sheet size 8-1/2 by 11 inches.
- G. Drawings may be on 11 by 17-inch sheets folded to 8-1/2 by 11 inches.
- H. Imprint on covers name of project, date of Contract, and volume number.

1.05 SUBMITTAL

- A. Submit one manual, contained in a post binder, to Engineer for approval.
- B. No payment in excess of 50 percent of the contract amount will be made until an acceptable manual is submitted.
- C. After approval, deliver the remaining copies of the manual to Owner. Submit to Engineer written proof that the copies have been received by Owner.

END OF SECTION 01780

SECTION 01820
DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.
 - 3. Demonstration and training video.
- B. See Divisions 2 through 16 Sections for specific requirements for demonstration and training for products in those Sections.

1.02 SUBMITTALS

- A. Instruction Program: Submit two (2) copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
- B. Demonstration and Training Video: Submit two (2) copies within seven (7) days of end of each training module.

1.03 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative experienced in operation and maintenance procedures and training.
- C. Pre-instruction Conference: Conduct conference to review methods and procedures related to demonstration and training.
- D. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals.

PART 2 - PRODUCTS

2.01 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include system and equipment descriptions, operating standards, regulatory requirements, equipment function, operating characteristics, limiting conditions, and performance curves.
 - 2. Documentation: Review emergency, operations, and maintenance manuals; Project Record Documents; identification systems; warranties and bonds; and maintenance service agreements.
 - 3. Emergencies: Include instructions on stopping; shutdown instructions; operating instructions for conditions outside normal operating limits; instructions on meaning of warnings, trouble indications, and error messages; and required sequences for electric or electronic systems.
 - 4. Operations: Include startup, break-in, control, and safety procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; operating procedures for emergencies and equipment failure; and required sequences for electric or electronic systems.
 - 5. Adjustments: Include alignments and checking, noise, vibration, economy, and efficiency adjustments.
 - 6. Troubleshooting: Include diagnostic instructions and test and inspection procedures.
 - 7. Maintenance: Include inspection procedures, types of cleaning agents, methods of cleaning, procedures for preventive and routine maintenance, and instruction on use of special tools.
 - 8. Repairs: Include diagnosis, repair, and disassembly instructions; instructions for identifying parts; and review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.01 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. Owner will furnish an instructor to describe Owner's operational philosophy.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner with at least seven (7) days' advance notice.

3.02 DEMONSTRATION AND TRAINING VIDEO

- A. General: Engage a qualified commercial photographer to record demonstration and training videos. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 2. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Video Format: Provide high-quality video in digital format.
- C. Narration: Describe scenes on video and include description of items being viewed. Describe vantage point, indicating location, as necessary.

END OF SECTION 01820

NOT FOR BID

SECTION 02200
SITE PREPARATION AND RESTORATION

PART 1 GENERAL

1.01 DESCRIPTION

A. Description of Work:

1. Remove site objects which obstruct construction.
2. Restore site objects disturbed by construction including, but not limited to, utilities, traffic signs, street lights, traffic signals, mail boxes, fences, guard rails, right-of-way markers, survey monuments, lot pins, driveway markers, structures, items intended to inform or protect the public, and other surface objects.

1.02 QUALITY ASSURANCE

A. Conditions Survey:

1. Provide video recordings in accordance with Section 01330 and other documentation to establish condition of existing structures and surface features.
2. Survey and record condition of existing facilities to remain in place that may be affected by construction operations.

B. Preparation Work:

1. Prior to starting construction, the Contractor shall request all public or private agencies to establish the location of their underground utilities within the site of work. Call J.U.L.I.E., 1-800-892-0123, two (2) working days (minimum) in advance of any excavation. The Contractor will not be permitted to work without proper J.U.L.I.E. clearances. The Contractor is cautioned that the Village of Villa Park does not locate storm or sanitary sewer mains or services. The Village may mark sewer mains by specific request.
 - a. The Contractor shall make such exploration as is necessary to determine the exact location of all underground utilities, and shall exercise sufficient care to protect such utilities during the progress of work. If it becomes necessary to relocate any underground utilities which are subject to franchise or permit granted by the Village, it shall be the responsibility of the utility company to make such relocation. It is the Contractor's responsibility to properly notify each utility agency in sufficient time so as to avoid interference with the progress of the work. No additional compensation shall be made to the contractor for down time for relocating or protecting any utility.
 - b. Utility services will be removed or relocated as required by the utility company in accordance with Article 105.07 of the IDOT Standard Specifications. The Contractor shall maintain utility services to any existing buildings in a manner as approved by the

Engineer. Such services shall include all water lines, sanitary sewers, and storm sewers. If necessary, the Contractor shall construct and maintain flumes and bypasses as required at all relocated or replaced sanitary and storm sewers to maintain flow of such lines. Flumes and bypasses shall be designed with sufficient capacity to carry the maximum flow without restricting the flow in the existing sanitary and storm sewer. Plans and procedures shall be submitted to the Engineer for review before proceeding with the work.

2. Remove only those site objects within construction limits, which are designated for removal on drawings or as directed by Engineer.
3. Do not remove site objects outside construction limits.
4. Protect existing utilities and maintain them in operation during construction except as specified elsewhere in the Contract Documents.
5. Provide traffic control in accordance with Section 01550.
6. Dispose of materials in legal manner in accordance with Section 02315.
7. Removal of trees and shrubs by Contractor is prohibited unless noted on plans. Engineer shall be informed by Contractor, which trees and shrubs may have to be trimmed or removed in order for the Contractor to carry out his construction activities. Engineer shall make the final determination as to which trees and shrubs shall remain, be trimmed or removed.
8. Trees indicated for removal shall be removed in accordance with IDOT Section 201, except that stumps shall be removed to a depth of not less than 18" below finished grade.
9. Removal and replacement of chain link fence shall be in accordance with IDOT Section 664.
10. Wooden Fence Panels and gates shall be removed with care and stored at the property location. Contractor may choose to retain or replace posts but any posts that are damaged during construction activities shall be replaced.
11. Bushes within the construction limit are to be removed as approved by the Engineer. They are to be replaced with bushes of like kind in accordance with IDOT Section 253. If the homeowner desires to maintain the plants during the construction period, they are to be removed, balled, and burlapped, and provided to the homeowner. Reinstallation shall be in accordance with IDOT Section 253.
12. Individual landscape areas that are designated for removal and replacement within the temporary easement area are to be removed and replaced to their original condition.

C. Restoration Work:

1. Restore to conditions equal to or exceeding conditions existing prior to construction as determined by video recordings and survey.

D. Reference Standard:

1. **Illinois Department of Transportation Standard Specifications for Road & Bridge Construction, Latest Edition.**
2. **Supplemental Specifications and Recurring Special Provisions- Latest Edition**
3. **Standard Specification for Water and Sewer Main Construction in Illinois**

PART 2 PRODUCTS

(Not applicable)

PART 3 EXECUTION

3.01 SITE PREPARATION

A. Site Improvement Objects:

1. Carefully remove all site improvement objects such as street name signs, traffic control signs, mailboxes, and lawn ornaments which interfere with construction.
2. Store site improvement objects in a manner, which will fully protect objects or replacement after construction is completed.
3. Provide temporary traffic control signs where permanent signs are removed for construction. Temporary signs shall be worded to match permanent signs except as necessary to be compatible with construction operations.
4. Bracing of light or power poles shall be incidental to the Contract.

3.02 SITE RESTORATION

A. Site Improvement Objects:

1. Reinstall site improvement objects removed for construction in their original location. Repair any damage to site improvement objects, which occurred during removal, storage, and reinstallation.
2. Replace any improvement object irreparably damaged, in Engineer's sole opinion. Contractor shall be responsible for making immediate arrangements to repair any damaged site objects. Contractor shall not be permitted to continue working unless the site objects have been repaired or arrangements have been made for repairs to the satisfaction of the Engineer.

3.03 PROTECTION

A. Protection of existing plant material:

1. The Contractor shall protect from damage, all trees, shrubs, plants, or other vegetation on either public or private property. The protection methods shall include tree wells, wrapping, root pruning, removal and replacement, or any other function required to provide protection of vegetation.
2. Tree roots are to be pruned at a distance of one foot outside the width of the open trench, where trees may cause interference to the construction process. If the tree roots need to be trimmed because of the proximity to the work, the contractor shall notify the project engineer or the Village's Forestry Division. The Contractor will be required to trim the roots and trees as directed by the engineer or the Village's Forestry Division. The Contractor shall cooperate with the Village to ensure protection of the existing vegetation.
3. Trees are to be protected per the Village's standard Tree Protection Detail.

PART 4 BASIS OF PAYMENT

4.01 TREE PROTECTION

- A. Tree protection will be paid for per each as **TREE PROTECTION** to include all necessary labor, materials, equipment, tools and necessary disposal to complete the above work.

4.02 TREE ROOT PRUNING

- A. Tree root pruning will be paid for per each as **TREE ROOT PRUNING, SPECIAL** to include all necessary labor, materials, equipment, tools and necessary disposal to complete the above work.

END OF SECTION 02200

SECTION 02220
DEMOLITION AND REMOVALS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Contractor shall provide all labor, materials, equipment and incidentals as shown, specified and required to complete the demolition, removal and disposal work.
- B. Included, but not limited to, are demolition and removals of existing materials, structures, equipment, or work necessary to install the new Work as shown and specified and to connect same with existing work in an approved manner. Demolition includes structural concrete, foundations, walls, doors, windows, structural steel, metals, roofs, masonry, attachments, appurtenances, piping, electrical and mechanical equipment, paving, curbs, walks, fencing, and similar existing facilities.
- C. Demolitions and removals which may be specified under other Sections shall conform to requirements of this Section.
- D. The removal of all equipment, piping, pumps, and all other materials from the demolition of buildings and structures shall, when released by the Engineer, become Contractors property, unless otherwise noted. The debris shall be disposed of off-site as required by the Contract documents.
- E. Contractor shall obtain all required permits from local jurisdictions and other agencies having jurisdiction.

1.02 RELATED SPECIFICATIONS

- A. General Specification 02200 - Site Preparation and Restoration
- B. General Specification 02315 - Excavation, Backfilling, Trenching, and Compacting
- C. General Specification 01570 - Protection of Environment

1.03 BASIS OF PAYMENT

- A. Payment for demolition and removals shall be made as provided for in the Detailed Specifications.

1.04 REFERENCES

- A. Reference Standards: Regarding closure of underground storage tanks, Contractor shall comply with the applicable provisions and recommendations of the following, unless otherwise shown or specified.
 - 1. 29 CFR 1518 - Safety and Health Regulations for Construction
 - 2. 29 CFR 1910 - Occupational Safety and Health Standards
 - 3. ANSI A10.2 - Safety Code for Building Construction

4. AWS D12.1 - Reinforcing Steel Welding Code

1.05 SUBMITTALS

- A. Contractor shall submit working drawings, shop drawings and material specifications for the approval of the Engineer in accordance with the requirements of the General Conditions, Article 4 - Contractors Working Drawings, Design and Shop Drawings; and the Detailed Specifications. Working drawings and shop drawings shall include, but not be limited to proposed methods, equipment and operating sequences to be used in performance of the demolition and removals work and handling of hazardous materials.
- B. Schedule: Show coordination of operations and sequence for shut-off, capping, temporary services, continuation of utility services, and other applicable items to ensure no interruption of District operations.

1.06 JOB CONDITIONS

- A. Protection:
 - 1. Demolition and removal work shall be performed by competent workmen experienced in the various types of demolition and removal work required and it shall be carried through to completion with the prevention of damage or injury to structures, occupants thereof, Owners employees, work persons on the site, the public and adjacent features which might result from falling debris or other causes, and so as not to interfere with the use of, and free and safe passage to and from, adjacent structures.
 - 2. Contractor shall provide, erect and maintain catch platforms, lights, barriers, weather protection, warning signs and other items as required for proper protection of the public, occupants of the building, work persons engaged in demolition operations, and adjacent construction.
 - 3. Contractor shall provide and maintain weather protection at exterior openings so as to fully protect the interior premises against damage from the elements until such openings are closed by new construction.
 - 4. Contractor shall provide and maintain temporary protection of the existing structure designated to remain where demolition, removal and new work is being done, connections made, materials handled or equipment moved. Contractor shall be responsible for any damage to the existing structure or contents by reason of providing insufficient protection.
 - 5. Contractor shall take necessary precautions to control dust as required by General Specification. Dust shall be prevented from rising by wetting demolished masonry, concrete, plaster and similar debris. Unaltered portions of the existing buildings affected by the operations under this Section shall be protected by dustproof partitions and other adequate means.
 - 6. Contractor shall provide adequate fire protection in accordance with local Fire Department requirements.
 - 7. Contractor shall carry out all operations so as to avoid interference with operations and work in the existing facilities and the work under other contracts.

8. Contractor shall be solely responsible for making all necessary arrangements and for performing all necessary work involving the discontinuance or interruption of all utilities or services.
 9. Any equipment, piping and appurtenances removed without proper authorization, and that are necessary for the operation of the existing or expanded plant, shall immediately be replaced to the satisfaction of the Engineer at no cost to the Owner.
 10. Closing or obstructing of roadways, sidewalks, and passageways adjacent to the work by the placement or storage of materials will not be permitted, and all operations shall be conducted with minimum interference to traffic.
 11. Contractor shall repair damage caused by his operations to facilities to remain, or to any property belonging to the Village, utility company, occupants of the facilities, or other entity.
 12. The work shall comply with the applicable provisions and recommendations of ANSI A10.2, Safety Code for Building Construction, all governing codes and as hereinafter specified.
 13. Contractor shall make such investigations, explorations and probes as are necessary to ascertain any required protective measures before proceeding with demolition and removal.
 14. Demolition and removal of hazardous materials shall be in accordance with applicable Federal, State and Local regulations.
- B. Permits: Obtain all permits required for closing or obstructing streets and sidewalks.
- C. Condition of Buildings, Structures and Equipment:
1. The Owner does not assume responsibility for the actual condition of buildings, structures and equipment to be demolished and removed.
 2. Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner so far as practicable. However, there is no guarantee by the Owner that the number of fixtures, amount of equipment or any other material of value existing at bidding time in the buildings and structures to be demolished will be present in the structures when they are demolished. Contractor shall have no claim against the Owner because of the absence of such fixtures and materials.
 3. The information regarding the existing structures and equipment shown on the Drawings is based on visual inspection and a walk-through survey only. Neither the Engineer nor the Owner will be responsible for interpretations or conclusions drawn therefrom by Contractor.
- D. Scheduling: Carry out operations so as to avoid interference with Owners operations and work in the existing facilities.
- E. Notification: At least 1 week prior to commencement of a demolition or removal, Contractor shall notify the Engineer in writing of his proposed schedule. Owner will inspect the existing

equipment or facilities and review with the Contractor those items which are to remain the property of the Owner. No removals shall be started without the permission of the Engineer.

- F. The use of explosives will not be permitted.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 GENERAL

- A. The work required shall be done with care, and shall include all necessary shoring, bracing, and support to prevent movement, settlement, or collapse of existing structures or facilities. Contractor shall be responsible for any damage which may be caused by demolition and removal work to any part or parts of existing structures or items designated for reuse or to remain. Contractor shall perform patching, restoration and new work in accordance with applicable technical sections of the Specifications and in accordance with the details shown on the Drawings.
- B. Surfaces of walls, floors, ceilings, or other areas which are exposed by any of the removals specified herein, and which will remain as architecturally finished surfaces, which have holes, scars, chipped or other damaged surfaces revealed by the removal, shall be repaired by Contractor with the same or matching materials as the existing surface or as may be otherwise approved by the Engineer.
- C. Pollution Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Comply with General Specification and all governing regulations pertaining to environmental protection.
 - 1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.
 - 2. Clean adjacent structures, facilities, and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to conditions existing prior to the start of the work.
 - 3. The use of calcium chloride for dust control will not be allowed.
- D. All supports, pedestals and anchors shall be removed with the equipment and piping unless otherwise specified or required. Concrete bases, anchor bolts and other supports shall be removed to approximately one inch below the surrounding finished area, and the recesses shall be patched to match the adjacent areas. Superstructure wall and roof openings shall be closed, and damaged surfaces shall be patched to match the adjacent areas, as specified under applicable sections of the Specifications, as shown on the Drawings, or as directed by the Engineer. Wall sleeves and castings shall be plugged or blanked off, all openings in concrete shall be closed in a manner meeting the requirements of the appropriate sections of the Specifications, as shown on the Drawings and as directed and approved by the Engineer.

- E. Any materials or items designated to remain the property of the Owner shall be removed with care and stored at locations designated by the Owner. The following items are to be removed by the Contractor from the existing Lift Station and turned over as directed by Owner:
1. Motor control center.
 2. Submersible pumps and power cable.
 3. Wet well floats and chain assembly.
- F. Where equipment is shown or specified to be removed and relocated, Contractor shall not proceed with removal of this equipment without specific prior approval of the Engineer. Upon approval, and prior to commencing removal operations, the equipment shall be operated in the presence of representatives of Contractor, Owner and the Engineer. Such items shall be removed with care, under the supervision of the trade responsible for reinstallation, and shall be protected and stored until required. Material or equipment damaged during removal shall be replaced with similar new material or equipment. Any equipment that is removed without proper authorization and is required for plant operation shall be replaced at no cost to the Owner.
- G. Wherever piping is to be removed for disposal, the piping shall be drained by Contractor, and adjacent pipe and headers that are to remain in service shall be blanked off or plugged and then anchored in an approved manner.
- H. Where alterations occur, or new and old work join, Contractor shall cut, remove, patch, repair or refinish the adjacent surfaces to the extent required by the construction conditions, so as to leave the altered work in as good a condition as existed prior to the start of the work. The materials and workmanship employed in the alterations shall be of the same quality as required for new work of the same type.
- I. Contractor shall confine cutting of existing roof areas designated to remain to the limits required for the proper installation of the new work. Contractor shall cut and remove insulation and weather protection, and provide temporary weather-tight protection as required until new roofing and flashings are installed.
- J. Contractor shall remove temporary work, such as enclosures, signs, guards, and the like when such temporary work is no longer required or when directed at the completion of the work.
- K. Contractor shall dispose of all demolition materials, equipment debris, and all other items not marked or specified by the Village or the Engineer to remain as property of the Owner, off site and in conformance with all existing applicable laws and regulations.
- L. Building Demolition:
1. Unless otherwise approved by the Engineer, proceed with demolition from the top of the structure to the ground. Complete demolition work above each floor or tier before disturbing supporting members of lower levels.
 2. Demolish concrete and masonry in small sections.

3. Remove structural framing members and lower to ground by means of hoists, derricks, or other suitable methods.
4. Break up and remove foundations and slabs-on-grade, unless otherwise shown to remain.
5. Locate equipment used for demolition work, and remove demolished materials, so as not to impose excessive loads on supporting walls, floors or framing.
6. Re-grade in accordance with General Specification 02300.

3.02 STRUCTURAL REMOVALS

- A. Contractor shall remove concrete, structures and sub-structures to the lines and grades shown unless otherwise directed by the Engineer. Where no limits are shown, the limits shall be 6 feet below final finished grade, unless otherwise approved by the Engineer. The removal of masonry beyond these limits shall be at Contractor's expense and these excess removals shall be reconstructed to the satisfaction of the Engineer with no additional compensation to the Contractor.
- B. Determine the thickness of existing concrete to be removed and the extent to which it is reinforced. No additional compensation will be made because of variations from the thickness shown or for variations in the amount of reinforcement.
- C. All concrete, stone, masonry, roofing materials, reinforcement, structural or miscellaneous metals, plaster, wire mesh and other items contained in or upon the structure shall be removed and taken from the site and disposed of at a permitted facility. Demolished items shall not be used in backfill.
- D. After removal of parts or all of masonry walls, slabs and like work which tie into new work or existing work, the point of junction shall be neatly repaired so as to leave only finished edges and finished surfaces exposed.

3.03 MECHANICAL REMOVALS

- A. Mechanical removals shall consist of dismantling and removing existing pipes, pumps, motors and other facilities as specified, shown, or required for the completion of the work. It shall include cutting, capping, draining, and plugging as required, except that the cutting of existing piping for the purpose of making connections thereto will be included under Division 15 of the Detailed Specifications.
- B. Existing process, water, chemical, and other piping shall be removed where shown on the Contract Drawings. All removed piping shall be removed to the nearest solid support, capped and left in place. Piping shall be purged and made safe by the Contractor prior to removal or capping. Disposal of any chemicals or other purged material shall be the responsibility of the Contractor. Where piping that is to be removed passes through existing walls, it shall be cut off and properly capped on each side of the wall.
- C. When underground piping is to be altered or removed, the remaining piping shall be properly capped. Abandoned underground piping may be left in place unless it interferes with new work or is shown or specified to be removed.

- D. Any required demolition or changes to potable water piping and other plumbing system work shall be made in conformance with all applicable codes. Portions of the potable water system that may have been altered or opened shall be pressure tested and disinfected in accordance with the Detailed Specifications for Division 15 and local codes. Other plumbing piping and heating piping shall be pressure tested only.
- E. Provide all caps, plugs, blind flanges, shut-off valves and other work and materials required to remove from service existing piping and necessary to keep existing piping in service where shown or required.

3.04 PAVEMENT, CURB AND SIDEWALK REMOVALS

- A. Remove existing pavement, including base and surface courses, stabilized sub-bases, curbs, and gutters as required to construct new facilities or as shown. Before removing, saw a straight joint at least 1-1/2-inches deep between sidewalk and pavement designated for removal and that left in place. Curbs and gutters shall be removed to the nearest construction joint beyond the limit of demolition shown on the Drawings.
- B. Provide for satisfactory transition between replaced pavement and sidewalks and the portions remaining in place.

3.05 ELECTRICAL REMOVALS

- A. Electrical removals shall consist of the removal of existing generators, transformers, distribution switchboards, control panels, motors, conduits and wires, and miscellaneous electrical equipment all as shown, specified, or required to perform the work.
- B. All existing electrical equipment and fixtures to be removed shall be removed with such care as may be required to prevent unnecessary damage to keep existing systems in operation and maintain the integrity of the grounding systems.
- C. Distribution switchboards shall be removed or modified as shown. Switchboards to be removed shall be disconnected and dismantled, and all components shall be disposed of off the site. Circuit breakers and other control equipment on modified switchboards that will no longer be used shall be removed unless otherwise shown or specified. All new openings cut into the modified switchboard panels shall be cut square and dressed smooth to the dimensions required for the installation of the new equipment.
- D. The existing motor control center cabinet shall be dismantled with buckets removed intact.
- E. Motors shall be disconnected and removed where shown or specified. Motors not marked or designated by the Owner or the Engineer to be salvaged shall be removed from the site. Motors or other electrical gear designated for reuse shall be stored in enclosed, heated storage.
- F. Conduits and wires shall be abandoned or removed where shown. All wires in abandoned conduits shall be removed, salvaged, turned over to the Village and stored where directed by the Engineer. Abandoned conduits concealed in floor or ceiling slabs, or in walls, shall be cut flush with the slab or wall at the point of entrance. The conduits shall be suitably plugged and the area repaired in a flush, smooth, approved manner. Exposed conduits and their supports

shall be disassembled and removed from the site. Repair all areas of work to prevent rust spots on exposed surfaces.

3.06 MISCELLANEOUS REMOVALS

- A. Contractor shall remove miscellaneous items where shown on the Drawings or where necessary for the construction of new structures or modification of existing structures. Anchor bolts shall be cut back one inch below the concrete surface and the hole patched.

3.07 MODIFICATIONS AND CLOSURES

- A. Modifications shall conform with all applicable Specifications, the Drawings, and the directions and approvals of the Engineer.
- B. Where alterations require cutting or drilling into existing floors, walls, and roofs, the holes shall be repaired in an approved manner. Contractor shall repair such openings with the same or matching materials as the existing floor, wall, or roof, or as otherwise approved by the Engineer. All repairs shall be smoothly finished unless otherwise approved by the Engineer.
- C. Openings in existing concrete slabs, ceilings, roofs, masonry walls, floors and partitions which are not to be used in the new work shall be closed and sealed as shown or otherwise directed by the Engineer.
- D. Where parts of existing structures are to remain in service, demolish the portions to be removed, repair damage, and leave the structure in proper condition for the intended use. Remove concrete and masonry to the lines designated by drilling, chipping, and other suitable methods. Leave the resulting surfaces true and even, with sharp straight corners that will result in neat joints with new construction or be satisfactory for the purpose intended. Where existing reinforcing rods are to extend into new construction, remove the concrete so that the reinforcing is clean and undamaged. Cut off other reinforcing flush with the surface.
- E. New work shall be keyed into the existing in an acceptable manner. New reinforcing steel shall be welded to the existing reinforcing. Welding shall conform to AWS D12.1, Reinforcing Steel Welding Code. In general, the same or matching materials as the existing adjacent surface shall be used. The finished closure shall be a smooth, tight, sealed, permanent closure with all exposed surfaces smooth finished and acceptable to the Engineer.

3.08 MAINTENANCE AND CLEAN UP

- A. Contractor shall maintain the buildings, structures, and other Owner properties free from accumulations of waste, debris, and rubbish caused by the demolition and removal operations.
- B. Contractor shall provide on-site dump containers for collection of waste materials, debris and rubbish, and shall wet down dry materials to prevent blowing dust.
- C. At reasonable intervals during the progress of the demolition and removal work or as directed by the Engineer, Contractor shall clean the Site and properties, and dispose of waste materials, debris, and rubbish.

END OF SECTION 02220

SECTION 02300
EARTHWORK AND EROSION CONTROL

PART I GENERAL

1.01 PROTECTION OF PROPERTY

- A. Arrange with all persons, firms, or corporations owning or using poles, pipes, tracks, conduits, or similar facilities affected by construction to maintain and protect them during construction.
- B. If existing gas or water pipes, buried electrical, telephone, and telegraph ducts, conduits, sewers, drains, or poles are blocked or interfered with by the excavation required on this project, maintain them in continuous operation and restore them to their original condition.

1.02 TOPSOIL STRIPPING AND STORAGE

- A. Remove topsoil from areas which will be disturbed by construction or grading operations and stockpile in designated areas for reuse.
- B. Topsoil is defined as friable surface soil similar in quality to productive agricultural soils commonly occurring in the vicinity of the project. Remove sod, grass, roots, weeds, sticks, stones over two (2) inches in diameter, and other foreign materials from the topsoil.
- C. Remove objectionable materials encountered during excavation and remove from the site.

1.03 EXCAVATION AND BACKFILL

A. General

- 1. Excavate for structures and roadways and dispose of excess and unsuitable materials. Backfill structures after they have been completed.
- 2. Provide necessary cofferdams, wellpoints and pumps, and the sheeting, shoring, and bracing required for safe and efficient operations.
- 3. Excavation includes removal of quicksand, hardpan, boulders, clay, rubbish, unforeseen obstacles, underground conduits, pipe, drain tile, trees, roots, timber or masonry structures, railroad tracks, pavements, sidewalks, and other obstacles encountered. No claim for additional payment will be accepted because of the character of the ground in which the excavation is made. Excavation will be unclassified unless otherwise designated in the Contract Documents.
- 4. Seal abandoned pipelines cut during excavation at both cut ends with Class C concrete.
- 5. Employ qualified professional engineering personnel to lay out the work, check sheeting and shoring, design cofferdams, and for other job conditions requiring skilled technical knowledge.

B. Earth Removal

- 1. Excavate to the elevations, conditions, and dimensions indicated, plus sufficient space for installation of forms, shoring, drain tiles, waterproofing, masonry, and for inspection of foundations. Provide temporary sheeting, shoring, timbering, bracing, and piling required

for the safe and efficient installation of the work. Remove temporary work when the permanent work is complete.

2. When excavation to the underside of structures or pavements founded on native soil is complete, employ an independent testing laboratory to verify that the soil encountered has the design bearing capacity indicated. Remove unsatisfactory soil as directed by the Engineer and replace with compacted granular foundation material.

C. Sheet piling, Shoring, and Bracing

1. Submit drawings showing how security for excavation work will be provided, including dimensions of members and the proposed methods for fastening or securing components of the protective work.
2. The design of all sheet piling, shoring, and bracing shall be the responsibility of the Contractor and shall be adequate to withstand all earth, hydrostatic, and construction loads.
3. The contractor shall submit for review shop drawings with calculations stamped by a licensed Illinois structural engineer.
4. The shoring contractor shall have a minimum of five years successful experience in similar types of projects. Provide a list of these past projects with contact information along with the shop drawings.
5. Install temporary sheet piling, shoring, timbering, bracing, or steel sheet piling as required so that the work can be installed in a safe and efficient manner. Once the structure is capable of supporting the imposed soil, water and surcharged loads temporary forms, shores, and bracing in such a manner to prevent collapse or settlement and backfill the voids between structure and sheet piling/shoring walls with an approved flowable fill grout to subgrade elevation or as directed by the Engineer.

D. Protection Against Water

1. Provide ditching, diking, pumping, well pointing, bailing, drains, and other work necessary to keep water out of excavations while work is in progress and until the finished work is safe from injury.
2. Dispose of water pumped or drained from the work so that it does not damage adjacent property or other work under construction. Protect construction against flooding.
3. Water from excavations shall be pumped into silt detention basins as required by applicable regulations before it is discharged into any waterway or storm system.
4. Provide protection to basements, vaults, reservoirs, and tanks where buoyancy or floor failures may occur due to uplift from storm or groundwater.

E. Frost Protection

1. Do not excavate to the full depth required when freezing temperature is expected, unless concrete can be poured immediately after the excavation has been completed. Protect the bottom of excavations from freezing until concrete is placed.

F. Backfilling

1. When excavation is carried beyond the lines and grades without authorization of Engineer, refill the extra excavated space as follows:
 - a. Excess excavations in earth under structure slabs and pavements shall be backfilled with granular foundation material.
 - b. Excess excavations in earth under footings shall be backfilled with Class C concrete.
 - c. Excess excavations in rock under structure slabs and footings shall be backfilled with either granular foundation material or Class C concrete as shown or as directed by the Engineer.
2. Granular foundation material shall consist of crushed stone or gravel with the following gradation:
 - a. 100 percent passing one-inch sieve
 - b. 90 to 100 percent passing 3/4-inch sieve
 - c. 40 to 70 percent passing 1/2-inch sieve
 - d. 5 to 15 percent passing No. 4 sieve
 - e. 0 to 6 percent passing No. 16 sieve
3. Place the material in layers not over eight (8) inches thick, loose measure, and compact. Compact cohesionless soils to at least 95 percent of maximum dry weight as determined by ASTM D1557. Hand tamp fill immediately adjacent to walls or use hand operated vibratory equipment.
4. At least one compaction test shall be taken for each 5,000 square foot of area, with a minimum of two tests for each layer. Additional layers shall not be placed until the density of each layer in place has been approved.
5. Do not place backfill against concrete walls until concrete has attained a strength of 3,000 psi and intermediate floors or framing levels have been poured.
6. Place backfill evenly on each side of structures such as tunnels, galleries, pump stations, and wet wells to prevent imposing unbalanced forces against the structures.
7. Provide a drainage course around sub-soil drains, relief valves, and under slabs. Drainage courses shall consist of a six (6) inch layer of granular foundation material. Compact the drainage course material to 90 percent relative density as determined by ASTM D2049.

1.04 ROCK EXCAVATION

- A. Rock is any material geologically in place with a hardness, when first exposed, of three or greater on the scale of mineral hardness. The hardness of three corresponds to the transparent variety of calcite.
- B. Material with a uniform hardness of less than three which cannot be removed from its original position with a power operated 3/4-cy backhoe without continuous drilling and blasting, will be classified as rock.

- C. Boulders and large slabs or masses of concrete encountered in excavations and cannot be broken from its original size with a power operation 3/4-cy backhoe, will be classified as rock if larger than 1 1/2-cy.
- D. Remove rock by blasting or other approved methods. Where blasts are made, cover excavation with brush, timber, or matting to prevent danger to life and property. Obtain all permits required by law for blasting operations and any additional hazard insurance required. Strip the rock of overburden in sections. Do no blasting until cross sections of the top of the rock have been obtained. If drilling and blasting is done with overburden in place, the elevation of the top of the rock for payment purposes will be determined by Engineer and shall be accepted without dispute.
- E. Excavate material classified as rock to the grade of the bottom of structures and six (6) inches below the bottom of pipes or conduit, unless specifically shown to be removed to a greater depth at no additional cost to owner.
- F. Protect above and below ground structures and utilities against damage. Correct any damage to original condition or replace with equal material at no cost to Owner.
- G. Excavated rock with a hardness greater than four (4), when permitted, may be crushed and used as granular foundation material if properly graded.

1.05 WASTE MATERIAL DISPOSAL

- A. Remove and dispose of unsuitable and excess excavated material off the site.
- B. Waste material shall be hauled in trucks of sufficient capacity and tight construction to prevent spillage. Take necessary measures to prevent the propagation of dust.
- C. Obtain an off-site disposal area before beginning demolition or excavation operations.
- D. If the disposal site is located on private property, submit to Engineer written permission from the owner prior to the start of dumping.
- E. Dispose of waste material in locations and under conditions that comply with federal, state, and local laws and regulations.
- F. Do not obstruct the flow of natural water courses with waste material.
- G. When disposal operations are complete, leave the site in a condition acceptable to the Owner.
- H. For detailed requirements on CCDD disposal, see Section 02315.

1.06 SITE GRADING

- A. Grade the project site as indicated. Begin grading after other construction and backfilling is complete. Do not disturb or damage underground construction such as sewers, drainage pipes, or drainage structures.
- B. Rough grade as follows:
 - 1. Under pavements and walks, grade to the bottom of the base course or to the bottom of the sub base course, if a sub base course is required.

2. Grade areas to be landscaped to six inches below finished grade.
3. Confine construction traffic to designated routes away from areas to be landscaped.
4. In areas rutted by traffic or eroded by water, re-grade, compact, and restore to established rough grade.

1.08 FINISH GRADING

- A. Finish grade the completed work area within the limits designated.
- B. Do not commence finish grading until construction, fill, backfill, and rough grading have been completed and approved.
- C. Shaped earth shoulder areas, when compacted, shall be one inch below the adjacent pavement.
- D. Grade areas to be planted, including lawns, when compacted, to the elevations and grades shown. Use topsoil previously stripped and stockpiled or obtained from off the site. Furnish topsoil obtained from off the site at no additional cost to Owner. The topsoil layer shall be six inches thick.
- E. Prior to landscaping operations, the landscaper shall inspect the fine grading and notify Contractor and Engineer if additional soil is required.
- F. Areas that have been finish graded shall be protected from construction traffic. Repair any area that has become rutted or has settled below the correct grade.

1.09 DESCRIPTION

- A. The work under this section consists of providing the labor, equipment and materials necessary to prepare the site for acceptance of the pavement curb and gutter, sidewalks, driveway approaches and landscaping.

1.10 QUALITY ASSURANCE

- A. Testing will be provided by Owner.
 1. One sieve analysis and plasticity index for each source of fill material.
 2. Density tests will be taken as directed by Engineer.
- B. Reference Standards:
 1. American Society for Testing and Materials (ASTM), Latest Edition
 2. Illinois Department of Transportation (IDOT)
 - a. Standard Specification for Road and Bridge Construction, Latest Edition (IDOTSPECS)
 - b. Supplemental Specifications and Recurring Special Provisions, Latest Edition
 3. Standard Specifications for Water and Sewer Main in Illinois

1.11 JOB CONDITIONS

A. Notify corporations, companies, individuals, or authorities owning above or below ground conduits, wires, pipes, or other utilities encountered during construction operations. Protect, support, and maintain all conduits, wires, pipes, and other utilities that are to remain in accordance with the requirements of owners of said services.

B. Utility Notice and Location:

1. Drawings indicate existence of some utilities and related structures situated underground and above ground. These existing utilities, structures, and their locations have been established from available records, which may or may not be accurate. Other utilities and structures may also be present. Accordingly, Contractor is responsible to determine exact location of existing utilities and related structures and their effect on construction operations.

2. Give minimum of 72-hour notice to owners of utilities (above or below ground) prior to excavating to locate said utilities or beginning other construction activities.

NOTE: Owner will not be responsible for locating sewer services.

3. Furnish labor, equipment, materials, services, and perform work necessary to locate existing utilities at each site, or acquire services of respective owners of existing utilities to locate existing utilities at each site at no additional cost to Owner.

4. Contractor shall not be relieved from liability for damage to existing utilities if he/she chooses to have utility owners locate existing utilities except as said utilities waive liability for damages.

5. Acquire services of utility owners to relocate utilities in conflict.

6. Protect all utilities.

7. Prevent construction material, pavement, concrete, earth, or other debris from entering sewers and other utility structures.

C. Excavated Material:

1. Do not block or obstruct pavements (including driveway approaches) with excavated material, except as authorized by Owner.

2. Transport surplus material off-site daily.

D. Debris on Road:

1. Where Contractor's equipment is operated on traveled surface or structures used by traffic on or adjacent to section under construction, clean to the satisfaction of Engineer, traveled surface of dirt and debris during and at end of each day's operations.

2. Cost of this work shall be incidental to Contract and no extra compensation will be allowed.

E. Equipment on Surfaces:

1. Protect traveled surface and structures on or adjacent to work from damage by lugs or cleats of treads, tracks, or wheels of equipment.
2. Equipment used in execution of work shall comply with legal loading limits and requirements established by statutes of State in which work is performed or local regulations when moved or operated on traveled surface or structure unless permission in writing has been issued by approving authority.
 - a. Secure permit before using equipment which may exceed legal loading, allowing ample time for making an analysis of stresses to determine whether or not proposed loading would be within safe limits.
 - b. Owner will not be responsible for delay in construction operations or for costs incurred by Contractor as result of not complying with statutes and regulations.
3. Limit operations to use of pneumatic-tired equipment on pavement, except for equipment used for excavating.
 - a. Move metallic tracked equipment on pneumatic-tired trailer.
 - b. Do not "walk" metallic tracked equipment.

F. Construction Noise:

1. Equip engines and engine-driven equipment used for hauling or construction with mufflers maintained to prevent excessive or unusual noise.
2. Construction within 1,000 feet of an occupied school, residence, motel, hospital, or similar facility shall be confined to period beginning at 7:00 a.m. and ending at 5:00 p.m. This time regulation does not apply to maintenance or operation of safety and traffic control devices such as barricades, signs and lighting, or to construction of emergency nature.
3. Any machine or device or part thereof, which is regulated by or becomes regulated by Federal or State noise standards, shall conform to those standards.

PART 2 MATERIALS

2.01 FILL

- A. A free-draining granular material equivalent to PGE with the following gradation shall be used as fill in undercut-replacement zones where wet conditions exist at undercut sub-grade or where unstable undercut sub-grade soils prevent compaction of other fill material.

PGE SPECIFICATIONS

SIEVE NUMBER	CRUSHED CONCRETE, CRUSHED STONE, OR BLAST FURNACE SLAG % PASSING	GRAVEL-CRUSHED GRAVEL OR PIT-RUN GRAVEL % PASSING
6 INCH	90 ± 10	90 ± 10
2 INCH	40 ± 25	60 ± 25
NO. 4	-	40 ± 20
NO. 200	5 ± 5	5 ± 5

- B. The six (6) inch sieve size shall be changed to four (4) inch for an undercut thickness of less than eighteen (18) inches.
- C. The surface of the PGE shall be covered with a minimum four (4) inch thick layer of CA-6/Grade 8 to cover protruding cobbles and boulders and to develop an adequate working platform. This minimum four (4) inch thick layer of CA-6/Grade 8 shall be considered included as part of the undercut-replacement zone.

2.02 EMBANKMENT

- A. Embankment shall consist of material excavated and installed per Section 205 of the IDOTSPECS.

PART 3 EXECUTION

3.01 PREPARATION

- A. Protect site objects in accordance with Section 01570.
- B. Provide traffic control and public protection for excavation operations in accordance with Section 01550.

3.02 EXCAVATION

A. General

1. Excavate and grade to elevations and dimensions necessary to complete construction as shown on the drawings.
2. When excavation by machine methods cannot be made without material damage being done to existing piping and structures, employ other appropriate excavation methods as necessary to prevent damage.
3. Keep area graded to allow safe passage of local traffic.
4. Leave the hydrants, valve pipe covers, valve boxes or other utility controls unobstructed and accessible until work is completed.
5. Keep inlets clear or make other satisfactory provisions for drainage.

B. Special Excavation

1. Excavation to the required sub-grade elevations shall be performed in accordance with the applicable articles of IDOTSPECS, Section 440.
2. All excess material excavated within the limits of the project but not incorporated into the project shall be disposed of away from the site by the Contractor in such a manner that public or private property will not be damaged or endangered.

C. Subgrade Treatment:

1. The roadway sub-grade shall be prepared in accordance with IDOTSPECS Section 301.

D. Granular Subgrade Stabilization:

1. Further sub-grade treatment (Granular Subgrade Stabilization) may be required at locations determined by the Engineer. This work will consist of the excavation, removal and satisfactory disposal of unsuitable material and the placement of granular fill material and geotechnical fabric.
2. The Geotechnical Study performed for this project recommends that further sub-grade treatment may be required at various locations.

3.03 FIELD QUALITY CONTROL

A. Degree of Compaction: ASTM D698 (95% of maximum density)

NOTE: All fill shall be placed in lifts not to exceed 8.0 inches when uncompacted.

B. Moisture Content: Within 3% of optimum when placed and compacted.

C. Compaction Testing:

1. Compaction testing in accordance with best practices of the industry shall be provided by Owner in areas determined by the Engineer.

PART 4 BASIS OF PAYMENT

4.01 BASIS OF PAYMENT

- A. Only items listed below will be measured in other costs shall be included in the unit for the item affected thereby.

B. Rock Excavation

1. Rock excavation will be measured from the average top surface of the rock to a plane coincidental with the bottom of the structural slab or as noted on the drawings, and to a vertical plane around the perimeter of the structure measured one foot beyond the outside face of the base slab.
2. Compensation will be made at the contract unit price per cubic yard for **ROCK EXCAVATION**, computed on the basis defined above, until the total quantity removed since the start of construction under this Contract becomes 115 percent of the quantity stated in the Agreement. Compensation for rock excavation in excess of 115 percent of the quantity stated in the Agreement will be made through a Change Order as provided for in the General Conditions.
3. Rock excavation shall include removal of rock, dewatering, and removal of excess excavated material from the site. Placing granular foundation material or Class C concrete, when directed by Engineer or when shown, from the top of the exposed rock to the bottom of the structure base slab or footings shall also be included in the unit price for rock removed.

C. Granular Foundation Material

1. Compensation for granular material ordered placed by Engineer (except that placed in rock excavation) will be based upon the contract unit price multiplied by the actual tonnage or cubic yards placed.
2. Compensation shall include the cost of removing and disposing of excavated material, wet or dry, and of furnishing, placing, and compacting refill material.
3. Granular foundation material specifically shown on the drawings or called for in the Specifications, such as sand and gravel layers under slabs and at relief valve locations will not be paid for as granular foundation material on a unit price basis. The cost of such material shall be included in the appropriate lump sum item.

D. Sheet piling, Shoring, and Bracing

1. Unless otherwise specified the sheet piling, shoring, and bracing work as described in this Section shall be considered incidental and payment will be included as part of the appropriate lump sum or unit prices stated in the Bid.

END OF SECTION 02300

SECTION 02315
EXCAVATING, BACKFILLING, TRENCHING, AND COMPACTING

PART 1 GENERAL

1.01 DESCRIPTION

A. Description of System:

1. Excavating, backfilling, and compacting shall include dewatering, sheeting, shoring, bracing excavation, backfilling, compacting, disposing of surplus materials, and other work incidental to construction of trenches, including any additional excavation required for manholes or other structures forming part of the sewer system or other utilities relocated for construction of the sewers and appurtenances.

B. Definitions:

1. Influence Zone around Piping or Electrical Ducts: Area below limits bounded by a line 12 inches above pipe or duct and by one horizontal to two vertical slopes extending outward from that line 1 foot beyond outer edge of pipe or duct.
2. Influence Zone Under Foundations, Pavements, or Sidewalks: Area below foundation or pavement and sidewalk base bounded by a one horizontal to two vertical slopes extending outward from 1 foot beyond outer edges of foundation, pavement, or sidewalk.
3. Existing utilities: Include but not limited to piping, wiring, conduit, and related structures situated underground and above ground for conveyance or transmission of water, sewage, storm water, electricity, telephone signals, television signals, natural gas, oil, gasoline, or other substances or signals.
4. Bedding Section: That portion of backfill adjacent to pipe which is critical to structural integrity of pipe. Limits of section, and specifications for various types of sections are contained within.
5. Unsuitable Material: Topsoil, peat, organic soils, and materials containing slag, cinders, foundry sand, debris, and/or rubble, or soil with less than required bearing capacity as determined by Engineer.
6. Rock Excavation:
 - a. Removal of solid rock in ledges, bedded deposits, or unstratified masses which by actual demonstration cannot, in Engineer's opinion, be reasonably loosened or ripped by a single-tooth, hydraulically operated ripper mounted on a Caterpillar Crawler Tractor D-86 in good condition or similar approved equipment in good condition or similar approved equipment and, in fact, is systematically drilled and blasted for removal.
 - b. Term "rock excavation" shall be understood to indicate a method of removal and not a geological formation.

- c. Boulders larger than 1/2 cubic yard will be classified as rock, if drilling and blasting are required and actually used for their removal.
- d. Demonstration may be waived if, in Engineer's opinion, material is obviously unrippable rock.

1.02 QUALITY ASSURANCE

- A. On-Site Testing: Testing shall be provided by Contractor.
 - 1. One sieve analysis and plasticity index for each source of granular backfill, bedding materials, and cover material. Additional analysis as required by Village to verify gradation and plasticity index (ASTM D4318).
 - 2. Field compaction testing as specified elsewhere in this section.
- B. Trenching Tolerances:
 - 1. Excavate such that pipes, ducts, and conduits can be laid straight at a uniform grade, without sags or humps, between elevations shown on drawings.
 - 2. The trench width shall be excavated in accordance with Standard Specifications for Water and Sewer Main Construction in Illinois and to the widths shown on the details.
- C. Reference Standards:
 - 1. American Society for Testing and Materials (ASTM), Latest Edition.
 - 2. American Institute of Steel Construction (AISC):
 - a. Manual of Steel Construction, Latest Edition
 - 3. American Institute of Timber Construction (AITC):
 - a. Timber Construction Manual, Latest Edition
 - 4. Illinois Department of Transportation (IDOT)
 - a. Standard Specifications for Road and Bridge Construction, Latest Edition
 - b. Supplemental Specifications and Recurring Special Provisions, Latest Edition
 - 5. Standard Specifications for Water and Sewer Main Construction in Illinois

1.03 PROJECT/SITE CONDITIONS

- A. Protect existing buildings, streets, and other structures, indicated to remain, from damage.

Repair damage caused by this Work at no additional cost to Owner.

- B. Notify corporations, companies, individuals, or authorities owning above or below ground conduits, wires, pipes, or other utilities encountered during construction operations. Protect, support, and maintain all conduits, wires, pipes, and other utilities that are to remain in accordance with the requirements of owners of said services.

C. Utility Notice and Location:

1. Drawings indicate existence of some utilities and related structures situated underground and above ground. These existing utilities, structures, and their locations have been established from available records, which may or may not be accurate. Other utilities and structures may also be present. Accordingly, Contractor is responsible to determine exact location of existing utilities and related structures and their effect on construction operations.
2. Give either minimum of 72 hour notice or notice in accord with state law, whichever time period is greater, to owners of utilities (above or below ground) prior to excavating to locate said utilities or beginning other construction activities. Weekends and holidays shall be excluded for purposes of commuting notice.

NOTE: Owner will not be responsible for locating sewer services.

3. Furnish labor, equipment, materials, services, and perform work necessary to locate existing utilities at each site, or acquire services or respective owners of existing utilities to locate existing utilities at each site at no additional cost to Owner.
4. Contractor shall not be relieved from liability for damage to existing utilities if he/she chooses to have utility owners locate existing utilities except as said utilities in writing waive Contractor's liability for damages.

D. Utility Protection and Relocation:

1. Sanitary Services and Water Services:
 - a. Some sanitary services may have to be relocated due to the installation of the new water main and appurtenances. Drawings do not indicate locations where these relocations will occur nor will they be located in the field by Owner.
 - b. As sanitary services are exposed, the contractor shall notify Engineer, which sanitary services will be in conflict. Engineer will make the determination on how the sanitary service shall be relocated.
 - c. Protect all sanitary services not in conflict with new sewers and appurtenances.
 - d. Water services shall be located in the field by Owner. Contractor shall be responsible for protecting all water services.

2. Other Utilities:

- a. Locate all other utilities.
- b. Notify utility owners of conflicts with new water mains, sewers and appurtenances.
- c. Acquire services of utility owners to relocate utilities in conflict.
- d. Cost to Contractor for relocating utilities in direct conflict with new mains and appurtenances will be reimbursed by Owner in accordance with Article 4.04 of the General Conditions. Notify Engineer and Owner in writing prior to relocating any utility for which Owner will bear responsibility for relocation cost. Contractor shall not be reimbursed for costs incurred in relocating any utility prior to notifying Engineer and Owner.
- e. Cost to Contractor for relocating utilities which are not in direct conflict with new mains and appurtenances which are relocated for Contractor's convenience shall be borne by Contractor at no additional cost to Owner.
- f. Protect all other utilities.

E. Excavated Material:

1. Do not block or obstruct pavements with excavated material, except as authorized by Owner.
2. Trim banks to minimize inconvenience to travel.
3. Transport surplus material and excavated material unsuitable for backfilling off-site daily.

F. Debris on Road:

1. Where Contractor's equipment is operated on traveled surface or structures used by traffic on or adjacent to section under construction, clean to the satisfaction of Engineer, traveled surface of dirt and debris during and at end of each day's operations.
2. Cost of this work shall be incidental to Contract and no extra compensation will be allowed.

G. Equipment on Surfaces:

1. Protect traveled surface and structures on or adjacent to work from damage by lugs or cleats of treads, tracks, or wheels of equipment.
2. Equipment used in execution of work shall comply with legal loading limits and requirements established by statutes of State in which work is performed or local regulations when moved or operated on traveled surface or structure unless permission in writing has been issued by approving authority.

- a. Secure permit before using equipment which may exceed legal loading, allowing ample time for making an analysis of stresses to determine whether or not proposed loading would be within safe limits.
 - b. Owner will not be responsible for delay in construction operations or for costs incurred by Contractor as result of not complying with statutes and regulations.
3. Limit operations to use of pneumatic-tired equipment on pavement, except for equipment used for excavating sewer trench.
 - a. Move metallic tracked equipment on pneumatic-tired trailer.
 - b. Do not "walk" metallic tracked equipment.

H. Construction Noise:

1. Equip engines and engine-drive equipment used for hauling or construction with mufflers maintained to prevent excessive or unusual noise.
2. Construction within 1,000 feet of an occupied school, residence, motel, hospital, or similar facility shall be confined to period beginning at 7:00 a.m. and ending at 5:00 p.m. This time regulation does not apply to maintenance or operation of safety and traffic control devices such as barricades, signs and lighting, or to construction of emergency nature.
3. Any machine, or device, or part thereof which is regulated by or becomes regulated by Federal or State noise standards shall conform to those standards.

I. Rock Excavation:

1. Adhere to Federal, State and local ordinances regulating blasting operations.

J. Dewatering

1. Examine borings and provide drainage by ditching or other satisfactory means of groundwater control in those areas where high groundwater may cause difficulties in clearing site or conducting other site Work activities. Provide for dewatering of groundwater and runoff during construction operations.

1.04 SHEETING, SHORING, AND BRACING

- A. Contractor shall bear sole responsibility for protecting adjacent areas, facilities, and structures from construction operations. Sheet piling, shoring, and bracing are an integral part of Contractor's construction methods.
 1. Structural requirements, installation, and removal techniques for sheet piling, shoring, and bracing are dependent upon specific construction procedures, which will be employed by Contractor.

2. Prepare written description of proposed construction procedures and compatible detailed designs for sheeting, shoring, and bracing.
3. Procedures and designs shall be certified by registered professional engineer, registered structural engineer, and registered soils engineer, as appropriate.
4. Install temporary sheeting, shoring, timbering, bracing, or steel sheet piling as required so that the work can be installed in a safe and efficient manner. Once the structure is capable of supporting the imposed soil, water and surcharged loads temporary forms, shores, and bracing in such a manner to prevent collapse or settlement and backfill the voids between structure and sheeting/shoring walls with an approved flowable fill grout to subgrade elevation or as directed by the Engineer.

1.05 TRAFFIC CONTROL

- A. Provide traffic control and public protection for excavation and backfilling operations in accordance with Section 01550.

1.06 PROTECTION OF THE ENVIRONMENT

- A. Conduct excavation and backfilling operations in accordance with Section 01570.

PART 2 MATERIALS

2.01 GENERAL

- A. Granular materials: conform to IDOT SPECS standard coarse aggregate (CA) gradations listed.
- B. Materials shall be compatible by means, which will be employed by Contractor to densities specified.

2.02 BEDDING AND COVER

- A. See standard bedding detail.
 1. Bedding shall be CA11 or CA13.
 2. Trench bottom stabilization shall be PGE as specified below.

2.03 BACKFILL

- A. Utility trenches beneath proposed utilities and beneath or less than 2 ft. from permanent streets, alley, sidewalk, or driveways: **CA-6 to underside of paved surface**
- B. Other areas adjacent to paved areas: Trenches adjacent to paved areas shall have backfill above the pipe to a level that is within the zone of influence. This zone of influence shall be defined as a 1:1 slope from 2 ft off the edge of the paved surface to the inside of the trench closest to the pavement. All other areas: Excavated earth free from organic materials.

PART 3 EXECUTION

3.01 PREPARATION

A. Dewatering:

1. Surface Waters:

- a. Keep construction site free draining.

2. Subsurface Waters:

- a. Keep excavations free from water.
- b. Maintain groundwater minimum of 12 inches below excavations.
- c. Install and operate dewatering system to lower groundwater table to required depth prior to commencement of excavation. In general, dewatering shall commence at least two (2) days prior to excavation in given area and shall extend at least 100 feet ahead and behind pipe installation operations. Determine specific requirements and procedures for each particular segment of pipe installation.
- d. Prevent displacement of surrounding soils.
- e. Remove soil which has been disturbed by pressure or flow of groundwater and replace with free draining material.
- f. Maintain dewatering systems in a manner that will prevent uplifting of structures.
- g. Protect adjacent properties from damage resulting from dewatering operations.
- h. Drill, maintain, and abandon dewatering wells in accordance with Federal, State, and local ordinances.

B. Line and Grade for Open-Cut Construction:

- 1. Install piping to line and grade shown on drawings.

3.02 SHEETING, SHORING, AND BRACING

A. Design:

- 1. Prepare designs of sheeting, shoring, and bracing in accordance with AITC Timber Construction Manual and AISC Manual of Steel Construction.

B. Sheeting, Shoring, and Bracing:

1. Install sheeting, shoring, and bracing as necessary in areas where Contractor's construction procedures may cause movement in adjacent soils and where such movement could damage existing utilities, landscaping, piping, curb and gutter, or roadways.
2. Install in other areas for Contractor's convenience.

3.03 EXCAVATION

- A. Excavate to elevations and dimensions necessary to complete construction.
 1. Where working space will permit, trenches may be excavated by machine provided that by so doing, existing piping and structures will not be subject to damage.
 2. When excavation by machine methods cannot be made without material damage being done to existing piping and structures, employ other appropriate excavation methods as necessary to prevent damage.
- B. Do not advance excavation of trenches more than 100 feet ahead of completed pipe installation at any time. Conduct excavation operations so that, at the end of each day's work, no more than 20 feet of trench is excavated ahead of completed pipe installation. The trench that is open shall be protected at the end of each day's work.
- C. Do not excavate for piping, manholes and other structures until scheduled for construction except as necessary to locate existing utilities.
- D. Do not excavate within influence zone of existing footings or foundations without providing shoring and bracing or other procedures to ensure against displacement of footings or foundations.
- E. Excavation in Roadways: Excavation, backfill, and surface replacement shall conform to requirements of local authority. In no case shall placement edges bear on less than 12 inches of undisturbed soil unless otherwise noted.
- F. Construction on Site:
 1. Place no material closer than two (2) feet to edge of excavation.
 2. Leave fire hydrants, valve pit covers, valve boxes, or other utility control unobstructed and accessible until work is completed.
 3. Keep ditches and inlets clear or make other satisfactory provisions for drainage.
 4. Do not obstruct natural watercourse.

3.04 INSPECTION PRIOR TO BEDDING AND BACKFILLING

- A. Examine surfaces to receive bedding or backfill to determine extent of areas loosened by frost action, softened by flooding or weather, or of unsuitable materials.

- B. At a time of use, granular bedding and backfill shall be free of frozen and foreign materials that may have become mixed with it during handling.

3.05 UNSUITABLE MATERIALS

- A. Remove and replace or compact natural soils or previously compacted fills softened by frost, flooding or weather.
- B. Remove unsuitable material, in accordance with IDOT Standard Specifications Article 202.03 from within trenches. Notify Engineer prior to excavating.
- C. Stabilize trench bottom by replacing unsuitable material with a PGE coarse aggregate gradation as specified below.

PGE SPECIFICATIONS

SIEVE NUMBER	CRUSHED CONCRETE, CRUSHED STONE, OR BLAST FURNACE SLAG % PASSING	GRAVEL-CRUSHED GRAVEL OR PIT-RUN GRAVEL % PASSING
6 INCH	90 ± 10	90 ± 10
2 INCH	40 ± 25	60 ± 25
NO. 4	-	40 ± 20
NO. 200	5 ± 5	5 ± 5

- B. The 6-inch sieve size shall be changed to 4 inch for an undercut thickness of less than 18 inches.
- C. The surface of the PGE shall be covered with a minimum 4-inch thick layer of CA-6/Grade 8 to cover protruding cobbles and boulders and to develop an adequate working platform. This minimum 4 inch thick layer of CA-6/Grade 8 shall be considered included as part of the undercut-replacement zone.

3.06 PLACING BEDDING AND COVER

- A. Rigid Pipes and Ducts:
 1. Use bedding material as specified in Paragraph 2.02 of this section.
 2. Spread bedding material over bottom of trench so after pipe placed thereon, imbedded and aligned, there remains six (6) inches minimum depth of bedding material below pipe barrel and minimum of four (4) inches below bell.
 3. If excavation carried deeper than six (6) inches below pipe barrel, excess depth shall be filled

with coarse aggregate gradations as specified.

4. Care should be taken to ensure pipe supported on entire length, not on bell.
5. Carefully place bedding material of required depth and bring up to level even with the middle of the pipe.
6. After pipe is laid and jointed, place and cover material to level twelve (12) inches above pipe barrel.

B. Compacted Section for Flexible Pipes and Ducts:

1. Place bedding material specified in details below and around pipe up to the middle of the pipe to provide adequate side support and prevent lateral movement.
2. Place bedding material in two stages. Extend first stage to top of pipe, and second to level from top of pipe to at least 12 inches above pipe
3. If for any reason trench width exceeds that allowed in Paragraph 1.02B of this section, extend bedding and cover material, as required above, at least two pipe diameter from either side of pipe or to undisturbed trench walls, whichever is closer. This pipe zone shall contain only undisturbed soil and/or bedding.
4. For PVC pipe, bedding and cover installation shall conform to requirements of ASTM D2321.

3.07 BACKFILLING

A. Backfill Material:

1. Excavated Material Backfill:
 - a. Backfill trenches with excavated material from trenches, unless granular backfill is required as specified below.
 - b. Excavated material shall consist of loam, clay or other materials, which, in judgment of Engineer, are suitable for backfilling. Unsuitable backfill materials are not acceptable. Extend backfill from surface of cover material to ground surface, making allowance for surface restoration.
2. Granular Material Backfill:
 - a. Place granular backfill within influence zone under new or existing roads, sidewalks, paved surface, or foundations and footings.
 - b. Extend backfill from surface of cover material to top of existing pavement structure to allow backfill to function as temporary aggregate roadway. Replace backfill displaced by traffic movement as necessary until temporary bituminous pavement or permanent pavement is installed at no additional cost to Owner.

3. Support of Underground Structures:

- a. Place granular backfill within influence zone under piping and other utilities. Compact mechanically to 95% of maximum density as determined by ASTM Test Designation D698.
- b. Contractor may submit an alternate design for support of underground facilities to Engineer for approval. Submittal shall contain documentation to verify adequacy of design.

B. Placing Backfill:

1. Do not use frozen material or place backfill on frozen sub-grade.
2. Exercise care not to exert undue stresses on new piping or existing utilities when dumping, spreading, and/or compacting backfill materials. Hand spreading and hand tamping may be required to adequately protect new pipe and existing utilities.
3. Where pipes leave structures, protect by backfilling pipe influence zone down to undisturbed soil as specified above for support of underground structure.
4. Do not backfill structures until new concrete has properly cured.

C. Compaction of Backfill:

1. Granular trench backfill shall be mechanically compacted in layers of twelve (12) inches maximum, loose measure. Each layer shall be compacted to 95% of maximum density as determined by ASTM D698 by ramming or tamping with tools approved by the Engineer. Care shall be taken during compaction to prevent disturbance or injury of the pipe and other utilities.
2. All job excavated material used for backfill shall be mechanically compacted in layers of eighteen (18) inches maximum, loose measure, to 90% of maximum density as determined by ASTM D698 by ramming or tamping with tools approved by the Engineer. Care shall be taken during compaction to prevent disturbance or injury of the pipe and other utilities.
3. Start trench compaction at point of lowest elevation of trench and work along trench.
4. Backfill pipe immediately after installation unless delay is approved by Engineer.

3.08 FIELD QUALITY CONTROL

- A. Degree of Compaction: ASTM D698 (95% of maximum density)
- B. Moisture Content: Within 3% of optimum when placed and compacted.
- C. Compaction Testing:

1. Compaction testing in accordance with best practices of the industry shall be provided by Owner in areas determined by the Engineer.

3.09 REMOVAL AND DISPOSAL OF EXCAVATED MATERIALS

A. Clean Construction Demolition Debris (CCDD)

1. The Illinois EPA defines clean construction or demolition debris (CCDD) as uncontaminated broken concrete without protruding metal bars, bricks, rock, stone, or reclaimed asphalt pavement generated from construction or demolition activities. When uncontaminated soil is mixed with any of these materials, the uncontaminated soil is also considered CCDD. Uncontaminated soil that is not mixed with other CCDD materials is not CCDD. Public Act 96-1416, effective July 30, 2010, establishes certain guidelines for managing CCDD materials permitted CCDD facilities.
2. All removal or excavation items being disposed of at an uncontaminated soil fill operation or clean construction and demolition debris (CCDD) fill site shall meet the requirements of Public Act 96-1416. All costs associated with meeting these requirements shall be included in the unit price cost for the associated removal or excavation items in the contract. These costs shall include State or Local tipping fees.
3. All excavated material on Kramer Avenue has been tested and certified for disposal at a CCDD facility. No additional costs shall be paid for testing or disposal of this material. LPC 663 will be provided for disposal of material from these locations.
4. All material excavated that cannot be replaced in the trench shall be disposed of at a landfill. A copy of the soils analysis is contained in the geotechnical appendix. Disposal of this material shall be paid for at the contract unit price per ton as non-special waste disposal to include all additional testing and permit as required by the facility and haulage and disposal at the landfill. Payments will only be made on receipt of the certificate (manifests) of each load showing tonnage disposed.

PART 4 BASIS OF PAYMENT

4.01 Granular Trench Backfill

- A. Granular trench backfill will be paid for per cubic yard as **TRENCH BACKFILL** to include all necessary labor, materials, equipment, and tools to complete the above work.

4.02 Unsuitable Soil removal

- A. Unsuitable Soil removal will be paid for per cubic yard as **REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL** to include all necessary labor, materials, equipment, and tools to complete the above work.

4.03 PGE Embankment, Special

- A. PGE Embankment, Special will be paid for per cubic yard as **POROUS GRANULAR EMBANKMENT, SUBGRADE** to include all necessary labor, materials, equipment, and tools to complete the above work.

4.04 Non Special Waste Disposal

- A. The excavation, transportation, and disposal of soil and other materials from an excavation determined to be contaminated will be paid for at the contract unit price per ton as **NON SPECIAL WASTE DISPOSAL** to include all necessary labor, materials, equipment, and tools to complete the above work.

4.05 Rock Excavation

- A. Rock excavation will be paid for at the contract unit price per cubic yard for **ROCK EXCAVATION**, computed on the basis defined above, until the total quantity removed since the start of construction under this Contract becomes 115 percent of the quantity stated in the Agreement. Compensation for rock excavation in excess of 115 percent of the quantity stated in the Agreement will be made through a Change Order as provided for in the General Conditions. (See Section 02300 for more details).

4.06 Sheet piling, Shoring, and Bracing

- A. Unless otherwise specified the sheet piling, shoring, and bracing work as described in this Section shall be considered incidental and payment will be included as part of the appropriate lump sum or unit prices stated in the Bid.

END OF SECTION 02315

NOT FOR BID

SECTION 02530
SEWERS AND FORCE MAINS

PART I GENERAL

1.01 DESCRIPTION

A. Description of Work:

1. Provide new storm or sanitary sewers as shown on drawings. Replace existing sanitary sewer services when directed by Engineer.

1.02 QUALITY ASSURANCE

A. Reference Standards:

1. American Society for Testing and Materials (ASTM), Latest Edition
2. American Water Works Association (AWWA), Latest Edition
3. Illinois State Plumbing Code, Latest Edition
4. Illinois Department of Transportation (IDOT)
 - a. Illinois Department of Transportation Standard Specification for Road and Bridge Construction, Latest Edition
 - b. Supplemental Specifications and Recurring Special Provisions, Latest Edition
5. Standard Specifications for Sewer and Water Main Construction in Illinois Latest Edition.

PART 2 PRODUCTS

2.01 MATERIALS

A. PVC Sanitary Sewer Pipe and Fittings:

1. 6 to 16 inch diameter: ASTM D 2241, SDR 26.; 18"-24" F-679
 - a. Fittings such as saddles, elbows, tees, and wyes shall be factory produced and have joint design compatible with adjacent pipe.
 - b. Provide approved adapters for transitions to other types of pipe materials.

2. Pipe Joints:

- a. Rubber Gasket: ASTM F477. Bell and spigot joint conforming to ASTM D3139, sealed by rubber gasket so assembly remains watertight under conditions of service including movements resulting from expansion, contraction, settlement, and deformation of pipe.
- b. Field applied heat fusion or solvent welded joints between pipe sections, pipe and fittings or fitting components not permitted.
- c. Assembled joint shall pass performance tests as required in ASTM D3139.

3. Pipe Markings:

- a. Manufacturer's name or trademark.
- b. Nominal pipe size.
- c. PVC cell classification
- d. ASTM D 2241 SDR 26
- e. Extrusion date, period of manufacture or lot number.

4. Tapping Saddles:

- a. Sealtite sewer tapping saddle system or TAPRITE "MD" Cut-ins manufactured by General Engineering Company, or approved equivalent.

5. Pipe Section Length:

- a. 12 foot minimum.
- b. Use full sections to maximum practical extent.
- c. No section shall be shorter than 3 feet in length.

6. Flexible Boots:

- a. Conform to ASTM C923.
- b. Kor-N-Tee.
- c. PSX by Press Seal, Inc.
- d. Or equal.

B. Ductile Iron Pipe (DIP) Sanitary Sewer:

1. Material:

- a. Conform to AWWA C151.

2. Thickness:

- a. Conform to AWWA C150, Class 52 minimum.

3. Joint:

- a. Conform to AWWA C111.
- b. Push on type.
- c. Neoprene or other synthetic rubber gaskets resistant to sanitary sewage. Natural rubber gaskets not permitted.

4. Pipe Lining:

- a. Conform to AWWA 104.

5. Coating:

- a. Cement lining conforming to AWWA C104.
- b. Bituminous conforming to AWWA C151.

6. Pipe Section Length:

- a. 18 feet nominal.
- b. Use full sections to maximum practical extent.

7. Fittings:

- a. Conform to AWWA C110 and AWWA C151.
- b. Push-on joints conforming to AWWA C111.
- c. Fitting pressure rating: 250 psi.
- d. Cement lining conforming to AWWA C104.
- e. Bituminous coat conforming to AWWA C151 on interior and exterior.

C. PVC force main sewer pipe and fittings (open cut)

1. Material:

- a. Conform to AWWA C-900 DR 25 for force main pipe up to and including 12" diameter, conforming to AWWA C-905 DR 25 for diameters greater than 12".

2. Joint:

- a. Conform to AWWA C-110.
- b. Push on type restrained by Megalug Series 2000PV or equal, and Corten T-Bolts
- c. Neoprene or other synthetic elastomeric gaskets resistant to sanitary sewage. Natural rubber gaskets not permitted.

3. Pipe Section Length:

- a. 20 feet nominal.
- b. Use full sections to maximum practical extent.

4. Fittings shall be ductile iron:

- a. Conform to AWWA C153.
- b. Push-on joints conforming to AWWA C110.
- c. Fitting pressure rating: 250 psi.

D. PVC Storm Sewer Pipe and Fittings

1. ASTM D 2241, SDR 26

- a. Fittings such as saddles, elbows, tees, and wyes shall be factory produced and have joint design compatible with adjacent pipe.
- b. Provide approved adapters for transitions to other types of pipe materials.

2. Pipe Joints:

- a. Rubber Gasket: ASTM F477. Bell and spigot joint conforming to ASTM D3139, sealed by rubber gasket so assembly remains watertight under conditions of service including movements resulting from expansion, contraction, settlement, and deformation of pipe.
- b. Field applied heat fusion or solvent welded joints between pipe sections, pipe and fittings or fitting components not permitted.

- c. Assembled joint shall pass performance tests as required in ASTM D3139.
- 3. Pipe Markings:
 - a. Manufacturer's name or trademark.
 - b. Nominal pipe size.
 - c. PVC cell classification
 - d. ASTM D 2241 SDR 21
 - e. Extrusion date, period of manufacture or lot number.
- 4. Pipe Section Length:
 - a. 12 foot minimum.
 - b. Use full sections to maximum practical extent.
 - c. No section shall be shorter than 3 feet in length.
- 5. Flexible Boots:
 - a. Conform to ASTM C923.
 - b. Kor-N-Tee.
 - c. PSX by Press Seal, Inc.
 - d. Or equal.
- E. Concrete Storm Sewer
 - 1. Pipe for reinforced concrete pipe sewers shall meet the minimum requirements of ASTM C 76, Class IV pipe. Joints for storm sewers shall conform to ASTM D443 All pipe shall be supplied from the manufacturer without lift holes.
 - 2. Concrete pipe joints, ASTM C443 for concrete pipe. Gaskets shall be confined O-rings, suitable for the pressure, fluid, and temperature in the pipeline.
- F. Flexible Connectors:
 - 1. Materials:
 - a. Synthetic rubber base compound formulated to resist acids, alkalis, solvents, and greases encountered in sanitary or storm sewers and contain no reclaimed rubber.

- b. Test in accordance with ASTM D543 and not lose weight in 1.0 normal sulfuric acid, 1.0 normal hydrochloric acid or 1.0 normal nitric acid.
 - c. Show no etching, blistering, distortion or other evidence of chemical or bacterial attack and shall show no cracking on rapid cooling.
 - d. Under ASTM D412, ultimate tensile strength shall exceed 750 psi at 80 degrees F and elongation shall exceed 150%.
 - e. Under ASTM D570, water absorption shall not exceed 4%.
 - f. Under ASTM D2240 Type A hardness shall exceed 55 in 5 second reading.
- 2. Material used in fabricating compression bands shall be Type 316 stainless steel and bolts and nuts shall be Type 305 stainless steel in accordance with ASTM A167.
 - 3. Completed Joint: Conform to material and performance standards of ASTM C425 for resilient sewer pipe joints.
 - 4. Acceptable Manufacturers:
 - a. Clow.
 - b. FERNCO, Inc.
 - c. Or equal.

G. Concrete for Collars:

- 1. Class SI in accordance with IDOT Standard Specifications, Section 1020.

H. Casing Pipe

- 1. Casing pipe shall be steel, bituminous coated inside and out, minimum of 30 mils thickness, and shall be of leak proof construction, capable of withstanding the anticipated loadings. The steel shall have a minimum yield strength of 35,000 psi and shall meet the requirements of ASTM A139, Grade B. Ring deflection shall not exceed 2% of the nominal diameters. The steel casing pipe shall be delivered to the job site with beveled ends to facilitate field welding. The diameter of the casing pipe shall be 12" greater than the nominal outside diameter of the water main or sanitary sewer. The minimum wall thickness shall be 0.375" for casings up to 24" in diameter and 0.5" for larger casings.

PART 3 EXECUTION

3.01 GENERAL

- A. Install new sewers and forcemain as shown on the drawings.

- B. Relocate sanitary sewer service pipes in conflict as necessary.
- C. When new sewer to be connected to existing sewer does not terminate at a manhole, uncover end of existing sewer to allow adjustments in line and grade, if required, before any pipes are laid.

3.02 INSTALLATION OF GRAVITY SEWER PIPE

- A. Install pipe and gaskets in accordance with manufacturer's recommendations.
- B. Install PVC pipe in accordance with ASTM D2321 and standard details.
- C. Trenching (including sheeting, shoring, and bracing as necessary to be compatible with Contractor's specific construction procedures), dewatering, bedding, cover, backfilling, and compaction shall be in accordance with Section 02315.
- D. Lay pipe only after trench is dewatered in accordance with Section 02315.
- E. Begin laying pipe from lowest point in proposed sewer line where possible.
- F. Lay pipe with bell end of bell and spigot pipe pointing upgrade.
- G. Lay pipe uniformly to line and grade so finished sewer will present uniform bore.
 - 1. Survey line and grade control as specified in Section 02300.
 - 2. Continuously monitor line and grade of pipe, and in event they do not meet specified limits described hereinafter, stop work immediately, notify Engineer, and remedy cause before proceeding with work.
- H. Retain pipe in position to maintain alignment and joint closure until backfill completed to hold pipe in place. Lay pipe to conform to prescribed line and grade shown on drawings with limits as follows:
 - 1. Variance from established line and grade shall not be greater than 1/32 inch per inch of pipe diameter and not to exceed maximum 2 inch, provided any such variation does not result in level or reverse sloping invert; provided also, variation in invert elevation between adjoining ends of pipe, due to non-concentricity of joining surface and pipe interior surfaces, does not exceed 1/64 inch per inch of pipe diameter, or 2 inch maximum.
- I. Rubber Gasket Joints:
 - 1. Immediately before making joint, lubricate outside of gasket and inside of bell or groove of last pipe with approved vegetable lubricant.
 - 2. Take care that gasket and pipe ends are clean and free of sand, gravel, dirt or other foreign materials.

3. Introduce spigot of pipe being laid with gasket in place, into bell of previously laid pipe.
4. Set pipe to line and grade, and then jack or push completely home. During insertion of the spigot, pipe shall be partially supported by hand or crane to minimize unequal lateral pressure on the gasket and maintain concentricity until gasket is properly positioned.
5. Employ whatever procedures necessary to seat spigots fully into bells without damaging or placing excessive stress on pipes.
6. Pipe required to be laid on curved alignment shall be jointed in straight alignment and then deflected, joint by joint. Maximum deflection shall be 80% of pipe manufacturer's allowable deflection.

J. Extrudable Preformed Plastic Gasket Joints:

1. Before placement of the extrudable preformed plastic gasket material, the tongue end of pipe shall be clean and free of sand, gravel, dirt or other foreign materials. The groove end of the previously laid pipe shall also be clean and free of any foreign materials.
2. Introduce tongue of pipe being laid with gasket material in place into the groove end of previously laid pipe.
3. Set pipe to line and grade, and then jack or push completely home. During insertion of the tongue end the pipe shall be partially supported by a crane to minimize unequal lateral pressure on the gasket material and maintain concentricity until gasket material is properly positioned.
4. Employ whatever procedures necessary to seat tongue ends fully into the groove ends without damaging or placing excessive stress on the pipes.

K. Seal pipe branches or open ends not to be immediately connected with caps of PVC, rubber or concrete material secured in place with joint comparable to main line joint. Stoppers may be of integrally cast breakout design.

L. Joining dissimilar pipes, joining plain ends of pipes, and connecting to existing pipes and services:

1. Flexible pipe connectors (rubber sleeves).
2. Use wherever plain ends of two pipes, whether of same or different materials or ODs to be connected.
3. Rubber sleeve and two metal straps designed for sizes and materials of two (2) pipes to be connected.
4. Concrete collars in accordance with details shown on drawings for pipe sizes for which flexible pipe connectors are not available.

M. Connecting inlet leads to storm sewers:

1. Use factory made tee/wye, tapping saddle or flexible boot at Contractor's option when connecting into RCP. Use factory made tee/wye when connecting into PVC pipe.
2. Grouted in connections not permitted.
3. Holes shall be cored into RCP. Broken out holes are not permitted.

N. Connecting branch sewer to main storm sewer:

1. Use factory made tee/wye at Contractor's option.

O. Abandoning existing inlet/catch basin leads:

1. Completely remove existing pipe and replace with granular trench backfill paid for in accordance with Section 02315.
2. Bulkhead at each end of section to be abandoned.

3.03 INSTALLATION OF FORCEMAIN

A. General:

1. Trench excavation shall consist of the removal and disposal of all materials, which are an obstruction to the installation of the new facilities or abandonment of existing facilities. The trench shall be excavated so as to allow the pipe to be placed on stone bedding on firm soil.
2. Temporary support, adequate protection and maintenance of all underground and surface utility structures, drains, sewers, utility poles, water and sewer services and other obstructions encountered in progress of the work shall be furnished by the Contractor at his own expense under the direction of the Engineer.
3. Wherever existing utility structures or branch connections leading to main sewers or to main drains, or other conduits, ducts, pipes, or structures present obstructions to the grade and alignment of the pipe, they shall be permanently supported, removed, relocated or reconstructed by the contractor through cooperation with the owner of the utility, structure, or obstruction involved. In those instances where the relocation or reconstruction is impractical, a deviation from line and grade will be ordered, and the change shall be made in the manner directed. No deviation shall be made from the required line or grade except with the consent of the Engineer.
4. The ground profile, underground utilities, existing structures and other pertinent topography are shown in the plans. The information pertaining thereto is believed to be reasonably correct, but the engineer does not guarantee the accuracy of such information. Whenever necessary to determine the location of existing pipes, valves or other

underground structures, the Contractor, after examination of available records, shall make all explorations and excavations for such purpose without further compensation.

5. Where fences, buffalo boxes, domestic water meters, house services, (except sanitary or storm laterals needing adjustment), sidewalks, curb and gutter, and foundations for street lights have been damaged, removed or disturbed by the Contractor, whether deliberately or through failure to employ usual and reasonable safeguards, such property and surface structures shall be replaced or repaired at the expense of the Contractor.
 6. At the end of each day's work, the Contractor shall tightly plug all pipe openings in such a manner that no foreign material may enter the pipe. This plugging shall be to the satisfaction of the Engineer and shall be considered incidental to this item.
- B. PVC Force Main: The Contractor shall furnish and install force main in accordance with the drawings, the requirements stated herein, and **Divisions II of the Standard Specifications for Water and Sewer Main Construction in Illinois, latest edition.**
- C. Fittings: Pipe fittings shall be restrained joint ductile iron. Thrust blocking at bends, tees, caps, and valves shall be placed between solid ground and the aforementioned fittings. The thrust blocks shall be concrete, having a minimum thickness of 12 inches. The thrust blocks shall be anchored in such a manner that all joints will be accessible for repairs. All bends of eleven and one quarter (11.25) degrees or greater, and all tees and plugs shall be thrust protected to prevent movement of the lines under pressure.
- D. Granular Bedding: The contractor shall furnish, install and compact granular bedding around the pipe as detailed on the drawings for the entire length of the pipe in accordance with the detail shown on the plans. Bedding material shall meet the gradation of CA11 or CA13. The bedding shall be compacted as indicated on the plans. The cost of the bedding shall be incidental to the force main.
- E. Tracer Wire:
1. #12 AWG solid copper conductor trace wire suitable for direct burial shall be installed with the PVC force main. The wire shall be designed to carry a radio signal and identified by surface printing indicating manufacturer, conductor size, and direct burial only. The wire must be installed continuous in length. The wire shall be blue in color. The high molecular weight polyethylene (HMWPE) insulating jacket shall not be less than 45 mils. The tracer wire shall be installed in the trench with all direct buried facilities.
 2. The wire shall be centered over the top of the pipe and attached directly to the pipe at 10 ft. intervals, using 3M Scotch 88, 1 ½" wide vinyl insulating tape half lapped six inches along the pipeline. Surface shall be clean and dry before tape application. An expansion loop shall be installed at 60 foot intervals to allow for expansion and contraction. Wrapping the wire around any facilities will not be allowed. The looped wire shall be brought to three feet above finished ground level adjacent to each Valvco Tracer Wire Access box. Excess tracer wire shall be coiled up into tracer wire box. The lid for the access box shall be marked "TRACER WIRE". Refer to detail sheets. Wire terminations at the tracer wire access box will

be completed by the Village of Villa Park. Tracer wire boxes shall be spaced at a maximum of 300 feet.

F. Fiber Conduit

1. Materials

- a. Rigid Non-metallic conduit shall meet the NEMA requirements for electrical PVC conduit Schedule 80 (EPC-80-PVC).

2. Installation

- a. All underground conduits shall have a minimum depth of 3 ft below the finished grade.

3. Conduit Assembly

- a. Rigid Non-metallic conduit. Following complete backfilling, the entire conduit length shall be mandrel tested and a pull string shall be installed for future use.

G. Handhole

1. Materials

- a. The handholes shall meet 20,000 lb load rating and shall be open bottom. Handholes shall be Armorcast, Quazite or approved equal.

2. Construction

- a. The handhole shall be located at locations shown on plans. These locations are approximate. No handholes shall be allowed in paved roadways, shoulders, driveways, or parking lots. Final location of the handhole to be determined by the Engineer.
- b. A waterproof sealing plug will be installed at the termination points in all empty conduits.

3.04 CROSSINGS - SEWERS AND WATER MAINS

- A. Normal Conditions: Lay water mains crossing house sewers, storm sewers or sanitary sewers crossing water mains to provide separation of at least 18 inches between bottom of water main and top of sewer.
- B. Unusual Conditions: When local conditions prevent vertical separation as described, following construction shall be used:
 - 1. Construct sewers passing over or under water mains with water quality PVC sewer pipe.
 - 2. Construct sewers crossing over water mains to ensure additional protection to water main by providing:

- a. Vertical separation of at least eighteen (18) inches between bottom of sewer and top of water main.
- b. Adequate structural support for sewers to prevent excessive deflection of joints and settling on and breaking of water mains.
- c. Length of sewer pipe shall be centered at point of crossing so joints will be equidistant and as far as possible from water mains.

3.05 SANITARY SEWER SERVICES

- A. Replace existing sanitary sewer services as directed by the Engineer. The existing sanitary sewer services shall be replaced upstream of its connection with the existing sanitary sewer to the new sanitary sewer with sufficient pipe to enable a smooth transition to the new sewer.
- B. Connect ends of new service piping to existing piping using non-shear rubber connectors. THE NEW SERVICE PIPE MUST BE SUPPORTED BY UNDISTURBED GROUND.
- C. Install a new tee/wye and additional piping as necessary. Connect new piping using non-shear rubber connectors as shown on drawings. Break-in connections are not permitted.
- D. Install in accordance with Illinois State Plumbing Code.

3.06 CASING

- A. Pipe within the casing shall be restrained joint if more than one (1) joint occurs within the casing. The first joint outside the casing shall also be restrained.
- B. All force main in steel casing shall be installed with approved spacers. Manufactured non-metallic or non-corrosive casing spacers, adjustable runners, or cradles shall be used to support the pipe in the casing. A minimum of two (2) supports shall be used per pipe for lengths up to 12.5 feet and a minimum of three supports shall be used for lengths greater than 12.5 feet or per manufacturer's recommendation. Wood skids will not be permitted.
- C. Fill voids outside the pipe (created during installation) with pressure grout or cellular concrete, and provisions made so that no voids are left, to prevent flotation. The annular space at the ends of the casing shall be sealed with a concrete bulk head.

3.07 FIELD QUALITY CONTROL

- A. Pipe shall be subject to rejection for failure to conform to requirements of specifications or for one or more of the following reasons:
 1. Fractures or cracks passing through pipe wall or socket, except for concrete pipe single crack not exceeding two (2) inches in length at either end of pipe or single fracture in socket not exceeding three (3) inches in width nor two (2) inches in length shall not be considered

cause for rejection unless these defects exist in more than 5% of entire shipment or delivery.

2. For concrete pipes, chips or fractures on interior of pipe exceeding two (2) inches in length, one (1) inch in width, and of depth more than 1/4 barrel thickness.
 3. Cracks, sufficient to impair strength, durability or serviceability of pipe.
 4. Defects indicating improper proportioning, mixing, and molding.
 5. Variations of more than 1/8 inch/lineal foot in alignment of pipe intended to be straight.
 6. Insecure attachment of spurs.
 7. Damaged ends, where such damage would prevent making satisfactory joint.
 8. Extensive patching or painting of any surface of pipe with exception of miter pipe formed by removal of wedge shaped sections from middle of pipe.
 9. Handling holes.
 10. Failure to pass testing.
- B. Acceptance of fittings, stubs, miters, cut-off or other specially fabricated pipe sections shall be based on visual inspection at job site by Engineer.
- C. Sewer testing:
1. Sanitary and storm sewers shall be inspected internally by Contractor's representative and by Owner's representatives utilizing the following methods:
 - a. Storm Sewer: visual inspection.
 - b. Sanitary: television inspection. (main line installation by open-cut or trenchless method)
 2. Contractor will provide television inspection.
 - a. The Contractor shall cause to be made an inspection by closed-circuit television of the sewer system, excepting sewer services. Televising shall show that the sewer system has been constructed in accordance with the approved plans and specifications, that the sewer is free and clear of all accumulations of foreign substance and debris so as to prevent clogging, and that there are no structural defects.
 - b. Prior to televising the sewer, the Contractor shall at his/her own expense, clean the sewer line with a jet-rodder or other equipment approved by the Engineer.
 - c. Upon completion of such inspection, and upon receipt of a written report of such inspection, together with a video recording of the actual inspection, and , if satisfied

that such sewer is free and clear of all foreign substance, and free of all structural defects, the Engineer shall give approval of the sanitary\combined sewer. All inspection reports and video recordings shall remain the property of the Village.

3. Sanitary services (or portions of services) installed by open-cut means will be inspected externally by Engineer. Inspection shall be visual and shall be conducted prior to backfilling. Any service backfilled prior to inspection shall be re-exposed for inspection at Contractor's expense without extra cost to Owner.
4. Failure criteria for sewer testing:
 - a. Visible infiltration at any joint which, in Engineer's opinion, exceeds one (1) gallon per minute.
 - b. Joints not "fully home" in accordance with pipe manufacturer's recommendations.
 - c. Out-of-roundness in PVC pipes which, in Engineer's opinion, exceeds 5% of the pipe diameter. Contractor shall pull a "95%" mandrel through PVC pipes after pipes are backfilled to demonstrate roundness.
 - d. Cracks or spall in pipe exceeding the requirements of Paragraph 3.06A.
 - e. Displaced gaskets.

D. Correction of defects:

1. Repair sections failing tests or quality requirements by removal and replacement of affected sections, internal or external grouting of failed joints or other defects not permitted.
2. Correct sewers failing deflection tests by re-excavating to sewer at point of failure and ten (10) feet on either side, allowing sewer to return to original round cross-section, and re-backfilling according to specifications. Re-test deflection limits as described herein. Sewers failing to return to original round cross-section or failing second deflection test shall be removed and replaced at no additional cost to Owner. Use of devices generating internal pressures or vibrations to correct sewers failing deflection testing expressly prohibited.

E. Force main testing

1. Pressure Tests
 - a. All piping shall be subject to pressure tests as specified herein. After the pipe has been laid and partially backfilled, the pipe shall be subjected to a hydrostatic pressure equal to 150 psi at the lowest elevation of the pipe section. The duration of each pressure test shall be for a period of two hours, and the pressure shall not drop more than 5 psi over this duration. The basic provisions of AWWA C-600 and C-603 shall apply.

- b. Each section of pipe to be tested, as determined by the District, shall be slowly filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump pipe connection and all necessary apparatus including gauges and meters shall be furnished by the Contractor. Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at points of highest elevation and afterwards tightly plugged. Any cracked or defective pipes, fittings, or valves discovered in consequence of this pressure test shall be removed and replaced by the Contractor with sound material and the test shall be repeated until satisfactory to the Engineer. Provisions of AWWA C-600 and C-603, where applicable, shall apply.

2. Leakage Test

- a. Leakage Test - After completion of the pressure test, a leakage test shall be conducted to determine the quantity of water lost by leakage under the specified test pressure. Test pressure is defined as the maximum operating pressure of the section under test and is based on the elevation of the lowest point in the line or section under test corrected to the elevation of the test gauge. Applicable provisions of AWWA C-600 and C-603 shall apply. Duration of each leakage test shall be a minimum of two (2) hour in addition to the pressure test periods. Allowable leakage shall be per the formula in the Illinois Standard Specifications for Water and Sewer Construction.

F. Sewer abandonment

1. Sanitary sewer abandonment shall consist of cutting and plugging existing sanitary sewer as shown on plans, removal of cone section and backfilling of existing sanitary manholes designated for abandonment with gravel or as directed by Engineer,
2. Sanitary sewer abandonment shall be considered incidental to the contract.

PART 4 BASIS OF PAYMENT

4.01 EXECUTION

- A. Sanitary Sewer shall be paid for per lineal foot as **SANITARY SEWER** of the size and type specified by depth to include pavement removal, excavation and bedding. Backfill and restoration shall be paid for separately.
- B. Storm sewer shall be paid for per lineal foot as **STORM SEWER, PVC** and **STORM SEWER, CLASS IV** of the size and type specified to include pavement removal, excavation and bedding. Backfill and restoration shall be paid for separately. Replacement of existing storm sewer shall be paid for as **STORM SEWER REMOVE AND REPLACE** of size and type specified.
- C. Laterals shall be paid for per lineal foot as **6" PVC LATERAL** to include pavement removal, excavation and bedding. Backfill and restoration shall be paid for separately.

- D. Sanitary sewer clean-outs shall be paid for as **SANITARY SEWER CLEAN-OUT** of the size and type specified by depth to include pavement removal, excavation and bedding, wye fitting, and clean-out cap installed at finished grade. Backfill and restoration shall be paid for separately.
- E. Force main shall be paid for at the contract unit price per lineal foot including pavement removal, excavation, and bedding as, **DUCTILE IRON FORCE MAIN, CL52**; Use of ductile iron pipe and fittings, where needed or specified, shall be included in this item.
- F. Granular trench backfill shall be constructed in accordance to Section 02315 and this section and will be paid for per cubic yard as **TRENCH BACKFILL** to include all necessary labor, materials, equipment, and tools to complete the work.

END OF SECTION 02530

SECTION 02532
DUPLEX PREFABRICATED FIBERGLASS LIFT STATION
WITH VALVE VAULT

PART 1 GENERAL

1.01 SUMMARY

A. Furnish and install a complete factory-built Metro-Rail Packaged System as manufactured by the Metropolitan Pump Company, Romeoville, Illinois. The system shall include two submersible pumps, guide rails, pump mounting plates, discharge elbow, discharge piping, upper & lower guide rail supports, access frame with cover for each pump, wiring bracket as required, all installed in a fabricated fiberglass basin. The system shall also include a fiberglass outside valve vault, which shall house the discharge piping, plug valves, check valves, and sump pump. The controls to be housed in a NEMA-3R Painted Steel traffic enclosure. (Structure and dimensions to be as shown on drawing).

1.02 SUBMITTALS

- A. Submit in accordance with Section 01330
- B. The contractor shall submit a minimum of six (6) copies of all drawings to the engineer for approval. Of these, two copies will be returned to the contractor with appropriate action taken. Receipt of less than the minimum required number of copies will be cause for withholding the shop drawings from being checked until receipt of the necessary additional copies.
- C. Each set of shop drawings shall include, but not necessarily be limited to:
- D. Drawings showing dimensions of all equipment. Control details and electrical schematic diagrams. Performance data including, when applicable, pump curves, and motor data.
- E. All other information necessary to enable the engineer to determine whether the proposed equipment meets the requirements.

PART 2 PRODUCTS

2.01 SUMP BASIN

A. The filament wound fiberglass shall have an inside diameter of 6 feet, 0 inches, and a height as shown on the drawings. The basin shall have a steel, fiberglass coated, anti-floatation flange mounted on the bottom. Basin shall incorporate an outside valve vault, as described below. The basin shall have a coated steel cover encompassing both the wet well and valve, and provided with openings to bolt in the aluminum access hatches.

2.02 PIPING

A. Piping in the basin shall be 4 inch ductile iron pipe and shall terminate with a flange outside the basin wall for connection to valves in an external valve vault. The valve vault shall include two 4" check valves with lever and spring and two 4" plug valves. Inlet or inlets into basin shall be grout sleeves for 8 inch inlet pipe. The pump guide rails shall be 2" stainless steel pipe. Valve vault piping shall include a bypass connection with a riser pipe, 4" shut-off valve, and quick disconnect hose coupling for portable pump connection.

2.03 METAL-TO-METAL RAIL SYSTEM

A. The MTM rail system shall include a discharge base elbow, sealing flange with rail guide, upper guide bracket, stainless steel lifting chain, and stainless steel guide rails. The discharge base elbow shall have mounted directly on the sump floor and sized according to the plans. It shall have a standard 125 lb flange, with machined face. The design shall be such that the pump to discharge connection is made without the need for any nuts, bolts, or gaskets. The base elbow shall also anchor two (2) 2" stainless steel guide rails. The sealing flange/rail guide bracket shall be mounted on each pump discharge. It shall have a machined mating flange, which matches the base elbow discharge connection. Sealing of this discharge connection shall be accomplished by simple linear downward motion of the pump culminating with the entire weight of the pumping unit supported entirely by the base elbow. The upper guide bracket shall align and support the two guide rails at the top of the sump. It shall bolt directly to the hatch frame and incorporate an expandable rubber grommet. Each pump shall be provided with a stainless steel lifting chain, and be of sufficient length to extend from the pump to the top of the wet well. The access frame shall provide a hook to attach the chain when not in use. The lifting chain shall be sized according to the pump weight.

2.04 ACCESS FRAME AND COVER

A. A double door access frame assembly for the wet well and a single access hatch for the valve vault shall be supplied. Access frame and covers shall be fabricated of aluminum and bolted to basin. Frame shall support guide rails and electrical wiring bracket. A separate hinged cover shall be provided for each pump. Cover shall be provided with lifting handle and safety latch to hold cover in the open position. Locking hasps shall be furnished for each cover.

2.05 CORD AND PLUG CONNECTED SUMP PUMP

A. A sump pump shall be provided for dewatering the valve vault back to the wet well. The pump shall be Metropolitan Model S33A1 with 1/3 hp, 1 phase, 60 hz, 115v motor designed for automatic operation through a piggy-back ION switch. The pump discharge shall be 1-1/2". Pump shall have integrated float control and shall be cord and plug connected. Manufacturer shall furnish and install a single yoke receptacle for the sump pump with electrical connections by the Electrical Contractor. Manufacturer shall also furnish and install (2) two PVC NEMA 4x junction boxes (6"x6"x4" with screw casketed covers) for terminating remote wiring for the receptacle inside the valve vault and for the spare conduit shown in the plans.

2.06 SUBMERSIBLE PUMPS

A. Each pump shall be of the sealed submersible type Model No. S4NVX. Pump shall be capable of handling raw, unscreened sewage with impellers to handle minimum of 3" diameter spheres. The impellers shall be of ductile iron construction, class 65 with an average Brinnell hardness rating of 200. Pump suction and discharge openings shall be no less than 3" diameter. Pump casing shall be fitted with bronze wear ring. Pump shall have two mechanical seals with oil chamber between the seals. Rotating seal faces shall be carbon and stationary seal faces to be ceramic. Pump motor shall be of the sealed submersible type with standard insulation for operation in high-dielectric oil to give better heat dissipation and longer bearing life. Motor stator shall be held in place with removable end ring so that it can be removed for repair without heating outer shell or using a press. Motor housing shall be filled with high-dielectric oil and no pressure balancing devices shall be used. Pump motor shaft shall be of 303 stainless steel. Pump shall be a standard production pump with attached rail guides and discharge sealing flange. All lifting loads will come on the

guide supports and not on the pump or motor housing. A lifting chain and hook shall be supplied for each pump. Each pump motor will be provided with heat sensing units, which shall trip the starter if the motor overheats. Seal chamber shall be fitted with an electrode probe to detect water in the seal chamber and indicated by seal fail lights on the control panel. Pump motor supplier shall furnish to the Systems Integrator pump motor overtemp and moisture sensing relays for installation into the Pump Control Panel. See plans and specifications.

2.07 POWER CORD

A. Pump motor cords shall be designed for flexibility and serviceability under hard usage conditions and meet the NEC requirements for sewage lift stations. The electrical system shall include ground fault protection in accordance with NEC and de-energize the circuit in the event of electrical integrity failure. The power cable entry into the cord cap assembly shall first be made with a compression fitting. Each individual lead shall be stripped down to bare wire, at staggered intervals, and each strand shall be individually separated. This area of the cord cap shall then be fitted with an epoxy compound potting which will prevent water contamination to gain entry even in the event of wicking or capillary attraction. There shall be an additional epoxy compound potting area separating the motor housing from the cord cap assembly for added protection. The cord cap shall be capable of removing and disconnecting the motor connections for pump removal, repair or replacement without disturbing the motor.

1. Operating Conditions

- a. Each pump shall have a capacity of 250 GPM at a total head of 17' TDH when operating at 1750 r.p.m. Pump motor shall be 5 HP, 3 phase, 230 volts, 60 Hz.

NOTE: Available power to be confirmed prior to order.

PART 3 CONTROL EQUIPMENT

Refer to Section 26 45 01 of the Specifications.

SCADA EQUIPMENT:

Furnish complete SCADA RTU panel that is to be located inside the traffic box enclosure and necessary programming required onsite and at the master location. The SCADA panel shall be by TRI-Systems and shall be included with the control system described above.

EQUIPMENT RESPONSIBILITY

The lift station wet well and valve pit structure, pumps, motors, rail system, internal piping and valves shall be furnished by one equipment supplier. The equipment supplier shall have responsibility for the complete and proper operation of the new and existing pumping equipment, control equipment, and program as specified and furnished. The system supplier shall furnish 24-hour service for the complete system, and shall stock all parts used of the installation. Start-up services shall be included, and shall include operating instruction to the operators. The equipment shall be as manufactured and furnished by Metropolitan Equipment Co. (Division of Metropolitan Pump Co., Romeoville, IL.) or equal.

INSTALLATION AND OPERATING INSTRUCTIONS

Two (2) copies of a manual, containing installation instructions, operating instructions, wiring diagrams, parts list, and, where applicable, test data and curves shall be provided. The contractor shall provide the services of factory-trained representative for a maximum period of one (1) day to start up the station

and to instruct the owner's operating personnel in the operation and maintenance of the equipment provided.

WARRANTY

The manufacturer shall warrant his/her product to be free from defects in workmanship for a period of one (1) year from date of completion. Warranties and guarantees by the suppliers of various components in lieu of a single source responsibility by the contractor shall not be accepted. The contractor shall be solely responsible for the warranty. In the event a component failure to perform as specified or is proven defective in service during the warranty period, excluding items of supply normally expended during operation, the manufacturer shall provide a replacement part without cost to the owner. This warranty shall be valid only if the product is installed, serviced, and operated under normal conditions, in accordance with the manufacturer instructions.

EQUIPMENT MANUFACTURER

In order to establish a standard of quality and to insure a uniform basis of bidding, pump station equipment shall be supplied by Metropolitan Pump Company or a written approval equal. To be considered an approved equal, complete details and shop drawings must be submitted to the engineer no later than ten (10) days prior to the bid date. Sufficient data must be submitted so that the engineer has the required information available to determine that the alternate station meets the required specifications.

The contractor shall prepare bid on the basis of the specific equipment and materials specified for purpose of determining the low bid.

After the execution of the contract, substitution of non-specified equipment will be considered, if the substitution is, in the opinion of the engineer, equal in quality to that named. If such substitution is approved by the engineer, all savings affected by the contractor in the purchase of the substituted equipment shall be passed on to the owner by reducing the contract price. In submitting for substitution, the contractor shall provide certified copies of equipment proposals from the named manufacturer.

End of Section 02532

SECTION 02630
MANHOLES, INLETS, AND VALVE VAULTS

PART I GENERAL

1.01 DESCRIPTION

A. Description of Work:

1. Provide cast-in-place concrete or precast concrete structures as shown on drawings.

1.02 QUALITY ASSURANCE

A. Reference Standards:

1. American Society for Testing and Materials (ASTM), Latest Edition
2. Illinois Department of Transportation (IDOT Standard and Specifications)
 - a. Standard Specifications for Road and Bridge Construction, Latest Edition (IDOTSPECS).
 - b. Supplemental Specifications and Recurring Special Provisions, Latest Edition
3. Standard Specifications for Sewer and Water Main Construction in Illinois Latest Edition.

PART 2 MATERIALS

2.01 MANHOLES AND INLETS

A. Precast concrete conforming to ASTM C478.

1. Sections and component parts to be marked by manufacturer with trade name and/or trademark and ASTM designation.

B. Provide precast concrete cone or flat tops as indicated on drawings.

C. Elevations on drawings designate sewer elevations at center of structure. Adjust elevations of openings for incoming and outgoing pipes in accordance with sewer grades shown on drawings.

1. Holes shall be smooth, radial to centerline of manhole, and perpendicular to manhole wall.
2. Holes for Sanitary and Storm Pipes: circular.
3. Holes shall be cast in initial pouring of section or shall be cored in after concrete cured. Broken out holes or holes cut into green concrete are not permitted.

D. Sanitary Manholes:

1. Integral Base: 6-inch nominal thickness.
2. Pipe Connection: Flexible synthetic rubber boot meeting ASTM C923.
 - a. Cast-in or pressed-on types permitted.
 - b. Cast-in type boot shall be installed in initial pouring of manhole section.
3. Provide channels in invert to direct flows from incoming to outgoing pipe.
4. Section Joints:
 - a. ASTM C361 with synthetic rubber O-ring.
 - b. Tongue and groove.
 - c. ASTM C-877, Type II, External joint seals.
5. Eccentric manhole opening.
6. Optional precast concrete flat slab top refer to IDOT Standard 602601.

E. Storm Manholes:

1. Integral Base: 6-inch nominal thickness.
2. Pipe Connection: Circular hole 1-1/2 inches to 3 inches larger than actual outside diameter of sewer pipe being connected.
3. Provide invert channels in storm manholes as specified in Paragraph 2.01.D.3 of this section.
4. Section Joints: Tongue and groove.
5. Eccentric manhole opening.
6. Optional precast concrete flat slab top refer to IDOT Standard 602601

F. Inlets.

1. Type "A".
 - a. Integral Base: 4-inch nominal thickness.
 - b. Pipe Connection: circular hole 1-1/2 inches to 3 inches larger than actual outside diameter of sewer pipe.

2. Type "B".

- a. Integral Base: 6-inch nominal thickness.
- b. Pipe Connection: Circular hole 1-1/2 inches to 3 inches larger than actual outside diameter of sewer pipe.
- c. Provide invert channels as specified in Paragraph 2.01.D.3 of this section.
- d. Section Joints: tongue and groove.
- e. Eccentric opening on cone.
- f. Optional precast concrete flat slab top refer to IDOT Standard 602601

3. Type "C".

- a. Integral Base: 6-inch nominal thickness.
- b. Pipe Connection: Circular hole 1-1/2 inches to 3 inches larger than actual outside diameter of sewer pipe.
- c. Provide invert channels as specified in Paragraph 2.01.D.3 of this section.
- d. Section Joints: tongue and groove.
- e. Eccentric opening on cone.
- f. Optional precast concrete flat slab top refer to IDOT Standard 602601

G. Wall Thickness:

- 1. For 2 ft.-0 in. Nominal ID: 3-in. minimum wall.
- 2. For 3 ft.-0 in. Nominal ID: 4-in. minimum wall.
- 3. For 4 ft.-0 in. Nominal ID: 5-in. minimum wall.
- 4. For 5 ft.-0 in. Nominal ID: 6-in. minimum wall.

2.02 ADJUSTING RINGS

A. Precast concrete with steel reinforcement sufficient to prevent cracking in normal handling and use.

B. Mating Faces:

- 1. Smooth.

2. Parallel.
3. Free from cracks, chips, spall or casting irregularities interfering with watertight mating to structure top or casting.
4. Provide grooves in faces to contain extrudable preformed plastic gasket material when possible.

C. Thickness Range:

1. 2 inch nominal minimum.
2. 12 inch nominal maximum.
3. Maximum adjustment three (3) rings.

2.03 GASKET MATERIALS

A. Flexible Boots:

1. Conform to ASTM C923.
2. Synthetic rubber resistant to sanitary sewage.
3. Cast-in or pressed-on type acceptable.

B. O-Ring Gaskets:

1. Conform to ASTM C361.
2. Synthetic rubber resistant to sanitary sewage.

C. Extrudable Preform or Plastic Gasket:

1. Butyl rubber.
2. EZ Stik by Press Seal Gasket Company, or equal.
3. External Manhole Chimney Seal
 - a. Canusa, Infishield, or approved equal.

D. External Joint Sealing Bands

1. Conform to ASTM C-877
2. Type II MacWrap or approved equal.

3. External joint seals shall consist of a collar 9 inches wide with an outer layer of polyethylene, with a minimum tensile strength of 4000 psi and a minimum tear resistance of 1500 psi, and an under layer of rubberized mastic that is reinforced with the collar 3/4 inches from the edge. The straps shall be confined in tubes that isolate them from the mastic and allow them to slip freely when mechanically tightened and locked around the manhole. The collar shall be furnished with a minimum 6 inches overlap and a closing flap to cover any remaining exposed strap.

E. Materials to be new and provided in unopened containers where applicable.

2.04 CASTINGS

- A. Conform to ASTM A48, Class 30.
- B. Free from cracks, holes, swells, and cold shuts and patches.
- C. Do not coat or paint.
- D. Provide structural capacity, hydraulic capacity, water tightness, interior clearance dimensions, approximate vertical height, and range of adjustment equal to:
 1. Sanitary Manhole Frame and Water Resistant Cover:
 - a. Neenah 1772 Type "B" self sealing lid.
 - b. "Sanitary" and "Village of Villa Park" cast on lid.
 - c. Bolted frame and cover shall be Neenah R1916-C or equal
 2. Storm Manhole Frame and Solid Cover:
 - a. Neenah R-1713-2000 with 1772-0123 Heavy Duty lid.
 - b. "Storm" and "Village of Villa Park" cast on lid.
 3. Storm Manhole Frame and Grate (for grassed areas by the Storage Tank)
 - a. Neenah R-4340-B
 4. Villa Park water main castings
 - a. Neenah 1713
 - b. Bolted frame and cover shall be Neenah R1916-C.

2.05 CAST-IN PLACE CONCRETE

- A. Class SI concrete in accordance with Section 637 of IDOT Standard Specifications.
- B. Use for field poured manhole bases, inverts, and plugs for existing inlet leads being abandoned.
- C. Cement shall be ASTM C150, Type 1 - resistant to attack by sanitary sewage.
- D. Reinforcement Bars: IDOT Standard and Specifications Section 508.

2.06 NON-SHRINK GROUT

- A. Use for grouting concrete masonry units.
- B. Five Star Grout, U.S. Grout Corporation or equal.

2.07 VACUUM AIR RELEASE VALVE IN VAULT

- A. This work shall include furnishing and installing Vacuum Air Release Valve in vault, in accordance with Section 44 of the Standard Specifications for Water and Sewer Main Construction, as shown on the plans, details and as specified by the valve manufacturer.
- B. Wastewater Combination Air Valves shall be Val-Matic Model No. VM-302A as manufactured by Val-Matic Valve and Manufacturing Corporation, Elmhurst, IL, USA or approved equal.

2.08 PLUG VALVE IN VAULT

- A. Plug valves shall be PEF 100% full part eccentric as manufactured by Dezurik or equal. Valve box shall be compatible for use with plug valve and shall be provided by plug valve manufacturer.

2.09 INSTALLATION OF FLUSHING VALVE VAULT AND PLUG VALVE IN VAULT

- A. Plug valves shall be PEF 100% full part eccentric as manufactured by Dezurik or equal. Valve box shall be compatible for use with plug valve and shall be provided by plug valve manufacturer.
- B. Check Valves shall be globe style silent check valves Model No. VMC-1802 as manufactured by Val-Matic Valve and Manufacturing, Elmhurst, IL or approved equal.

PART 3 EXECUTION

3.01 SANITARY MANHOLES

- A. Place where shown on drawings and in accordance with details.
- B. Excavate in accordance with Section 02315.
- C. Connect pipes using flexible boots in accordance with boot manufacturers instructions.
 - 1. Center pipe in boot.

2. Take special care to ensure connections are watertight.
- D. Place O-ring gasket or double row of extrudable preform plastic gasket between manhole sections.
 - E. Place external Sealing Bands as shown on the detail at each joint between manhole sections in accordance with the manufacturer's instructions.
 - F. Grout all lift holes from the inside and outside with a non-shrink grout, prior to backfilling.
 - G. Place appropriate top section, cone (depth > 6 feet) or flattop, (depth < 6 feet).
 - H. Place two adjusting rings maximum on manhole top. Thickness of adjusting rings shall be 2 inches to 12 inches as necessary to bring completed manhole to elevation shown on drawings. Maximum height of adjustment shall be 12 inches.
 1. Place extrudable preformed plastic gasket material between adjusting ring and manhole top, and between adjusting ring and manhole frame.
 2. Avoid use of overly thick gasket material such as will likely produce after-settlement of manhole frame due to long-term cold flow of gasket materials.
 3. For ungrooved adjusting ring, provide two (2) rows of 2 inch by 2 inch or 3/4 inch by 3/4-inch gasket material.
 4. For grooved adjusting rings, provide size gasket material recommended by ring manufacturer Single or multiple grooved rings permitted. Where multiple grooved rings used, place gasket material in each groove.
 - I. Install manhole frame and cover and External Manhole Chimney Seal as shown on the detail, with extensions where needed to cover the entire chimney area, in accordance with the manufacturers instructions. Provide digital photo of Manhole showing external chimney seal installed such that the manhole and its location are identified. For bolted cover provide bolts and ensure that the frame is securely fastened to the manhole.
 - J. Backfill in accordance with Section 02315.
 - K. Pour manhole invert.
 1. Provide poured-in-place channels (if manholes not furnished with precast inverts) to direct flows from in-coming pipes to outgoing pipes. Channels shall smoothly blend flows.
 2. Make channel horseshoe shaped. Width and depth equal to size of outlet sewer.
 3. To maintain flexibility of pipe connection boot, plug annular space between pipe and boot which falls in area where invert to be poured with extrudable preformed plastic gasket material. Plug shall prevent concrete from entering space between pipe and boot.

4. Invert channels may be placed any time after manhole base section (and connecting pipe) is backfilled.

3.02 STORM MANHOLE AND INLETS

A. Construct in accordance with sanitary manholes except as follows:

1. Inlet Installation:

- a. This work shall consist of removing the existing brick or cinder block catch basin or inlet which interferes with the installation of the proposed force main and replacing it with a new inlet, type A, or catch basin and a new frame and grate of the type specified below. This work shall conform to the applicable Article 602 IDOT Standard Specifications.
- b. The new inlet shall be placed on the compacted material and adjusted to finish grade. All adjustments shall be done with 1-, 2-, 4- and 6-inch concrete adjusting rings combined to result in the minimum number of mortar joints possible and in accordance with section 603 of the Standard Specifications.

2. Pipe connection:

- a. Center pipe in hole through base section and pack annular space with extrudable preformed plastic gasket material. Seal connection on interior and exterior with non-shrink grout.
- b. Take care that annular space is uniform around pipe and gasket material evenly distributed.
- c. Ensure connection is watertight.

3. Joint between precast concrete sections:

- a. Provide one or two rows extrudable preformed plastic gasket material between sections as necessary for watertight joint.

4. Abandoning existing catch basins/inlets:

- a. Where drawings so indicate, remove existing catch basins/inlets for installation of new inlets and inlet leads. This removal shall be incidental to the cost of the installation of the new inlet/catch basin.
- b. Plug existing catch basin leads with Class SI concrete, in accordance with IDOT Standard and Specifications, at end of lead as exposed for removal of existing inlet and at connection of existing lead to combined sewer manhole. As a minimum, depth of plug shall be equal to inside diameter of existing lead.
- c. Where drawings so indicate and as directed by ENGINEER, abandon existing catch basins, which will not be replaced, by new inlets. These catch basins shall be abandoned

as follows:

1. Plug existing catch basin leads as outlined in Paragraph 3.02.A.3.b.
2. Remove existing castings and inform OWNER so that it can be removed from the job site.
3. Remove existing structure to a point at least 3 inches under the proposed sub-grade.
4. Fill catch basin with CA-6/Grade 8 material and compact in accordance with Section 02315.

3.03 VACUUM AIR RELEASE VALVE IN VAULT

- A. This work shall include furnishing and installing Vacuum Air Release Valve in vault, in accordance with Section 44 of the Standard Specifications for Water and Sewer Main Construction, as shown on the plans, details and as specified by the valve manufacturer
- B. Wastewater Combination Air Valves shall be Val-Matic Model No. VM-302A as manufactured by Val-Matic Valve and Manufacturing Corporation, Elmhurst, IL, USA or approved equal.

3.05 CASTINGS

- A. Existing castings shall be placed at a designated area on the job site. The OWNER shall have first rights to the castings. After the OWNER removes certain castings, the CONTRACTOR shall be responsible to remove the remaining castings.

3.06 FIELD QUALITY CONTROL

- A. Precast reinforced concrete bases, risers, tops, adjusting rings, and iron castings shall be subject to rejection on account of failure to conform to any specification requirements.
- B. Individual sections of bases, risers, and tops may be rejected because of:
 1. Fractures or cracks passing through bell, except for single end crack not exceeding joint depth.
 2. Excessive patching.
 3. Grouted pipe openings.
 4. Defects indicating imperfect proportioning, mixing, and molding.
 5. Surface defects indicating honeycombed or open texture.
 6. Damaged ends, where such damage would prevent making satisfactory joint.

7. Continuous crack having surface width of 0.01 inches or more and extending for length of 12 inches or more, regardless of position.
- C. All manholes shall be tested for watertightness in accordance with ASTM C969-94 – "Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Pre-cast Concrete Pipe Sewer Lines", Vol. 04.05, Chemical Resistant Materials, Vitrified Clay, Concrete, Fiber-Cement Products; Mortars; Masonry (1996) (no later editions or amendments) or ASTM C1244-93 "Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test", Vol. 04.05, Chemical Resistant Materials, Vitrified Clay, Concrete, Fiber-Cement Products; Mortars; Masonry (1996) (no later editions or amendments) prior to placing into service.
- D. Installation may be rejected because of:
1. Use of individual components subject to rejection.
 2. Failure to conform to installation requirements.
 3. Visible infiltration.
 4. Variation from true vertical alignment by more than 2% of depth.
 5. Variations in pipe and rim elevations greater than 0.5 inches from elevations shown on plans.
 6. Test failure

3.07 ABANDON MANHOLES

- A. Remove existing castings and inform OWNER so that it can be removed from the job site.
- B. Remove cone section of manhole. If a flat-top manhole remove top 30".
- C. Plug all pipe connections
- D. Pour concrete into manhole base to 12" above pipe soffit
- E. Fill manhole with pea gravel or sand and backfill remaining with trench backfill.

PART 4 BASIS OF PAYMENT

4.01 MANHOLE

- A. Sanitary manholes shall be paid for at the contract unit price per each as **SANITARY MANHOLE**, of diameter, depth, and type specified, which price shall include labor, materials, excavation, and backfill necessary to complete the work as herein specified. Removal of sanitary manhole shall be paid for at the contract unit price per each **REMOVE SANITARY MANHOLE**, which shall include all labor, materials, excavation, and backfill necessary to complete the work as herein specified.

- B. Sanitary drop manholes shall be paid for at the contract unit price per each as **SANITARY DROP MANHOLE**, of diameter, depth, and type specified, which price shall include labor, materials, excavation, and backfill necessary to complete the work as herein specified.
- C. Doghouse manholes shall be paid for at the contract unit price per each as **SANITARY MANHOLE, 'DOG HOUSE'**, which price shall include labor, materials, excavation, and backfill necessary to complete the work as herein specified.
- D. Storm manholes shall be paid for at the contract unit price per each as **STORM MANHOLE**, which price shall include labor, materials, excavation, and backfill necessary to complete the work as herein specified. Removal of storm manhole shall be paid for at the contract unit price per each **REMOVE STORM MANHOLE**, which shall include all labor, materials, excavation, and backfill necessary to complete the work as herein specified.

4.02 CATCH BASIN, INLET

- A. Inlet and catch basin work shall be paid for at the contract unit price per each for **INLET TYPE A, REMOVE AND REPLACE** and **CATCH BASIN, REMOVE AND REPLACE**, which price shall include all labor, materials, excavation and backfill necessary to complete the above work as herein specified.

4.03 AIR RELEASE VALVE IN VAULT

- A. The Installation of Vacuum Air release Valve in Vault work shall be paid for at the contract unit price lump sum for **VACUUM AIR RELEASE VALVE IN VAULT**. This price shall be full compensation for furnishing and installing the valve, in the vault. Trench backfill and bedding necessary to install this vault will be considered included in the cost of this item. Restoration shall be paid for at the relevant unit prices.

Fittings and Mechanical joint restraint shall not be measured separately and shall be considered incidental to the Contract.

4.04 ABANDON MANHOLE

- A. Incidental to contract.

4.05 4" VALVE IN VAULT

- A. Valve in vault shall be paid for per each as **4" VALVE IN VAULT** to include all labor and materials necessary to complete the work.

END OF SECTION 02630

NOT FOR BID

SECTION 02700
PAVING AND SURFACING

PART 1 GENERAL

1.01 DESCRIPTION

A. Description of Work:

1. Remove site objects which obstruct construction.
2. Restore site objects disturbed by construction including, but not limited to:
 - a. Streets, driveways, sidewalks, parking lots, alleys, other improved or paved surfaces and constituent parts of the above facilities including pavement, curb and gutter, ditches, shoulders, drainage structures, base course, and sub-base.
 - b. Lawn and turf.
 - c. Landscape improvements including trees, shrubs, stairways, terraces, plantings, gardens and other improvements.
 - d. Utilities.
 - e. Miscellaneous objects including traffic signs, street lights, traffic signals, mail boxes, fences, guard rails, right-of-way markers, survey monuments, lot pins, driveway markers, structures, items intended to inform or protect the public, and other surface objects.
3. Conduct construction operations to minimize disturbance of construction site and adjacent area.

1.02 QUALITY ASSURANCE

A. Conditions Survey:

1. Provide video recording in accordance with Section 01330 and other documentation to establish condition of existing structures and surface features.
2. Survey and record condition of existing facilities to remain in place that may be affected by construction operations.

B. Preparation of Work:

1. Notify owners of existing utilities a minimum of three workdays prior to beginning preparation work.

C. Reference Standard:

1. American Society for Testing and Materials (ASTM), Latest Edition
2. Illinois Department of Transportation (IDOT)
 - a. Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition. (IDOTSPECS)
 - b. Supplemental Specifications and Recurring Special Provisions, Latest Edition

PART 2 PRODUCTS

2.01 MATERIALS

- A. Coarse Aggregate for Aggregate Sub-base, IDOT Standard Specifications, Section 311, CA-6.
- B. Aggregate Prime Coat IDOT Standard Specifications, Section 406.
- C. Bituminous Surface Course: IDOT Standard Specifications, Section 406, Mix "C" N50.
- D. Bituminous Binder Course: IDOT Standard Specifications, Section 406, IL 19.0, N50.
- E. Prime Coat: IDOT Standard Specifications, Article 406.02.
- F. Portland cement concrete for sidewalks, curb and gutter, paving, miscellaneous cast-in-place concrete structures: IDOT Standard Specifications, 1020.
 1. Portland cement concrete: Class SI.
 2. Cement for sidewalks, drives, and roadways: ASTM C150, Type 3.
 3. Cement for curbs and miscellaneous structures: ASTM C150, Type 1.
- G. Detectable Warnings: IDOT Standard Specifications, Article 424.09. "Access Tile" Brick red.
- H. Bituminous surface removal IDOT Standard Specifications, Section 440.
- I. Tri-Dar 33 (Tamms Industries) curing emulsion, sealing, and anti-scaling compound.

PART 3 EXECUTION

3.01 SITE PREPARATION

- A. Trees and Shrubs:
 1. It may be necessary to remove trees and shrubs in order to accommodate the work. Removal of trees and shrubs shall be completed in accordance with Section 02200.

2. The CRITICAL ROOT ZONE of all trees shall be protected by fencing. The area to be protected shall be measured as a radius around each tree equal to one foot of root protection for each inch of trunk diameter, as measured 4.5 feet from the ground. Removal of protective fencing must be authorized by Engineer. No material or equipment storage within the Critical Root Zone will be tolerated.
3. Conduct all construction operations so as to minimize disturbance to trees and shrubs. Repair any damage to trees and shrubs immediately in accordance with best horticultural practices.
4. Where construction procedures may disrupt tree root systems, the ENGINEER shall be notified immediately before any work continues. The ENGINEER will make a determination on whether to remove the tree or to take other action which may save the tree. When construction must be conducted with the Critical Root Zone, mechanical root pruning shall be performed prior to excavating.

B. Site Improvement Objects:

1. Carefully remove all site improvement objects such as: street name signs, traffic control signs, mailboxes, and lawn ornaments, which interfere with construction.
2. Store site improvement objects in a manner, which will fully protect objects for replacement after construction is completed.
3. Provide temporary traffic control signs where permanent signs are removed for construction. Temporary signs shall be worded to match permanent signs except as necessary to be compatible with construction operations.

C. Pavement Removal:

1. General:
 - a. Remove pavement, curb and gutter, driveway approaches, sidewalks, alleys and other materials necessary to prepare the site for the installation of the drainage facilities and construction of the new pavement, curb and gutter, driveway approaches, sidewalks, alleys and parkways, in accordance with details shown on drawings. Protect all other paving. Pavement removal shall be included in the cost of pipe installation unless otherwise noted.
2. Roadway Pavement:
 - a. All pavement and sidewalk to be removed shall be saw cut, full depth, at the limit of removal. Saw cutting shall not be paid for separately but shall be considered incidental to the cost of the pavement removal, bituminous or concrete driveway removal, or sidewalk removal in accordance with the applicable portions of IDOT Specifications Article 440. Saw cuts shall be no more than 1/2" wide. Saw cuts greater than 1/2" wide shall be backfilled level and shall be maintained level with adjacent ground by the Contractor.

- b. Saw cutting shall be done at the direction of the Engineer prior to any excavation in order to minimize pavement damage. In addition, saw cutting shall be done at the direction of the Engineer prior to patching to ensure vertical surfaces and uniform edges.
 - c. The work consists of the full depth removal of existing pavement. The Village makes no guarantee of the composition or thickness of the existing pavement.
- 3. Curb and Gutter:
 - a. Remove in accordance with IDOT Standard Specifications, Article 440 except saw cut shall be full depth of curb and gutter. Remove at locations shown on the drawings or as directed by ENGINEER. Protect all other curb and gutter.
- 4. Sidewalks:
 - a. Remove in accordance with IDOT Standard Specifications, Article 440 except saw cut shall be full depth. Remove full squares only. Remove sidewalks where shown on drawings or as directed by Engineer. Protect all other sidewalks.
- 5. Driveway Approaches and Alleys:
 - a. Remove in accordance with IDOT Standard Specifications, Article 440 except saw cut shall be full depth. Remove at locations shown on the drawings or as directed by ENGINEER. Protect all other work.
 - b. No driveway shall be removed without the permission of the Engineer. It shall be the responsibility of the Contractor to notify each property owner not less than 48 hours prior to removal. No driveway shall be closed for more than three calendar days.
 - c. The Village makes no guarantee of composition or thickness of existing driveway to be removed. Contractor shall excavate to full depth for new driveway.

3.02 SITE RESTORATION

- A. Perform site restoration as shown on drawings in accordance with the following general requirements:
 - 1. Curb and Gutter
 - a. This work shall consist of the removal and replacement of existing combination concrete curb and gutter which, at the discretion of the Engineer, must be removed and replaced in order to complete the project satisfactorily. This includes the use of dowels to connect to existing concrete curb and gutter. This work shall be undertaken in accordance with Section 606 of the Standard Specifications as applicable.
 - b. Contraction joints: Saw cut one-quarter depth across full profile within 24 hours of

placement of concrete to minimize random cracking. Place at 15-foot intervals.

- c. Expansion joints: At ends abutting existing curb, at points four (4) feet away on either side of castings, intermediate at sixty (60) foot intervals, at points of curvature, and at expansion joints in Portland cement concrete paving. Provide two No. 6 dowel bars three (3) feet long with one end of each in an eighteen (18) inch grease cup at each expansion joint.
 - d. Provide protective coat in accordance with IDOT Standard Specification, Article 420.18 tri-dar 33 or equal.
 - e. Depress curb at driveways and at intersections where new sidewalk abuts.
 - f. Aggregate base course: CA-6/Grade 8, four (4) inch thickness minimum.
2. Install sidewalks in accordance with IDOT Standard Specification, Section 424 with the following modifications:
- a. This work shall consist of the removal and replacement of existing concrete sidewalks, including handicapped ramps.
 - b. Sidewalks to be replaced across driveways shall be six (6) inches thick.
 - c. All other walks shall be five (5) inches thick.
 - d. Sidewalks installed at intersections where handicapped ramps are required shall have detectable warnings which conform to IDOT ISP 04-30. In general, a twenty-four (24) inch wide strip of detectable warnings is required. Detectable warnings shall be "Access Tile" in brick red. The Contractor may be allowed to use an alternative method with approval of the Engineer. Any product used shall be approved by the Engineer prior to placement.
 - e. No sidewalk shall be removed without the permission of the Engineer. All joints shall be saw cut full depth. Full-depth sawing shall be considered incidental to this item. Any shrinkage cracks which form outside the joints shall be sealed with epoxy crack sealer or removed and replaced, as directed by the Engineer.
 - f. All sidewalk installed by contractor shall be stamped. The stamp shall include the name of contractor and year of construction. Failure to stamp sidewalks will result in non-payment for the sidewalk.
2. Restore concrete driveways as follows:
- a. Portland Cement Concrete: six (6) inch minimum thickness.
 - b. Aggregate base course: six (6) inch minimum thickness, CA-6.
 - c. Width: Match existing.

- d. Provide expansion joints between new driveway and: curbs, sidewalks, and existing Portland cement concrete driveway paving.
 - e. Provide saw cuts one-quarter depth as contraction joints at ten (10) foot intervals. Place immediately after initial set of concrete to minimize random cracking.
 - f. Provide concrete curing materials in accordance with IDOT Standard Specifications, Article 1022.
 - g. Provide protective coat in accordance with IDOT Standard Specifications, Article 420.18 regardless of time of year when concrete is poured.
 - h. No Calcium chloride or any additive may be added to Portland Cement Concrete without written approval of Engineer.
3. Restore bituminous driveways as follows:
- a. Bituminous concrete three (3) inch minimum thickness.
 - b. Aggregate base course: Six (6) inch minimum thickness CA-6 compacted to 95% of maximum density in accordance with ASTM D698.
 - c. Width: Match existing.
4. Driveway, brick or paver, special
- a. This work shall consist of the removal, by hand, and replacement, by hand, of existing flagstone, brick or other such material of driveway, sidewalk, approach, and/or service walk which interferes with the construction of the force main.
 - b. After removal, the flagstone or other material shall be neatly stockpiled or stored for replacement. It shall be the contractor's responsibility to replace any lost, stolen or broken pieces of flagstone or other material with matching stone at its expense.
 - c. The Contractor shall furnish sand from outside of the project limits as necessary and re-lay the pavers to a quality and pattern identical to the preconstruction condition.
5. Driveway Conduit
- a. Two (2) inch PVC conduit shall be required under driveway aprons where main streetlight cable runs are present. The conduit shall be placed two (2) feet behind the curb and extending one (1) foot on either side of the driveway apron, at a depth of at least six (6) inches below the bottom of the concrete or asphalt. If it is necessary to use more than one piece of conduit, they shall be joined by a glued coupling. The ends of the conduit shall be taped to keep it from getting plugged.

6. Pavement

- a. Pavement to be replaced shall be replaced in accordance with Section 407 of the IDOT Standard Specifications:
- b. On bituminous streets, the pavement compositions shall be two (2) inch surface course over two (2) inch binder course, and shall be placed over the trench as directed by the engineer at a minimum of one (1) foot outside the trench limits. Care shall be taken to achieve a smooth even surface and provide positive drainage.

7. Concrete Protective Coat.

- a. All exposed concrete surfaces shall receive a single application of Tri-dar 33 following the manufacturer's recommended application procedure. Application of Tri-dar will not be paid for separately, but shall be incidental to the items.

3.03 FIELD QUALITY CONTROL

- A. Testing in accordance with the best practices of the industry will be provided by the OWNER.

PART 4 BASIS OF PAYMENT

4.01 SIDEWALK

- A. This work will be paid for at the contract unit price per square foot for **SIDEWALK REMOVAL AND REPLACEMENT - PCC - 5"**, **SIDEWALK REMOVAL AND REPLACEMENT - PCC - 6"**, or **SIDEWALK RAMP REMOVAL AND REPLACEMENT - PCC - 5" (WITH DETECTABLE WARNINGS)** which price shall include all necessary labor, equipment, and materials. Sidewalks shall be placed on no less than four (4) inch of compacted CA-6, crushed aggregate material which shall be considered part of Sidewalk Removal and Replacement.

4.02 DRIVEWAY

- A. Driveway Removal and Replacement work shall be paid for at the contract unit price per square yard for **DRIVEWAY REMOVAL AND REPLACEMENT**, of type specified, which price shall include all necessary labor, equipment, and materials. Any backfilling, trench backfill, or base course material shall be considered incidental to the force main.
- B. Driveway Removal and Replacement, Special work shall be paid for at the contract unit price per square foot for **DRIVEWAY REMOVAL AND REPLACEMENT, SPECIAL**, which price shall include all necessary labor, equipment, and materials. Any backfilling, trench backfill or base course material shall be considered incidental to the Contract.

4.03 PVC CONDUIT

- A. Driveway two (2) inch PVC conduit work will be paid for at the contract unit price per lineal foot for **2" PVC CONDUIT**. Failure to install this conduit will result in non-payment for the driveway

4.04 PAVEMENT

- A. This Bituminous Pavement Removal shall be paid for at the contract unit price per square yard for **BITUMINOUS PAVEMENT REMOVAL**. This work shall include all equipment, labor and material needed to complete this work.
- B. The HMA surfacing will be paid for at the contract unit price per ton as **HOT-MIX ASPHALT BINDER COURSE**, of the mixture composition and N design specified (HMA BINDER COURSE IL-19 N50) and **HOT-MIX ASPHALT SURFACE COURSE**, of the friction aggregate mixture and N design specified (HMA SURFACE COURSE MIX "C" N50).
- C. Prime Coat will be paid for at the contract unit price per gallon for **BITUMINOUS MATERIALS (PRIME COAT)**
- D. Aggregate Shoulders will be paid for at the contract unit price per square yard for **AGGREGATE SHOULDERS, TYPE B**, of the thickness specified (10").
- E. Aggregate base course will be paid for at the contract unit price per cubic yard for **AGGREGATE BASE COURSE, TYPE A** of the thickness specified, to include installation, compaction, and all necessary labor and materials to complete this work.
- F. Curb and gutter will be paid for at the contract unit price per foot as **REMOVE AND REPLACE CURB AND GUTTER**, which price shall include all necessary material, labor, and equipment, excavation, hauling and disposal of spoils.
- G. Excavation, special shall consist of excavating and grading for road base. Disposal of excavated material shall be paid for separately as non-special waste.

END OF SECTION 02700

SECTION 02920
LANDSCAPING

PART I GENERAL

1.01 DESCRIPTION

A. Description of work:

1. The Contractor shall restore all existing grass lawns and parkway areas which were removed or damaged during the course of construction, as directed by the Engineer.

1.02 QUALITY ASSURANCE

A. Preparation work:

1. Remove and replace only those areas within construction limits which are designated for removal and replacement on the drawings or as directed by Engineer.

B. Restoration work:

1. Complete in accordance with specifications and details shown on drawings.
2. Restore to conditions equal or exceeding conditions existing prior to construction as determined by video and survey required in accordance with Section 01330.
3. Complete to highest standard required.

C. Reference Standard:

1. Illinois Department of Transportation (IDOT)
 - a. Standard Specifications for Road and Bridge Construction, Latest Edition (IDOT Standard Specifications).
 - b. Supplemental Specifications and Recurring Special Provisions, Latest Edition

PART 2 PRODUCTS

2.01 MATERIALS

A. Landscape materials:

1. Topsoil: IDOT Standard Specifications Section 1081.05.
2. Sod: IDOT Standard Specifications Section 1081.03.
3. Seed: IDOT Standard Specifications Section 1081.04

4. Fertilizer: IDOT Standard Specifications Section 1081.08
5. Agricultural Ground Limestone: IDOT Standard Specifications Section 1081.07
6. Hydroseed: Village of Villa Park grass seed mix:

Grass Seed:

Premium Mix of 80% Kentucky Bluegrass & 20% Ryegrass, or approved equal, in accordance with Section 250 of the Standard Specifications. A product label certifying the seed mix and a physical sample of the seed shall be submitted to the Engineer (a minimum of seven (7) days prior to application) for approval prior to application.

Example (OR Approved Equal):

Midnight Bluegrass (20%)
Moonstruck Bluegrass (20%)
Alley Cat Bluegrass (20%)
Marquis Bluegrass (20%)
Calypso II Perennial Ryegrass (10%)
Racer II Perennial Ryegrass (10%)

7. Hydromulch: Mat fiber 100% wood, or approved equal, in accordance with Section 1081.06 of the IDOT Standard Specifications.
8. Fertilizer: Converg FS - Water Soluble: 13-25-12 with Micros, or approved equal, in accordance with Section 250 of the IDOT Standard Specifications.
9. Tackifier: Fiber Plus 5 (or approved equal)
10. Crushed Limestone: Grade 8 (road rock)
11. Mulch: Hardbark general use mulch.

PART 3 EXECUTION

3.01 SITE RESTORATION

- A. Perform site restoration as shown on the drawings in accordance with the following general requirements.
 1. Landscape materials installation:
 - a. Sod: IDOTSPECS Section 252
 - b. Topsoil: IDOTSPECS Section 211

c. Seed: IDOTSPECS Section 250

B. Topsoil and Compost:

1. The topsoil shall be pulverized and free from clods, stones, sticks and other debris. The topsoil used for surface restoration shall come from an approved material supplier, which is subject to the approval of the Engineer or the Village's Forestry Division. The Village reserves the right to reject individual loads of material containing excessive stone or debris or that otherwise does not meet the Village's standards. The contractor shall be required to notify the Village when all topsoil is ready for inspection. The Engineer may reject the topsoil at his/her discretion
2. Topsoil shall be provided by the Contractor to bring the area to be sodded / seeded to the proper grade. The minimum depth of topsoil shall be four (4) inches. The topsoil shall be worked into the existing ground to a minimum depth of six (6) inches below finished grade by disking or tilling.

C. Hydro Seeding

1. This work shall consist of the application of grass seed being applied with a sprayer in a wetted state to restore turf areas disturbed during construction. The grass seed shall be mixed with hydromulch, fertilizer and tackifier and applied per the manufacturer recommended rate. Hydroseed shall be applied in a manner to ensure complete coverage of the entire area to be seeded. Overspray onto paved surfaces, structures, etc. shall be kept to a minimum, and any overspray deemed to be excessive by the Engineer shall be removed at the Contractor's expense. In no case shall overspray be allowed to come into contact with vehicles.
2. Areas to be restored by the placement of new Sod and/or Seed shall be designated by the Engineer.
3. Sod shall be placed when directed by Engineer.
4. Engineer/Village shall designate areas for specific seed mixtures.

D. Sodding

1. Engineer/Village shall designate areas to be sodded.
2. The sod shall be at a minimum, or equal quality and type as the existing turf.

PART 4 BASIS OF PAYMENT

4.01 TOPSOIL FURNISH AND PLACE

- A. Topsoil furnish and place shall be paid for at the contract unit price per square yard for **TOPSOIL FURNISH AND PLACE – 4"** for sodding and per acre for hydroseeding, which price shall include

all necessary labor, material, and equipment for furnishing, hauling, and placing topsoil from outside the project limits.

4.02 HYDROSEEDING

- A. Hydroseed work shall be paid for at the contract unit price per acre for **HYDROSEEDING**, of the type of seed specified, which price shall include all necessary labor, material including hydromulch, fertilizer and tackifier, and equipment for furnishing, hauling, and placing topsoil from outside the project limits.

4.03 SODDING

- A. Sodding shall be paid for at the contract unit price per square yard for **SODDING**, which price shall include all necessary labor, materials, and equipment required for furnishing, hauling, and placing sod from outside the project limits.

4.04 CRUSHED LIMESTONE FOOTPATH

- A. Footpath west of Madison Street used for construction access shall be rehabilitated where necessary with the addition of crushed limestone. This work shall be paid for at the contract unit price per cubic yard as **CRUSHED LIMESTONE** to include filling of potholes, top dressing, compaction, and all materials and labor to complete this work.

4.05 WOOD CHIP FOOTPATH

- A. This work shall be paid for at the contract unit price per cubic yard as **WOODCHIP FOOTPATH** to include filling of potholes, top dressing, compaction, and all materials and labor to complete this work.

4.06 CLEARING OF BRUSH

- A. Localized cleaning of scrub/brush for access and in the vicinity of the drill pits and pipe installation shall not be paid for separately but shall be included in the price of other related items.

END OF SECTION 02920

SECTION 03200
CONCRETE REINFORCEMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Reinforcing steel bars, wire fabric and accessories for cast-in-place concrete.

1.02 RELATED SECTIONS

- A. Section 03100 – Concrete Formwork.
- B. Section 03300 – Cast-in-Place Concrete.

1.03 REFERENCES

- A. ACI 301- Structural Concrete for Buildings.
- B. ACI 350 – Code Requirements for Environmental Engineering Concrete Structures.
- C. ACI SP-66 – American Concrete Institute – Detailing Manual.
- D. ASTM A82 – Cold Drawn Steel Wire for Concrete Reinforcement.
- E. ASTM A184 – Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
- F. ASTM A185 – Welded Steel Wire Fabric for Concrete Reinforcement.
- G. ASTM A496 – Deformed Steel Wire Fabric for concrete Reinforcement.
- H. ASTM A497 – Welded Deformed Steel Wire Fabric for concrete Reinforcement.
- I. ASTM A615 – Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- J. ASTM A616 – Rail Steel Deformed and Plain Bars for Concrete Reinforcement.
- K. ASTM A617 – Axle Steel Deformed and Plain Bars for Concrete Reinforcement.
- L. ASTM A704 – Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement.
- M. ASTM A706 – Low-Alloy Steel Deformed Bars for Concrete Reinforcement.
- N. ASTM A767 – Zinc-Coated (Galvanized) Bars for Concrete Reinforcement
- O. ASTM A775 – Epoxy-Coated Reinforcing Steel Bars.

- P. ASTM D3963 – Epoxy-Coated Reinforcing Steel.
- Q. AWS D1.4 – Structural Welding Code for Reinforcing Steel.
- R. AWS D12.1 – Welding Reinforcement Steel, Metal Inserts and Connections in Reinforced Concrete Construction.
- S. CRSI – Concrete Reinforcing Steel Institute – Manual of Practice.
- T. CRSI 63 – Recommended Practice For Placing Reinforcing Bars.
- U. CRSI 65 – Recommended Practice For Placing Bar Supports, Specifications and Nomenclature.

1.04 SUBMITTALS FOR REVIEW

- A. Section 01330 – Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate bar sizes, spacing, locations, and quantities of reinforcing steel and wire fabric, bending and cutting schedules and supporting.

1.05 SUBMITTALS FOR INFORMATION

- A. Section 01330 – Submittals: Procedures for submittals.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- C. Submit certified copies of mill test report of reinforcement materials analysis.

1.06 QUALITY ASSURANCE

- A. Perform Work in accordance with CRSI 63, 65 and Manual of Practice and ACI 301. Maintain one copy of each document on site.

PART 2 PRODUCTS

2.01 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615, 60 ksi.
- B. Welded Steel Wire Fabric: ASTM A185 Plain Type.

2.02 ACCESSORIES

- A. Tie Wire: Minimum sixteen (16) gage annealed type.

- B. Chairs, Bolsters, Bar Supports, and Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions, including load bearing pad on bottom to prevent vapor barrier puncture.

2.03 FABRICATION

- A. Fabricate concrete reinforcing in accordance with CRSI Manual of Practice.
- B. Weld reinforcement in accordance with AWS D1.4.

PART 3 EXECUTION

3.01 PLACEMENT

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- B. Do not displace or damage vapor barrier.
- C. Accommodate placement of formed openings.
- D. Maintain concrete cover around reinforcing as shown on drawings.

3.02 FIELD QUALITY CONTROL

- A. Section 01450 – Testing Laboratory Services.
- B. Inspect for acceptability.

END OF SECTION 03200

NOT FOR BID

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cast-in-place concrete foundation walls and supported slabs.
- B. Floors and slabs on grade.
- C. Control, expansion and contraction joint devices associated with concrete work, including joint sealants.
- D. Equipment pads, pipe supports, light pole base, thrust blocks, manholes, and sidewalks.

1.02 RELATED SECTIONS

- A. Section 03200 – Concrete Reinforcement.

1.03 REFERENCES

- A. ACI 301 – Structural Concrete for Buildings.
- B. ACI 302 – Guide for Concrete Floor and Slab Construction.
- C. ACI 304 – Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- D. ACI 305R – Hot Weather Concreting.
- E. ACI 306R – Cold Weather Concreting.
- F. ACI 308 – Standard Practice for Curing Concrete.
- G. ACI 350 – Code Requirements for Environmental Engineering Concrete Structure.
- H. ASTM C33 – Concrete Aggregates.
- I. ASTM C94 – Ready-Mixed Concrete.
- J. ASTM C150 – Portland Cement.
- K. ASTM C260 – Air Entraining Admixtures for Concrete.

- L. ASTM C494 – Chemical Admixtures for Concrete.
- M. ASTM C618 – Fly Ash and Raw or Calcinated Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
- N. ASTM C948 – Test Method for Dry and Wet Bulk Density, Water Absorption and Apparent Porosity of Thin Sections of Glass-Fiber-Reinforced Concrete.
- O. ASTM D1190 – Concrete Joint Sealer, Hot-Poured Elastic Type.
- P. ASTM D1751 – Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).

1.04 SUBMITALS FOR REVIEW

- A. Section 01330 – Submittals: Submittal requirements.

1.05 SUBMITTALS FOR INFORMATION

- A. Section 01330 - Submittals: Submittal requirements.
- B. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent Work.

1.06 SUBMITTALS AT PROJECT CLOSEOUT

- A. Section 01330 Submittals
- B. Accurately record actual locations of embedded utilities and components which are concealed from view.

1.07 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.
- B. Maintain one copy of document on site.
- C. Acquire cement and aggregate from same source for all work.
- D. Conform to ACI 305R when concreting during hot weather.
- E. Conform to ACI 306R when concreting during cold weather.

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type 1 – Normal or Type 1A – Air Entraining.
- B. Fine and Coarse Aggregates: ASTM C33.
- C. Water: Clean and not detrimental to concrete.

2.02 ADMIXTURES

- A. Air Entrainment: ASTM C260.
- B. Chemical: ASTM C494 Type A – Water Reducing.

2.03 JOINT DEVICES AND FILLER MATERIALS.

- A. Joint Filler Type A: ASTM D1751; Asphalt impregnated fiberboard or felt, half (½) inch thick; tongue and groove profile.

2.04 CONCRETE MIX

- A. Mix and deliver concrete in accordance with ASTM C94.
- B. Provide concrete to the following criteria:

<u>Unit</u>	<u>Measurement</u>
Compressive Strength (28 day)	4,000 psi
Air Entrained	6 percent
Slump – Plus or minus 1 inch	4 inches

- C. Use accelerating admixtures in cold weather only when approved by Engineer. Use of admixtures will not relax cold weather placement requirements.
- D. Calcium chloride and/or admixtures containing calcium chloride shall not be used in any concrete.
- E. Use set retarding admixtures during hot weather only when approved by Engineer.
- F. Add air entraining agent to normal weight concrete mix for work exposed to exterior.

2.05 KEYWAYS AND WATERSTOPS

- A. Keyways shall be provided in all construction joints.

- B. Waterstops shall be Durajoint Type 11 or approved equal and shall be installed where shown on plans.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify site conditions under provisions of Section 01039.
- B. Verify requirements for concrete cover over reinforcement.
- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

3.02 PREPARATION

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instruction.
- B. In locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- C. Coordinate the placement of joint devices with erection of concrete formwork and placement of form accessories.

3.03 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301 Exposed concrete wall vertical surfaces shall receive a rubbed finish in accordance with IDOT specifications Article 503.15 (b).
- B. Notify Architect/Engineer minimum twenty-four (24) hours prior to commencement of operation.
- C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.
- D. Install vapor retarder under interior slabs on grade. Lap joints minimum six (6) inches and seal watertight by taping edges and ends.
- E. Repair vapor retarder damaged during placement of concrete reinforcing. Repair with vapor retarder material; lap over damaged areas minimum six (6) inches and seal watertight.

- F. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- G. Place concrete continuously between predetermined expansion, control, and construction joints.
- H. Do not interrupt successive placement; do not permit cold joints to occur.
- I. Saw cut joints within eighteen (18) hours after placing. Use three-sixteenths (3/16) inch thick blade, cut in one-quarter (¼) depth of slab thickness where shown on the drawings.
- J. Screed floors and slabs on grade level, maintaining surface flatness of maximum one-quarter (¼) inch in ten (10) feet.

3.04 CONCRETE FINISHING

- A. Provide formed concrete surfaces to be left exposed sack rubbed finish.
- B. Finish concrete floor surfaces in accordance with ACI 301.

3.05 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.06 FIELD QUALITY CONTROL

- A. Section 01450 – Testing Laboratory Services.
- B. Provide free access to Work and cooperate with appointed firm.
- C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of Work.
- D. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
- E. Four (4) concrete test cylinders will be taken for every fifty (50) or less cubic yards of each class of concrete placed.
- F. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.

- G. One (1) slump test will be taken for each set of test cylinders taken.

3.07 PATCHING

- A. Allow Engineer to inspect concrete surfaces immediately upon removal of forms.
- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Engineer upon discovery.
- C. Patch imperfections as directed in accordance with ACI 301.

3.08 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by the Engineer.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect/Engineer for each individual area.

END OF SECTION 03300

SECTION 03600
GROUT AND BONDING AGENTS

PART I GENERAL

- 1.01 Type I - General purpose grout shall have equal parts of sand and cement with sufficient water to produce required consistency.
- 1.02 Type II – Grout for machinery bases and where non-metallic, non-shrink grout is required shall be a factory premixed grout; “SonogROUT” by Sonneborn-Contech Corp., “Five Star Grout” by U.S. Grout Corp., or equal, applied in accordance with manufacturer’s recommendations. Submit manufacturer's descriptive details of grout for approval.
- 1.03 Type III - Bonding agent for anchoring bolts and reinforcing dowels into predrilled or precast holes in concrete and for bonding new concrete to old shall be a two component epoxy; "Thiokol LP" by Toch Brothers, “EpoxTite Binder” by A.C. Horn, Inc., or equal. Mix components and apply bonding agent in accordance with manufacturer's recommendations. Submit manufacturer's descriptive details of bonding agent for approval.

END OF SECTION 03600

NOT FOR BID

SECTION 09900
PAINTS AND COATINGS

PART I GENERAL

1.01 DESCRIPTION OF WORK

A. Work Included: This Section specifies the following items.

1. Field painting of exposed interior items and surfaces.
2. Field painting of exposed exterior items and surfaces.
3. Surface preparation for painting.

1.02 DEFINITIONS AND EXTENT

A. Standard coating terms defined in ASTM D 16 apply to this Section.

B. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.

1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

C. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Engineer will select from standard colors and finishes available.

1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish.

D. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

1.03 SUBMITTALS

A. Submit in accordance to the General Conditions, Article 6.

B. Product Data: For each paint system indicated.

C. Provide color charts and samples for verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.

1.04 QUALITY ASSURANCE

- A. **Applicator Qualifications:** A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. **Source Limitations:** Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name, label, product name, stock number, contents by volume, date of manufacture, color name/number, VOC content, application instructions, and mixing and thinning instructions.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of forty-five (45) degrees Fahrenheit and a maximum ambient temperature of ninety-five (95) degrees Fahrenheit. Maintain storage containers in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.
 - 2. Take precaution measures to prevent fire hazards and spontaneous combustion.

1.06 PROJECT CONDITIONS

- A. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between fifty and ninety (50 and 90) degrees Fahrenheit.
- B. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between forty-five and ninety-five (45 and 95) degrees Fahrenheit.
- C. All paint shall be applied in strict accordance with the applicable manufacturer's printed data sheet and container label outlining recommended minimum and maximum surface and air temperatures required for application. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds Eighty-five (85) percent; or at temperatures less than five (5) degrees Fahrenheit above the dew point; or to damp or wet surfaces.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

- D. Maintain surface and ambient temperatures above forty-five (45) degrees Fahrenheit for twenty-four (24) hours before, during and forty-eight (48) hours after application of finishes, unless required otherwise by manufacturer's instructions.

1.07 EXTRA STOCK

- A. Provide new unopened full one (1) gallon containers or one (1) gallon kit of each color to the owner. Label each container with color, manufacturer label, and location.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Interior and Exterior Paint

1. Tnemec; or,
2. Approved Equal

2.02 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
- C. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with applicator present, for compliance with requirements for paint application. Correct defects and deficiencies in the surfaces which may adversely affect the work of this section.
 1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
 1. Start of painting will be construed as applicator's acceptance of surfaces and conditions

within a particular area.

- B. Coordination of Work: Review other sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

- 1. Notify Engineer about anticipated problems when using the materials specified over substrates primed by others.

3.02 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. Provide surface-applied protection of adjacent surfaces not to be painted before surface preparation and painting.

- B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.

- 1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

- A. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.

- 1. Provide barrier coats or tie-coats over incompatible primers or remove and re-prime.

Cementitious Materials: Allow new concrete to cure twenty-eight (28) days. Prepare concrete, concrete unit masonry, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation to remove.

- a. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
 - b. Determine pH of surfaces using pH indicating papers and distilled water and perform moisture vapor transmission testing for concrete floors in accordance with ASTM F 1869 and moisture tests on concrete walls in accordance with ASTM D 4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method. For masonry walls, use a moisture meter approved by the coating manufacturer. Follow the selected and approved coating manufacturers recommendations for acceptable pH values, moisture vapor transmission values (in lbs. of moisture per 24 hours per 1,000 SF), and moisture meter values (for masonry). If these values are not acceptable, do not paint surfaces until moisture levels are acceptable or additional surface preparation has been performed and the pH values measured are acceptable
 - c. Clean concrete floors to be painted with shot blast equipment to remove laitance, cur-

ing compounds, hardeners, sealers and other contaminants and to provide surface profile.

2. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 - b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
 - c. If transparent finish is required, back prime with spar varnish.
 - d. Back prime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
 - e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
 3. Ferrous Metals: Clean un-galvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with The Society for Protective Coating's (SSPC) recommendations.
 - a. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3, SSPC-SP 10/NACE No. 2, or SSPC-SP 12 Water Jetting at 45,000 psi as specified in the Paint Schedule in this Section.
 - b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
 - c. Treat existing painted surfaces with surface preparation methods recommended by coating manufacturer and in accordance with the coating schedule.
 4. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods. Use Oakite Cleaner LTS or equal for pretreatment of any non-primed galvanized metal before finish painting.
- B. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign

materials and residue.

2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 3. Use only thinners approved by paint manufacturer and only within recommended limits.
- C. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.03 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.
 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 3. Provide finish coats that are compatible with primers used.
 4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, convactor covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
 5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 6. Paint interior surfaces of ducts with a flat, non-specular black paint where visible through registers or grilles.
 7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
 9. Sand lightly between each succeeding coat if recommended by manufacturer or if required to achieve specified finish. Allow applied coat to dry before next coat is applied.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent sur-

face deterioration.

1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
 2. Omit primer over metal surfaces that have been shop primed and touchup painted.
 3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.
- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
 2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.
- E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms, valve pits, wet wells, and occupied spaces.
- F. Mechanical items to be painted include, but are not limited to, the following:
1. Uninsulated metal piping.
 2. Uninsulated plastic piping.
 3. Pipe hangers and supports.
 4. Tanks that do not have factory-applied final finishes.

5. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
 6. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material.
 7. Mechanical equipment that is indicated to have a factory-primed finish for field painting. The primed finish shall be compatible with the intermediate coats and topcoats to be used. Surface prepare the primer surface by hand sanding or as recommended by the coating manufacturer prior to application.
- G. Paint exposed conduit and electrical equipment occurring in prefinished areas with color to match adjacent surfaces. Electrical items to be painted include, but are not limited to, the following:
1. Switchgear.
 2. Panelboards.
 3. Exposed conduits where directed by the Engineer.
 4. Electrical equipment that is indicated to have a factory-primed finish for field painting. The primed finish shall be compatible with the intermediate coats and topcoats to be used. Surface prepare the primer surface by hand sanding or as recommended by the coating manufacturer prior to application.
- H. Structural steel items which have already been shop primed shall be surface prepared according to the coating manufacturer recommendations and painted in accordance to the Paint Schedule in Part 3.06. The shop applied coating materials shall be compatible with the intermediate and final coats.
- I. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- J. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- K. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- L. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even

luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats.

M. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

N. Color Coding

1. Color code equipment, piping, and conduit as requested by Owner.
2. Color banding and identification (flow arrows, naming, numbering) in accordance with the Recommended Standard for Water Works, published by the Great Lakes – Upper Mississippi River Board State Public Health and Environment Managers.

3.04 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.

1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

3.05 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Engineer.

B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.

1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in Painting and Decorating Contractors of America PDCA P1.

3.06 PAINT SCHEDULE

A. Schedule: This schedule is not intended to include mention of every item requiring field painting, but is intended as a guide to finishing various surfaces throughout the project.

1. The Painting Schedule of this section is based, in general on the products of Tnemec Company, Inc. and is set up as standards of quality. The standard "or equal" clause shall apply.

2. No substitution will be considered unless a written request for approval has been received by the Engineer at least 10 days prior to the date for receipt of bids. Each such request shall include the name of the specified material for which a substitute is being requested; the name of the proposed substitute material; and a complete description of the proposed substitute including performance and test data and any other information necessary for an evaluation.
 3. The burden of proof of the merit of the proposed substitute is upon the proposer. The decision of the Engineer/Owner regarding approval or disapproval of the proposed substitution shall be final.
 4. Where products are proposed other than those specified by name and number in the Painting Schedule, provide submittal as required including product data sheets and performance criteria along with a new painting schedule in the same format included in this Section.
- B. Provide all paint and materials supplied by one manufacturer. Provide products and number of coats specified.
- C. PAINT SCHEDULE for Steel, iron, galvanized and non-ferrous metal; PVC for structural, tanks, pipes, conduits, electrical boxes, and miscellaneous equipment:
1. Exterior, Non-immersion:
 - a. Tnemec System 1075 Endura-Shield
 - 1) Surface Prep: SSPC SP-6 for ferrous metal;
SSPC SP-7 for non-ferrous
PVC hand sand to scarify
NAPF 500-03-04 for Cast Iron
 - 2) 1st coat: Series N69-1255 Beige Hi-Build Epoxoline II, 3.0-5.0 mils DFT
 - 3) 2nd coat: Series N69-color Hi-Build Epoxoline II , 4.0 - 6.0 mils DFT
 - 4) 3rd coat: Series 1075-color Endura-Shield, 2.0 - 3.0 mils DFT
 2. Interior, Non-immersion:
 - a. Tnemec System N69 Hi-Build Epoxoline II
 - 1) Surface Prep: SSPC SP-6 for ferrous metal;
SSPC SP-7 for non-ferrous
PVC hand sand to scarify
NAPF 500-03-04 for Cast Iron
 - 2) 1st coat: Series N69-1255 Beige Hi-Build Epoxoline II, 3.0-5.0 mils DFT
 - 3) 2nd coat: Series N69-color Hi-Build Epoxoline II , 4.0 - 6.0 mils DFT
 - 4) 3rd coat: Series N69-color Hi-Build Epoxoline II, 4.0 - 6.0 mils DFT
 3. Immersion / splash potable water:

- a. Tnemec Series 20 Pota-Pox
 - 1) Surface Prep: SSPC SP-10 for ferrous metal
 - 2) 1st coat: Series 20-15BL Tank White Pota-Pox, 3.0 - 5.0 mils DFT
 - 3) 2nd coat: Series 20-44BR Beige Pota-Pox, 3.0 - 5.0 mils DFT
 - 4) 3rd coat: Series 20-15BL Tank White Pota-Pox, 3.0 - 5.0 mils DFT
- 4. Immersion / splash non-potable:
 - a. Tnemec Series N69 Hi-Build Epoxoline II
 - 1) Surface Prep: SSPC SP-10 for ferrous metal
 - 2) 1st coat: Series N69-1255 Beige Hi-Build Epoxoline II, 3.0-5.0 mils DFT
 - 3) 2nd coat: Series N69-color Hi-Build Epoxoline II, 4.0 - 6.0 mils DFT
 - 4) 3rd coat: Series N69-color Hi-Build Epoxoline II, 4.0 - 6.0 mils DFT
- 5. High temperature surfaces:
 - a. Tnemec Series 39 Silicone Aluminum
 - 1) Surface Prep: SSPC SP-10 for ferrous metal
 - 2) 1st coat: Series 39-1261, 1.0 - 1.5 mils DFT
 - 3) 2nd coat: Series 39-1261, 1.0 - 1.5 mils DFT
- D. PAINT SCHEDULE for Concrete:
 - 1. Interior, exposed except floor
 - a. Tnemec Series N69 Hi-Build Epoxoline II
 - 1) Surface prep: SSPC SP-13
 - 2) 1st coat: Series Series 130 Envirofill, 85-115 sq.ft/gal application rate
 - 3) 2nd coat: Series N69-color Hi-Build Epox. II, 3.0 - 4.0 mils DFT
 - 4) 3rd coat: Series N69-color Hi-Build Epox. II, 3.0 - 4.0 mils DFT
 - 2. Interior floors, Chemical & Slip Resistant:
 - a. Tnemec Series 239 Chem Tread
 - 1) Surface prep: Surface prep: Shot Blast or Mechanically abrade ICRI CSP
 - 2) 1st coat: Series 201 Epoxoprime, 6.0 – 12.0 mils DFT
 - 3) 2nd & 3rd coats: Double Broadcast Application Series 239 Chem Tread, 1/16" per coat
 - 4) Grout Application: Series 239 Chem Tread, 1/4" thickness
 - 5) 4th coat: Series 282 Tneme-Glaze, 8.0 – 10.0 mils DFT
- E. PAINT SCHEDULE for Concrete Block (CMU):

1. Interior:

a. Tnemec Series N69 Hi-Build Epoxoline II

- 1) Surface prep: Clean & Dry, free of contamination
- 2) 1st coat: Series 130 Envirofill, 85-115 sq.ft/gal
- 3) 2nd coat: Series L69-color Hi-Build Epox. II, 3.0 - 4.0 mils DFT
- 4) 3rd coat: Series L69-color Hi-Build Epox. II, 3.0 - 4.0 mils DFT

2. Exterior:

a. Tnemec Series 607 Conformal Stain

- 1) Surface prep: clean & dry
- 2) 1st coat: Tnemec / Chemprobe Series 660 Prime-A-Pell 200 clear penetrating water repellent, 65-85 sq. ft. gal
- 3) 2nd coat: Tnemec / Chemprobe Series 607 bConformal Stain solvent based acrylic stain, 75-100 sq. ft gal
- 4) 3rd coat: Tnemec / Chemprobe Series 607 Conformal Stain solvent based acrylic stain, 75-100 sq. ft gal

F. PAINT SCHEDULE for Plaster & Gypsum Wallboard:

1. Interior:

a. Tnemec Series 113 Tneme-Tufcoat

- 1) Surface preparation: clean & dry
- 2) 1st coat: Series 51-792 PVA sealer, 1.0 - 2.0 mils DFT
- 3) 2nd coat: Series 113 HB Tneme-Tufcoat, 2.0 - 3.0 mils DFT
- 4) 3rd coat: Series 113 HB Tneme-Tufcoat , 2.0 - 3.0 mils DFT

G. PAINT SCHEDULE for Wood:

1. Non-immersion:

a. Tnemec Series 2H Tneme-Gloss

- 1) Surface preparation: clean & dry
- 2) 1st coat: Series 36-603 Undercoater, 2.0 - 3.0 mils DFT
- 3) 2nd coat: Series 2H Tneme-Gloss, 1.5 - 2.0 mils DFT
- 4) 3rd coat: Tnemec Series 2H Tneme-Gloss, 1.5 - 2.0 mils DFT

H. PAINT SCHEDULE for Insulated Pipe:

1. Interior:

a. Tnemec Series 6 Tneme-Cryl

- 1) Surface preparation: clean & dry
- 2) 1st coat: Series 6-color Tneme-Cryl, 2.0 - 3.0 mils DFT
- 3) 2nd coat: Series 6-color Tneme-Cryl, 2.0 - 3.0 mils DFT

I. PAINT SCHEDULE for Brick:

1. Exterior: System 660 Prime-A-Pell

a. Tnemec Series 660 Prime-A-Pell

- 1) Surface preparation: Clean and dry
- 2) 1st coat: Series 660 Prime-A-Pell 200, 125-150 sq.ft. gal

J. PAINT SCHEDULE for Cast Stone:

1. Exterior:

a. Tnemec Prime A Pell N.S. Clear Water Repellent

- 1) Surface prep: clean & dry
- 2) 1st coat: Tnemec / Chemprobe Prime-A-Pell NS Clean penetrating water repellent
65-85 sq.ft.gal.
- 3) 2nd coat: Tnemec / Chemprobe Prime-A-Pell NS Clean penetrating water repellent
65-85 sq.ft.gal

2. Exterior:

a. Tnemec Prime A Pell Conformal Stain

- 1) Surface prep: clean & dry: Conformal Stain
- 2) 1st coat: Tnemec / Chemprobe Prime A-Pell NS Clear penetrating water repellent,
65-85 sq.ft.gal
- 3) 2nd coat: Tnemec / Chemprobe Conformal Stain solvent based acrylic stain, 75-100
sq.ft.gal
- 4) 3rd coat: Tnemec / Chemprobe Conformal Stain solvent based acrylic stain, 75-100
sq.ft.gal

G. Paint Schedule – Colors

- a. Interior Paints – Match Sherwin Williams, Snowbound SW 7004 (walls, ceilings, man doors & frames, louvers & frames, ducts, conduits, all items previously painted, equipment that can be painted, verify ALL items with owner before painting).
- b. Exterior Paints – Match Sherwin Williams, Aloof Gray SW-6197 (West man door and frame, west louver, verify ALL items with owner before painting).
- c. Exterior Paints - Match Sherwin Williams, Rockwood Brown SW-2806 (north man door and

frame, verify ALL items with owner before painting).

END OF SECTION 09900

NOT FOR BID

SECTION 13421
LEVEL TRANSMITTERS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Level transmitters for instrumentation and control (I&C) system.

PART 2 PRODUCTS

2.01 SUBMERSIBLE LEVEL TRANSMITTER

A. Manufacturers:

1. KPSI 750.
2. Approved equal.

B. Level transmitter consisting of variable capacitance, gauge pressure sensing assembly enclosed in submersible Type 316 stainless steel housing with Buna N pressure sensing diaphragm, special cable containing 1/8 in. breather tube and signal wiring, and sealed breather and transmitter assembly.

C. Provide intrinsically safe barriers when used in hazardous areas.

D. Transducer:

1. Low movement 2.75 in. diameter Buna N diaphragm.
2. Hydraulic oil-filled.
3. Nispan C pressure capsule.
4. Pressure exerted against diaphragm flexes minutely which varies proximity between internal ceramic diaphragm and ceramic substrate to vary capacitance of electrical field created between 2 surfaces.
5. Solid state operational amplifier.
6. 2-wire, 4-20 mAdc.
7. Output loop resistance 0-1200 ohms.
8. Span and off-set adjustable.
9. Fused.
10. Active transient protection.
11. Repeatability: $\pm 1/4$ of 1%.
12. Hysteresis: $\pm 15\%$ of element range.
13. Accuracy: $\pm 0.5\%$ of span.
14. Provide lightning/surge suppression option.

E. Cable Assembly:

1. Positive sealed where entering transducer housing.
2. Contains 1/8 in. breather tube.
3. Length: Approximately 50 ft.
4. Polyurethane.

2.02 TAGGING

- A. Provide Type 316 stainless steel tag permanently affixed to unit (sensor and transmitter separately mounted).
- B. Engrave with process application as listed in Specifications.
- C. Include ENGINEER'S tag number as listed in Specifications and on P&ID'S.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's written instructions and approved submittals.

END OF SECTION 13421

SECTION 15050
DUCTILE IRON PIPING

PART I GENERAL

1.01 SCOPE OF WORK

- A. Section includes detailed requirements for ductile iron piping products appurtenances. Some products specified in this Section may not be required for this Contract. Refer to piping system specification section(s) and Drawings to determine particular ductile iron piping products to be provided under this Contract.
- B. Provide all labor, materials, equipment and services required to furnish and install all ductile iron piping and fittings shown on the Drawings and/or specified herein.

1.02 SUBMITTALS

- A. Product Data:
 - 1. Manufacturer's specifications, catalog cuts, and literature:
 - a. Pipe.
 - b. Interior Coating.
 - c. Mechanical and push-on joints.
 - d. Flanged joints.
 - e. Grooved joints.
 - f. Standard fittings.
 - g. Special fittings.
 - h. Wall pipe and floor pipe.
 - i. Polyethylene encasement.
- B. Submit outside coating system for buried, interior, exterior, and submerged piping locations. Include submittal information specified in Section 09900.
- D. Submit in accordance with Section 01330.
- E. Submit shop drawings for layout of ductile iron piping systems including dimensions, pipe lengths, and types of fittings in accordance with this section.

PART 2 PRODUCTS

2.01 PIPING

- A. Pipe shall conform to: AWWA C151, ductile iron.
- B. Minimum Thickness Class 52

1. Mechanical and push-on joint pipe: Thickness Class 52, unless specified otherwise shown in the Drawings.
2. Flanged joint pipe: Thickness Class 53.

2.02 INTERIOR LININGS

- A. Cement lining in accordance with AWWA C104.

2.03 JOINTS

A. Joint Type

1. Piping in buried locations shall be mechanical or push-on joint unless otherwise shown in the Drawings.
2. Piping in locations other than buried shall be flanged end joint.

B. Mechanical and Push-on Joints confirming to AWWA C111.

1. Provide Type 304 stainless steel bolts and nuts.
2. Gasket material to be suitable for the type of service and maximum operating temperature of piping system.
3. Restrained Joints
 - a. Provide restrained joints by U.S. Pipe and Foundry Company, TR-Flex or approved equal
 - b. Provide restrained joints for buried piping systems specifically identified to have restrained joints and for buried piping systems where use of concrete thrust blocks is not practical.
 - c. Mechanical locking type to provide positive restraint from joint separation without use of restraining rods, straps, clamps, or setscrew retainer glands.
 - d. Minimum pressure rating: 250 psi.

C. Flanged Joints

1. Flanged pipe shall be in accordance with AWWA C115.
2. Fabrication of flanged pipe, including assembly of flange on pipe shall be performed by pipe manufacturer in accordance with AWWA C115.
4. Gasket material shall be suitable for service and maximum operating temperature as specified. Torque requirement of gaskets shall be less than torque rating of flange, bolt, and

nuts.

5. Gaskets shall be ring or full face, 1/8 in. thick, and conform to dimensions shown in Appendices to AWWA C110 and AWWA C115.
6. Bolts and nuts shall conform in number and size to AWWA C110 and AWWA C115 and shall be stainless steel, Type 304.
7. Dimensions: ANSI B18.2.1, heavy hex.

2.04 FITTINGS

- A. Pressure rating shall be 250 psi, minimum.
- B. Standard fittings for piping systems:
 1. Mechanical joint fittings shall be ductile iron conforming to AWWA C110 or C153.
 2. Flanged joint fittings shall be ductile iron conforming to AWWA C110. Flange dimensions in accordance with AWWA C115.
- C. Wall Pipe and Floor Pipe:
 1. Ductile iron material with Wall thickness of body equal to or greater than wall thickness of connecting pipe.
 2. Flanges set flush with face of concrete shall be tapped for stud bolts.
 3. Seepage collar dimensions as shown on Drawings.
 4. Collar cast integral with pipe.
 5. Fabricated wall pipe and floor pipe shall be rated for dead end thrust due to 250 psi internal pressure.
 6. Manufacturer: American Cast Iron Pipe Company, or equal.
- D. Miscellaneous Fittings:
 1. Provide miscellaneous fittings, such as cutting in sleeves, tapping sleeves, caps, plugs, and other fittings, as required for complete system.
 2. Manufacturer of miscellaneous fittings shall be same manufacturer as pipe.
 3. Miscellaneous fittings shall be suitable for type of service

2.05 EXTERIOR COATINGS

- A. Provide buried piping with asphaltic coating in accordance with applicable AWWA and ANSI standards. Surface preparation, priming, and finish coating of non-buried piping shall be compatible and in accordance with Section 09900.

2.06 POLYETHYLENE ENCASEMENT

- A. Provide polyethylene encasement for buried piping in accordance with AWWA C105.

PART III EXECUTION

3.01 INSTALLATION

- A. In accordance to the Contract Documents in a workman manner meeting manufacturer recommendations and industry standards.
- B. Buried Piping: In accordance with manufacturer recommendations.

3.02 JOINT ASSEMBLY

- A. Push-on and mechanical joint in accordance with manufacturer's written instructions.
- B. Flanged joint in accordance with piping system specification section, flanged pipe manufacturer's written instructions, and gasket manufacturer's written instructions.
- C. Coat threads of all fasteners with marine grade anti-seize lubricating compound, either shop or field applied.

3.03 WALL PIPE

- A. Support by formwork to prevent contact with reinforcing steel.
- B. Install in accordance with Section 03300.

3.04 POLYETHYLENE ENCASEMENT

- A. Install in accordance with AWWA C105.

END OF SECTION 15050

SECTION 15100
BUILDING SERVICES PIPING

PART I GENERAL

1.02 COPPER PIPE

- A. Copper pipe shall be copper water tube, ASTM B88, Type K soft temper for buried service and Type L hard temper for inside service.
- B. Copper pipe solder joint fittings, ANSI B16.22. c. Copper pipe flared fittings, ANSI 816.26.

1.03 POLYVINYL CHLORIDE PIPE

- A. PVC pipe and fittings for drain lines ASTM D2665.
- B. Polyvinyl chloride hose shall be a clear, flexible, abrasion resistant extrusion with clear rigid reinforcement. The hose shall have a smooth bore, convoluted cover, and be suitable for use with liquid polymer.

1.04 CONNECTORS

- A. Pipe Joints
 - 1. Grooved end joints, AWWA C606. Gaskets shall be suitable for the pressure, fluid, and temperature in the pipeline. Ductile iron pipe and fittings used with grooved couplings shall have a minimum thickness in accordance with AWWA C606. Shouldered joints shall be Type D. Grooved end cast iron fittings shall be used with grooved end ductile iron pipe. Grooving dimensions shall be designed for rigid joints except when flexible joints are required due to construction as recommended by the manufacturer and approved by the Engineer. Lubricants used to install joints shall be compatible with pipe coatings so that a leak proof joint results.
 - 2. Mechanical joints, ANSI A21.11. Bolts, nuts, and glands shall be alloy steel. Glands at wall fittings shall be furnished with set screws or equivalent locking devices.
 - 3. Push-on joints, ANSI A21.11.
 - 4. Mechanical and push-on joint gasket material for low pressure air lines shall be neoprene.

1.13 PIPING SPECIALTIES DESCRIPTION

- A. Provide all labor, materials, equipment and services necessary for and incidental to, the complete and satisfactory installation of the methanol piping system as specified herein and as shown on the Contract Drawings. The system shall consist of underground piping, aboveground pipe ducting, transitions, and a leak detection system. All components of the piping system shall be UL listed for 100% methanol. All equipment specified in this section shall be provided by one supplier. Sole source responsibility is intended.

- B. The entire system shall be designed by the manufacturer, and material selected based upon the requirements herein.

1.14 SUBMITTALS

- A. Shop drawings including dimensioned drawings, descriptive literature, system layout plan, material schedule, electrical characteristics and materials of construction shall be submitted for all items specified herein and as specified under SECTION 01330, entitled SUBMITTALS.
- B. Provide operation and maintenance manuals in accordance with SECTION 01330, entitled SUBMITTALS.

1.15 EQUIPMENT DESIGN

- A. Equipment design, workmanship, testing and operation shall be as specified herein, in SECTION 15000, entitled GENERAL MECHANICAL REQUIREMENTS, and SECTION 15060 entitled PIPES, VALVES AND FITTINGS.

1.16 QUALITY CONTROL

- A. The installing sub-contractor shall be a certified installer of the Piping System manufacturer. All installations shall be completed in accordance with the manufacturer's installation instructions.
- B. All testing shall be witnessed by the Engineer.

1.17 MANUFACTURER'S CERTIFICATE

- A. The Contractor shall furnish the Engineer with a Manufacturer's Certificate, as specified under SECTION 01300, entitled SUBMITTALS, certifying the methanol piping system has been installed in a complete and satisfactory manner ready for operation, in accordance with the manufacturer's installation instructions.

1.18 MANUFACTURER

- A. The methanol piping system shall be the XP series flexible secondary containment piping system, as manufactured by Franklin Fueling Systems, or equal.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Installation and startup shall be in accordance with manufacturer's installation instructions, and accomplished by a manufacturer certified installer.
- B. Plumbing Code Compliance: Comply with applicable portions of building codes pertaining to plumbing materials, construction, and installation of products.
 - 1. Illinois Plumbing Code.

3.02 TESTING

- A. Test each section of the installed system in accordance with the manufacturer's installation instructions to the following test pressures; primary carrier piping 100 psig, secondary containment piping 5 psig, ducting 2 psig.

END OF SECTION 15100

NOT FOR BID

SECTION 15110
VALVES

PART I GENERAL

1.01 SCOPE OF WORK

- A. Provide all labor, materials, equipment and services required to furnish and install all valves shown on the Drawings and/or specified herein.

1.02 SUBMITTALS

- A. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering. Comply with provisions of Section 01330.
- B. At the time of submission, the Contractor shall, in writing, call Engineers attention to any deviations that the submittals may have from the requirements of the Engineer's Contract Drawings and Specifications.

PART 2 PRODUCTS

2.01 PLUG VALVES

- A. Plug valves shall be port eccentric type plug conforming to AWWA C517 standards for eccentric plug valves. Valve flange thickness, diameter, and drilling shall conform to ANSI Class 125 standards for cast iron valves. Valves shall be furnished with corrosion resistant welded nickel seats. Valves shall provide a drip-tight shutoff on wet-service applications up to the full pressure rating of the valve with pressure in either direction.
- B. All in-plant plug valves shall be manually operated, with handwheel (4" and larger). Plug valves installed in vaults shall be installed as shown per Plans. Provide extended shaft or neck for above grade actuators as required.
- C. Eccentric plug valves shall be port eccentric as manufactured by DeZurik (PEC Eccentric Plug Valve) or Val-Matic (Cam-Centric Model #58XXR).

2.02 VALVE OPERATORS

- A. Valve operators shall be as shown on the plans and specified herein. Special operators where shown on the plans shall be furnished under this item. Valves shall be positioned to cause the most convenient position of the actuator possible. Valves located six (6) feet or more from floor level shall be furnished with chainwheel operators or chainlever operators. Chains shall extend to

within four (4) feet off the floor. All NRS floor stands and geared operators shall be indicating type. All hand wheels shall have an arrow cast into them indicating the direction to turn the valve to open.

2.03 CHECK VALVES

- A. Check valves three inches and larger shall be iron body, bronze mounted, full opening, outside weight and lever, swing type check valves with bolted covers and flanged end. Flanges shall be faced and drilled in accordance with the 125 lb. AN Standard.
- B. Valves shall be equipped with outside levers and weights.
- C. Valves shall be designed for water working pressures as follows:

<u>Valve Size (Diameter)</u>	<u>Pressure</u>
3 to 12 inches	175 psi
14 to 24 inches	150 psi
30 inches and larger	120 psi

- D. Check valves smaller than three inch size shall be 200 lb. WOG minimum bronze or all brass swing check valves. Valves shall have screw-on cap and renewable composition disks. Valve body shall be as hereinbefore specified for gate and globe valves.
- E. Check valves in pipelines carrying sewage or sludge shall be installed horizontally.
- F. Influent pump station check valves shall be outside lever and weight with oil cushion mechanisms.

2.04 SWING CHECK VALVES

- A. Check valves will be oil control/bottom mounted cushioned swing check valves.
- B. Swing Check Valves sizes 14" and smaller with Bottom Mounted Buffer shall be APCO model CVS-6000-BMB (Series 6000B) as manufactured by DeZurik, Inc. or Val-Matic Series 7900B. Swing Check Valves sizes 16" and greater with Bottom Mounted Buffer shall be APCO model CRF-BMB (Series 100B) as manufactured by DeZurik, Inc. or Val-Matic Swing-Flex Check Valve (Model 72XXCB).
- C. Bottom Mounted Buffer permits free opening, but positive non-slam closure of the disc.
- D. The oil hydraulic buffer shall make contact with the disc during the final 10% of closure to control the disc until shut-off in a manner to prevent slam and water hammer.
- E. The buffer rod shall be 303 stainless steel per ASTM A582. The final closure is to be adjustable by means of a color-coded micrometer type control valve. Control valve to have a locking set screw to secure final setting.

- F. The Oil Reservoir shall be 316 stainless steel per ASTM A240. Hydraulic hoses are to be S.A.E. certified.
- G. Body shall be ASTM A126 Class B cast iron. End connections shall be flanged class 125/150 per ANSI B16.1. Valves 8" and larger shall have a drain plug located on the
- H. bottom of the valve.
- I. Body Seat shall be 316 stainless steel per ASTM A276 with an O-ring seal, and locked into place with stainless screws.
- J. Disc and Disc Arm shall be ASTM A536 ductile iron. The disc shall be attached to the disc arm with a double clevis hinge to assure self-leveling and even load distribution upon closure, minimizing seat wear. Disc shall have an independent adjustable full open disc stop. The disc arm, valve body or cover is not to be used as the disc stop. Disc seat shall be nitrile butadiene (NBR) and field replaceable without the use of special tools.
- K. Pivot Shaft shall be a large one-piece 303 stainless steel per ASTM A582, protruding through the body with a lever and weight mounted on one side. The pivot shaft shall have an integral retainer to prevent axial shaft movement. The pivot shaft shall have O-Ring seals on both sides of the shaft. Braided type packing is not acceptable.
- L. Valve is to be tested by the manufacturer as a complete assembly, including the bottom buffer, per AWWA C508.

2.05 WASTEWATER AIR RELEASE VALVE

- A. Wastewater Air Release Valves shall be automatic float operated valves designed to release accumulated air from a piping system while the system is in operation and under pressure. The capacity and pressure rating of the valve is dependent on the diameter of the precision orifice in the cover. A large inlet connection is required for proper air and water exchange.
- B. Valves shall be manufactured and tested in accordance with American Water Works Association (AWWA) Standard C512.
- C. Manufacturer shall have a quality management system that is certified to ISO 9001 by an accredited, certifying body.
- D. The valves shall have full size NPT inlets and outlets equal to the nominal valve size. The body inlet connection shall be hexagonal for a wrench connection. The body shall have 2" NPT cleanout and 1" NPT drain connections on the sides of the casting. The cover shall be bolted to the valve body and sealed with a flat gasket. A threaded adjustable orifice button shall provide drop tight shut off to the full valve pressure rating.
- E. Floats shall be unconditionally guaranteed against failure including pressure surges. Extended mechanical linkage shall provide suitable mechanical advantage so that the valve will open under full operating pressure.

- F. The valve body and cover shall be constructed of ASTM A126 Class B cast iron.
- G. The orifice, float and linkage mechanism shall be constructed of Type 316 stainless steel. Non-metallic floats or linkage mechanisms are not acceptable. The orifice button shall be Buna-N.
- H. Backwash accessories shall be furnished and shall consist of an isolation inlet 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.
- I. An optional vacuum check on the outlet shall be provided to prevent air from re-entering the system during negative pressure conditions.
- J. Optional body materials include ASTM A536 Grade 65-45-12 ductile iron, ASTM A351 Grade CF8M stainless steel, and ASTM B584 Alloy C83600 cast bronze.
- K. Valve interiors and exteriors shall be coated with an NSF/ANSI 61 certified fusion bonded epoxy in accordance with AWWA C550.
- L. The manufacturer shall demonstrate a minimum of five (5) years experience in the manufacture of wastewater air valves. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.
- M. Wastewater Air Release Valves shall be Series 48A and 49A as manufactured by Val-Matic Valve and Manufacturing Corporation, Elmhurst, IL, USA or approved equal

2.06 WATER UTILITY SERVICE VALVES

- A. For water utility service valves, see Section 02510.

PART 3 EXECUTION

3.01 INSTALLATION

- A. All valves shall be installed in accordance with the manufacturer's recommendations. All valves shall open left (counterclockwise).

END OF SECTION 15110

SECTION 15200
MECHANICAL PIPING SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

- A. This section identifies mechanical piping systems to be provided and references other sections where detailed requirements of piping components are specified.
- B. Mechanical piping systems are shown on Mechanical Drawings and on Civil Site Piping Plan Drawings. Civil Site Piping Plan Drawings may also show site utility, plumbing, and HVAC piping systems which are specified in other sections.

1.02 SUBMITTALS

- A. Shop Drawings:
 - 1. Layout drawings for each mechanical piping system in the wet well and valve vault drawn to scale.
 - a. Double-line layout for each piping system three (3) inch pipe size and larger.
 - b. Single-line or double-line layout for each piping system smaller than three (3) inch pipe size.
 - c. For each piping system include:
 - 1) Size for each pipe and fitting size and type.
 - 2) Material, type, and exterior coating to be provided for each pipe and fitting.
 - 3) Pipe class, thickness or schedule for each pipe and fitting.
 - 4) Type of joints and couplings.
 - 5) Location and type of supports, hangers, anchors, and expansion joints.
 - 6) Pipe couplings, saddles, sleeves, clamps, adapters, and other piping products.
 - 7) Pipe mounted equipment and instrumentation as shown on Drawings.
 - 8) Insulation to be provided.
- B. Submit in accordance with Section 01330.

PART 2 PRODUCTS

2.01 PIPE AND FITTINGS

A. Exposed/Submerged Piping and Fittings:

1. All piping and fittings within the valve vaults (or valve pits) and wet wells shall be AWWA C 115 Class 53 ductile iron flanged pipe, unless otherwise shown in the Drawings. Fittings shall be AWWA C 110 ductile iron flanged joints.
2. Provide with standard cement linings in conformance with AWWA C 104
3. Pipe and fitting exteriors shall be coated in accordance with Section 09900.
4. Flanges shall be Class 125 B 16.1.

B. Buried Piping and Fittings:

1. All buried piping outside of the valve vaults and wet well shall be AWWA C 151 Class 52 ductile iron push-on and mechanical joint pipe, unless otherwise shown in the Drawings.
2. Fittings shall be mechanical joint, AWWA C 110 or AWWA C 153.
3. Provide pipe and fittings with standard asphaltic coating and cement mortar lining, per AWWA C 104.

2.02 PIPING SUPPORT, THERMAL EXPANSION, ANCHORAGE, AND VIBRATION ISOLATION

- A. Provide support system for each non-buried mechanical piping system.
- B. Provide anchors, restraints, and concrete blocks as required to resist hydraulic thrust and forces due to thermal expansion.
- C. Piping system, including support and anchorage system, shall allow for thermal expansion and contraction due to differences in operating temperatures and temperatures piping is exposed to during construction. Provide piping system products to allow for and control movement of piping due to thermal expansion and contraction.
- D. No attempt has been made to show pipe supports, hangers, anchors, expansion joints, and other piping products required for piping support, thermal expansion, and anchorage. Absence of these products on Drawings does not relieve Contractor of his/her responsibility for providing them in accordance with these Specifications.
- E. Provide joints, couplings, and expansion joints as shown on Drawings and as required for piping flexibility and vibration isolation. No attempt has been made to show all joints, couplings, expansion joints, and other piping products required for piping flexibility and vibration isolation.

2.03 OTHER PIPING PRODUCTS

- A. For buried piping, trench, backfill, and compact in accordance with Section 02315.
- B. Provide products for pipe penetrations in accordance with Section 15120.
- C. Provide couplings, flanged coupling adapters, and service saddles in accordance with Section 15105.
- D. Provide gravity sewer systems in accordance with other specification sections and the Drawings.

2.04 COATINGS

- A. Coat exterior surfaces of non-insulated piping products with coating system numbers specified and in accordance with Section 09900.

PART 3 EXECUTION

3.01 PREPARATION

- A. Use implements, tools, and facilities for handling and protection of piping products to avoid damage prior to installation.
- B. Inspect piping products before installation. Patch damaged interior linings and exterior coatings or replace damaged product with new product. Patching is subject to ENGINEER'S approval.
- C. Clean ends of piping product before installation. Remove foreign matter and dirt from inside of piping product and keep product clean until Work has been accepted.

3.02 INSTALLATION

- A. Location:
 - 1. Install piping parallel to structure lines unless shown otherwise on Drawings.
 - 2. Do not install piping through beams, columns, or other structural members unless shown on Drawings.
 - 3. Locate valves in piping system in accordance with manufacturer's instructions.
- B. Assembly:
 - 1. Install piping without springing or forcing in manner which would cause stress in piping, valves, or connected equipment.

2. Set pipe flanges level, plumb, and aligned. Set flanged fittings so flange is true and perpendicular to pipe axis. Set flanges so bolt holes straddle vertical centerline of pipes.
3. For flanged connections, match bolt holes and obtain uniform contact over entire flange area prior to installation of flange bolts. Tighten bolts to uniformly compress gaskets and minimize flange stress. Tighten bolts to torque recommended by gasket manufacturer. Coat nuts and bolts with anti-seize thread compound.
4. Machine off raised-face of steel flange when mating with flat-faced flange.

C. Pump and Equipment Connections:

1. Align pipe, equipment, and pumps so stresses are not transmitted to connections. Support piping independently from pumps and equipment. Do not support piping from equipment and pumps. Anchor piping to prevent transmission of hydraulic thrust load to pumps and equipment.
2. Install couplings, adapters, expansion joints, flanges, and unions so pumps, equipment, valves, and in-line instruments can be removed from service without disruption to other portions of piping system.
3. Install couplings, expansion joints and other vibration isolation components to isolate piping from pump and equipment vibration.
4. For welded nozzle connections, allow for shrinkage during welding to prevent excessive stresses on pumps and equipment.

- D. Install insulating flange, insulating coupling or dielectric union at each connection between ferrous and non-ferrous metal piping.

3.03 FIELD QUALITY CONTROL

- A. Inspect installed piping products for dents, kinks, abrupt changes of curvature, damage to lining, and other damage. Repair or recondition damaged products as approved by ENGINEER or replace damaged products with new products.
 - B. Inspect installed, unlined piping products for corrosion and scale on interior surfaces. Clean products to remove corrosion and scale or replace with new products.
- C. Test system in accordance with Section 01450.

3.04 CLEANING

- A. After installation and before testing, remove dirt, rocks, debris and other foreign matter from interior of each piping system.
- B. Water flush each hydrostatically tested piping system unless specified otherwise.

1. Minimum flushing velocities shall be maintained until accumulated debris has been removed.
2. Insert cone strainers at equipment connections prior to flushing. Remove cone strainers after flushing is complete.
3. Remove accumulated debris through drains not less than two (2) inches in diameter or by temporarily removing pipe spools, fittings, or valves.

3.05 PROCESS MECHANICAL PIPING SCHEDULE - OTHER

- A. If mechanical piping shown on Drawings is not listed in schedule, Contractor shall provide piping.
 1. Provide type of pipe used in similar services on project.
 2. Provide piping suitable for pressure, temperature and other service conditions.
 3. Submit type of pipe proposed for review by Engineer.

END OF SECTION 15200

NOT FOR BID

COMMON WORK RESULTS FOR ELECTRICAL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Basic Electrical Requirements specifically applicable to Division 1.
- B. If there are any conflicts or misunderstanding, the Electrical Contractor shall bring it to the attention of the Engineer before beginning any such work. In addition, it is the Electrical Contractors responsibility to coordinate with the System Integrator the installation and wiring of all components and equipment required for the Lift Station project.
- C. The System Integrator for this project will be Tri-R Systems. See electrical specification section 26 45 01 (Lift Station Pump Control Panel) for additional information and requirements.

Contact Information is:

Mr. Tim Smith
Tri-R Systems
1804 E. Lincoln Highway
DeKalb, IL 60115
Office Phone: 815-787-0830
Cell Phone: 630-514-6785
tsmith@tri-rsystems.com

The Electrical Contractor shall inspect and determine if any of the System Integrators equipment is damaged before installation. If any equipment supplied by the System Integrator is damaged, it is the Electrical Contractor's responsibility to notify the Engineer immediately before installation. If the Electrical Contractor damages any equipment, it is his/her responsibility to repair or replace at the Engineer's discretion at no additional cost to the Contract.

Before any equipment that has been supplied by the System Integrator is energized, the Electrical Contractor shall notify the System Integrator at least 48 hours in advance so they can be on site to verify the installation and wiring is correct, and that system testing and start-up can begin. Any wiring malfunctions or results from the wiring damages any equipment it is the Electrical Contractor's responsibility to repair or replace at the Engineer's discretion.

- D. Scope of Electrical Work – Village of Villa Park–North Avenue Lift Station:
 - 1. This project includes, but not limited to:
 - a. Furnishing or furnishing and installing:
 - 1) Demolition of Existing Facilities. See sheet No.3 of the plans. Not all removals are shown, field verify same and disconnect and remove.
 - 2) Conduit Systems.
 - 3) Motor Controls.
 - 4) Circuit Breakers.
 - 5) Disconnect Switches.
 - 6) Surge Suppression Systems.
 - 7) Lift Station Control Panel.
 - 8) Transducers.
 - 9) Floats.
 - 10) Submersible Pumps (supplied by the packaged Lift Station manufacturer).
 - 11) 600 volt Conductors.
 - 12) Emergency Generator and ATS.
 - 13) Control wiring Installation.
 - 14) SCADA Communication Equipment and integration into the existing Village SCADA control system.

- 15) Coordination with the local Electrical and gas Utility Companies.
The Electrical Utility Company Com Ed and the gas company is NICOR.

The Contact at Com Ed is Mr. Ted Zawislak
Design Construction Consultant
New Business, Glenbard
Office phone number 630-424-5706
Office Fax 630-691-4780
Ted.Zawislakjr@exeloncorp.com

The Contact at NICOR is Mr. Tom Kellay
Office phone number 630-629-2500 (X231)
Cellular number 630-816-0147
Office fax number 630-916-8549

1.02 SCADA

- A. The lift station SCADA equipment shall share the same PLC/HMI as the SCADA controls and shall communicate all data listed in the specifications with the Master SCADA system via radio once the pump control system is operational as noted on the plans and within.

1.03 CONDUIT LAYOUT

- A. Install all conduits where practicable and where specified on the plans. Coordinate all conduit penetrations with the Engineer before proceeding with work.
- B. Some of the general routing of conduit is shown on the plans. The Electrical Contractor is responsible for locating and installing all conduits required for the project. Field verify that all equipment safeties, emergency stop switches and equipment interlocks are properly working.

1.04 REFERENCE

- A. ANSI/NFPA 70 - National Electrical Code.
- B. State of Illinois Electrical Code.
- C. Local Codes.

1.05 EQUIPMENT ADJUSTMENTS

- A. Submit under provisions of Division 1.
- B. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in single submittals.
- C. Mark dimensions and values in units to match those specified.

1.06 PROJECT/SITE CONDITIONS

- A. Install Work in locations shown on Drawings, unless prevented by Project conditions.
- B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission of Owner before proceeding.

1.07 SEQUENCING AND SCHEDULING

- A. Construction Work in sequence under provisions of Division 1.

1.08 TEMPERATURE CONTROL EQUIPMENT AND WIRING

- A. Not Used.

1.09 CONDUIT ROUTING

- A. The Electrical Contractor shall submit conduit routing plans before installation. This information shall be supplied with the shop drawings.
- B. If the Electrical Contractor's routing does not meet the Engineers requirements, the Electrical Contractor shall relocate the conduits at no additional cost to the contract as directed by the Engineer.

1.10 TELEPHONE SERVICE

- A. Not Used.

1.11 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, and other information needed for identification.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 ROUGH-IN

- A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected.
- B. Refer to equipment specifications in Divisions 2 through 26 for rough-in requirements.

3.02 ELECTRICAL INSTALLATIONS

- A. General: Sequence, coordinate, and integrate the various elements of electrical systems, materials, and equipment. Comply with the following requirements:
 - 1. Coordinate electrical systems, equipment, and materials installation with specified equipment and components.
 - 2. Verify all dimensions by field measurements.
 - 3. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.
 - 4. Sequence, coordinate, and integrate installations of electrical materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing in the building.
 - 5. Where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible.
 - 6. Coordinate connection of electrical systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
 - 7. Install systems, materials, and equipment to conform with approved submittal data, including coordination drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Engineer.

8. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other equipment and components, where installed exposed in finished spaces.
9. Install electrical equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
10. After installation, verify that all motors are "phased" for proper rotation.
11. Coordinate electrical service work with local electrical utility company.
12. Coordinate gas service work with local gas company.

3.03 CUTTING AND PATCHING

- A. General: Perform cutting and patching in accordance with Division 1 Section. In addition to the requirements specified in Division 1, the following requirements apply:
 1. Perform cutting, fitting, and patching of electrical equipment and materials required to:
 - a. Uncover Work to provide for installation of ill-timed Work.
 - b. Remove and replace defective Work.
 - c. Remove and replace Work not conforming to requirements of the Contract Documents.
 - d. Remove samples of installed Work as specified for testing.
 - e. Install equipment and materials in existing structures.
 - f. Upon written instructions from the Engineer, uncover and restore Work to provide for Engineer observation of concealed Work.
 2. Cut, remove, and legally dispose of selected electrical equipment, components, and materials as indicated, including but not limited to removal of electrical items indicated to be removed and items made obsolete by the new Work.
 3. Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.
 4. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
 5. Protection of Installed Work: During cutting and patching operations, protect adjacent installations.
 6. Patch existing finished surfaces and building components using new materials matching existing materials and experienced Installers. Installers' qualifications refer to the materials and methods required for the surface and building components being patched.

END OF SECTION

SUBMITTAL REVIEW

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop Drawing review and O&M Manual review based on the Contract Documents.
- B. The list created below may not include all equipment due to Electrical Contractor substitutions when acceptable by the Engineer. With this occurrence, the Electrical Contractor shall submit additional information as directed by the Engineer at no additional cost to the contract.
- C. Project References:
 - 1. Section 01330.
- D. The Electrical Contractor shall submit Shop Drawings on the following Electrical Equipment:
 - 1. 600 Volt Conductors.
 - 2. Control Cables or Conductors.
 - 3. Grounding Conductors and clamps.
 - 4. Ground Rods or Ground Plates. (See Plans).
 - 5. Schedule 80 PVC Conduits.
 - 6. Conduit Elbows.
 - 7. Rigid Steel Conduit.
 - 8. Conduit Supports and Hangers.
 - 9. Meter Socket.
 - 10. Electrical Cabinets and Terminal Blocks.
 - 11. Explosion-Proof Equipment.
 - 12. Conduit Fittings and Conduit Bodies.
 - 13. Conduit Supports.
- E. The System Integrator shall submit Shop Drawings for the following Major Instrumentation and Control Equipment:
 - 1. Lift Station Control panel with SCADA.
 - 2. HMI screens at the Lift Station HMI and at the Master.
 - 3. Electrical and Instrumentation Devices.
 - 4. Motor Starters.
 - 5. Ethernet Communications Hardware.
 - 6. All Control Panel Hardware.
- F. Lift Station Requirements:
All electrical equipment shall include the listing of the available fault current at all supplied equipment included under this contract. If the information is not included, the Shop Drawings will be sent back as an incomplete submittal.

1.02 SHOP DRAWING SUBMITTALS

- A. Submit Shop Drawings in accordance with procedures of Section 01330. Before any components are fabricated and/or integrated into assemblies, or shipped to the site, the Electrical Contractor and System Integrator shall furnish to the Engineer and receive his/her review of Shop Drawings with all details, catalog cuts, inter-connecting wiring diagrams, and such other descriptive matter and documentation as described herein to fully describe the equipment and to demonstrate its conformity to these Specifications.
- B. The Shop Drawings for all Electrical Equipment shall be submitted to the Engineer under single cover. The Shop Drawings for the Instrumentation & Controls submittal may be under a separate cover.

- C. The Electrical Contractor and the System Integrator shall each provide six (6) sets of Shop Drawings in 3 ring binders (hard copy only, emailed versions are not acceptable).
- D. The Electrical equipment Shop Drawing submittal and Instrumentation & Controls Shop Drawings shall follow the specified format listed in C below. Incomplete submittals or submittals not as described in the specifications shall be returned "NOT REVIEW-RESUBMIT".

Shop Drawing Submittal for Electrical Equipment:

Each submittal shall be indexed to organize the required Electrical Equipment submittal information. The Shop Drawings shall include written description of operation (if required), equipment lists, equipment cut sheets with identification of each item submitted.

All electrical equipment documentation shall be typed and the drawings shall be produced in AutoCAD format for all control drawings and all equipment, conduit layouts and piping layouts.

Each group of equipment shall be placed in each individual section and all equipment submitted shall be clearly identified. The Electrical Contractor shall follow the general format outlined in the Instrument & Control submittal requirements.

The Shop Drawing submittal shall be all inclusive for all Electrical Equipment furnished for the project and shall contain all details, cut sheets, equipment layouts where required and the equipment shall be clearly identified for its intended purpose. The Shop Drawing submittal shall indicate the complete component listing with product literature including manufacturer's model or catalog numbers. The Electrical Contractor shall tag or otherwise identify exactly the model or catalog number of the part being furnished and where the part is to be installed in the system or building. If this information is not provided the Shop Drawings will be returned to the Electrical Contractor **"NOT REVIEWED-RESUBMIT"**.

E. Shop Drawing Submittal for Instrumentation & Controls:

Provide a 3-ring binder for all Instrumentation & Controls equipment specified within and as shown on the plans. Each submittal shall be indexed to organize the required Lift Station Controls submittal information.

All equipment descriptive documentation shall be typed and the drawings shall be produced in AutoCAD format.

The Controls submittal shall be sectioned for the project location and grouped by each item, motor or other equipment as listed in these specifications and as shown on the plans.

1. Each section shall contain the equipment, any associated control drawings and equipment required for each specified control panel located at project site, PLC program and any other information pertaining to each project location.
2. The format and content of each section is described in detail in this section.
3. System Manual organization:
 - a. Backbone and cover project identification.
 - b. Numbered indexes as follows:
 - 1) Introduction; general project and contractor references.
 - 2) Contents.
 - 3) Component listing. The System Integrators exact "Bill of Materials" as referenced to the "Bill of Materials" referenced in the plans. Note that the "Bill of Materials" referenced on the plans may not include all items required for the project.
 - 4) Components (A through end).
 - a) With alpha numbered tab for each component, each section to include a System Integrators produced data sheet and manufacturers product literature annotated for this application.
 - b) One section for each component code and one each for spares, test equipment, expendables.

- 5) Instrument loop functional diagrams, with written loop descriptions.
- 6) Drawing list and mechanical diagrams.
- 7) Shop Drawings - drawing list, symbol sheets, electrical diagrams, block diagrams, interconnecting wiring, panel power and equipment wiring.
- 8) Programmable Logic Controller program documentation in ladder logic format and each HMI display layouts and screens for the proposed HMI screen located in the Control panel. Assign point numbers to all inputs and outputs and indicate in the PLC program.
- 9) Description of operation documentation and layouts. Panel and equipment sequence of operation. See item 5 above.
- 10) PLC program documentation - written sequence of operation and computer generated ladder diagrams for each location.
- 11) Shop Drawings - drawing list, symbol sheets, and installation details.
- 12) Identification listings.
 - a) Panel nameplate legends.
 - b) Terminal block numbers.
 - c) Field device tag legends.
- 13) Test procedures.
- 14) Calibration and test records.
- 15) Training materials.
- 16) O&M manual outline.

F. Documentation Requirements:

1. "Bill of Material" with complete description of items supplied in sufficient detail to order spare parts; quantity used; manufacturers catalog, style, or part number; and tag or other cross reference to permit easy correlation with material appearance in specification and drawings. Catalog information shall be submitted for all equipment, regardless of whether or not it is of the same manufacturer as that listed in the specifications and in the plans. The list shall be in Excel spreadsheet format or Engineer approved equal.
2. Drawings: Provide the following:
 - a. Loop diagrams, which shall consist of an individual wiring diagram for each analog loop showing all terminal numbers, the location of the DC power supply(s), the location of any interface relays and common dropping resistors, etc. The loop diagrams shall meet the minimum requirements of ISA S5.4 plus the following requirements: Each loop diagram shall be divided into three areas for identification of element locations: front panel layouts, back panel layouts, and field, respectively. Loop diagrams shall be on individual 11-inch by 17-inch Drawings. On each diagram present a tabular summary of:
 - 1) The output capability of the transmitting instruments.
 - 2) The input impedance of each receiving instrument.
 - 3) An estimate of the loop wiring impedance based on the wire sizes and lengths shown.
 - 4) The total loop impedance.
 - 5) Reserve output capacity.
 - b. Each operator interface (HMI) application programming shall fully describe the operation and functions of each key and display. This includes all legends, tags, ranges, alarms etc.
 - c. A written description and sequence shall also be provided. Submit HMI graphics in "Hand" sketched or computer generated format for preliminary review and then again for final review.
 - d. Interconnecting wiring diagrams, showing all component and panel terminal block identification numbers and external wire numbers. This diagram shall include all intermediate terminations between field elements and panels (e.g., terminal junction boxes, motor controls, etc.). Diagrams, device designations, and symbols shall be in accordance with NEMA ICS 1-101. The drawings shall contain the drawing number and terminal numbers of the interfaced equipment.
 - e. Panel mechanical drawings shall show top, front, side and back sections with dimensions. The instrument arrangement drawing shall be scaled. Internal and sub-panel equipment layout shall be provided. Include material lists, legends and scales. All drawings shall be scaled. A separate cutout detail drawing shall be provided. The HMI screens shall be provided in hard copy of graphics. The Engineer shall determine at the time of the Shop Drawing submittal if the HMI screens shall be modified. These modifications shall be provided by the System Integrator at no additional cost to the Owner.

- f. Instrument installation detail drawings shall be provided for field process installed devices. Custom drawings shall be provided for each installation. Copies of the manufacturer's product literature shall not be acceptable. These shall be submitted for approval.
- g. Functional loop diagrams shall be shown in the ISA standards.
- h. The System Integrator shall submit Shop Drawings to the Engineer in accordance with the requirements of the General Conditions and Section 01330.

All submittals shall be complete, neat, orderly and indexed. Partial submittals will not be accepted and will be returned- Not Reviewed-Resubmit. All components shall be referenced by the instrument name-tag designations shown. If an item(s) is not submitted, the Engineer will notify the Electrical Contractor or the System integrator and six (6) new complete submittals shall be provided. This will be considered as one of the two submittals allowed. If the second submittal is missing information and the information is not submitted in the second submittal, requiring a third submittal, the additional cost will be required by the Engineer. If the second submittal is "Approved as Noted" or Approved", a third submittal will not be required.

The Shop Drawing submittal shall be all inclusive for all Instrumentation & Control Equipment furnished for the project and shall contain all details, cut sheets, equipment layouts, wiring diagrams, and the equipment shall be clearly identified for its intended purpose. If this information is not provided the Shop Drawings will be returned to the Electrical Contractor and System Integrator **"NOT REVIEWED-RESUBMIT"**.

The maximum number of Shop Drawing or O&M Manual reviews by the Engineer for each submittal group Electrical and Control Equipment shall be two (2). If more than two (2) reviews are required due to incomplete or inaccurate Shop Drawing or O&M Manual submittals, the Electrical Contractor or the System Integrator shall pay the Engineer \$1,000.00 per each additional review of each submittal. The payment shall be made to the Engineer (Powrtek Engineering, Inc) when each submittal is submitted. The Shop Drawings or O&M Manuals will not be reviewed and will be returned to the Electrical Contractor or the System Integrator. The third and subsequent Shop Drawings or O&M Manual submittals will not be further reviewed without first receiving payment in advance by the Engineer.

1.03 OPERATION AND MAINTENANCE (O&M)MANUALS

- A. Submit operation and maintenance manuals under provisions of Section 01330.
- B. The O&M manuals shall be furnished at least 15 calendar days before the scheduled delivery of equipment. The manuals shall include a table of contents.
- C. The O&M manuals shall exactly follow the format of the submittal manual and include the Shop Drawings and other documentation as specified.
- D. The O&M manuals shall in addition contain an indexed section to house the calibration and loop testing documentation that shall be provided for the project.
- E. The Electrical Contractor or the System Integrator shall provide six (6) sets of "record" O&M manuals to the Engineer after the installation. The Engineer shall provide those O&M manuals to the Owner after Engineer review. If the O&M manuals are in-complete the Engineer will return the O&M Manuals to the Electrical Contractor or System Integrator for re-submittal. If this process requires more then two submittals, then the Electrical Contractor or System Integrator shall provide the same review fees as required for the Shop Drawing review(s).
- F. The factory testing results shall become part of the O & M manuals. The tests shall include the following information:
 - 1. Factory, Functional Acceptance Tests and Field Operational Acceptance Tests: Before shipment all control panels (enclosures) shall be tested for proper operation at the System Integrators panel shop before shipping to the jobsite. Results of the tests shall be recorded and submitted with the O & M Manuals.
 - 2. Field Operational Acceptance Tests: These tests are to demonstrate that the system of Process Control is ready for final operation. The I&C System shall be checked for proper installation,

- adjusted, and calibrated on a loop-by-loop basis to verify that it is ready to function as specified. All system elements shall be checked to verify that they have been installed properly and that all terminations have been made correctly. All discrete elements and systems shall have their set points adjusted and shall be checked for proper operation (e.g., interlock functions, contact closure on rising/ falling P.V., etc.). All continuous elements and systems shall have three-point calibrations performed. All controller tuning constants shall be adjusted to preliminary settings. The operational acceptance tests shall be completed before starting the functional acceptance tests. The actual testing program shall be conducted in accordance with prior approved procedures and shall be documented as required hereinafter.
3. Functional Acceptance Tests: These tests are to demonstrate that the system of Controls is operating and complying with the specified performance requirements. A witnessed, functional acceptance test shall be performed on the complete system of Controls. Each function shall be demonstrated to the satisfaction of the Engineer on a paragraph by paragraph and loop by loop basis. Each test shall be witnessed and signed off by the Electrical Contractor and System Integrator upon satisfactory completion. The actual testing program shall be conducted in accordance with prior approved procedures and shall be documented as required hereinafter.
 4. The Electrical Contractor/System Integrator shall notify the Engineer at least 2 weeks prior to the date of the functional acceptance test.
- G. Test Procedure Development and Test Documentation: The System Integrator/Electrical Contractor shall perform testing procedures as approved by the Engineer. The Electrical Contractor shall include in the submittal, the test procedures proposed.
- H. The Engineer may participate in many of the tests. The Engineer reserves the right to test or retest any and all specified functions whether or not explicitly stated in the prior-approved Test Procedures.
- I. The Engineer's decisions shall be final regarding the acceptability and completeness of all testing.
- J. A List of recommended spare parts shall be included in the O & M Manual.

PART 2 EXECUTION

2.01 ELECTRICAL CONTRACTOR & SYSTEM INTEGRATOR RESPONSIBILITIES

- A. Where the Electrical Contractor and/or the System Integrator's equipment interface with other equipment furnished by other Contractor's, it is the Electrical Contractor's responsibility to verify that all the submitted equipment is compatible.
- B. The Electrical Contractor and the System Integrator shall read and understand the information contained in this specification section. Any misunderstanding by the Electrical Contractor or the System Integrator is not acceptable as these requirements are bound within the Project Contract Documents.
- C. The Electrical Contractor and the System Integrator shall provide the specified information that is required by these Electrical Specifications and shall submit this information to the Engineer by mail in a timely manner.

END OF SECTION

NOT FOR BID

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SECTION 26 05 02

ELECTRICAL DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. The Electrical demolition shall be phased such that the existing Lift Station shall be demolished as required. All shut downs shall be coordinated with the Engineer and the Owner before proceeding.
- B. The removed equipment, conduit and wiring shall be disposed of off-site by the Electrical Contractor. The Owner has the right to re-claim any equipment whether noted on the plans or not, at their discretion.
- C. Coordinate all demolition and construction sequencing with the Engineer.
- D. Any equipment to be turned over to the Owner shall be protected from damage by the Electrical Contractor. If damage does occur, it is the Electrical Contractor's responsibility to repair or replace the damaged equipment at no additional cost to the contract.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Materials and equipment for patching and extending work: As specified in individual Sections.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing field measurements and circuiting arrangements are as shown on Drawings.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition Drawings are based on casual field observation and existing record documents. Report discrepancies to Owner/Engineer before disturbing existing installation.
- D. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

- A. Disconnect electrical systems scheduled for removal.
- B. Provide demolition in conformance with Division 1.
- C. All equipment removed during demolition including equipment, conduit, wiring and miscellaneous materials shall be disposed of off-site by the Electrical Contractor.

3.03 CLEANING AND REPAIR

- A. Not Required.

3.04 INSTALLATION

Not required.

END OF SECTION

NOT FOR BID

CLEANING, INSPECTION AND TESTING ELECTRICAL EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of Work:
1. Prior to energizing equipment, perform inspections and tests as herein specified and follow the System integrators directions.
 2. Ensure electrical equipment supplied by other Contractors is operational, within industry and manufacturer's tolerances and installed in accordance with Specifications.
 3. Before any equipment has been energized the Electrical Contractor shall megger (test) each individual branch, feeder and motor circuit installed under this contract to verify the insulation values are within specifications and that grounding continuity exists from the origin of the circuit to the load. See the INSULATION AND EQUIPMENT SCHEDULE 1A at the back of this specification section. After each circuit is tested the Electrical Contractor shall fill in the required data into the table. The Electrical Contractor shall make as many copies of the table as needed to complete the testing. The Contractor shall designate which site has been tested on the schedule. This information shall be turned over to the Engineer. If the tests do not meet the minimum values that are shown in the INSULATION RESISTANCE TESTS FOR ELECTRICAL EQUIPMENT & SYSTEMS chart, replace circuit conductors and repair or replace motors or other devices. Once all equipment has been installed the Electrical Contractor shall megger (test) each individual branch, feeder and motor circuit installed under this contract to verify the insulation values are within specifications and that grounding continuity exists from the origin of the circuit to the load.

1.02 QUALITY ASSURANCE

- A. Recommendations for acceptance or rejection shall be given upon consultation of Engineer.
- B. Inspections and tests shall utilize the following:
1. Project specifications.
 2. Project drawings.
 3. Manufacturer's instruction manuals applicable to each particular apparatus.
- C. Requirements of Regulatory Agencies:
1. National Fire Protection Associates (NFPA):
 - a. National Electrical Code (NEC) (NFPA No. 70) and State of Illinois amendments thereto.
 2. Underwriters Laboratories, Inc. (UL).
 3. Local Codes.
- D. National Fire Protection Associates (NFPA):
1. National Electrical Code (NEC), (NFPA No. 70E) The Electrical Contractor shall provide the required protective clothing and other protection required if working on live equipment.
 2. The Electrical Contractor shall provide the following Arc Flash labels per NEC 110-16 and ANSI Z535.4-1998 on the electrical equipment:
 - a. Label No.1: WARNING on first line. "Arc Flash and Shock Hazards" on second line. "Appropriate PPE Required" on third line. "Failure to Comply Can Result in Death or Injury" on forth line and "Refer to NFPA 70E" on fifth line.
 - b. Label No.2: WARNING on first line. "Arc Flash and Shock Hazards" on second line. "Appropriate PPE Required" on third line. "Failure to Comply Can Result in Death or Injury" on forth line "Available Three Phase bolted Fault Current" on fifth line with the appropriate fault current for the project site. The "Flash Hazard Boundary" on the sixth line, "Ca/CM 2 Flash Hazard at 18 Inches", "Hazard Risk Category" on the seventh line, Voltage "Shock

Hazard” on the eighth line, “Limited Approach” on the ninth line, “Restricted Approach” on the tenth line and “Prohibited Approach” on the eleventh line.

- E. Reference Standards:
 - 1. Institute of Electrical and Electronic Engineers (IEEE):
 - a. IEEE Standard No. 81-83 - Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System.
 - b. IEEE Standard No. 400.
- F. The Electrical Contractor shall review the contract drawings and other specification sections and provide additional spare equipment as noted. In the case of duplication of spare equipment, the Electrical Contractor shall provide the spare in accordance with the specification that requires the greater number.

1.03 SUBMITTALS

- A. Test Reports and Demonstration Log:
 - 1. Permanently record checks and tests and demonstrations.
 - 2. Submit copy of complete testing or demonstration report no later than 30 days after testing or demonstration is complete.
- B. Submit copy to Engineer.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 DEMONSTRATIONS

- A. Demonstrate the proper operation of all electrical systems and equipment in the presence of the Owner and/or Owners designated representatives. The demonstrations shall include, but not be limited to, the following equipment and systems:
 - 1. Circuit breakers.
 - 2. Disconnect switches.
 - 3. Ground fault receptacles.
 - 4. Motor starters and contactors.
 - 5. Motor Controls
 - 6. Lift Station Controls.
 - 7. Motors.
 - 8. Surge Suppression systems.
 - 9. SCADA System.
 - 10. Generator and ATS.
 - 11. Other devices and equipment as directed by the Engineer.
- B. Demonstration Log:
 - 1. Keep log of individual demonstrations.
 - 2. Data:
 - a. Date and time of demonstration.
 - b. Owner's representative.
 - c. Equipment or system demonstrated.
 - d. Result of demonstration.
 - 1) Success or fail.
 - 2) If failure, description of failure.
 - 3) Corrective action.
 - 4) Re-demonstration result.

3.02 TESTS

- A. Test work and equipment installed to ensure proper and safe operation in accordance with intent of drawings and specifications.
 - 1. Check interlocking and automatic control sequences and test operation of safety and protective devices.
 - 2. Correct defects.
 - 3. Cooperate with supplier's and manufacturer's representatives in order
- B. Test, adjust, and record operating voltages at each system level before energizing services, feeders or branch circuits. Re-adjust after energizing as necessary.
 - 1. Transformer taps must be adjusted to obtain as near as possible nominal system voltage. Prior to energization of transformers, check phase-to-phase and phase-to-ground insulation resistance levels. Check transformers for continuity of circuits and short circuits.
 - 2. Where transformer is under utility jurisdiction, obtain services of utility to correct voltage.
 - 3. Replace devices and equipment damaged due to failure to comply with this requirement.
 - 4. Motors:
 - a. Complete nameplate data.
 - b. Overload relay element.
 - c. Voltage and current phase readings.
 - d. Direction of rotation.
 - e. Circuit breaker/MCP instantaneous trip settings.
 - 5. Ampere readings on any cable operating in parallel to insure an even division of current.
- C. Balance load among feeder conductors at each panelboard, switchboard or substation and reconnect loads as may be necessary to obtain reasonable load balance on each phase. Electrical load unbalance shall not exceed 7-1/2%.
- D. Control Circuits, Branch Circuits, Feeders, Motor Circuits, and Transformers:
 - 1. Megger check of phase-to-phase and phase-to-ground insulation levels for all feeders. Do not megger on Hipot Test solid state equipment.
 - 2. Continuity.
 - 3. Short circuit.
 - 4. Operational check.
- E. Wiring Devices:
 - 1. Test all new receptacles with Hubbell 5200, Woodhead 1750 or equal tester for current polarity, proper ground connection, and wiring faults.

3.03 ADJUSTMENT AND CLEANING

- A. Disconnects and Motor Starters:
 - 1. Adjust covers and operating mechanisms for free mechanical movement.
 - 2. Tighten wire and cable connections to proper torque.
 - 3. Verify overcurrent protection thermal unit size with motor nameplate to provide proper operation and compliance with NEC.
 - 4. Clean interior of enclosures.
 - 5. Touch up scratched or marred surfaces to match original finish.
 - 6. Protect all VFD's and similar electrical/electronic equipment from dust and debris. Make sure all equipment is wrapped in plastic and protected during construction.
- B. Circuit Breakers:
 - 1. Adjustable settings shall be set to provide selective coordination, proper operation, ground fault and compliance with NEC.
 - 2. Provide record of all circuit breaker information and settings including circuit breaker instruction manuals and time-current characteristic curves.

3.04 GROUNDING SYSTEMS

- A. Visual and Mechanical Inspection:
1. Inspect ground system for compliance with drawings and specifications.
- B. Electrical Tests:
1. Fall of potential test per IEEE No. 81, Section 9.04 on main grounding electrode or system.
 2. Two-point method test per IEEE No. 81, Section 9.03, to determine ground resistance between main grounding system and major electrical equipment frame, system neutral, and derived neutral points.
 3. Alternate to two-point method.
 - a. Ground continuity test between main ground system and equipment frame, system neutral, and/or derived neutral point.
 - b. Test shall be made by passing minimum of 10 amp dc current between ground reference system and ground point to be tested.
 - c. Voltage drop shall be measured and resistance calculated by voltage drop method.
 4. Electrical grounding test shall be performed by an independent testing firm approved by the Owner or Engineer. Copies of test reports shall be submitted to the Engineer and Owner.
 5. Test Values.
 - a. Main ground electrode system resistance to ground shall be no greater than 5 ohms for commercial or industrial systems and 1 ohm or less for generating or transmission station grounds, unless otherwise specified by Engineer.

3.05 GROUND FAULT SYSTEMS

- A. Electrical Tests:
1. Measure system neutral insulation resistance to ensure no shunt ground paths exist, neutral-ground disconnect link removed, neutral insulation resistance measured, and link replaced.
 2. Determine relay pickup current by primary injection at sensor and circuit interrupting device operated.
 3. Test relay timing by injecting 150% and 300% of pickup current into sensor. Electrically monitor total trip time.
 4. Test system operations at 55% rated voltage.
 5. Test primary service cable per IEEE 400.

INSULATION RESISTANCE TESTS FOR NEW ELECTRICAL (EQUIPMENT & SYSTEMS ONLY)

MAXIMUM RATING OF EQUIPMENT IN VOLTS	MINIMUM TEST VOLTAGE, DC IN VOLTS	RECOMMENDED MINIMUM INSULATION RESISTANCE*
250	500	Infinity
600	1,000	Infinity
5,000	2,500	Infinity
8,000	2,500	Infinity
15,000	2,500	Infinity
25,000	5,000	Infinity
35,000	15,000	Infinity
46,000	15,000	Infinity
69,000	15,000	infinity

Note 1: The minimum resistance level shall be 500 meg-ohms for existing motors. If resistance is less than specified, remove motor and repair or replace. If the meg-ohm readings are less than specified remove conductors and replace with new conductors as required by Specification Section 26 05 19.

END OF SECTION

NOT FOR BID

SECTION 26 05 05

ELECTRICAL EQUIPMENT STARTUP

PART 1 GENERAL

1.01 ELECTRICAL EQUIPMENT STARTUP

- A. The Electrical Contractor shall test (MEGGER) each feeder, branch circuit, motor circuit and associated equipment per Specification Section 26 05 04 "CLEANING, INSPECTION AND TESTING ELECTRICAL EQUIPMENT" before beginning system(s) startup.
- B. Each motor shall be rotated by hand before energizing any existing equipment. Provide all system check-outs as required in Specification Division 1 and Division 22 and 23. Coordinate pump/motor startup testing with Mechanical Contractor present. Do not run pump/motor(s) dry unless otherwise directed by the Engineer.
- C. Visually inspect each motor, motor starter, control transformer, indicating lights, switches and auxiliary control equipment for damage, broken or missing parts. Field verify that each motor is protected with proper size overload and replace same if required. Where indicating lights are defective, replace same.

1.02 MEETINGS

- A. Conduct a planning meeting two weeks prior to equipment startup. Coordinate all meetings with Engineer.

1.03 PRESTARTUP CHECKOUT

- A. Field verify that all equipment safeties, emergency stop switches and equipment interlocks are properly working.
- B. Check for proper motor rotation and correct if required.

1.04 CLEANING

- A. Clean any debris that is inside each motor starter bucket, panelboard, switchboard, automatic transfer switch, disconnect switch and other electrical enclosures.

1.05 EQUIPMENT ADJUSTMENTS

- A. Check floats, limit switches, valve position switches for proper operation. Make all necessary adjustments as required for proper operation or as recommended by the manufacturer.
- B. Test and calibrate all control circuits, both analog and digital types.
- C. Verify that all new equipment is compatible. Notify the Engineer immediately if the new equipment is not compatible with equipment provided by the other trades.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

NOT FOR BID

BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Requirements specified in Section 26 05 00 apply to this Section.

1.02 SUMMARY

- A. This Section includes limited scope general construction materials and methods for application with electrical installations as follows:
 - 1. Excavation for underground utilities and services, including underground raceways and equipment.
 - 2. Miscellaneous metals for support of electrical materials and equipment.
 - 3. Wood Framing including nailers, blocking, fasteners, and anchorage for support of electrical materials and equipment.
 - 4. Joint sealers for sealing around electrical materials and equipment; and for sealing penetrations in fire and smoke barriers, floors, and foundation walls.

1.03 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Shop drawings detailing fabrication and installation for metal fabrications, and wood supports and anchorage for electrical materials and equipment.
- C. Welder certificates, signed by Contractor, certifying that welders comply with requirements specified under Division 1.
- D. Schedules indicating proposed methods and sequence of operations for installation prior to commencement of Work. Include coordination for connection of electrical service.
 - 1. Coordinate sequencing with construction phasing and Owner occupancy specified in Division 1.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer for the installation and application joint sealers, access panels, and doors.
- B. Qualify welding processes and welding operators in accordance with AWS D1.1 "Structural Welding Code- Steel."
 - 1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone re-certification.
- C. Fire-Resistance Ratings: Where a fire-resistance classification is indicated, provide access door assembly with panel door, frame, hinge, and latch from manufacturer listed in the UL "Building Materials Directory" for rating shown.
 - 1. Provide UL Label on each fire-rated access door.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver joint sealer materials in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multi-component materials.
- B. Store and handle joint sealer materials in compliance with the manufacturers' recommendations to prevent their deterioration and damage.

1.06 PROJECT CONDITIONS

- A. Conditions Affecting Excavations: The following project conditions apply:
 - 1. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by excavation operations.
 - 2. Use of explosives is not permitted.
- B. Environmental Conditions: Apply joint sealers under temperature and humidity conditions within the limits permitted by the joint sealer manufacturer. Do not apply joint sealers to wet substrates.

PART 2 PRODUCTS

2.01 MISCELLANEOUS METALS

- A. Steel plates, shapes, bars, and bar grating: ASTM A 36.
- B. Cold-Formed Steel Tubing: ASTM A 500.
- C. Hot-Rolled Steel Tubing: ASTM A 501.
- D. Steel Pipe: ASTM A 53, Schedule 40, welded.
- E. Non-shrink, Nonmetallic Grout: Premixed, factory-packaged, non-staining, non-corrosive, nongaseous grout, recommended for interior and exterior applications.
- F. Fasteners: Zinc-coated, type, grade, and class as required.

2.02 MISCELLANEOUS LUMBER

- A. Framing Materials: Standard Grade, light-framing-size lumber of any species. Number 3 Common or Standard Grade boards complying with WCLIB or AWPB rules, or Number 3 boards complying with SPIB rules. Lumber shall be preservative treated in accordance with AWPB LP-2, and kiln dried to a moisture content of not more than 19 percent.
- B. Construction Panels: Plywood panels; APA C-D PLUGGED INT, with exterior glue; thickness as indicated, or if not indicated, not less than 15/32 inches.

2.03 JOINT SEALERS

- A. Fire-Resistant Joint Sealers: Two-part, foamed-in-place, silicone sealant formulated for use in through-penetration fire-stopping around cables, conduit, pipes, and duct penetrations through fire-rated walls and floors. Sealants and accessories shall have fire-resistance ratings indicated, as established by testing identical assemblies in accordance with ASTM E 814, by Underwriters' Laboratories, Inc., or other testing and inspection agency acceptable to authorities having jurisdiction.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. "Dow Corning Fire Stop Foam," Dow Corning Corp.
 - b. "Pensil 851," General Electric Co.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting installation of access panels. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 EXCAVATION

- A. Slope sides of excavations to comply with local codes and ordinances. Shore and brace as required for stability of excavation.
- B. Shoring and Bracing: Establish requirements for trench shoring and bracing to comply with local codes and authorities. Maintain shoring and bracing in excavations regardless of time period excavations will be open.
 - 1. Remove shoring and bracing when no longer required. Where sheeting is allowed to remain, cut top of sheeting at an elevation of 30 inches below finished grade elevation.
- C. Material Storage: Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.
 - 1. Locate and retain soil materials away from edge of excavations. Do not store within drip-line of trees indicated to remain.
 - 2. Remove and legally dispose of excess excavated materials and materials not acceptable for use as backfill or fill.
- D. Trenching: Excavate trenches for electrical installations as follows:
 - 1. Excavate trenches to the uniform width, sufficiently wide to provide ample working room and a minimum of 3 to 6 inches clearance on both sides of raceways and equipment.
 - 2. Excavate trenches to depth indicated or required.
 - 3. Limit the length of open trench to that in which installations can be made and the trench backfilled within the same day.
 - 4. Where rock is encountered, carry excavation below required elevation and backfill with a layer of crushed stone or gravel prior to installation of raceways and equipment. Provide a minimum of 6 inches of stone or gravel cushion between rock bearing surface and electrical installations.
- E. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F. (2 deg C).
- F. Backfilling and Filling: Place soil materials in layers to required subgrade elevations for each area classification listed below, using materials specified in Part 2 of this Section.
 - 1. Under walks and pavements, use a combination of subbase materials and excavated or borrowed materials.
 - 2. Under building slabs, use drainage fill materials.
 - 3. Under piping and equipment, use subbase materials where required over rock bearing surface and for correction of unauthorized excavation.
 - 4. All underground conduits shall be installed 24 inches below finished grade, measured to the top of the largest conduit in the group, unless otherwise noted, and shall be routed adjacent other underground piping as directed by the Engineer. The conduits shall be installed in trench per the details shown on the plans.
 - 5. Other areas, use excavated or borrowed materials.
- G. Backfill excavations as promptly as work permits, but not until completion of the following:
 - 1. Inspection, testing, approval, and locations of underground utilities have been recorded.
 - 2. Removal of concrete form work.
 - 3. Removal of shoring and bracing, and backfilling of voids.
 - 4. Removal of trash and debris.

- H. Placement and Compaction: Place backfill and fill materials in layers of not more than 8 inches in loose depth for material compacted by heavy equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- I. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification specified below. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
- J. Place backfill and fill materials evenly adjacent to structures, piping, and equipment to required elevations. Prevent displacement of raceways and equipment by carrying material uniformly around them to approximately same elevation in each lift.
- K. Compaction: Control soil compaction during construction, providing minimum percentage of density specified for each area classification.

3.03 CUTTING AND PATCHING

- A. Cut, fit, and place miscellaneous metal fabrications accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS "Structural Welding Code."

3.04 ERECTION OF WOOD SUPPORTS AND ANCHORAGE

- A. Cut, fit, and place wood framing, nailers, blocking, and anchorage accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Select fastener sizes that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood members.
- C. Attach to substrates as required to support applied loads.

END OF SECTION

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Building wire and cable.

1.02 REFERENCES

- A. ANSI/NFPA 70 – National Electrical Code.

1.03 SUBMITTALS

- A. Submit under provisions of Division 1.
 - 1. Submit six copies of shop drawings and samples of the following:
 - a. Wire connectors, of each type for both underground and above ground installations.
 - b. Wire identification markers or tags. See Specification section 26 05 53 for additional information on required products.
 - c. Insulation tape as specified within. Samples only need to be six inch cut-offs.
 - d. All samples will be retained by the Engineer.
- B. Test Reports: Indicate procedures and values obtained.
- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.

1.04 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.05 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Conductor sizes are based on copper. Use 75°C ratings for all conductors. All conductors for power and lighting circuits shall be sized as shown on the plans or as required by the actual load to be served, whichever is larger. Article 310 of the NEC shall be the guide in determining conductor sizes. Long circuits shall be sized to prevent voltage drops in excess of 2 percent.
- C. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet Project Conditions. Include wire and cable lengths within 10 feet of length shown.
- D. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

1.06 COORDINATION

- A. Coordinate Work under provisions of Division 1.
- B. Determine required separation between cable and other work.

- C. Determine cable routing to avoid interference with other work.

PART 2 PRODUCTS

2.01 BUILDING WIRE AND CABLE

- A. Description:
 - 1. Type; XLP insulated wire.
 - 2. Type; Thermo-plastic insulation, nylon jacket
- B. Conductor: Stranded Copper only.
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation: ANSI/NFPA 70; Type XHHW insulation for feeders, branch circuit wiring and 24DC and 120 volt control circuits. Where wiring is routed underground or wet and damp locations or classified locations (Class 1, Division 1 or Class 1, Division 2) provide XHHW only.

2.02 WIRING CONNECTORS

- A. Spring Wire Connectors for branch circuit #14, #12, and #10 wire. Use Ideal Twister DB silicon filled safety connectors below finished grade or in wet and damp location areas.
- B. Compression Connectors required on all control wire and cable terminations. Control and metering wire terminations shall be completed using vinyl insulated, crimp terminals or terminal blocks designed for direct wire termination. Crimp type terminals shall not be installed on solid wires.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that mechanical work likely to damage wire has been completed.

3.02 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire.

3.03 COMBINING OF CONDUCTORS IN RACEWAYS

- A. The following rules shall apply:
 - 1. Motor power conductors may be run together for two motors which are three horse power and less provided motors are deemed non-critical; or they may be critical but not back-ups of each other. Thus motors connected to pumps of a common type may not be run together.
 - 2. Power conductor for motors over three horse power and for critical loads without back-up should be run in separate individual conduits unless otherwise specified or approved.
 - 3. Conduit fill for power to motors shall meet the requirements of the National Electric Code.
 - 4. No more than SIX (6) current carrying conductors (including the neutral conductor) may be installed in a single conduit.

3.04 SPECIAL WIRING – SEE SPECIFICATION SECTION 26 05 23.01

3.05 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.

- B. Use stranded conductor for feeders and branch circuits 10 AWG and larger.
- C. Use stranded conductors for control circuits.
- D. Use conductor not smaller than 12 AWG for power and lighting circuits.
- E. Use conductor not smaller than 14 AWG for control circuits.
- F. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet, whether shown on the plans or not.
- G. Pull all conductors into raceway at same time.
- H. Use suitable wire pulling lubricant for building wire 8 AWG and larger.
- I. Protect exposed cable from damage.
- J. Support cables above accessible ceiling, using cable tray. Do not rest cable on ceiling panels.
- K. Use suitable cable fittings and connectors.
- L. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- M. Clean conductor surfaces before installing lugs and connectors.
- N. Make splices, taps, and terminations to carry full capacity of conductors with no perceptible temperature rise.
- O. Use split bolt connectors for copper conductor splices and taps, 8 AWG and larger. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.
- P. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.
- Q. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller. All wet location areas shall include the use of ideal twister DB wire connecting approved equal.
- R. Tag all wires at each end and at junction boxes. Do not change wire color at splices.

3.06 WIRING IN HAZARDOUS AREAS

- A. Wiring in hazardous areas as indicated by class, division and group on the drawings shall comply with the Electrical code requirements.
- B. All wiring shall be in rigid threaded galvanized steel conduit or galvanized rigid steel conduit, PVC coated as required elsewhere in the specifications or as shown on the drawings with termination fittings approved for the class location.
- C. All boxes, fittings and joints shall be threaded for connection to conduit and shall be explosion proof and approved for the class location.
- D. Threaded joints shall be at least 5 threads fully engaged. Running threads will not be accepted.
- E. All connections to equipment which is subject to movement or vibration shall be with flexible fittings of the explosion proof type, where required.

- F. Seal-offs shall be provided in all conduit systems that enter or leave a Class 1, Division 1 or 2 locations to prevent the passage of vapors or flames from one portion of the installation to another through conduit in accordance with the code requirements.

3.07 CORROSION RESISTANT AREAS

- A. All connections and wiring shall be installed to eliminate or minimize corrosion of conductors and terminations installed in these areas.

3.08 INTERFACE WITH OTHER PRODUCTS

- A. Identify wire and cable under provisions of Section 26 05 53.
- B. Identify each conductor with its circuit number or other designation indicated on Drawings.

3.09 FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of Division 1.
- B. Inspect wire and cable for physical damage and proper connection.
- C. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.
- D. Verify continuity of each branch circuit conductor.

END OF SECTION

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Grounding electrodes and conductors.
- B. Equipment grounding conductors.
- C. Bonding.

1.02 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.

1.03 GROUNDING ELECTRODE SYSTEM

- A. Ground Rod and/or Ground Electrode Plates.

1.04 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 5 ohms.

1.05 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1.
- B. Accurately record actual locations of grounding electrodes.

1.06 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.
- C. UL Standard: UL standard 467 "Grounding and Bonding Equipment."

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Subject to compliance with requirements, provide products by the following:
 - 1. Anixter Bros. Inc.
 - 2. A.B. Chance Co.
 - 3. Erico Products, Inc.
 - 4. O-Z/Gedney Co.
 - 5. Racor, Inc.
 - 6. Thomas & Betts Corp.
 - 7. Or approved equal submitted in compliance with section 01 255 13.

2.02 MATERIALS

- A. Grounding and Bonding Products: Types as indicated. Where types, sizes, ratings, and quantities indicated differ from NEC requirements, the more stringent requirements and the greater size, ratings, and quantities indicated differ from NEC requirements, the more stringent requirements and the greater size, rating, and quantity indications govern.
- B. Conductor Materials: Copper.
- C. Wire and Cable Conductors: Comply with Section 26 05 19. Conform to NEC Table 8, except as otherwise indicated, for conductor properties, including stranding.
- D. Equipment Grounding Conductor: Green insulated.
- E. Grounding Electrode Conductor: Bare stranded copper conductor.
- F. Bare Copper Conductors: Conform to the following:
 - 1. Solid Conductors: ASTM B-3.
 - 2. Assembly of Stranded Conductors: ASTM B-8.
 - 3. Tinned Conductors: ASTM B-33.
- G. Ground Bus: Bare annealed copper bars of rectangular cross-section.
- H. Braided Bonding Jumpers: Copper tape, braided from No. 30-gage bare copper wire and terminated with copper ferrules.
- I. Bonding Strap Conductor/Connectors: Soft copper, 0.05 inch thick and 2 inches wide, except as indicated.
- J. Connector Products: Listed and labeled as grounding connectors for the materials with which used.
- K. Pressure Connectors: High-conductivity plated units.
- L. Bolted Clamps: Heavy-duty units listed for the application.
- M. Exothermic Welded Connections: Provided in kit form and selected for the specific types, sizes, and combinations of conductors and other items to be connected.
- N. Ground Rods: Copper-clad steel, 3/4 inch by 10 feet, minimum.
- O. Ground Plates if shown on the plans. The plates shall be 24 inch X 24 inch X 1/8 inch thick tinned copper with pigtails exothermically welded to the plate before the tinning occurs.
- P. Concrete encased grounding electrode system shall be bonded to building and process piping if available.

PART 3 INSTALLATION

3.01 EQUIPMENT GROUNDING CONDUCTOR APPLICATION

- A. Comply with NEC Article 250 for sizes and quantities of equipment grounding conductors, except where larger sizes or more conductors are indicated. Apply equipment ground conductors in accordance with the following:
 - 1. Install in separate insulated equipment grounding conductors with all circuit conductors.
 - 2. Nonmetallic Raceways: Install an insulated equipment grounding conductor in nonmetallic raceways except as otherwise indicated or unless they are designated for telephone or data cables.

3. Metal Piping Equipment Circuits: Install a separate insulated equipment grounding conductor to electrical devices connected to metallic piping systems and operating at 120 V and above, including pumps, heaters, heat tracing, and surface anti-frost heating cable. Bond the conductor to each such unit and to the piping.
- B. Underground Conductors: Bare, tinned, stranded copper except as otherwise indicated.
- C. The Electrical Contractor shall bond to all building, process or other equipment such as steel filter tanks, pressure tanks and similar equipment when required by the process contractor or manufacturer that may not be noted on the plans at no additional cost to the contract.
- D. Signal and communications: For telephone, alarm, and communication systems, provide a #4 AWG minimum green insulated copper conductor in raceway from the grounding electrode system to each terminal cabinet or central equipment location.
- E. Separately derived systems required by NEC to be grounded shall be grounded as approved by the authority having jurisdiction.
- F. Installation, General: Ground electrical systems and equipment in accordance with NEC except where grounding in excess of NEC requirements is indicated.
- G. Ground Rods: Locate a minimum of one-rod length from each other and at least the same distance from any other grounding electrode. Interconnect ground rods with bare conductors buried at least 12 inches below grade. Connect bare-cable ground conductors to ground rods by means of exothermic welds except as otherwise indicated. Make these connections without damaging the copper coating or exposing the steel. Drive rods until tops are 6 inches below finished floor or final grade except as otherwise indicated.
- H. Ground Plates: The plates shall be horizontally installed 48 inches below finished grade.
- I. Concrete encased electrode shall be provided as shown on the plans. The conductors shall be the size shown and shall be exothermically welded to the building rebar or mesh as detailed on the plans. The minimum length shall be 20 feet.
- J. Grounding Electrode Conductor: Provide insulated copper conductor, sized as indicated, in conduit. Bond the ground conductor conduit to the conductor, sized as indicated, in conduit. Bond the ground conductor conduit to the conductor at each end. Where a dielectric fitting is installed in the main metallic water service pipe, connect the ground conductor to the street side of the fitting. Do not install a grounding jumper around dielectric fittings. Bond the ground conductor conduit to the conductor at each end.
- K. Braided-Type Bonding Jumps: Install to connect ground clamps on water meter piping to electrically bypass water meters. Use elsewhere for flexible bonding and grounding connections.
- L. Route grounding and bonding conductors using the shortest and straightest paths possible without obstructing access or placing conductors where they may be subjected to strain, impact, or damage, except as indicated.
- M. Connections: Make connections in such a manner as to minimize possibility of galvanic action or electrolysis. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
1. Use electroplated or hot-tin-coated materials to assure high conductivity and make points of contact closer in order of galvanic series.
 2. Make connections with clean bare metal at points of contact.
 3. Coat and seal connections involving dissimilar metals with inert material such as red lead paint to prevent penetration of moisture to contact surfaces.

- N. **Exothermic Welded Connections:** Use for connections to structural steel and for underground connections. Install at connections to ground rods. Comply with manufacturer's written recommendations. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable. Bolted ground connectors shall not be used underground or in concrete encased areas unless specified.
- O. **Tighten grounding and bonding connectors and terminals,** including screws and bolts, in accordance with manufacturer's published torque tightening values for connectors and bolts. Where manufacturer's torquing requirements are not indicated, tighten connections to comply with tightening torque values specified in UL 486A and UL 486B.
- P. **Compression-Type Connections:** Use hydraulic compression tools to provide the correct circumferential pressure for compression connectors. Use tools and dies recommended by the manufacturer of the connectors. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on the conductor.
- Q. **Moisture Protection:** Where insulated conductors are connected to ground rods or ground buses, insulate the entire area of the connection and seal against moisture penetration of the insulation and cable.
- R. **Tests:** Subject the completed grounding system to a megger test at each location where a maximum ground resistance level is specified, at service disconnect enclosure ground terminal, and at ground test wells. Measure ground resistance without the soil being moistened by any means other than natural precipitation or natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance. Perform tests by the 2-point method in accordance with Section 9.03 of IEEE 81, "Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System."
1. Ground/resistance maximum values shall not exceed 5 ohms measured at the service entrance.
 2. **Deficiencies:** Where ground resistance exceeds specified values, and if directed, modify the grounding system to reduce resistance values. Where measures are directed that exceed those indicated the provisions of the Contract, covering changes will apply.
 3. **Report:** Prepare test reports, certified by the testing organization, of the ground resistance of each test location. Include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

END OF SECTION

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Conduit and equipment supports.
- B. Anchors and fasteners.
- C. Comply with NFP 70 "National Electrical Code."
- D. Electrical components shall be listed and labeled by UL, ETL, CSA, or other approved, nationally recognized testing and listing agency that provides third-party certification follow-up services.

PART 2 PRODUCTS

2.01 PRODUCT REQUIREMENTS

- A. Materials and Finishes: As a minimum, all conduit straps and hangers shall be hot dipped galvanized. All exterior mounted unistrut, and any other "wet" location, "corrosive" locations shall be stainless steel. Where shown on the drawings, provide stainless steel, or PVC coated supports and hardware.
- B. Provide materials, sizes and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit and conduit fittings when selecting products. Use only stainless steel hardware on exterior installations.
- C. Anchors and Fasteners:
 - 1. Concrete and Structural Elements: Use expansion anchors and preset insert channels.
 - 2. Steel Structural Elements: Use beam clamps.
 - 3. Concrete Surfaces: Use expansion anchors.
 - 4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts.
 - 5. Solid Masonry Walls: Use expansion anchors.
 - 6. Sheet Metal: Use stainless steel sheet metal screws.
 - 7. Wood Elements: Use stainless steel wood screws.
 - 8. All anchors and fasteners located on the exterior of buildings, pump rooms, chlorine rooms, wet wells, dry wells shall be stainless steel.

2.02 SUPPORT CHANNEL

- A. Manufacturer:
 - 1. B-Line.
 - 2. Unistrut.
 - 3. Engineer Approved Equal.
- B. Special Requirements.
 - 1. See drawings for special requirements.
- C. Description: Stainless steel shall be provided, as specified in Specification Section 26 05 33.01 for all exterior mounting locations. Where Stainless Steel channel is used, conduit support clamps shall be stainless steel or PVC coated.

2.03 SUPPORT RODS

- A. Manufacturer:
 - 1. B-Line.
 - 2. Unistrut.
 - 3. Approved equal.
- B. Description:
 - 1. Stainless steel with all stainless steel hardware.
 - 2. U-Channel Systems: 12-gage stainless steel channels and galvanized steel shall be 1 5/8 high by 1 5/8 inches wide, with 9/16-inch-diameter holes, at a minimum of 8 inches on center, in top surface. Provide fittings and accessories that mate and match with U-channel and are of the same manufacturer.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install supporting devices to fasten electrical components securely and permanently in accordance with NEC requirements.
- C. Coordinate with the building structural system and with other electrical installation.
- D. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".
- E. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
- F. Raceway Supports: Comply with the NEC and the following requirements:
 - 1. Conform to manufacturer's recommendations for selection and installation of supports.
 - 2. Strength of each support shall be adequate to carry present and future load multiplied by a safety factor of at least four. Where this determination results in a safety allowance of less than 200 lbs, provide additional strength until there is a minimum of 200 lbs safety allowance in the strength of each support.
- G. Do not use powder-actuated anchors.
- H. Do not drill or cut structural members.
- I. Install individual and multiple (trapeze) raceway hangers and riser clamps as necessary to support raceways. Provide U-bolts, clamps, attachments, and other hardware necessary for hanger assembly and for securing hanger rods and conduits.
- J. All conduits supports shall be hot dipped galvanized or stainless steel where otherwise noted. All hardware, including threaded rods, washers, bolts, and nuts shall be stainless steel.
- K. Support parallel runs of horizontal raceways together on trapeze-type hangers.
- L. Support individual horizontal raceways serving by separate pipe hangers. Spring steel fasteners may be used in lieu of hangers only for 1-1/2-inch and smaller raceways serving lighting and receptacle branch circuits above suspended ceilings only. For hanger rods with spring steel fasteners, use 1/4-inch-diameter or larger threaded steel. Use spring steel fasteners that are specifically designed for supporting single conduits or tubing.
- M. Space supports for raceways in accordance with Table I of this section. Space supports for raceway types not covered by the above in accordance with NEC.

- N. Support exposed and concealed raceway within of an unsupported box and access fittings. In horizontal runs, support at the box and access fittings may be omitted where box or access fittings are independently supported and raceway terminals are not made with chase nipples or threadless box connectors.
- O. In vertical runs, arrange support so the load produced by the weight of the raceway and the enclosed conductors is carried entirely by the conduit supports with no weight load on raceway terminals.
- P. Vertical Conductor Supports: Install simultaneously with installation of conductors.
- Q. Miscellaneous Supports: Support miscellaneous electrical components as required to produce the same structural safety factors as specified for raceway supports. Install metal channel racks for mounting cabinets, panelboards, disconnects, control enclosures, pull boxes, junction boxes, transformers, and other devices.
- R. In open overhead spaces, cast boxes threaded to raceways need not be supported separately except where used for fixture support; support sheet metal boxes directly from the building structure or by bar hangers. Where bar hangers are used, attach the bar to raceways on opposite sides of the box and support the raceway with an approved type of fastener not more than 24 inches from the box.
- S. Sleeves: Install in concrete slabs and walls and all other fire-rated floors and walls for raceways and cable installations. For sleeves through fire rated-wall or floor construction, apply UL-listed firestopping sealant in gaps between sleeves and enclosed conduits and cables in accordance with "Fire Resistant Joint Sealers" requirement of Section 26 05 06. Conduit Seals: Install seals for conduit penetrations of slabs on grade and exterior walls below grade and where indicated. Tighten sleeve seal screws until sealing grommets have expanded to form watertight seal.
- T. Fastening: Unless otherwise indicated, fasten electrical items and their supporting hardware securely to the building structure, including but not limited to conduits, raceways, cables, cable trays, busways, cabinets, panelboards, transformers, boxes, disconnect switches, and control components in accordance with the following:
 - 1. Holes cut to depth of more than 1-1/2 inches in reinforced concrete beams or to depth of more than 3/4 inch in concrete shall not cut the main reinforcing bars. Fill holes that are not used.
- U. Ensure that the load applied to any fastener does not exceed 25 percent of the proof test load. Use vibration- and shock-resistant fasteners for attachments to concrete slabs.

TABLE 1: SPACING FOR RACEWAY SUPPORTS

Raceway Size (Inches)	No. of Conductors in Run	Location	Maximum Spacing of Supports (Feet)		
			RMC & IMC	EMT & ALU	RNC
HORIZONTAL RUNS					
1/2,3/4	1 or 2	Flat ceiling or wall	5	5	3
1/2,3/4	1 or 2	Where it is difficult to provide supports except at intervals fixed by the building construction.	7	7	...
1/2,3/4	3 or more	Any location.	7	7	...
1/2-1	3 or more	Any location.	6	6	...
1 & larger	1 or 2	Flat ceiling or wall.	6	6	...
1 & larger	1 or 2	Where it is difficult to provide supports except at intervals fixed by the building construction.	10	10	...
Any	...	Exposed.	7	7	...
VERTICAL RUNS					
1/2,3/4	...	Exposed.	7	7	...
1,1-1/4	...	Exposed.	8	8	...
1-1/2 and larger	...	Exposed.	10	10	...
Up to 2	...	Shaftway.	14	10	...
2-1/2	...	Shaftway.	16	10	...
3 & larger	...	Shaftway.	20	10	...
Any	...	Concealed.	10	10	...

NOTES:

- (1) Maximum spacing of supports (feet).
- (2) Maximum spacings for IMC above apply above apply to straight runs only. Otherwise the maximum for EMT apply.

Abbreviations:

EMT Electrical metallic tubing.
 IMC Intermediate metallic conduit.
 RMC Rigid metallic conduit.
 RNC Rigid nonmetallic conduit.

END OF SECTION

SECTION 26 05 33.01

CONDUIT AND RACEWAYS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Applicable provisions of Division 1 shall govern work of this section.
- B. Rigid steel galvanized conduit.
- C. Rigid galvanized steel conduit, PVC coated.
- D. Non-Metallic, schedule 80 PVC.
- E. Liquid tight flexible metal conduit.
- F. Flexible metal conduit.
- G. Fittings and conduit bodies.
- H. Rigid aluminum conduit.
- I. Electrical Metallic Conduit (EMT).
- J. Electrical Metallic Tubing (EMT)
- K. Wireways.
- L. Polyethylene Duct, Type TC-7.

1.02 REFERENCE

- A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
- B. ANSI C80.3 - Electrical Metallic Tubing, Zinc Coated.
- C. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
- D. ANSI/NFPA 70 - National Electrical Code.
- E. NECA "Standard of Installation."
- F. NEMA RN 1 - Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
- G. NEMA TC 2 - Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80).
- H. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing.
- I. ANSI TC3 - Rigid Aluminum Conduit.

1.03 DESIGN REQUIREMENTS

- A. Conduit Size: ANSI/NFPA 70.

1.04 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1.
- B. Accurately record actual routing of conduits larger than 2 inches.

1.05 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect, and handle Products to site under provisions of Division 1.
- B. Accept conduit on site. Inspect for damage.
- C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- D. Protect PVC conduit from sunlight.

1.07 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Verify routing and termination locations of conduit prior to rough-in.
- C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

PART 2 PRODUCTS

2.01 CONDUIT REQUIREMENTS-GENERAL

- A. Minimum Size: Exterior mounted raceways; 1 inch unless otherwise specified.
- B. Underground Installations:
 - 1. Use Schedule 80 PVC conduit for all underground installations. After cables are installed from the wet well, dux seal each inside air gap enclosure located below the lift station control panel.
 - 2. The conduit for the service entrance conductors that is from 24 inches below grade to the meter socket shall be galvanized rigid steel.

2.02 CONDUIT REQUIREMENTS – FIBER OPTIC CABLES

- A. Not Used.

2.03 PVC COATED METAL CONDUIT

- A. Manufacturers:
 - 1. OCAL-Blue.
 - 2. Permacote.
 - 3. NO SUBSTITUTES.
- B. Description: NEMA RN 1; rigid steel conduit with external PVC coating, 40 mil thick. Conduit shall be provided with an internal epoxy coating.

- C. Straps and supports, Fittings, Seal-offs, Conduit Bodies and Junction Boxes: ANSI/NEMA FB 1; steel fittings with external PVC coating to match conduit.

2.04 NONMETALLIC CONDUIT

- A. Description: NEMA TC 2; Schedule 80 PVC.
- B. Fittings and Conduit Bodies: NEMA TC 3.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install electrical raceways in accordance with manufacturer's written installation instructions, applicable requirements of NEC, and as follows:
- B. Complete installation of electrical raceways before starting installation of conductors within raceways.
- C. Provide supports for raceways as specified elsewhere in Division 26.
- D. Prevent foreign matter from entering raceways by using temporary closure protection.
- E. Make bends and offsets so the inside diameter is not effectively reduced. Unless otherwise indicated, keep the legs of a bend in the same plane and the straight legs of offsets parallel.
- F. Use raceway fittings that are of types compatible with the associated raceway and suitable for the use and location.
- G. Run concealed raceways where otherwise noted with a minimum of bends in the shortest practical distance except as otherwise indicated.
- H. Install exposed raceways parallel and perpendicular to nearby surfaces or structural members and follow the surface contours as much as practical. Where conduits are routed underground, slope all conduits to provide proper drainage.
- I. Run exposed, parallel, or banked raceways together. Make bends in parallel or banked runs from the same centerline so that the bends are parallel. Factory elbows may be used in banked runs only where they can be installed parallel. This requires that there be a change in the plane of the run such as from wall to ceiling and that the raceways shall be of the same size. In other cases provide field bends for parallel raceways.
- J. Join raceways with fittings designed and approved for the purpose and make joints tight. Where joints cannot be made tight, use bonding jumpers to provide electrical continuity of the raceway system. Make raceway terminations tight. Where terminations are subject to vibration, use bonding bushings or wedges to assure electrical continuity. Where subject to vibration or dampness, use insulating bushings to protect conductors.
- K. Terminations: Where raceways are terminated with locknuts and bushings, align the raceway to enter squarely and install the locknuts with dished part against the box. Where terminations cannot be made secure with one locknut, use two locknuts; one inside and one outside the box.
- L. Where terminating in threaded hubs, screw the raceway or fitting tight into the hub so the end bears against the wire protection shoulder. Where chase nipples are used, align the raceway so the coupling is square to the box, and tighten the chase nipple so no threads are exposed.

- M. Install pull wires in empty raceways. Use no. 14 AWG zinc-coated steel or monofilament plastic line having not less than 200-lb tensile strength. Leave not less than 12 inches of slack at each end of the pull wire.
- N. Telephone and Signal System Raceways, if specified, use 2-Inch Trade Size and Smaller: In addition to the above requirements, install raceways 2-inch and smaller trade size in maximum lengths of 150 feet and with a maximum of two, 90-deg bonds or equivalent. Install pull or junction boxes where necessary to comply with these requirements.
- O. Install raceway sealing fittings in accordance with the manufacturer's written instructions. Locate fittings at suitable, approved, accessible locations and as indicated on plans, and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points and elsewhere as indicated:
 - 1. Where conduits enter or leave hazardous locations.
 - 2. Where conduits pass from warm locations to cold locations, such as the boundaries of refrigerated spaces and air-conditioned spaces.
 - 3. Where required by the NEC.
- P. Stub-up Connections: Extend conduits through concrete floor for connection to freestanding equipment with an adjustable top or coupling threaded inside for plugs and set flush with the finished floor. Extend conductors to equipment with rigid steel conduit; flexible metal conduit may be used 6 inches above the floor. Where equipment connections are not made under this contract, install screwdriver-operated threaded flush plugs flush with floor.
- Q. Flexible Connections: Use short length (maximum of 6 ft.) of flexible conduit for recessed and semi-recessed lighting fixtures, for equipment subject to vibration, noise transmission, or movement; and for all motors. Use liquid tight flexible conduit in wet locations. Install separate ground conductor across flexible connections.
- R. Provide equipment grounding conductors in all raceways. Conduit shall not be the sole grounding method.
- S. Conduit expansion fittings shall be installed in all conduit runs which cross a structural expansion joint or are in excess of 100 feet without a 90 degree bend or where conduits are stubbed up on exterior applications. The expansion fittings shall match the conduit type used and shall be installed within 12 inches of finished grade or concrete slabs. Polyethylene duct does not require expansion fittings.
- T. The Engineer/Owner reserves the right to make reasonable changes in the location of outlets, apparatus, or other equipment up to the time of rough-in. Such changes, as directed by the Engineer, shall be made by the Contractor without additional compensation.
- U. Provide dux-seal in all conduits that are routed through exterior walls, underground conduits or conduits routed through areas that are air conditioned or corrosive. Where conduits are installed in explosion-proof areas provide seal-offs for each conduit. Install dux-seal in both ends of conduit where used.
- V. Use long sweep 90 degree elbows for all fiber optic cables and service entrance conduits as shown on the plans.

3.02 SUPPORTING DEVICES

- A. Supporting devices shall be as specified in Section 26 05 29.

END OF SECTION

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Nameplates and labels.
- B. Wire and cable markers.
- C. Conduit markers.

1.02 REFERENCES

- A. Comply with NFPA 70- National Electric Code.
- B. Comply with ANSI Standard A13.1, "Scheme for the Identification of Piping Systems," with regard to type and size of lettering for raceway and cable labels.

PART 2 PRODUCTS

2.01 NAMEPLATES AND LABELS

- A. Nameplates and Labels: Engraved three-layer laminated plastic, black letters on white background. Supply for all equipment F.B.O. and furnished by electrical contractor.
- B. Locations: Install equipment/system circuit/device identification as follows:
 - 1. Apply equipment identification labels made of engraved plastic-laminate on each major unit of electrical equipment in building. This includes communication/signal/alarm systems, unless unit is specified with its own self-explanatory identification. Except as otherwise indicated, provide single line of text, with 1/2-inch-high lettering on 1-1/2-inch high label (2-inch-high lettering on 1-1/2-inch-high where two lines are required), white lettering in black field. Text shall match terminology and numbering of the Contract Documents and shop drawings. Apply labels for each unit of the following categories of electrical equipment.
 - 2. Each electrical distribution and control equipment enclosures.
 - 3. Communication cabinets and PLC Control panels.
 - 4. Each motor control center and unit.
 - 5. Each disconnect switch.
 - 6. Each switchboard breaker.
 - 7. Each switchboard section.
 - 8. Each motor combination starter/ disconnect switches.
 - 9. Each separately mounted motor starters.
 - 10. Each separately mounted motor control station, such as PB and LO.
 - 11. Panel boards.
 - 12. Transformers.
 - 13. Contactors.
 - 14. Automatic transfer switch.
 - 15. VFD unit.
- C. Cable labels shall be engraved, laminated plastic plates suitable for use from -40 deg. F. to 150 deg. F., and shall be self-extinguishing, resistant to oil, water and solvents. Nameplate shall be minimum size 1-1/2" X 4". Face shall be white and the letters shall be black. Fasten label to cable with nylon tie-wraps.

Cable Ties: Fungus-inert, self-extinguishing, one-piece, self-locking nylon cable ties, 0.18-inch minimum width, 50-lb minimum tensile strength, and suitable for a temperature range from minus 50 deg F to 350 deg F. Provide ties in specified colors when used for color coding.

D. Letter Size:

1. Use 1/8 inch letters for identifying individual equipment and loads.
2. Use 1/4 inch letters for identifying grouped equipment and loads.

2.02 WIRE AND CABLE MARKERS

- A. Manufacturer: Computerized Brady tags. Use Brady marker XC plus printer or equal with self-laminating vinyl tags.
- B. Description: All wire and cable numbers shall match shop drawings that have been provided with the equipment and have been provided as part of the electrical contractor's cable and wire layout submittal.
- C. Locations: Each conductor at panelboard gutters, terminal junction boxes, motor control center, local control panels (LCP), remote hand switch and controls, and at each control and instrumentation device.
- D. Legend:
1. Power and Lighting Circuits: Branch circuit or feeder number as indicated on the layout drawings provided to the owner by the contractor.
 2. Control Circuits: Control wire number and "To" and "From" indicated on schematic and interconnection diagrams on shop and approval drawings.

2.03 CONDUIT MARKERS

- A. Description: Hand written in non-erasable marker, put on conduit. Put on each duct bank and feeder conduit, at both ends write conduit number on duct bank wall where conduit enters. Put conduit numbers on all communication control and instrumentation conduits in all areas to be visible where normally viewed from.
- B. Location: Furnish markers for each conduit at each termination.
- C. All conduit markers shall match the conduit schedule that is provided to the owner by the contractor.

2.04 EQUIPMENT LOCATIONS

- A. Engraved, Plastic-Laminated Labels, Signs, and Instruction Plates: Engraving stock melamine plastic laminate, 1/16-inch minimum thick for signs up to 20 square inches, or 8 inches in length; 1/8-inch thick for larger sizes. Engraved legend in white letters on black face and punched for mechanical fasteners.

PART 3 EXECUTION

3.01 PREPARATION

- A. Coordinate names, abbreviations, colors, and other designations used in electrical identification work with corresponding designations specified or indicated. Install numbers, lettering, and colors as approved in submittals and as required by code.
- B. Install identification devices in accordance with manufacturer's written instructions and requirements of NEC.

- C. Sequence of Work: Where identification is to be applied to surfaces that require finish, install identification after completion of finish work.
1. The following areas shall be identified:
 - a. On entire floor area directly above conduits running beneath and within 12 inches of a ground floor that is in contact with earth or is framed above un-excavated space.
 - b. On wall surfaces directly external to conduits run concealed within wall.
 - c. On all accessible surfaces of concrete envelope around conduits in vertical shafts, exposed at ceilings or concealed above suspended ceilings.
 - d. On entire surface of exposed conduits.
 2. Apply identification to areas as follows:
 - a. Clean surface of dust, loose material, and oily films before painting.
 - b. Prime surfaces: For galvanized metal, use single-component acrylic vehicle coating formulated for galvanized surfaces. For concrete masonry units, use heavy-duty acrylic resin block filler. For concrete surfaces, use clear alkali- resistant alkyd binder-type sealer.
 - c. Apply one intermediate and one finish coat of orange silicone alkyd enamel.
 - d. Apply primer and finish materials in accordance with manufacturer's instructions.
- D. Band exposed or accessible raceways of the following systems for identification. Bands shall be pre-tensioned, snap-around colored plastic sleeves, colored adhesive marking tape, or a combination of the two. Make each color band 2 inches wide, completely encircling conduit, and place adjacent bands of two-color markings in contact, side by side. Install bands at changes in direction, at penetrations of walls and floors, and at 40-foot maximum intervals in straight runs. Apply the following colors:
1. Mechanical and Electrical Supervisory System: Green and Blue.
 2. Telephone System: Green and Yellow.
- E. Identify Junction, Pull, and Connection Boxes: Code-required caution sign for boxes shall be pressure-sensitive, self-adhesive label indicating system voltage in black, preprinted on orange background. Install on outside of box cover. Also label box covers with identity of contained circuits. Use pressure- sensitive plastic labels at exposed locations and similar labels or plasticized card stock tags at concealed boxes.
- F. Underground Electrical Line Identification: During trench backfilling, for exterior underground power, signal, and communications lines, install continuous underground plastic line marker indicating "Caution-Buried Cable", located directly above the center conduit at 6 to 8 inches below finished grade. Where multiple lines installed in a common trench or concrete envelope, do not exceed an overall width of 16 inches; install a single line marker.
- G. Install line marker tape for underground conduit and wiring, (both direct-buried and in raceway).
- H. Conductor Color Coding: Provide color coding for primary service, feeder, and branch circuit conductors throughout the project. Primary and secondary electrical system shall be designated as follows:

Wire Colors:

System Voltage:	208/120	4160	480/277
Phase A	Black	Brown	Black
Phase B	Red	Orange	Red
Phase C	Blue	Yellow	Blue
Neutral	Grey	White	
Ground	Blue	Green	Green

Control Wiring:

24 Volt AC and DC: Blue
120 Volt AC: Red

All intrinsically safe wiring shall be identified with the label "INTRINSIC SAFETY WIRING" and by using light blue wire color.

- I. Use conductors with color factory-applied the entire length of the conductors except as follows:
1. The following field-applied color-coding methods may be used in lieu of factory-coded wire for sizes larger than No. 10 AWG.
 - a. Apply colored, pressure-sensitive plastic tape in half-lapped turns for a distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply the last two laps of tape with no tension to prevent possible unwinding. Use 1-inch-wide tape in colors as specified. Do not obliterate cable identification markings by taping. Tape locations may be adjusted slightly to prevent such obliteration.
 - b. In lieu of pressure-sensitive tape, colored cable ties may be used for color identification. Apply three ties of specified color to each wire at each terminal or splice point starting 3 inches from the terminal and spaced 3 inches apart. Apply with a special tool or pliers, tighten for snug fit, and cut off excess length.
- J. Power Circuit Identification: Securely fasten plastic labels to cables, feeders, and power circuits in vaults, pull boxes, junction boxes, manholes, and switchboard rooms. Legends to correspond with designations on Drawings. If metal tags are provided, attach them with approximately 55-lb test monofilament line or one-piece self-locking nylon cable ties.
- K. Tag or label conductors as follows:
1. Future Connections: Conductors indicated to be for future connection or connection under another contract with identification indicating source and circuit numbers.
 2. Multiple Circuits: Where multiple branch circuits or control wiring or communications/signal conductors are present in the same box or enclosure (except for three-circuit, four-wire home runs), label each conductor or cable. Provide legend indicating source, voltage, circuit number, and phase for branch circuit wiring. Phase and voltage of branch circuit wiring may be indicated by mean of coded color of conductor insulation. For control and communications/signal wiring, use color coding or wire/cable marking tape at terminations and at intermediate locations where conductors appear in wiring boxes, troughs, and control cabinets. Use consistent letter/number conductor designations throughout on wire/cable marking tapes.
 3. Match identification markings with designations used in panelboards shop drawings, Contract Documents, and similar previously established identification schemes for the facility's electrical installations.
- L. Apply warning, caution, and instruction signs and stencils as follows:
1. Install warning, caution, or instruction signs where required by NEC, where indicated, or where reasonably required to assure safe operation and maintenance of electrical systems and of the items to which they connect. Install engraved plastic-laminated instruction signs with approved legend where instructions or explanations are needed for system or equipment operation. Install butyrate signs with metal backing for outdoor items.
- M. Apply circuit/control/item designation labels of engraved plastic laminate for disconnect switches, breakers, pushbuttons, pilot lights, motor control centers, and similar items for power distribution and control components above, except panelboards and alarm/signal components, where labeling is specified elsewhere. For panelboards, provide framed, typed circuit schedules with explicit description and identification of items controlled by each individual breaker. All wiring shall match full description of device or load. For example: M-1B-1for MCC1B; all field wiring and terminations shall be configured to M-2-1-1for MCC2, etc. Wiring in MCC's and other related equipment shall be identified as shown above. Color coding shall be as listed in this Specification Section. All labeling shall be identified on the shop drawings. Coordinate all identification requirements with Owner/ Engineer.
- N. Install labels at locations indicated and at locations for best convenience of viewing without interference with operation and maintenance of equipment.

END OF SECTION

SECTION 26 09 24

MOTOR AND LIGHTING CONTROLLERS

PART 1 GENERAL

1.01 GENERAL

- A. This specification section covers individual motor starters and lighting contactors only. See control drawings and details on the plans for additional information.
- B. Submit product data for products specified in this Section. Include dimensions, ratings, and data on features and components. Include standard wiring diagrams.
- C. Submit certified reports of field tests and observations.
- D. Submit maintenance data for products for inclusion in Operating and Maintenance Manual specified in Division 1 and in Division 26 Section "Basic Electrical Requirements."
- E. Components and Installation: NFPA 70 "National Electrical Code."
- F. Listing and Labeling: Provide products specified in this Section that are listed and labeled.
 - 1. The terms "listed" and "labeled" shall be defined as they are in the National Electrical Code, Article 100.
- G. NEMA Compliance: NEMA ICS 2, "Industrial Control Devices, Controllers, and Assemblies." IEC style is not permitted.
- H. UL Compliance: UL 508, "Electric Industrial Control Equipment."
- I. Single-Source Responsibility: Obtain similar motor-control devices from a single manufacturer.
- J. Coordinate features of controllers and control devices with pilot devices and control circuits provided under Division 25 Sections covering control systems.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Subject to compliance with requirements, provide products by the following:
 - 1. Cutler Hammer.
 - 2. Allen Bradley.
 - 3. No approved equals.

2.02 EQUIPMENT

- A. Motor Controller and Lighting Contactors with the following features: Provide controllers and contactors consistent with the ratings and characteristics of the supply circuit, the motor, the required control sequence, the duty cycle of the motor, drive, and load, and the pilot device, and control circuit affecting controller functions. Controllers shall be horsepower rated to suit the motor controlled.
 - 1. Contacts shall open each ungrounded connection to the motor.
 - 2. Overload Relays: Electronic type with inverse time-current characteristic, with heaters or sensors in each phase matched to nameplate full-load current of the specific motor to which connected, with appropriate adjustment for duty cycle.

3. Enclosures for Individually Mounted Motor Controllers and Control Devices: Suitable for the environmental conditions at the controller location. Provide NEMA Type 4X enclosures except as otherwise indicated.
 4. Where installed into a MCC section, also see Specification section 26 24 19.
 5. Where lighting contactors are specified, provide units that are tungsten rated for amperage specified on the plans. Where photocells and timers are shown on the plans, provide the model or types specified.
- B. Manual Motor Controllers: Quick-make, quick-break toggle action.
- C. Magnetic Motor Controllers: Provide full-voltage, non-reversing, across-the-line, magnetic controller, except where another type is indicated.
1. Control Circuit: 120 V. Provide control power transformer integral with controller where no other supply of 120 V control power to controller is indicated. Provide control power transformer with adequate capacity to operate connected pilot, indicating and control devices, plus 100 percent spare capacity.
 2. Combination Starter/Disconnects: Motor circuit protector; molded-case circuit-breaker type with magnetic-only trip element calibrated to coordinate with the actual locked-rotor current of the connected motor and the controller overload relays. Provide breakers that are factory assembled with the controller, interlocked with unit cover or door, and arranged to disconnect the controller. Provide motor-circuit protectors with field-adjustable trip elements as specified in Division 26 Section "Enclosed Circuit Breakers."
- D. Multi-speed Motor Controllers: Match to motor type, application, and number of speeds required. Conform to Article "Magnetic Motor Controllers" above. Provide auxiliary devices as indicated. Relays shall be factory installed in controller enclosure.
- E. Auxiliary Control Devices: Factory installed in controller enclosure, except as otherwise indicated. Where separately mounted, provide NEMA 1 enclosure except as otherwise indicated.
1. Pushbutton Stations, Pilot Lights, and Selector Switches: Heavy-duty type, 30.5 mm type, NEMA 13 rated. All pilot lights shall be transformer type LED. See other specification sections for additional requirements.
 2. Stop and Lockout Pushbutton Station: Momentary-break pushbutton station with a factory-applied hasp arranged so a padlock can be used to lock the pushbutton in the depressed position with the control circuit open.
 3. Control Relays: Auxiliary and adjustable-time-delay relays.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install independently mounted motor control devices in accordance with manufacturer's written instructions.
- B. Location: Locate controllers as indicated and within sight of motors controlled.
- C. Mounting: For control equipment at walls, bolt units to wall or mount on light-weight structural steel channels bolted to the wall. For controllers not at walls, provide freestanding racks fabricated of structural steel members and light-weight slotted structural steel channels.
- D. Identify motor control components and control wiring in accordance with Division 26 Section "Identification for Electrical Systems."
- E. Install control wiring between motor control devices and control/indicating devices as specified in Division 26 Section "Low-Voltage Electrical Power Conductors and Cables" for hard-wired connections. Wiring in enclosures shall be neatly bundled, trained, and supported.

- F. Joints and Connections: Check bus joints and mountings for tightness. Tighten field-connected connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with values tightening torques specified in UL 486A, and UL 486B.

3.02 TESTING AND FIELD QUALITY CONTROL

- A. Conform to the following:
1. Labeling: On satisfactory completion of tests and related effort, apply a label to each tested component indicating test results, date, and responsible organization and person.
 2. Schedule visual and mechanical inspections and electrical tests with at least one week's advance notification.
 3. Make continuity tests of circuits.
 4. Motor-Control Device Ratings and Settings: Verify that ratings and settings as installed are appropriate for final loads and final system arrangement and parameters. Recommend final protective device ratings and settings where discrepancies are found. Use accepted revised ratings or settings to make the final system adjustments. Prepare and submit the load current and overload relay heater list.
 5. Inspect for defects and physical damage, and nameplate compliance with current project drawings.
 6. Exercise and perform operational tests of mechanical components and other operable devices in accordance with manufacturer's instructions.
 7. Verify proper fuse types and ratings in fusible devices.
 8. Perform insulation resistance test of motor control devices conducting parts to the extent permitted by the manufacturer's instructions. Insulation resistance less than meg-ohm requirements listed in Specification section 26 05 04 is not acceptable.
 9. Use primary current injection to check performance characteristics of motor-circuit protectors and for overload relays of controllers for motors 15 horsepower and larger. Trip characteristics not within manufacturer's published time-current tolerances are not acceptable.
 10. Make adjustments for final settings of adjustable-trip devices.
 11. Test auxiliary protective features such as loss of phase, phase unbalance and under-voltage to verify operation.
 12. Check for improper voltages at terminals in controllers that have external control wiring when controller disconnect is opened. Any voltage over 30 V is unacceptable.
- B. Correct deficiencies and retest motor control devices. Verify by the system tests that specified requirements are met.
- C. Remove paint splatters and other spots, dirt, and debris. Touch up scratches and mars of finish to match original finish. Clean devices internally using methods and materials as recommended by manufacturer.

END OF SECTION

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SECTION 26 22 01

LOW-VOLTAGE TRANSFORMERS GENERAL PURPOSE, DRY AND NON-LINEAR LOAD TYPE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Dry type two winding transformers.
- B. Electrical Component Standard: Components and installation shall comply with NFPA 70 "National Electrical Code."
- C. ANSI/IEEE Compliance: Comply with applicable requirements of ANSI/IEEE Standards including C2, "National Electrical Safety Code," and C57.12.80, "Terminology for Power and Distribution Transformer."
- D. UL Listing and Labeling: Items provided under this section shall be listed and labeled by UL.

1.02 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Product Data: Provide outline and support point dimensions of enclosures and accessories, unit weight, voltage, KVA, and impedance ratings and characteristics tap configurations, insulation system type, K factor rating and rated temperature rise.
- C. Test Reports: Indicate loss data, efficiency at 25, 50, 75 and 100 percent rated load, and sound level.
- D. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.
- E. Manufacturer's Certificate: Certify that Products comply with the specified requirements.

1.03 QUALITY ASSURANCE

- A. Perform Work in accordance with NECA Standard of installation.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store, protect, and handle products to site under provisions of Division 1.
- B. Deliver transformers individually wrapped for protection and mounted on shipping skids.
- C. Accept transformers on site. Inspect for damage.
- D. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- E. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to transformer internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 TWO-WINDING TRANSFORMERS

- A. Manufacturers:
 - 1. Cutler Hammer. See Motor Control Center Specifications for additional information.
 - 2. Allen Bradley (If MCC mounted).
 - 3. No approved equal.
- B. Transformers, General: Factory assembled and tested, air cooled units of types specified, having characteristics and ratings as indicated. Units shall be designed for 60-HZ service.
 - 1. Cores: Continuous windings without splices except for taps.
 - 2. Internal Coil Connections: Brazed or pressure type.
 - 3. Internal Coil Connections: Brazed or pressure type.
 - 4. All 3 phase transformers are 480 VAC, 3 phase, 3 wire, delta primary with 120/208 3 phase, 4 wire wye secondary with adjustable taps.
 - 5. All 1 phase transformers are 480 VAC 1 phase, 2 wire primary with 120/240 1 phase 3 wire secondary with adjustable taps.
- C. General purpose, Dry-Type Transformers: Comply with NEMA Standards ST 20 "Dry-Type Transformers for General Applications."
 - 1. Windings: 2-winding type. Three phase transformers shall use one coil per phase in primary and secondary.
 - 2. Sound Level: Minimum of 3 dB less than NEMA ST 20 standard sound levels for transformer type and size indicated when factory tested in accordance with that standard.
 - 3. Transformers shall have the following features and ratings:
 - a. Enclosure: Indoor, ventilated area.
 - b. Enclosure: Totally enclosed, nonventilated weather proof.
 - c. Insulation Class: 185 deg C or 220 deg C class for transformers 15 kVA or smaller; 220 deg C class for transformers larger than 15 kVA.
 - d. Insulation Temperature Rise: 150 deg C maximum rise above 40 deg C, for 220 deg C class insulation; 115 deg C maximum rise for 185 deg C class insulation.
 - e. Taps: For transformers 3 kVA and larger, full capacity taps in high-voltage winding as follows:
 - 1) 15 kVA through 500 kVA: Six 2-1/2 percent taps, 2 above and 4 below rated high-voltage.
 - 4. Accessories: As follows:
 - a. Wall mounting brackets: Manufacturers standard brackets for transformers sized up to 75 kVA where wall mounting is indicated or if located in MCC section as shown on the plans.
- D. Control and Signal Transformers: Comply with NEMA Standard ST 1 "Specialty Transformers", and UL Standard 506, "Specialty Transformers."
 - 1. Ratings: As indicated and for continuous duty. Where ratings are not indicated, provide capacity in excess of load.
 - 2. Type: Self-cooled, two-winding dry type.
 - 3. Enclosure: Indoor, except as indicated.

2.02 NON-LINEAR LOAD TYPE (IF SHOWN ON PLANS)

- A. In addition to the requirements of paragraph 2.1 of this section, transformers for non-linear loads shall have the following features:
 - 1. Full width electrostatic shield to provide a maximum effective coupling capacitance between primary and secondary of 33 picofarads. Full load attenuation of line noise and transients shall be:
 - a. Common Mode: 0 to 1.5 KHZ - 120 db; 1.5 KHZ to 10 KHZ - 90 db, 10 KHZ to 1000 KHZ - 65 db; 100 KHZ to 1 MHZ - 40 db.
 - b. Transverse Mode: 1.5 KHZ to 10 KHZ - 5 db; 10 KHZ to 100 KHZ - 30 db; 100 KHZ to 1 MHZ, - 30 db.

- B. Core flux density at full load shall be below the saturation point to minimize overheating caused by harmonic voltage distortion.
- C. Common core concentration. Transformers utilizing more than one core, or Scott-T connection, shall not be acceptable.
- D. Transformer secondary neutral terminal shall be sized for 200% of the rated secondary phase current.
- E. Provide a Underwriters Laboratories approved K-factor rating of 4.

2.03 SOURCE QUALITY CONTROL

- A. Provide testing of transformers under provisions of Division 1 and 26.
- B. Provide production testing of each unit in accordance with NEMA ST20.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Where transformers are installed in a MCC section, installation shall be required with Specification Section 26 24 19.
- B. Arrange equipment to provide adequate spacing for cooling air circulation.
- C. Identify transformers in accordance with Section 26 05 53.
- D. Tighten electrical connectors and terminals in accordance with manufacturer's published torque-tightening values. Where manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- E. Ground transformers and tighten connections to comply with tightening torques specified in UL Standard 486A.
- F. Tests shall conform to International Electrical Testing Association (INETA) Standard ATS, "Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems," to assure transformer installation is operational within industry and manufacturer's tolerances, is installed in accordance with Contract Documents, and is suitable for energizing.
 - 1. Testing for transformers shall include insulation resistance test, taps verification and excitation test.
 - 2. Test Failures: Correct deficiencies identified by tests and make ready for retest. Verify that equipment meets the specified requirements.
- G. Upon completion of installation, inspect interiors and exteriors of accessible components. Remove paint splatters and other spots, dirt, and construction debris. Touch up scratches and mars of finish to match original finish.
- H. Adjust transformer taps to provide optimum voltage conditions at utilization equipment.
- I. Temporary Heating: Apply temporary heat in accordance with manufacturer's recommendations within enclosure of each transformer throughout periods during which equipment is not in a space that is continuously under normal control of temperature and humidity.
- J. Provide liquid tight flexible metal conduit with grounding conductors on transformer primary and secondary connections. Mount on vibration isolation pads.
- K. Enclosure: NEMA ST 20; Type 3R ventilated. Provide lifting eyes or brackets.

- L. Isolate core and coil from enclosure using vibration-absorbing mounts.
- M. Nameplate: Include transformer connection data and overload capacity based on rated allowable temperature rise.

3.02 FIELD QUALITY CONTROL

- A. Check for damage and tight connections prior to energizing transformer.
- B. Measure primary and secondary voltages and make appropriate tap adjustments.

END OF SECTION

SECTION 26 27 01

SERVICE ENTRANCE

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. Division-26 Basic Electrical Materials and Methods sections apply to work specified in this section.

1.02 SUMMARY

- A. Extent of service-entrance work is indicated by drawings and schedules.
- B. Types of service-entrance equipment in this section include the following:
 - 1. Meter socket (Furnished and installed by the Electrical Contractor).
 - 2. The utility meter will be furnished and installed by the Utility Company.
- C. Wires/cables, raceways, and electrical boxes and fittings are specified in Division-26 Basic Electrical Materials and Methods sections, "Low-Voltage Electrical Power Conductors and Cables", "Conduit and Raceways", and "Boxes and hand holes."
- D. Refer to other Division-26 sections for wires/cables, raceways, and electrical boxes and fittings work required in connection with service-entrance equipment.
- E. The electrical service installation shall meet the Electrical Utility Company requirements. Coordinate any and grounding requirements necessary for proper installation with the Electrical Utility Company.
- F. The Electrical Contractor is responsible for furnishing and installing the concrete transformer pad as shown on the plans and routing the secondary conduits from the CT cabinet to the transformer. The Electrical Utility Company will install the secondary conductors into those conduits.
- G. The Electrical Utility Company is Com Ed, see section 26 05 00 for contact data.

1.03 UTILITY COMPANY FEES

- A. The Electrical Contractor shall include XXXXX (\$000.00) in his/her bid for the electrical utilities cost for the electrical service installation by the Electrical Utility Company, including but not limited to; connections, trenching, cable installation and meter installation charges up to the amount of XXXXX (\$000.00). The Electrical Contractor shall provide the Owner and Engineer with paid receipt(s) from the utility company indicating the exact amount paid and if there is any balance remaining from the \$000.00, this amount shall be reimbursed back to the Owner before project completion.

1.04 SUBMITTALS

- A. Provide submittal on CT Cabinet.

1.05 QUALITY ASSURANCE

- A. Meet utility requirements and specifications.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Not Required.

1.07 SEQUENCING AND SCHEDULING

- A. Not Required.

PART 2 PRODUCTS

2.01 SERVICE-ENTRANCE EQUIPMENT

- A. Cables/Wires:
 - 1. General: Provide cables/wires complying with Division-26 Basic Electrical Materials and Methods section "Wires and Cables", in accordance with the following listing:
 - a. Type XHHW copper conductors for underground installation.
 - b. Type XHHW for above ground installations.
- B. Raceways:
 - 1. General: Provide raceways complying with Division-26 Basic Electrical Materials and Methods section "Conduit and Raceways", in accordance with the following listing:
 - a. PVC conduit and fittings.
 - b. Rigid steel galvanized conduit.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine areas and conditions under which service-entrance equipment and components are to be installed. Coordinate the electrical services work with Xcel Energy.

3.02 INSTALLATION OF SERVICE- ENTRANCE EQUIPMENT

- A. Install service-entrance equipment as indicated, in accordance with equipment manufacturer's written instructions, and with recognized industry practices, to ensure that service-entrance equipment fulfills requirements. Comply with applicable installation requirements of NEC and NEMA standards and each of the utility company requirements.
- B. Tighten electrical connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for equipment connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Stds 486A and B, and the National Electrical Code.

3.03 FIELD QUALITY CONTROL

- A. Prior to energization of service-entrance equipment, check accessible connections for compliance to manufacturer's torque tightening specifications.
- B. Prior to energization of service-entrance equipment, check with ground resistance tester, phase-to-phase and phase-to-ground insulation resistance levels to ensure requirements are fulfilled.
- C. Prior to energization, test circuitry for electrical continuity, free of shorts.

3.04 GROUNDING

- A. Provide equipment grounding connections for service-entrance equipment as indicated. Tighten connections to comply with tightening torques specified in UL Std 486A to assure permanent and effective grounding.

3.05 ADJUSTING AND CLEANING

- A. Adjust operating mechanisms for free mechanical movement.
- B. Touch-up scratched or marred enclosure surfaces to match original finishes.

3.06 DEMONSTRATION

- A. Upon completion of installation of service-entrance equipment and electrical circuitry, energized circuitry and demonstrate capability and compliance with requirements. Where possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and retest to demonstrate compliance.

END OF SECTION

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ELECTRICAL CABINETS AND ENCLOSURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Hinged cover enclosures, where shown on plans.
- B. Cabinets.
- C. Accessories.

1.02 REFERENCES

- A. UL 508.
- B. JIC Standard EGP-1-1967.
- C. ANSI/NFPA 70 - National Electrical Code.

PART 2 PRODUCTS

2.01 HINGED COVER ENCLOSURES (INTERIOR NON-CORROSIVE INSTALLATIONS ONLY)

- A. Construction: NEMA, Type 12, painted steel enclosures or as shown in the plans.
- B. Covers: Continuous hinge, held closed by hasp and staple for padlock.
- C. Provide interior metal panel for mounting terminal blocks and electrical components; finish with white enamel.

2.02 HINGED COVER ENCLOSURES (EXTERIOR AND CORROSIVE INSTALLATIONS)

- A. Construction: NEMA, Type 4X, 316 Stainless steel enclosures as shown in the plans.
- B. Covers: Continuous hinge, held closed by hasp and staple for padlock.
- C. Provide interior metal panel for mounting terminal blocks and electrical components; finish with white enamel.

2.03 TERMINAL BLOCKS

- A. Manufacturers:
 - 1. Allen Bradley, 1492 Series
 - 2. Phoenix Contact; or approved equal.
- B. Provide ground bus terminal block, with each connector bonded to enclosure.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify conditions.
- B. Verify that surfaces are ready to receive work.

3.02 INSTALLATION

- A. Install Products in accordance with manufacturer's instructions.
- B. Install enclosures and boxes plumb. Anchor securely to wall and structural supports at each corner.
- C. Install cabinet fronts plumb.

END OF SECTION

SECTION 26 28 13

FUSES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 26 28 15.01 - Enclosed Switches.
- C. Section 26 09 24 - Motor and Lighting Controllers.
- D. Section 26 45 01 – Lift Station Duplex Pump Control Panel.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Fuses.
 - a. Power
 - b. Control

1.03 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for each fuse type. Include the following:
 - 1. Descriptive data and time-current curves.
 - 2. Fuse size for elevator feeder and disconnect applications.
- C. Field test reports indicating and interpreting test results.
- D. Maintenance data for tripping devices to include in the "Operating and Maintenance Manual" specified in Division 1.

1.04 QUALITY ASSURANCE

- A. Comply with NFPA 70 "National Electrical Code" for components and installation.
- B. Listing and Labeling: Provide products specified in this Section that are listed and labeled.
 - 1. The Terms "Listed" and "Labeled": As defined in the "National Electrical Code," Article 100.
- C. Single-Source Responsibility: all fuses shall be the product of a single manufacturer.

1.05 EXTRA MATERIALS

- A. Furnish the following extra materials that match products installed, packaged with protective covering for storage, and with identification labels clearly describing contents.
- B. Spare Fuses: Furnish quantity equal to 20 percent of each fuse type and size installed, but not less than 1 set of 3 of each type and size.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide fuses by one of the following:
 - 1. Buss Fuses, Inc.
 - 2. Bussmann Div., Cooper Industries, Inc.
 - 3. Circuit Protection Div.,; Gould, Inc.
 - 4. Littelfuse, Inc.; or approved equal

2.02 CARTRIDGE FUSES

- A. Characteristics: NEMA FU 1 nonrenewable cartridge fuse, class as specified or indicated, current rating as indicated, voltage rating consistent with circuit voltage.
- B. Motor Branch Circuits: Class RK1 time delay.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install fuses in fusible devices as indicated. Arrange fuses so that fuse ratings are readable without removing fuse.

3.02 IDENTIFICATION

- A. Install typewritten labels on the inside on the inside door of each fused switch to indicate fuse replacement information.

END OF SECTION

SECTION 26 28 16.02

ENCLOSED CIRCUIT BREAKERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Enclosed circuit breakers for new equipment as specified on the plans.

1.02 RELATED WORK

- A. Section 26 24 16 – Panelboards
- B. Section 26 09 24 - Motor and Lighting Controllers
- C. Section 26 45 01 – Lift Station Duplex Pump Control Panel
- D. Section 26 22 01 - Low Voltage Transformers, General Purpose, Dry Type and Non-Linear Load Type

1.03 SUBMITTALS

- A. Submit product data under provisions of Division 1.
- B. Product Data: Provide catalog sheets showing ratings, trip units, time current curves, dimensions, and enclosure details.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, installation and starting of Product.

1.04 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum three years of experience.

1.05 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Furnish products listed and classified by Underwriter's Laboratories, Inc., as suitable for purpose specified and indicated.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Cutler Hammer type ED thermal magnetic for 10-225 amp frame circuit breakers at 120/240 and 240 volts with non-interchangeable trip units at up to 65KAIC.
- B. Main circuit breaker located in the pump control panel shall be service entrance rated.
- C. The main circuit breaker shall be installed in the panelboards with top or bottom feed as determined by the project conditions.

- D. Provide thermal/magnetic and magnetic circuit breakers for other equipment as shown on the plans.
- E. Allen Bradley equivalent.
- F. Approved equal.

2.02 MOLDED CASE CIRCUIT BREAKER

- A. Circuit Breaker: NEMA AB 1.

2.03 ENCLOSURE

- A. Enclosure: NEMA AB 1; 12.
- B. Fabricate enclosure from steel.
- C. Finish using manufacturer's standard enamel finish.
- D. See One-Line Diagram for additional information.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install enclosed circuit breakers where indicated, in accordance with manufacturer's instructions.
- B. Install enclosed circuit breakers plumb. Provide supports in accordance with Section 26 05 29.
- C. Height: 5 ft. (1.6 M) to operating handle.
- D. Provide engraved plastic nameplates under the provisions of Section 26 05 53.

3.02 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Division 1.
- B. Inspect and test each circuit breaker to NEMA AB 1.
- C. Inspect each circuit breaker visually.
- D. Perform several mechanical ON-OFF operations on each circuit breaker.
- E. Verify circuit continuity on each pole in closed position.
- F. Determine that circuit breaker will trip on over-current condition, with tripping time to NEMA AB 1 requirements.
- G. Include description of testing and results in test report.

3.03 ADJUSTING

- A. Adjust work under provisions of Division 1.

END OF SECTION

SECTION 26 32 12.12

PACKAGED NATURAL GAS ENGINE GENERATOR SET FOR EXTERIOR INSTALLATION WITH AUTOMATIC TRANSFER SWITCH

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. The generator manufacturer shall provide a packaged natural gas engine generator system as specified within. Kohler Power Systems were provided for design parameters.
- B. The engine/generator shall be located in an exterior mounted enclosure with fixed louvers and sound shield enclosure.
- C. The engine/generator shall include a steel exhaust silencer located under the enclosure.
- D. The generator manufacturer shall furnish a fuel solenoid shut-off valve (unit mounted electric type), flexible fuel lines and secondary fuel pressure regulator. The Electrical Contractor shall provide all coordination with the Gas Company including installation of the gas meter and sizing and installation of all gas piping. Provide fuel shut-off valve, pressure regulator, metering, all fuel connection piping and materials as required by the generator manufacturer and the gas company and any associated costs for the installation. All gas piping shall be black iron, except for any flexible fuel lines required.
- E. The installation shall include the steel reinforced concrete pad of the size and depth as shown on the plans and shall be furnished with this contract by a concrete sub-contractor to the Electrical Contractor. The sub-contractor shall be regularly employed in the business of pouring concrete. After the installation is completed, all site work including excavation, backfill, top soil, gravel, asphalt and mulch as required shall be furnished and installed under this contract.
- F. The Electrical Contractor shall route all generator alarms specified on the plans and as directed by the electrical specifications to the Pump Control Panel and terminate on new terminal blocks matching existing.
- G. The battery(s), battery charger with failure circuit and battery tray shall be included.
- H. The circuit breaker furnished with the generator shall be shunt trip type. The circuit breaker shall be 80% rated at 100 amps using a 100 amp frame main circuit breaker with a 100 amp trip.
- I. The generator shall be EPA certified by the manufacturer in the factory and shall not require any onsite EPA certification of any kind.

1.02 RECOMMENDED GENERATOR MANUFACTURERS

- A. ANSI/NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
 - 1. Kohler Power Systems.
 - 2. Cummins Great Lakes, Inc. (Cummins).
 - 3. Caterpillar.
 - 4. No Approved Equal.

1.03 REFERENCES

- A. ANSI/NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- B. ANSI/NEMA MG 1 - Motors and Generators.

- C. ANSI/NFPA 70 - National Electrical Code.
- D. ANSI/NFPA 99 - Health Care Facilities.
- E. ANSI/NEMA AB 1 - Molded Case Circuit Breakers.
- F. Operation: In accordance with ANSI/NFPA 99.
- G. NFPA 70, compliance with State of Illinois and any local codes.
- H. State Inspection by State of Illinois or Local Inspection.

1.04 SYSTEM DESCRIPTION

- A. Engine generator system to provide a standby power source for the Village of Villa Park, Illinois.
- B. Generator Capacity: The natural gas engine generator set shall be rated for 30KW/38KVA @ 0.8 PF, 60 Hz, 3 phase 3 wire, 240 volt and a rated output 90 amps @ 130 degrees C. The peak motor starting KVA shall be 194 amps at 480 volts @ 60HZ. The maximum voltage dip shall be approximately 13.5% and the maximum frequency dip shall be approximately 10.60% for the loads shown below.

1.05 SUBMITTALS

- A. Submit six (6) copies of shop drawings showing plan and elevation views with overall and interconnection point dimensions, fuel consumption rate curves at various loads, and electrical diagrams including schematic and interconnection diagrams.
- B. Submit product data showing all equipment dimensions, weights, ratings, fuel consumption, interconnection points, and internal wiring diagrams for engine/generator, block heater, batteries, battery trays, internal wiring, control panel, soundshield outdoor enclosure, fixed louvers and sound attenuation, exhaust silencer and layout and vibration isolators and fuel delivery system components.

1.06 OPERATION AND MAINTENANCE DATA

- A. Include instructions for normal operation, routine maintenance requirements, service manuals for engine and fuel delivery system, oil sampling and analysis for engine wear, and emergency maintenance procedures. Three (3) copies of O&M Manuals shall be provided at the end of the project.

1.07 QUALIFICATIONS

- A. Manufacturer: Company specializing in packaged engine generator system with minimum ten (10) years experience.
- B. Supplier: Authorized distributor of engine generator manufacturer with service facilities within 150 miles of project site.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Accept packaged engine generator set and accessories on site in crates and verify damage.
- B. Protect equipment from dirt and moisture by securely wrapping in heavy plastic.

1.09 EQUIPMENT WARRANTY

- A. Provide one year manufacturer's warranty. (Warranty shall not begin until Owner has provided written acceptance to the Electrical Contractor.)

1.10 MAINTENANCE AGREEMENT

- A. Furnish service and maintenance of packaged engine generator system for one year from the date that Owner receives and accepts the generator.
- B. Maintenance Agreement Options shall be provide to the Owner with the following Options:
 - 1. Three (3) years.
 - 2. Five (5) years.
 - 3. Seven (7) years.

Each maintenance agreement option shall include the additional costs for each, so that the Owner can determine their selection or rejection of all options. If the Owner decides to extend the one year maintenance agreement, the Owner will coordinate their option directly with the manufacturer's authorized distributor.

1.11 EXTRA MATERIALS

- A. Provide two additional sets of oil and air filter elements required for the engine.

1.12 GENERATOR ENCLOSURE

- A. Outdoor Weatherproof Enclosure
 - 1. Provide an outdoor weatherproof enclosure with rodent guard to enclose the Generator, control panel and exhaust system as outlined in these specifications. The generator shall be installed into the enclosure and shipped to the project site as a complete unit. The outdoor enclosure shall be approximately 42.4 inches wide, 101.8 inches long and 59.6 inches high.
 - 2. Provide 14 gauge sound attenuated enclosure with critical grade silencer made from pre-painted aluminum for both the side walls and roof. The roof shall be tapered to allow water run off. All doors shall be lockable using steel hinges with stainless steel hardware and chrome plated door handles. All seams shall be caulked with body sealer and shall be primed and final color provided. The exhaust system shall be located under the roof of the enclosure. Double doors shall be located on each side of the engine and single doors located on each side of the generator to access the control panel. All doors shall be lockable and the Owner shall be provided with six (6) sets of keys. All doors shall be keyed alike.
 - 3. The exhaust system shall be contained within the enclosure. The silencer shall be a critical grade muffler that is roof supported.
 - 4. The enclosure shall be provided with fixed louvers. The louvers shall include bug screens with 1/4 inch square holes. The louvers shall be made from aluminum and shall be painted to match the enclosure.
 - 5. The color shall be the manufacturer's standard. The paint system shall consist of a primer coat and one coat of electrostatically applied color finish (Power Armor) or engineer approved equal.
 - 6. The enclosure shall provide the proper attenuation and be insulated to reduce the noise level to a log average of approximately 68 Db(A) at the exhaust side of the enclosure, measured from 7 meters along the enclosure (8 point test) under full load.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Kohler Model 30REZG with 4P7 alternator.
 - 1. The generator is sized for the following loads:
 - a. Step 1: 7.5KVA of miscellaneous single phase electrical load (Control & Power Transformer).
 - b. Step 1: 5 HP Lift Station Pump No.1 operating on a FVNR starter.
 - c. Step 1: 2 HP Mixer motor operating on a VFD Controller.
 - d. Step 2: 5 HP Lift Station Pump No.2 operating on a FVNR starter.

- B. Onan (Cummins). Provide load calculations at shop drawing review that generator meets or exceeds the ratings specified within. Maximum voltage and frequency dip shown above shall be at 100 degrees F ambient temperature, 1,000 feet elevation and 130 degrees C rise with class H insulation.
- C. Caterpillar. Provide load calculations at shop drawing review that generator meets or exceeds the ratings specified within. Maximum voltage and frequency dip shown above shall be at 100 degrees F ambient temperature, 1,000 feet elevation and 130 degrees C rise with class H insulation.
- D. No substitutes.

2.02 ENGINE

- A. Type: Type: Liquid-cooled, 4 cylinder, Inline configuration, four stroke, natural gas engine, naturally aspirated. The fuel consumption rate at 60HZ for the specified generator shall be 12.2 cubic meter/hour (430cfh) at full load based on 1000 Btu standard per cubic foot of natural gas and 7-11 inches of H2O or 2 lbs with the required regulator as directed by the gas company.
- B. Fuel System: Appropriate for use with natural gas using a 1 inch NPTF inlet pipe. Provide a flexible fuel line for spring mounted skid. All fuel piping shall be installed using black iron pipe, galvanized steel pipe or copper tubing or pipe shall not be installed for any part of the fuel system installation. Braided flexible metal piping shall be used where connections are made for vibration.
- C. The Electrical Contractor shall provide all necessary grounding and bonding of the fuel lines and generator as required by the NEC and State and local codes. The piping shall be properly supported from the generator to the gas meter. The Contractor shall submit a piping support detail with the shop drawings, any changes in the piping layout by the Engineer shall be at no additional cost to the project contract.
- D. Engine Speed: 1800 rpm.
- E. Electronic governing system to control generator frequency regulation from no-load to full load (isochronous) and steady state of +0.5%.
- F. Engine Protection Devices: Low coolant temperature alarm, low lubrication oil pressure alarm, high coolant temperature alarm, low lubrication oil pressure shutdown, high coolant temperature shutdown, over-speed shutdown and over crank lockout.
- G. Engine Starting: DC starting system with positive engagement, number and voltage of starter motors in accordance with manufacturer's instructions.

Include remote starting control circuit, with MANUAL-OFF- REMOTE selector switch on engine-generator control panel.
- H. Ignition: 12 VDC battery ignition system with radio suppression.
- I. Engine Jacket Heater: Thermal circulation type 1000 watt water heater or similar as required by the generator manufacturer with integral thermostatic control, sized to maintain engine jacket water at 90 degrees F, and suitable for operation at 120 volt.
- J. Engine Accessories: Fuel filter, replaceable oil filter with bypass, reusable element, intake air filter, lube oil cooler and water pump. Include water temperature gauge, and lube oil pressure gauge on engine-generator control panel.
- K. Mounting: Provide unit with suitable spring-type vibration isolators and mount on structural steel base.
- L. Radiator: unit mounted radiator using glycol coolant, thermostat, radiator duct flange, blower type fan and water pump sized to maintain safe engine temperature in ambient temperature of 125 degrees F.

2.03 GENERATOR

- A. The generator shall be salient-pole, brushless, 4-lead reconnectable, self-ventilated of drip proof construction with amortisseur rotor windings and skewed stator. The insulation shall meet NEMA standard (MG-1) for class H and be vacuum impregnated windings with insulated epoxy varnish to be fungus resistant per MIL 1-24092. Temperature rise of the rotor and stator shall be limited for 130 degrees standby. The excitation system shall be brushless controlled by a solid-state voltage regulator capable of maintaining voltage within +/- 2% at constant load from 0 to 100% of rating. The regulator shall be isolated to prevent tracking when connected to SCR loads, and provide individual adjustments for voltage range, stability and volts-per-hertz operations and be protected from the environment by conformal coating. The generator shall upon a one step application of any load up to 90% of the rated load of 0.8 power factor, the voltage dip shall not exceed 20% and shall recover to 2% of rated voltage within one second. The generator shall be capable of sustaining at least 300% of rated current for a minimum of 10 seconds under a 3 phase symmetrical short.
- B. Rating: kW and kVA as specified at 0.8 power factor, 240 volt, 3 phase, 3 wire 60 Hz at 1800 rpm.
- C. Insulation: ANSI/NEMA MG 1, Class H.
- D. Temperature Rise: 130 degrees C standby.
- E. Enclosure: ANSI/NEMA MG 1; open drip proof.

2.04 ACCESSORIES

- A. Exhaust Silencer: Gas proof, seamless, critical type silencer, with flexible steel exhaust fitting, sized in accordance with engine manufacturer recommendations.
- B. Alternator: Provide 70 ampere minimum automatic battery charging alternator with solid-state voltage regulation.
- C. Battery: Heavy duty, type lead-acid storage battery, 630 CCA minimum capacity @ 0 degrees F. Match battery voltage to starting system. Include necessary cables and clamps.
- D. Battery Tray: Plastic tray treated for electrolyte resistance, constructed to contain spillage of electrolyte.
- E. Battery Charger: 10 ampere wall mounted automatic float and equalize battery charger with $\pm 1\%$ constant voltage regulation from no load to full load over $\pm 10\%$ AC input line variation, current limited during engine cranking and short circuit conditions, temperature compensated for ambient from -40 to +60 degrees C, 5% accurate voltmeter and ammeter, fused, reverse polarity and transient protected. Provide optional alarm circuit board to meet the requirements of NFPA 110 for low battery voltage, high battery voltage, and battery charger malfunction.
- F. Line Circuit Breaker: Rated as shown on plans, 3-pole, 80% rated, NEMA AB 1 molded case circuit breaker on generator output with integral thermal and instantaneous magnetic trip in each pole. Include battery- voltage operated shunt trip, connection to open circuit breaker on engine failure. Mount unit in enclosure to meet ANSI/NEMA 250, Type 1 requirements.
- G. Engine Generator Control Panel: Generator mounted control panel enclosure with engine and generator controls and indicators (Kohler Decision Maker 3000 or manufacturer approved equal), with the following equipment and features:
 - 1. Controller shall include two lines of 12 characters digital display with pushbutton/rotary selector dial for menu navigation for access of all functions.
 - 2. Measurements in English or metric.
 - 3. Scrolling display for critical data.
 - 4. Integrated hybrid voltage regulator providing $\pm 0.5\%$ regulation.
 - 5. Built-in alternator thermal overload protection.
 - 6. Emergency stop button and alarm horn.

7. Environmentally sealed membrane keypad with master control buttons for Off-Reset/Auto/Run with lights. Off/Reset with red light, Auto in green and run in yellow.
8. Alarm Silence/Lamp test button with light.
9. Annunciator fault light, with red for shutdown and yellow for warning.
10. USB Connection for software upgrades and communications access for diagnostics.
11. User inputs for remote emergency stop switch (not used), remote 2 wire start for transfer switch and future SCADA and auxiliary shutdown.
12. Frequency Digital Meter: 45-65 Hz range.
13. Auto-resettable circuit protection.
14. Digital display of power monitoring including kW and kVA.
15. AC Digital Output Voltmeter.
16. AC Digital Output Ammeter.
17. Rated power in percentage.
18. Output voltage adjustment.
19. Push to test indicator lamps, one each for low oil pressure, high water temperature, over-speed and over-crank.
20. Engine start/stop selector switch for manual operation.
21. Engine running time meter.
22. Oil pressure gauge.
23. Water temperature gauge.
24. Auxiliary Run Relay: 3PDT, operates when engine runs, with contact terminals pre-wired to terminal strip.
25. Input/Output Module.

H. Controller:

1. Set-mounted controller shall be vibration isolated on the generator enclosure. The microprocessor control board shall be moisture proof and capable of operation from -40 degrees C to 70 degrees C with a humidity range of 5% to 95% noncondensing.
2. AC output voltage regulator adjustment of +/- 10% Maximum of system voltage.
3. Alternator short circuit protection.
4. Cyclic cranking.
5. Event logging up to 1000 entries for warning and shutdown faults, fully resettable.
6. Historical data logging capabilities.
7. Integrated hybrid voltage regulator.
8. Lamp test.
9. Power metering.
10. Programming access via USB port.
11. Run time hour meter.
12. Time delay engine cooldown (TDEC) feature.
13. Time delay engine start (TDES) feature.
14. Controller shall meet the following standard:
 - A. CE Directive
 - B. NFPA 99
 - C. NFPA 110, Level 1
 - D. UL 508
 - E. ASTM B117 (Salt spray test)

NFPA 110 Requirements: Indicating Display, Front Panel Mounted with the following:

1. Overcrank.
2. Emergency Stop
3. High Engine Speed
4. Low Coolant Level
5. Low Fuel level or Pressure
6. Low Oil Pressure Warning
7. Low Oil Pressure Shut down
8. High Battery Voltage
9. Low Battery Voltage
10. EPS Supplying Load
11. High Coolant Temperature Warning

12. High Coolant Temperature Shut down
13. Low Coolant Temperature Warning
14. Master Switch for "Not In Auto" Position
15. Battery Charger Fault
16. Lamp test
17. Audible Alarm Silence Button
18. Remote Emergency Stop
19. Contacts for Local and Remote Common Alarm

2.05 PROGRAMMED-TRANSITION MODEL AUTOMATIC TRANSFER SWITCH (ATS), MODEL KSS OR GENERATOR MANUFACTURER AND ENGINEER APPROVED EQUAL

- A. The programmed transition automatic transfer switch ATS shown on the plans shall be a 100 amp rated unit at 250 volts for operation on the existing 240 Volt, 3 phase, 3 wire system.
- B. The ATS shall be open type installed into the NEMA 4X pump control panel enclosure and shall be a back mounted type with remote mounted (front control panel door) mounted controls. The ATS shall be furnished by the Electrical Contractor and installed and internally wired by the System Integrator.
- C. The ATS shall be UL listed at 208-480 VAC, 3 pole, electrically operated and mechanically held mechanism with double-throw, mechanically interlocked design (break-before-make power contacts).
- D. The front accessible contacts shall be silver alloy type. Each shall include arc chambers with arc chutes. They shall include main shaft auxiliary position indicating contacts with one set at normal and set for emergency.
- E. The ATS shall utilize a microprocessor based controller meeting UL1008 Automatic Transfer Switch Equipment for use in emergency systems file #E58962. The controller shall include a backlit LCD display with 4 lines X 20 characters. The controls shall include an environmentally sealed user interface.
- F. The controller shall include a dynamic function keypad with tactile feedback pushbuttons for programming and viewing capability at the door.
- G. Source available, transfer switch position and service required (fault) and "not in Auto LED indicators shall be provided.
- H. Phase to phase sensing and monitoring and frequency sensing with 0.5% accuracy on both sources.
- I. Anti-single phase sensing.
- J. Three phase rotation sensing.
- K. Real time clock with automatic adjust for daylight saving time and leap year.
- L. Time stamped event log.
- M. Fail safe transfer for loaded test and exercise functions.
- N. Dip switches for password disable and maintenance functions.
- O. Ethernet, Modbus RTU and Modbus TCIP/IP protocols and user USB port for read/write compatibility.
- P. The ATS controller shall include the following programmable features:
 1. Monitoring and password protected programming at the door using keypad and display.
 2. Program and monitor using a PC with Monitor III integrated generator set and ATS monitor software.
 3. Transfer files via USB port.
 4. System voltage and frequency.
 5. Voltage unbalance.

6. Under/over voltage and over/under frequency for all phases of normal and emergency sources.
7. Adjustable time delays.
8. Load/no load auto-load test and load/no load exercise functions.
9. Programmable inputs and outputs.
10. Time based and current based load control abilities for future.
11. Load bank control for exercise or test.
12. Pre/post transfer with nine (9) individual time delays for selected loads.
13. ABC/BAC/none phase rotation selection with error detection.
14. Resettable historical data.
15. In-phase monitor.
16. Password protection with up to three (3) security levels.

Q. The ATS controller shall include the following adjustable time delay features:

1. Engine start – source 2, delay 0-6 seconds, field adjustable.
2. Engine start source 1, delay 0-6 seconds, field adjustable.
3. Engine cooldown timer- source 2, 0-60 minutes, field adjustable.
4. Engine cooldown timer-source 1, 0-60 minutes, field adjustable.
5. Preferred to standby timer, 0-60 minutes, field adjustable.
6. Fail to acquire standby source, 0-60 minutes, field adjustable.
7. Fail to acquire preferred, 0-60 minutes, field adjustable.
8. Transfer, preferred to standby, 0-60 minutes, field adjustable.
9. Transfer- standby to preferred, 0-60 minutes, field adjustable.
10. Transfer-off to standby, 1 second to 60 minutes, field adjustable.
11. Fail to synchronize, 10 second to 15 minutes, field adjustable
12. Auto load test duration, 1 to 60 minutes, field adjustable.
13. Prime power run duration, 6 minutes to 100 days, field adjustable.

R. Power and Control Contact Ratings:

1. Engine start contact, 2 amp @ 30 volts DC.
2. Auxiliary contact rating, 15 amp @ 480 volts AC.
3. The terminal range for the conductors shall be one (1) #14AWG to 1/0 AWG per phase and neutral connections.

S. Voltage and Frequency Sensing:

1. Under voltage drop out, 90% of pickup with an adjustment range of 75% to 98%.
2. Under voltage pickup, 90% of nominal with an adjustment range of 85% to 100%.
3. Over voltage drop-out, 115% of nominal with an adjustment range of 106% to 135%.
4. Over voltage pickup, 95% of dropout with an adjustment range of 95% to 100%.
5. Unbalance enable, Disable, with Disable/Enable.
6. Unbalance dropout, 20% with an adjustment range of 5% to 20%.
7. Unbalance pickup, 10% with an adjustment range of 3% to 18%.
8. Voltage drop-out time, 0.5% with an adjustment of 0.1 to 9.9 seconds.
9. Under frequency drop-out, 99% of pick-up with an adjustment range of 95% to 99%.
10. Under frequency pick-up, 90% of pick-up with an adjustment range of 80% to 95%.
11. Over frequency drop-out, 101% of pick-up with an adjustment range of 101% to 115%.
12. Over frequency pick-up, 110% of nominal with an adjustment range of 105% to 120%.
13. Frequency drop-out time, 3 seconds with an adjustment of 0.1 to 15 seconds.

T Load Control Time Delays:

1. Pre-transfer to preferred, 0 seconds with an adjustment range of 0-60 minutes.
2. Post-transfer to preferred, 0 seconds with an adjustment range of 0-60 minutes.
3. Pre-transfer to standby, 0 seconds with an adjustment range of 0-60 minutes.
4. Post-transfer to standby, 0 seconds with an adjustment range of 0-60 minutes.
5. Load add source 1/source 2, 0 seconds with an adjustment range of 0-60 minutes.
6. Load remove source 1/source 2, 0 seconds with an adjustment range of 0-60 minutes.

U. The ATS shall be Kohler model KSP, or Engineer approved equal furnished by Onan. The ATS and generator shall be supplied and be compatible with the generator utilizing a single source for a complete system.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Provide full load test utilizing portable load bank, for four hours minimum once generator is installed and ready for operation.

Simulate power failure including operation of transfer switch, automatic starting cycle, and automatic shutdown, and return to normal.

- B. During test, record the following at 20 minute intervals and submit report to the Engineer:
 - 1. Kilowatts.
 - 2. Amperes.
 - 3. Voltage.
 - 4. Coolant temperature.
 - 5. temperature.
 - 6. Frequency.
 - 7. pressure.

- C. Test alarm and shutdown circuits by simulating conditions.

3.02 MANUFACTURER'S FIELD SERVICES

- A. Prepare, start, test, and adjust systems according to manufacturer's recommendations.

3.03 ADJUSTING

- A. Adjust generator output voltage and engine speed.

3.04 DEMONSTRATION

- A. Operate generator a minimum of 2 hours with a portable load bank sized to match full load of the generator once installed.
- B. Simulate power outage at least four (4) operations by interrupting normal source, and demonstrate that system operates to provide standby power.
- C. Provide record drawings of the installation including as installed wiring diagrams of all equipment. This material shall be turned over to the Owner at the same time as the O&M Manuals are submitted.
- D. Provide a minimum of 2 hours instruction to Owners on operation, maintenance requirements and any other pertinent data.

END OF SECTION

NOT FOR BID

LIFT STATION DUPLEX PUMP CONTROL PANEL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. The proposed Lift Station Duplex Pump Control Panel shall be constructed to operate two (2) 5 HP submersible pumps via FVNR starters with one (1) pressure transducer (PT-1) and a float system utilizing two (2) floats (low and high level) and the packaged mixer control panel and other equipment as described within and as shown on the plans.
- B. The panel shall be provided with 240 volt, 3 phase, 3 wire electrical service as described within and as shown on the plans.
- C. The Lift Station Pump Control Panel shall also include SCADA radio and antenna.
- D. Major components include, but not limited to:
 - 1. Instrumentation and control. The control system shall include both primary PLC control and secondary back-up float control. These specifications and the plans include a complete pump control system. Other services included, are PLC and HMI programming, testing and complete start-up and Owner training at the project site.
 - 2. All power distribution equipment is located in the lift station pump control panel for internal and remote power requirements as shown on the plans.
 - 3. The lift station pump control panel shall be provided with the PLC and HMI with communications to the Waste Water Treatment Plant via UHF radio constructed under a separate project. The contract shall include all equipment, materials, labor, programming, set-up, testing and start-up services for the complete installation.
 - 4. The System Integrator shall provide the necessary programming for the remote SCADA for the alarms shown below in section 2.05.
 - 5. The control system PLC shall include the required SCADA system monitoring and control by a single System Integrator listed in specification section 26 05 00.
- E. The System Integrator shall provide the Engineer/Owner with all PLC pass code information and PLC ladder logic with all input and output call-outs and sub-scripts, each relay and function block with all data that describes the information within the I/O set and function block(s) prior to acceptance of the system and final payment. This information shall be field-demonstrated by the System Integrator that the open architecture status of all application programs written for the project are unprotected and the Owner will not be required to sign any type of non-disclosure agreement of any kind.

1.02 SYSTEMS EXPERIENCE

- A. The System Integrator shall have prior experience maintaining the Village of Villa Park's SCADA system.
- B. The lift station pump control panel and remote SCADA shall be provided by the System Integrator listed in Specifications section 26 05 00.

1.03 RELATED SECTIONS

- A. See electrical specification sections pertaining to enclosures and field wiring and other installation requirements including Arc Flash requirements shall also apply to this section.

1.04 SUBMITTALS

- A. See "Submittal Review" Specifications for additional project shop drawing and O&M Manual project requirements.

- B. Shop drawings for the pump control panel data per NEMA-ICS standards, including:
 - 1. Complete component listing and product literature including manufacturer's model or catalog numbers. Tag or otherwise identify exactly what model or catalog number of part is being furnished. Failure to comply will result in shop drawings sent back indicating NOT REVIEWED.
 - 2. Front and internal panel component arrangement drawing with nameplate engraving legends.
 - 3. Panel wiring diagrams, elementary diagrams, terminal block connection diagrams. Provide all control diagrams in ladder logic only.
 - 4. Written sequence of operation.
 - 5. Ladder diagram of logic and PLC programming code. Provide hard copy of the computer generated PLC program during shop drawing review. Final copies shall be provided with the Operation and maintenance Manuals.
 - 6. The System Integrator shall furnish two (2) spare control relays with plug in sockets, one spare timer with plug in socket, one (1) spare P-T-T LED transformer type indicating light, all in unopened boxes.
 - 7. Recommendation of other spare parts.
- C. Submit certificates of proper installation and operator training.
- D. Submit 6 copies of Operation and Maintenance Manuals before project completion. All drawings shall be Record drawings indicating as installed diagrams and layouts.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. This specification is based in part on products as itemized on the "Bill of Materials" shown on the plans as a means to establish a standard of quality. Products of other manufacturers shall provide all specified functions and features and shall be of similar quality. Any adjustments or changes to products or facilities shown or specified necessary to accommodate other manufacturers' products, such as panel, FVNR motor starters, PLC's, HMI, conduit or wire sizes, including the cost of redesign to accommodate such changes, shall be at the System Integrator's expense. All such changes shall be included in the shop drawing submittal for the equipment.

2.02 PUMP CONTROL PANEL

- A. Enclosure: The System Integrator shall provide a NEMA 4X 316 stainless steel enclosure for mounting to the concrete lift station base as shown on the plans. The enclosure shall be manufactured from 12 gauge stainless steel with seams that are continuously welded and ground smooth. The indicating lights, elapsed time meters, selector switches, HMI, push buttons and other controls shall be located on the front of the panel behind the lockable NEMA 4X stainless steel control cavity.
- B. The exterior doors shall be manufactured using a continuous welded stainless steel hinge provided along the entire length of the doors. The door gasket shall be made from a closed cell, oil resistant material to provide a dust tight seal. Bracing of the doors shall be provided and shall incorporate internally welded aluminum supports. Provide flexible grounding (bonding) jumpers from the enclosure to the back panel and doors. The three (3) doors shall be lockable with hasp and staple using the specified locks listed on the plans. The main circuit breaker and the two walking beam circuit breakers shall be externally operated by a flexible shaft mechanism with circuit breaker disconnects. Provide locks that are keyed alike and furnish 8 keys with the four (4) locks for the three doors and lockable disconnect switch in both the open and closed positions.
 - 1. The enclosure shall be bolted to the concrete base with stainless steel hardware as shown on the plans.
 - 2. Provide Hoffman or approved equal enclosure, sized as required with full factory painted white sub panel.
 - 3. The enclosure shall be dead-front design as shown on the plans.
- C. Provide equipment shown on the "Bill of Materials", provided in the drawings.

- D. Connect to the utility service using the walking beam circuit breakers shown on plans.
- E. The enclosure and wiring shall be UL 508 & 913 listed and approved.
- F. Provide a pressure transducer and new floats to control the lift station pumps as shown on the plans.
- G. All equipment installed within the enclosure shall be fastened in place with stainless steel machine screws. All holes shall be drilled and tapped. Sheet metal screws shall not be allowed.

2.03 CONTROL PANEL COMPONENTS

- A. Furnish controls and control panel compatible with the submersible pumping system. See the "Bill of Materials" for additional information.
- B. Power supply: 240 volt, 3 phase, 3 wire, 60 Hz feed from the electrical utility meter as shown on the plans. The System Integrator shall confirm with Com Ed the AIC rating for the service, provide equipment with the proper AIC ratings, but not less than shown on the plans and submit shop drawings with the utility companies rating indicated.
- C. Front panel mounted main switch that is interlocked with main panel circuit breaker.
- D. The AIC rating for the electrical equipment shall exceed the ratings shown on the plans.
- E. The System Integrator shall install the specified 100 amp ATS switch and separately mounted front controls furnished by the Electrical Contractor. The System Integrator shall verify with the Electrical Contractor the selected generator and ATS manufacturer before sizing the control panel or installing any equipment. The unit shown is based on Kohler Power Systems, if another manufacturer is selected by the Electrical Contractor they shall first coordinate the equipment with the System Integrator to verify the equipment may fit into the control panel as intended. This effort shall be coordinated with the Engineer before final approval by the Engineer is made.
- F. The System Integrator shall install the specified wet well mixer control panel furnished by the General Contractor. The System Integrator shall verify with the General Contractor the selected mixer manufacturer before sizing the control panel or installing any equipment. The unit shown is based on Wilo, if another manufacturer is selected by the General Contractor they shall first coordinate the equipment with the System Integrator to verify the equipment may fit into the control panel as intended. This effort shall be coordinated with the Engineer before final approval by the Engineer is made.
- G. Indicator lights: LED transformer type P-T-T. NEMA style, 30.5mm. NEMA 4/13 rated. See the front panel layout for exact indicating lights required.
- H. Power Distribution: Internal to control panel. Provide Thermal Magnetic type circuit breaker(s) and NEMA rated contactors and variable frequency drives for the submersible.
 - 1. Furnish a power and control transformer as shown on the plans for all internal and external power.
 - 2. The starters circuit power shall be 120VAC derived from internal control power. Power distribution equipment shall be located in the control panel.
 - 3. Provide auxiliary (two each) N.O. and N.C. contacts for each starter.
 - 4. Provide overload alarm relay contact.
 - 5. The PLC shall be an Allen Bradley Micrologix 1400 as shown on the plans. The unit shall be provided with 24 VDC inputs and 120VAC outputs.
 - 6. The HMI shall be an Allen Bradley Panelview 600 Plus or Engineer approved equal.
 - 7. There shall be two (2) 24VDC power supplies for the lift station controls PLC and inputs and for the radio.
 - 8. The analog input circuits shall be completely isolated from the PLC with an isolator. The outputs shall include surge arrestors (MOV's) on all inductive loads controlled by the PLC.

- I. Front panel Mounted Switches shall be NEMA style, 30.5, NEMA 4/13 rated. The Reset control push button shall reset all pumps, primary automatic controls and alarm circuits.
- J. Hour meter: Provide one per pump. Front panel mounted. NEMA 4 rated. The unit shall be a five digit non-resettable type. The unit shall totalize the number of hours of run time.
- K. Control Relays & Time Delay Relays: Plug-in:
 - 1. Provide three-pole control relays for internal panel logic. Relays shall have a coil light, test button and 10 AMP rated contacts.
 - 2. Provide solid state plug-in time delay relays as required to implement the required pump operational, safety and protection functions.
- L. Provide relays or pump manufacturer's thermal/moisture devices and related wiring as shown on the plans. The control circuits shall be constructed to provide front panel indication lights for each signal.
- M. Provide 1KW UPS for a back-up power supply in case of power loss for the Lift Station Pump Control Panel.
- N. All components and circuitry shall be UL approved. There shall be two (2) classes of wiring, low voltage (24VDC) and 4-20ma and high voltage, 120VAC and 250VAC. There shall be complete separation of these classes of wiring, minimum 3 inches. The wiring and associated terminal blocks shall be color coded as follows:

Red	120VAC wiring
Blue	24VDC wiring
Black	250VAC wiring
White	neutral wiring
Green	grounding conductors

2.04 WETWELL LEVEL CONTROL

- A. The pump control system shall include a primary control system and a hard wired back-up type secondary float control system operating completely separate of the primary control system. The primary control system shall consist of a programmable logic controller (PLC), pressure transducer and HMI to automatically control both pumps via FVNR starters.
- B. If the primary control system should fail, the back-up float system shall take control with either of the "low" or "high" floats activated. The back-up float control system shall include a separate alternator relay as shown on the plans. Each control mode shall be displayed on the front of the control panel.
- C. The primary control system shall include the Allen Bradley PLC with The level transducer LE-1-1 a KPSI Pressure Series 745 level with all 316 stainless steel wetted parts, 4-20 MADC output, piezoresistive pressure-sensing element, all-welded design, traceable calibration card, and temperature compensation. The transducer shall be loop powered. The sensor shall have a 2.50-inch diameter active diaphragm with a PTFE outer diaphragm and an outside dimension of 3.5 inches. The cable shall be polyurethane jacketed shielded cable with polyethylene vent tube of sufficient length to wire to the panel or junction box. Cable shall be Kevlar reinforced to support a maximum load of 200 lb. The transmitter shall include a vent tube and aneroid bellows to provide atmospheric reference for the sensor and a sensitive bellows attached to the end of the vent tube. The bellows shall respond to and transmit changes in atmospheric pressure to the sensor while remaining a maintenance-free, closed system with an accuracy shall be .25 % of span.
- D. The transducer shall be mounted using a cable hanger above a 4inch diameter schedule 80 PVC stilling well. The transducer shall be provided with a sufficient length of cable to enable the termination to be made at the location where the aneroid bellows is mounted in the Pump Control Panel. The transducer shall include the cable hanger.
- E. The transducer shall be provided with an automatic reset integral multi-stage surge protector designed for 4-20 ma signals and rated for up to 20,000 amperes peak. Also included shall be a panel mounted

surge protector providing protection on both ends of the cable. Units shall be UL/FM/CSA labeled for intrinsic safety. A lifetime warranty against lightning damage shall be included with the transducer.

- F. The transducer shall be manufactured by KPSI, model number 745-S-1-4-D-4-B-0-C-1-B, no approved equal. The range for the transducer and final cable lengths shall be determined during shop drawing review at no additional cost to the contract.
- G. The secondary control system shall include two (2) mercury free floats, as manufactured by Anchor Scientific or Engineer approved equal. See 2.6, H below for additional information.
- H. Automatic Alternation: The primary alternation of pumps shall be provided as follows:
 - 1. Automatic alternation, internal to the PLC and pressure transducer. See the functional description below for primary pump control.
 - 2. Alternation shall occur on each successive decrease in level with the primary pressure transducer control with the low and high level back-up floats for secondary control. If the primary pressure sensor (transducer) control system fails, either the "low" float or the "high" level float shall begin operation once either float is activated, which shall also activate the pumps through the back-up alternator controls and activate the "Primary System Failure" alarm.
 - 3. Once the back-up float system is initiated, only the reset push button on front of the control panel shall allow the operation from secondary control back to primary control after the primary control system has been repaired or corrected.
 - 4. Time delays shall be programmed into the PLC programming code to provide a time delay between pumps starts with alternation provided for the pump control.
 - 5. Any pump selected out of service (off position) via the respective front panel mounted Hand-Off-Auto switch, shall be skipped over in the sequence in both primary and secondary control modes.
- I. Back-up alternation:
 - 1. If either the "high" level or "low" level floats are activated, these floats shall automatically select the back up float system to start the first pump if the wet well level is high or to turn off the pumps if the wet well is low. The circuit shall also de-activate the "Primary Control mode" and activate the "Float Control mode" indicating lights and dry contacts for the SCADA system.
 - 2. The panel shall also include a manual float control selector switch for selecting float control for maintenance and testing purposes.
 - 3. When the high float is activated, it shall imitate the lead pump via the alternator relay. If the water level does not drop within five (5) minutes the lag pump shall start and run until the low float is activated and turns off both pumps. Then the pumps shall alternate on the next succession.
 - 4. The hard wired circuit shall include time delay relays to operate the pumps and to monitor the floats to eliminate "circuit bounce". The system shall operate through the back-up alternator relay and time delay relays and shall simultaneously activate the remote "back- up system" alarm light on the front of the panel and send a remote SCADA signal.
 - 5. Once the secondary control system is activated it shall remain active until the primary control system is operational and the front panel "reset" pushbutton is depressed.
 - 6. The "low" level float shall shut the pumps off and shall be set slightly lower than the transducer's pump stop level.
 - 7. The alternator shall cycle the pumps on the next successive operation via the floats.
 - 8. Pump starts shall alternate on the back-up alternator and time delay relays shall not allow more than one pump start at any one time, ie; staggered starting, minimum 10 second delay.
 - 9. Once the primary pressure transducer control system is functioning normally and the reset pushbutton depressed, the pump control sequence shall begin alternating pumps in the original sequence.
 - 10. Any pump selected out of service, (off position) via the respective front panel mounted Hand-Off-Auto switch shall be skipped over in the sequence.
- J. Provide Inputs and outputs in the pump control system as follows:
 - 1. Two (2) dry contact closures per back-up float.
 - 2. High temperature signals-one per pump. Provide relay contacts, wiring, PLC input and output logic for installation. The high temperature alarm shall shut down the pump.
 - 3. Provide moisture sensor wiring-one per pump. Provide relay contacts, wiring, PLC input and output logic for installation. The moisture sensor shall indicate only, without pump shutdown.

2.05 ADDITIONAL LIFT STATION CONTROL PANEL REQUIREMENTS

- A. The following additional control requirements shall also be integrated into the control schemes:
1. Off Position: The pump(s) will not run.
 2. Hand Position: The pump will run if not in alarm. Only power failure, starter failure, overload trip or pump high temperature shall cause the pump(s) to shut down or not start.
 3. Auto Position: Each pump shall operate as required by the pressure transducer level control system. The programmed sequence alternator shall provide alternation on each successive decrease in the wet well level. If any pump is in the "off" position or in failure mode, that particular pump shall be skipped over in the sequence. Pump starts shall be staggered via programmed PLC time delays. The float and timing functions and permissive/trip conditions including power loss and VFD fault or overload condition shall cause the pump to shut down or not start. If power is lost via the automatic transfer switch aux. contact (ATS), and power is reapplied, the PLC shall provide timing functions for pump restarting to protect a portable emergency generator. This timing function shall be provided for the back-up control system.
 4. The PLC control system functions with set points only and is not intended to control or maintain a certain wet well level.
 5. Reset: Clears alarm conditions that restricted the pump from operating. Manual resetting shall not be required in the event of a power outage.
 6. Each indicating lamp shall be a push-to-test transformer type LED.
 7. All front panel mounted devices shall include legend plates per the electrical specifications.
 8. Individual remote alarms shall be routed to the terminal blocks to the remote SCADA system integration shall include the following:
 - a. Control Power Failure
 - b. Pump No. 1 HOA "Not in Auto"
 - c. Pump No. 2 HOA "Not in Auto"
 - d. Pump No. 1 Run
 - e. Pump No. 2 Run
 - f. Pump No.1 FVNR Starter Failure
 - g. Pump No.2 FVNR Starter Failure
 - h. Primary Pump Control Active
 - i. Back Up Float Control Active
 - j. Back Up Float Control Selected
 - k. Low Wet Well Level
 - l. Pump No.1 Seal Failure
 - m. Pump No.2 Seal Failure
 - n. Pump No.1 Over-temperature Failure
 - o. Pump No.2 Over-temperature Failure
 - p. Pump No. 1 Totalize
 - q. Pump No. 2 Totalize
 - r. High Wet Well Level
 - s. Surge Arrestor Failure
 - t. Normal Power Failure (ATS)
 - u. UPS Failure
 - v. Generator Not In Auto
 - w. Generator Running
 - x. Generator Failure
 - y. Battery Charger failure
 - z. Mixer Running
 - aa. Mixer Failure
 - bb. Communication Failure (PLC/Watchdog Relay)
 - cc. Ten (10) Spare Terminals

2.06 ELECTRICAL REQUIREMENTS

- A. All circuit breakers shall be thermal-magnetic type.
- B. All power fuses shall be low peak type and control fuses shall be dual element, FRN type.

- C. All power distribution blocks shall be rated for the voltage and current available.
- D. Control circuit power shall be indicated on the diagrams and shall be designed for automatic resumption of operation after a prime power failure.
- E. All control wiring shall be 14 AWG. Stranded copper with THWN insulation.
- F. Provide terminal blocks for all field wiring. Terminal blocks shall be 55 amp rated for 600 VAC. Each terminal block shall be provided with tubular screws without pressure plates. Each terminal block, retaining clips and end barriers shall be mounted on steel mounting channel. Each terminal block shall be NEMA type with open construction made from UL listed nylon #6. Each terminal shall be made "finger safe" and shall meet UL and CSA standards. The wire range for each 55 amp terminal shall be from #22-#8 AWG. The terminal blocks shall be temperature rated for -40 degrees to +85 degrees C. The contractor shall install the terminal strips vertically along the side of the enclosure.
- G. All interior wiring to each relay and motor starters shall be installed in white PVC plastic wiring duct and cover. The vertical wiring duct along the edge of the terminal strips shall be 1-1/2 inch wide X 2 inches high and the horizontal wiring duct between the relays and motor starters shall be 1-1/2 inch wide X 2 inches high. All wiring duct shall be snap-in slot type with solid covers.
- H. Intrinsically Safe Wiring: Provide intrinsically safe wiring within the control panel for the float level switches. This includes the use of intrinsically safe solid-state barriers (relays).
 - 1. The proposed floats shall be shall be manufactured by Anchor Scientific, catalog # W-NOSST or approved equal. The floats shall be provided with a Type W dual stainless steel U-bolt type clamps for each float support.
- I. The pressure transducer shall be provided and connected to the PLC for required pump control. Provide the pressure transducer with sufficient amount of cable such that the cable is continuous without splices. Do not splice this cable.
- J. All terminal blacks, circuit breakers, starters and all other devices shall be made finger safe.

PART 3 GENERAL

3.01 MANUFACTURER'S SERVICES

- A. Minimum Service Requirements:
 - 1. Provide installation supervision assistance to the Electrical Contractor for various issues as they arise; verification of wiring & interconnections, instrumentation & control wiring support, level transmitter mounting consideration, etc.
 - 2. Provide one 4-hour training session for Owners' personnel on operation and maintenance of the system.
 - 3. Installation: Inspection as required for proper installation.
 - 4. Start-up and Field Testing: One full day on site.
- B. Service to Repair Defective Work: Provide one-year warranty period under the provisions of the General Conditions.

3.02 POST STARTUP SERVICES

- A. Provide one day of field support service after 3 months of operation after system acceptance. Service shall be provided at no cost to the owner. Support shall include such items as; modification to PLC control strategies and HMI programming changes and additions of field instrumentation, calibration, or similar services as directed by the Owner or the Engineer.

3.03 SOFTWARE RIGHTS

- A. The System Integrator shall provide the Owner with all PLC pass code information and PLC ladder logic with all input and output call-outs and sub-scripts, each relay and function block with all data that describes the information within the I/O set and function block(s) prior to acceptance of the system and final payment. This information shall be field-demonstrated by the System Integrator that the open architecture status of all application programs written for the project are unprotected and the Owner will not be required to sign any type of non-disclosure agreement of any kind. Final payment is contingent on the supply and verification of this software access information.

END OF SECTION

APPENDIX A – GEOTECHNICAL REPORT

NOT FOR BID

NOT FOR BID



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June 17, 2014

File No. 21531

Ms. Catherine Morley, P.E.
RJN Group
200 West Front Street
Wheaton, IL 60187

Re: Geotechnical Investigation
North Avenue Townhomes
New Pump Station
Villa Park, Illinois

Dear Ms. Morley:

The following is our report of findings for the geotechnical investigation completed for the above referenced project in the Village of Villa Park, Illinois.

The investigation was requested to determine current subsurface soil and water conditions at select boring locations. The findings of the field investigation and the results of laboratory testing are intended to assist in the planning, design and construction of the proposed new pump station.

SCOPE OF THE INVESTIGATION

The field investigation included obtaining 1 boring at the location requested and as indicated on the enclosed location sketch. The boring location was established using field taping methods and accuracy. Surface elevations were determined using the temporary benchmark indicated on the location sketch.

We auger drilled the boring to a depth of 35.0 feet below existing surface elevations. Soil samples were obtained using a split barrel sampler advanced utilizing an automatic SPT hammer. Soil profiles were determined in the field and soil samples returned to our laboratory for additional testing including determination of moisture content. Cohesive soils obtained by split barrel sampling were tested further to determine dry unit weight and unconfined compressive strength. The results of all field determinations and laboratory testing are included in summary with this report.

RESULTS OF THE INVESTIGATION

Enclosed are boring logs indicating the soil conditions encountered at each location. Site surface conditions include pavement materials and fill soil conditions.

Composition of the fill includes the presence of uncontrolled clay/silt mixtures extending to a depth of 8.5 feet at this. The limits of fill placement were not determined within the scope of this investigation.

8 WEST COLLEGE DRIVE • ARLINGTON HEIGHTS, IL 60004

SOIL BORINGS • SITE INVESTIGATIONS • PAVEMENT INVESTIGATIONS • GEOTECHNICAL ENGINEERING
TESTING OF • SOIL • ASPHALT • CONCRETE • MORTAR • STEEL

Underlying soil conditions consist primarily of cohesive soils. These are classified as tough to very tough clay/silt mixtures with lesser portions of sand and gravel. A thin seam of very damp and very loose silt/clay was encountered between 11.5 feet and 12.5 feet as indicated. Cobbles and boulders may be present within the site soils at any elevation, although none were encountered while drilling.

The following table summarizes depth ranges below existing grade, the magnitude of soil strength within these ranges and other information:

<u>Boring</u>	<u>Surface Elevation (feet)</u>	<u>Depth Range Below Existing Surface (feet)</u>	<u>Soil Strength (lbs./sq.ft.)</u>	<u>Recorded Water Levels, W.D./A.D. (feet)</u>
1	721.1	0.5 to 1.5	*500	7.0/18.0
		1.5 to 13.0	*none	
		13.0 to 32.0	3,000	

* Not recommended for support of foundations.

It is expected that foundations can be supported on undisturbed natural soils located at any elevation within the depth ranges indicated in the above table, except as noted. Above these depth ranges the soils are not considered able to support foundations, even at reduced design bearing values, due to long-term settlement considerations.

SUBSURFACE WATER

The boring logs and the above table indicate the depth at which subsurface water was encountered in the bore holes at the time of the drilling operations and during the period of these readings. It is expected that fluctuations from the water levels recorded will occur over a period of time due to variations in rainfall, temperature, subsurface soil conditions, soil permeability and other factors not evident at the time of the water level measurements.

FOUNDATIONS

We understand the new pump station foundation will extend approximately 25 feet below existing grade. Based on the results of this investigation it is our opinion that the new pump station foundation may be considered for support on undisturbed natural soils located below all pavement materials, unsuitable fill soils, low strength soils and other unsuitable conditions which may be encountered. Soil strength values and the depths at which they are expected to be encountered at these boring locations are indicated in the above table. A net allowable bearing value of 3,000 lbs./sq.ft. is available for design. This value can be used to size foundations for support of structure dead and live loads.

DEWATERING

Excavations may require dewatering due to subsurface water seepage and/or surface precipitation. This water can likely be removed to depths of several feet by standard sump and

pump operations. Soils exposed at foundation, slab or undercut elevations should not be permitted to become saturated. Loss of bearing strength and stability may occur, requiring additional soil excavation.

Fill soils, cohesive soils and others can be unstable when saturated. These soils tend to cave or run when submerged or disturbed. The stability of exposed embankments is minimal to non-existent as confining soil pressures are removed. Proper drainage within excavations is necessary at all times, particularly when excavations extend below anticipated water levels and below saturated soils.

The contractor should be made responsible for designing and constructing stable temporary excavations. Also, the contractor should shore, slope, bench or restrain the sides of the excavations as required to maintain stability of both the excavation sides and bottom. In no case, should the slope, slope heights, or excavation depth exceed those in the local, state, and federal safety regulations.

CONCLUSION

The information within this report is intended to provide initial information concerning subsurface soil and water conditions on the site. Variations in subsurface conditions are expected to be present due to naturally changing and filled soil conditions.

Our understanding of the proposed improvements is based on limited information available to us at the writing of this report. The findings of the investigation and the recommendations presented are not considered applicable to significant changes in the scope of the improvements or applicable to alternate site uses. We recommend that proposed foundation, plans be reviewed by our office to determine if additional considerations are necessary to address anticipated subsurface conditions. Soil conditions encountered at foundation elevations are recommended to be tested to verify the presence of design soil strength prior to concrete placement.

If you have any questions concerning the findings or recommendations presented in this report, please let me know.

Very truly yours,

SOIL AND MATERIAL CONSULTANTS, INC.

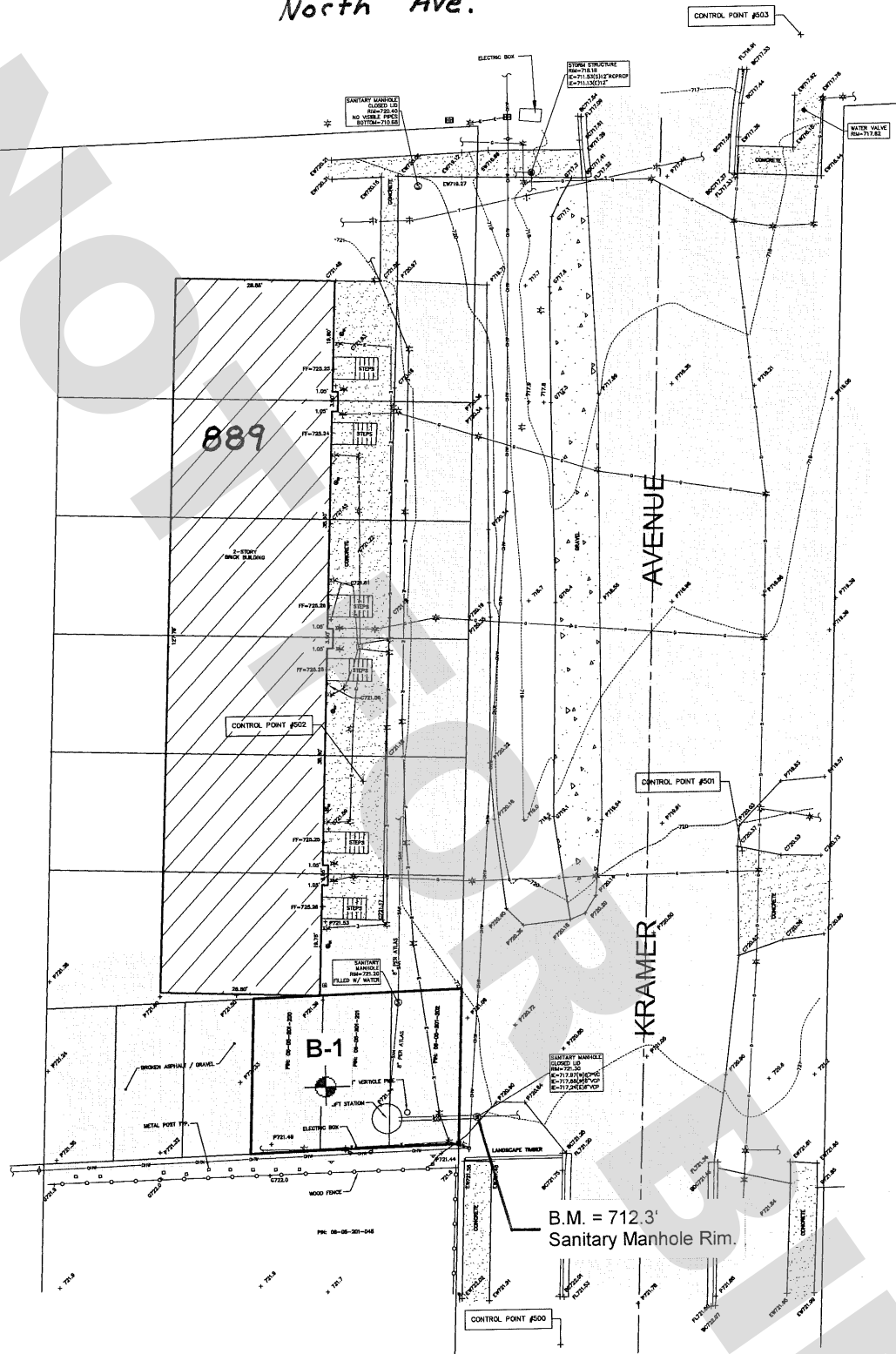


Thomas P. Johnson, P.E.
President

TPJ:ek
Enc.

NOT FOR BID

North Ave.



SMC		SOIL AND MATERIAL CONSULTANTS, INC.	LOCATION SKETCH
Client:	RJN GROUP		
Project:	NORTH AVENUE TOWNHOMES NEW PUMP STATION		
Location:	VILLA PARK, ILLINOIS		
File No.	21531	Date: 6-13-14	Scale: 1" ≈ 30'

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Logged By: DA

Page: 1 of 1

Client: RJN Group

File No. 21531

Date Drilled: 6/13/14

Reference: North Avenue Townhomes
New Pump Station
Villa Park, IL

Comments:

depth, ft.	Equipment: ☒ CME 45B ☐ CME 55 ☐ Hand Auger ☐ Other	standard penetration	moisture content	dry unit weight lbs./cu.ft.	unconfined compressive strength	○ unconfined compressive strength, tons/sq.ft. ● penetrometer reading, tons/sq.ft. 1.0 2.0 3.0 4.0			
	CLASSIFICATION					× standard penetration "N", blows/ft. △ moisture content, % 10 20 30 40			
	Elevation 721.1' Existing Surface	×	△	⌘	○	10	20	30	40
	720.1' (a & b) see below								
	Brown-gray-black clay, some silt, trace sand & gravel, damp-very damp, tough-Fill	8	20.0	104.3	1.8	×	○	●	
5	Brown-gray-black clay, some silt, trace sand & gravel, damp-very damp, stiff-Fill	4	20.1	110.3	0.5	×	△		
	Brown-gray-black clay, some silt, trace sand & gravel, damp-very damp, very soft - Fill	1	25.9	101.2	0.2	×	△		
10	Brown clay, some silt, trace sand & gravel, damp, very tough	9	15.4	121.9	3.6	×	△	○	●
	709.6'		14.2	126.3	3.3		△	●	○
	708.6' (c) see below	2	33.1			×		△	
15	Gray clay, some silt, trace sand & gravel, damp, tough	11	16.4	118.0	1.6	×	△	●	
20		12	16.8	123.0	1.9	×	△	●	
25		11	18.3	122.8	1.5	×	△	●	
30		14	18.1	122.8	1.7	×	△	●	
35	686.1' End of Boring	11	11.5	139.0	1.3	×	△	●	
	(a) Bituminous concrete - 2.0"								
	(b) Limestone, damp - 10.0"								
	(c) Gray silt, some clay, trace sand, very damp, very loose								
40	End of Boring								

Water encountered at 7.0 feet during drilling operations (W.D.).
Water recorded at 18.0 feet on completion of drilling operations (A.D.).
Water recorded at feet hours after completion of drilling operations (A.D.).

NOT FOR BID

General Notes

SAMPLE CLASSIFICATION

Soil sample classification is based on the Unified Soil Classification System, the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), ASTM D-2488, the Standard Test Method for Classification of Soils for Engineering Purposes, ASTM D-2487 (when applicable), and the modifiers noted below.

CONSISTENCY OF COHESIVE SOILS

Term	Qu -tons/sq. ft.	N (unreliable)
Very Soft	0.00 - 0.25	0 - 2
Soft	0.26 - 0.49	3 - 4
Stiff	0.50 - 0.99	5 - 8
Tough	1.00 - 1.99	9 - 15
Very Tough	2.00 - 3.99	16 - 30
Hard	4.00 - 7.99	30 +
Very Hard	8.00 +	

RELATIVE DENSITY OF GRANULAR SOILS

Term	N - blows/foot
Very Loose	0 - 4
Loose	5 - 9
Medium Dense	10 - 29
Dense	30 - 49
Very Dense	50 +

IDENTIFICATION AND TERMINOLOGY

Term	Size Range
Boulder	over 8 in.
Cobble	3 in. to 8 in.
Gravel	-coarse 1 in. to 3 in.
	-medium 3/8 in. to 1 in.
	-fine #4 sieve to 3/8 in.
Sand	-coarse #10 sieve to #4 sieve
	-medium #40 sieve to #10 sieve
	-fine #200 sieve to #40 sieve
Silt	0.002 mm to #200 sieve
Clay	smaller than 0.002 mm

Modifying Term Percent by Weight

Trace	1 - 10
Little	11 - 20
Some	21 - 35
And	36 - 50

Moisture Condition

Dry
Damp
Very Damp
Saturated

DRILLING, SAMPLING & SOIL PROPERTY SYMBOLS

CF - Continuous Flight Auger
 HS - Hollow Stem Auger
 HA - Hand Auger
 RD - Rotary Drilling
 AX - Rock Core, 1-3/16 in. diameter
 BX - Rock Core, 1-5/8 in. diameter
 NX - Rock Core, 2-1/8 in. diameter
 S - Sample Number
 T - Type of Sample
 J - Jar
 AS - Auger Sample
 SS - Split-spoon (2 in. O.D. with 1-3/8 in. I.D.)
 ST - Shelby Tube (2 in. O.D. with 1-7/8 in. I.D.)
 R - Recovery Length, in.
 B - Blows/ 6 in. interval, Standard Penetration Test (SPT)
 N - Blows/ foot to drive 2 in. O.D. split-spoon sampler with 140 lb. hammer falling 30 in., (STP)
 Pen. - Pocket Penetrometer reading, tons/ sq. ft.
 W - Water Content, % of dry weight
 Uw - Dry Unit Weight of soil, lbs./ cu. ft.
 Qu - Unconfined Compressive Strength, tons/ sq. ft.
 Str - % Strain at Qu.
 WL - Water Level
 WD - While Drilling
 AD - After Drilling
 DCI - Dry Cave-in
 WCI - Wet Cave-in
 LL - Liquid Limit, %
 PL - Plastic limit, %
 PI - Plasticity Index (LL-PL)
 LI - Liquidity Index [(W-PL)/PI]

NOT FOR BID



Illinois Environmental Protection Agency

Page 1 of 2

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as
amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Parking Lot CCDD Soil Testing Office Phone Number, if available: _____

Physical Site Location (address, including number and street):

North Kramer Avenue & West North Avenue - See Figures

City: Villa Park State: IL Zip Code: 60181

County: DuPage Township: York

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 41.904830 Longitude: -87.999170

(Decimal Degrees) (-Decimal Degrees)

Identify how the lat/long data were determined:

☐ GPS ☒ Map Interpolation ☐ Photo Interpolation ☐ Survey ☐ Other

IEPA Site Number(s), if assigned: _____ BOL: _____ BOW: _____ BOA: _____

II. Owner/Operator Information for Source Site

Site Owner

Name: Village of Villa Park

Street Address: 20 South Ardmore Avenue

PO Box: _____

City: Villa Park State: IL

Zip Code: 60181 Phone: 630-834-8505

Contact: Vydas Juskelis

Email, if available: juskelis@invillapark.com

Site Operator

Name: _____

Street Address: _____

PO Box: _____

City: _____ State: _____

Zip Code: _____ Phone: _____

Contact: _____

Email, if available: _____

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms

Project Name: Parking Lot CCDD Soil TestingLatitude: 41.904830 Longitude: -87.999170Uncontaminated Site Certification**III. Basis for Certification and Attachments**

For each item listed below, reference the attachments to this form that provide the required information.

- a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

A limited historical and regulatory review was performed to identify PIPs. Site reconnaissance and PID screening were performed while sampling to evaluate PIPs. Based on the nature and scope of the project, 1 soil sample was collected for the indicator contaminants associated with the identified PIPs. Figure 2 identifies the location of the samples.

- b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0, including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

See attached analytical summary tables, laboratory reports and associated NELAC certification. Figure 2 identifies the project area that complies with 35 IAC Part 1100 Subpart F.

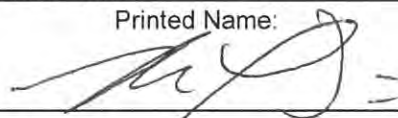
IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Ryan M. LaDieu, P.E. (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Company Name: True North Consultants
 Street Address: 1240 Iroquois Avenue, Suite 206
 City: Naperville State: IL Zip Code: 60563
 Phone: 630.717.2880
Ryan M. LaDieu

Printed Name:



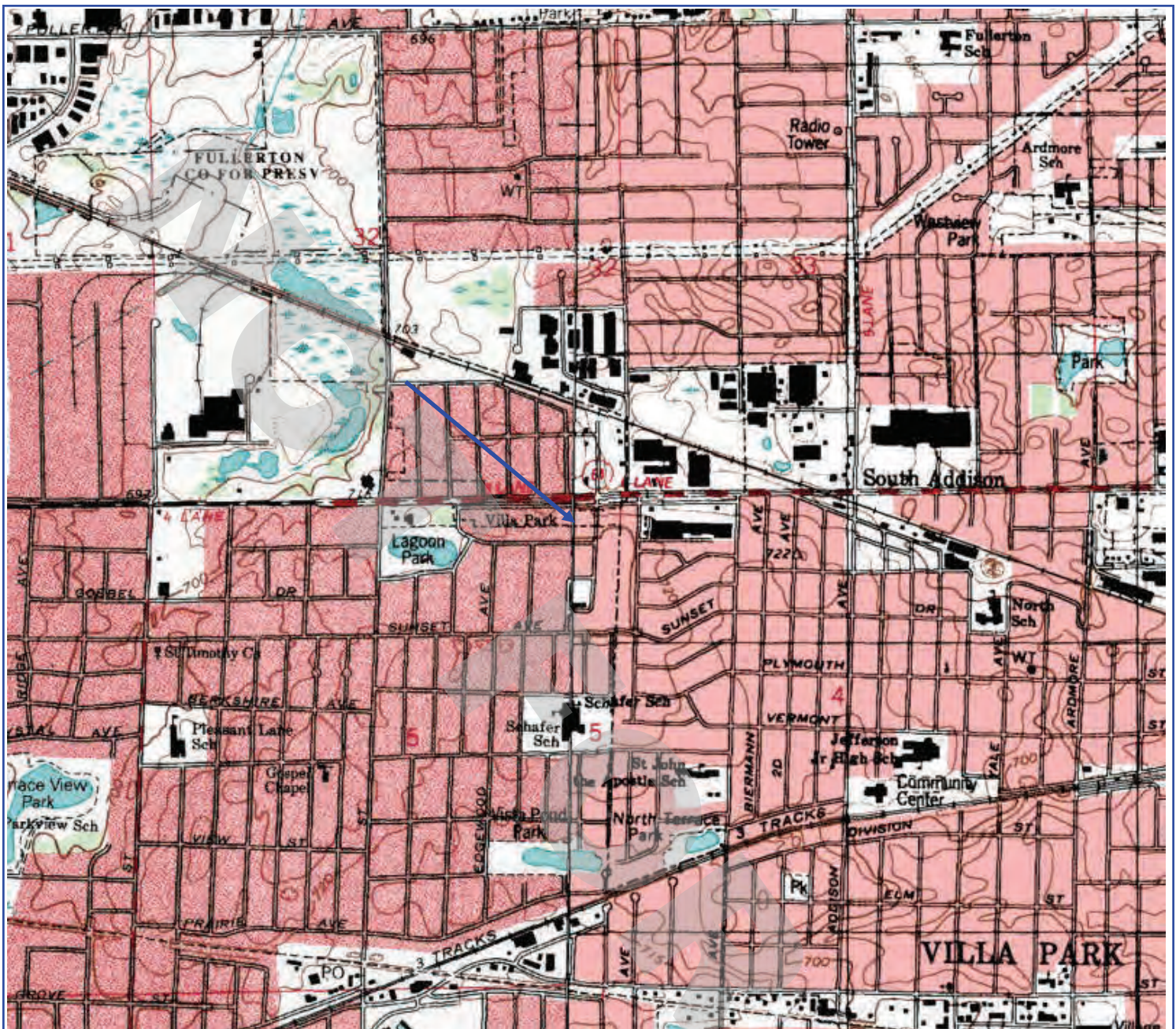
Licensed Professional Engineer or
 Licensed Professional Geologist Signature:

07 09 14

Date:



P.E. or L.P.G. Seal:



1999 ELMHURST, ILLINOIS — TOPOGRAPHIC MAP ADAPTED FROM MYTOPO

← APPROXIMATE SITE LOCATION

 TRUE NORTH CONSULTANTS 1240 IROQUOIS AVE, SUITE 206 NAPERVILLE, ILLINOIS 60563	SITE LOCATION NORTH KRAMER AVENUE AND NORTH AVENUE VILLA PARK, IL 60181	 NOT TO SCALE	FIGURE I PROJECT NUMBER TII4328 DATE 7/01/2014
	CLIENT SOIL & MATERIALS CONSULTANTS 8 WEST COLLEGE DRIVE, SUITE C ARLINGTON HEIGHTS, IL 60004		

TABLE I

Summary of Soil Analytical Results - Soil Characterization Sampling

Volatile Organic Compounds (VOCs)

CLIENT: Soil & Materials Consultants, Inc.

SITE: North Kramer Avenue & North Avenue Villa Park, IL 60181

PROJECT NUMBER: TII4328

SAMPLE DATE: June 13, 2014

LABORATORY: Prairie Analytical Systems, Inc.

MATRIX: Soil

Analytical Method: EPA Method 5035A/8260B

Contaminant of Concern	Maximum Allowable Concentration (MAC) within a Metropolitan Statistical Area (MSA)		Sample ID	Kramer						
			Sample Date	6/13/2014						
			Depth	4-6'						
	Value	Objective	Soil Type	Silty Clay						
Acetone	25	MAC								
Benzene	0.03	MAC		< 0.00437						
Bromodichloromethane	0.6	MAC								
Bromoform	0.8	MAC								
Bromomethane	0.2	MAC								
2-Butanone	17	MAC								
Carbon disulfide	9	MAC								
Carbon tetrachloride	0.07	MAC								
Chlorobenzene	1	MAC								
Chloroethane	NE	NE								
Chloroform	0.3	MAC								
Chloromethane	NE	NE								
Dibromochloromethane	0.4	MAC								
1,1-Dichloroethane	23	MAC								
1,2-Dichloroethane	0.02	MAC								
1,1-Dichloroethylene	0.06	MAC								
cis-1,2-Dichloroethylene	0.4	MAC								
trans-1,2-Dichloroethylene	0.7	MAC								
1,2-Dichloropropane	0.03	MAC								
cis-1,3-Dichloropropene	0.005	MAC								
trans-1,3-Dichloropropene	0.005	MAC								
Ethylbenzene	13	MAC		< 0.00437						
2-Hexanone	NE	NE								
Methyl tertiary-butyl ether	0.32	MAC								
4-Methyl-2-pentanone	NE	NE								
Methylene chloride	0.02	MAC								
Styrene	4	MAC								
1,1,2,2-Tetrachloroethane	NE	NE								
Tetrachloroethylene	0.06	MAC								
Toluene	12	MAC		< 0.00437						
1,1,1-Trichloroethane	2	MAC								
1,1,2-Trichloroethane	0.02	MAC								
Trichloroethylene	0.06	MAC								
Vinyl Chloride	0.01	MAC								
Xylenes (total)	5.6	MAC		< 0.0131						

Notes:

Constituents that are not identified in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

< = Analyte not detected (i.e. less than RL or MDL)

All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.

NA = This constituent was not analyzed.

NE = No remediation objective established by the IEPA for this constituent.

Bold identifies an exceedence of the referenced objective.

TABLE 2

Summary of Soil Analytical Results - Soil Characterization Sampling

Polynuclear Aromatic Hydrocarbons (PNAs)

CLIENT: Soil & Materials Consultants, Inc.

SITE: North Kramer Avenue & North Avenue Villa Park, IL 60181

PROJECT NUMBER: T114328

SAMPLE DATE: June 13, 2014

LABORATORY: Prairie Analytical Systems

MATRIX: Soil

Analytical Method: EPA Method 5035A/8260B

[illegible]

Notes:

Constituents that are not identified in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

< = Analyte not detected (i.e. less than RL or MDL)

All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.

NA = This constituent was not analyzed.

NE = No remediation objective established by the IEPA for this constituent.

Bold identifies an exceedence of the referenced objective.

TABLE 3

Summary of Soil Analytical Results - Soil Characterization Sampling

CLIENT: Soil & Materials Consultants, Inc.
SITE: North Kramer Avenue & North Avenue Villa Park, IL 60181
PROJECT NUMBER: TI14328

SAMPLE DATE: June 13, 2014
LABORATORY: Prairie Analytical Systems
MATRIX: Soil

Analytical Method: EPA Method 6020

[illegible]

Notes:

Constituents that are not identified in 35 IAC 1100 Subpart F (MAC Table) are compared to the Metropolitan Statistical Area Background Concentration found in 35 IAC 742 Appendix A, Table H

All data reported in milligrams per kilogram (mg/kg) unless otherwise noted.
NA = This constituent was not analyzed.

**NE = No remediation objective established by the IEPA for this constituent.
Bold identifies an exceedence of the referenced objective.**

Bold identifies an exceedence of the referenced objective.

NOT FOR BID



Tuesday, June 24, 2014

Ryan Bourgart
True North Consultants
1240 Iroquois Avenue, Suite 210
Naperville, IL 60563
TEL: (630) 717-2880
FAX: (630) 689-5881

RE: Soil Assessment: Kramer and North

PAS WO: 14F0345

Prairie Analytical Systems, Inc. received 1 sample(s) on 6/16/2014 for the analyses presented in the following report.

All applicable quality control procedures met method specific acceptance criteria unless otherwise noted.

This report shall not be reproduced, except in full, without the prior written consent of Prairie Analytical Systems, Inc.

If you have any questions, please feel free to contact me at (217) 753-1148.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "JP Rouanet".

Jean-Pierre Rouanet For Kristen A. Potter
Project Manager

Certifications: NELAP/NELAC - IL #100323

1210 Capital Airport Drive	*	Springfield, IL 62707	*	1.217.753.1148	*	1.217.753.1152 Fax
9114 Virginia Road Suite #112	*	Lake in the Hills, IL 60156	*	1.847.651.2604	*	1.847.458.0538 Fax

NOT FOR BID

LABORATORY RESULTS

Client: True North Consultants
Project: Soil Assessment: Kramer and North
Client Sample ID: Kramer
Collection Date: 6/13/14 8:05

Lab Order: 14F0345
Lab ID: 14F0345-01
Matrix: Solid

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
*Benzene	U	0.00437		mg/Kg dry	1	6/17/14 7:26	6/17/14 13:47	SW 8260B Re	BDP
*Ethylbenzene	U	0.00437		mg/Kg dry	1	6/17/14 7:26	6/17/14 13:47	SW 8260B Re	BDP
*Toluene	U	0.00437		mg/Kg dry	1	6/17/14 7:26	6/17/14 13:47	SW 8260B Re	BDP
*Xylenes (total)	U	0.0131		mg/Kg dry	1	6/17/14 7:26	6/17/14 13:47	SW 8260B Re	BDP
Surrogate: 4-Bromofluorobenzene		90 %		75-120		6/17/14 7:26	6/17/14 13:47	SW 8260B Re	BDP
Surrogate: 1,2-Dichloroethane-d4		113 %		75-119		6/17/14 7:26	6/17/14 13:47	SW 8260B Re	BDP
Surrogate: Toluene-d8		117 % S2		78-114		6/17/14 7:26	6/17/14 13:47	SW 8260B Re	BDP
Semi-Volatile Organic Compounds by GC-MS									
*Acenaphthene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Acenaphthylene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Anthracene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Benzo(a)anthracene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Benzo(b)fluoranthene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Benzo(k)fluoranthene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Benzo(g,h,i)perylene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Benzo(a)pyrene	U	0.0754		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Chrysene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Dibenz(a,h)anthracene	U	0.0754		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Fluoranthene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Fluorene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Indeno(1,2,3-cd)pyrene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Naphthalene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Phenanthrene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
*Pyrene	U	0.419		mg/Kg dry	1	6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
Surrogate: 2-Fluorobiphenyl		90 %		38-122		6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
Surrogate: Nitrobenzene-d5		89 %		45-136		6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
Surrogate: 4-Terphenyl-d14		99 %		57-122		6/18/14 10:46	6/19/14 16:46	SW 8270C	AJD
Metals by ICP-MS									
*Mercury	U	0.0957		mg/Kg dry	2	6/16/14 11:15	6/17/14 1:47	SW 6020A	JTC
*Selenium	U	0.598		mg/Kg dry	2	6/16/14 11:15	6/17/14 1:47	SW 6020A	JTC
*Silver	U	0.598		mg/Kg dry	2	6/16/14 11:15	6/17/14 1:47	SW 6020A	JTC
Metals by ICP									
*Arsenic	9.33	0.598		mg/Kg dry	1	6/16/14 11:15	6/17/14 18:41	SW 6010B	CEP
*Barium	76.7	2.99		mg/Kg dry	10	6/16/14 11:15	6/18/14 10:32	SW 6010B	CEP
*Cadmium	0.587	0.299		mg/Kg dry	1	6/16/14 11:15	6/17/14 18:41	SW 6010B	CEP
*Chromium	19.5	0.299		mg/Kg dry	1	6/16/14 11:15	6/17/14 18:41	SW 6010B	CEP
*Lead	16.4	0.299		mg/Kg dry	1	6/16/14 11:15	6/17/14 18:41	SW 6010B	CEP
Conventional Chemistry Parameters									
*pH	7.6	0.010		pH Units	1	6/17/14 11:25	6/17/14 14:14	SW 9045C	RSR
Percent Solids	78.5	0.100		%	1	6/17/14 15:13	6/18/14 13:32	ASTM D2974	CCD

LABORATORY RESULTS

Client: True North Consultants

Project: Soil Assessment: Kramer and North

Lab Order: 14F0345

Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch X003164 - SW 5035A VOA

Blank (X003164-BLK1)

Prepared & Analyzed: 06/17/2014

Benzene	U	0.00500	mg/Kg wet							
Ethylbenzene	U	0.00500	mg/Kg wet							
Toluene	U	0.00500	mg/Kg wet							
Xylenes (total)	U	0.0150	mg/Kg wet							
Surrogate: 4-Bromofluorobenzene	0.0508		mg/Kg wet	0.050000		102	75-120			
Surrogate: 1,2-Dichloroethane-d4	0.0537		mg/Kg wet	0.050000		107	75-119			
Surrogate: Toluene-d8	0.0532		mg/Kg wet	0.050000		106	78-114			

LCS (X003164-BS1)

Prepared & Analyzed: 06/17/2014

Benzene	0.0590	0.00500	mg/Kg wet	0.050000		118	80-130			
Ethylbenzene	0.0596	0.00500	mg/Kg wet	0.050000		119	77-132			
Toluene	0.0566	0.00500	mg/Kg wet	0.050000		113	80-130			
Xylenes (total)	0.176	0.0150	mg/Kg wet	0.15000		117	80-130			
Surrogate: 4-Bromofluorobenzene	0.0548		mg/Kg wet	0.050000		110	75-120			
Surrogate: 1,2-Dichloroethane-d4	0.0524		mg/Kg wet	0.050000		105	75-119			
Surrogate: Toluene-d8	0.0521		mg/Kg wet	0.050000		104	78-114			

LABORATORY RESULTS

Client: True North Consultants

Project: Soil Assessment: Kramer and North

Lab Order: 14F0345

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch X003202 - SW 3550B PNA

Blank (X003202-BLK1)

Prepared: 06/18/2014 Analyzed: 06/19/2014

Acenaphthene	U	0.333	mg/Kg wet							
Acenaphthylene	U	0.333	mg/Kg wet							
Anthracene	U	0.333	mg/Kg wet							
Benzo(a)anthracene	U	0.333	mg/Kg wet							
Benzo(b)fluoranthene	U	0.333	mg/Kg wet							
Benzo(k)fluoranthene	U	0.333	mg/Kg wet							
Benzo(g,h,i)perylene	U	0.333	mg/Kg wet							
Benzo(a)pyrene	U	0.0600	mg/Kg wet							
Chrysene	U	0.333	mg/Kg wet							
Dibenz(a,h)anthracene	U	0.0600	mg/Kg wet							
Fluoranthene	U	0.333	mg/Kg wet							
Fluorene	U	0.333	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	U	0.333	mg/Kg wet							
Naphthalene	U	0.333	mg/Kg wet							
Phenanthrene	U	0.333	mg/Kg wet							
Pyrene	U	0.333	mg/Kg wet							
Surrogate: 2-Fluorobiphenyl	0.631		mg/Kg wet	0.66667		95	38-122			
Surrogate: Nitrobenzene-d5	0.639		mg/Kg wet	0.66667		96	45-136			
Surrogate: 4-Terphenyl-d14	0.693		mg/Kg wet	0.66667		104	57-122			

LCS (X003202-BS1)

Prepared: 06/18/2014 Analyzed: 06/19/2014

Acenaphthene	0.575	0.333	mg/Kg wet	0.66667		86	50-135			
Acenaphthylene	0.578	0.333	mg/Kg wet	0.66667		87	51-134			
Anthracene	0.556	0.333	mg/Kg wet	0.66667		83	52-117			
Benzo(a)anthracene	0.610	0.333	mg/Kg wet	0.66667		91	50-126			
Benzo(b)fluoranthene	0.616	0.333	mg/Kg wet	0.66667		92	57-134			
Benzo(k)fluoranthene	0.646	0.333	mg/Kg wet	0.66667		97	59-168			
Benzo(g,h,i)perylene	0.650	0.333	mg/Kg wet	0.66667		98	56-147			
Benzo(a)pyrene	0.578	0.0600	mg/Kg wet	0.66667		87	41-133			
Chrysene	0.616	0.333	mg/Kg wet	0.66667		92	52-127			
Dibenz(a,h)anthracene	0.660	0.0600	mg/Kg wet	0.66667		99	60-170			
Fluoranthene	0.592	0.333	mg/Kg wet	0.66667		89	57-130			
Fluorene	0.574	0.333	mg/Kg wet	0.66667		86	47-154			
Indeno(1,2,3-cd)pyrene	0.695	0.333	mg/Kg wet	0.66667		104	59-132			
Naphthalene	0.566	0.333	mg/Kg wet	0.66667		85	40-135			
Phenanthrene	0.594	0.333	mg/Kg wet	0.66667		89	54-126			
Pyrene	0.585	0.333	mg/Kg wet	0.66667		88	57-132			
Surrogate: 2-Fluorobiphenyl	0.605		mg/Kg wet	0.66667		91	38-122			
Surrogate: Nitrobenzene-d5	0.598		mg/Kg wet	0.66667		90	45-136			
Surrogate: 4-Terphenyl-d14	0.660		mg/Kg wet	0.66667		99	57-122			

LABORATORY RESULTS

Client: True North Consultants

Project: Soil Assessment: Kramer and North

Lab Order: 14F0345

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch X003202 - SW 3550B PNA

Matrix Spike (X003202-MS1)

Source: 14F0346-32

Prepared: 06/18/2014 Analyzed: 06/19/2014

Acenaphthene	1.05	0.726	mg/Kg dry	1.4541	ND	72	50-135			
Acenaphthylene	1.09	0.726	mg/Kg dry	1.4541	ND	75	51-134			
Anthracene	1.03	0.726	mg/Kg dry	1.4541	ND	71	52-117			
Benzo(a)anthracene	1.05	0.726	mg/Kg dry	1.4541	ND	73	50-126			
Benzo(b)fluoranthene	0.972	0.726	mg/Kg dry	1.4541	ND	67	57-134			
Benzo(k)fluoranthene	0.938	0.726	mg/Kg dry	1.4541	ND	65	59-168			
Benzo(g,h,i)perylene	0.594	0.726	mg/Kg dry	1.4541	ND	41	56-147			S
Benzo(a)pyrene	0.808	0.131	mg/Kg dry	1.4541	ND	56	41-133			
Chrysene	1.11	0.726	mg/Kg dry	1.4541	ND	76	52-127			
Dibenz(a,h)anthracene	0.767	0.131	mg/Kg dry	1.4541	ND	53	60-170			S
Fluoranthene	1.07	0.726	mg/Kg dry	1.4541	ND	74	57-130			
Fluorene	1.05	0.726	mg/Kg dry	1.4541	ND	72	47-154			
Indeno(1,2,3-cd)pyrene	0.726	0.726	mg/Kg dry	1.4541	ND	50	59-132			S
Naphthalene	1.07	0.726	mg/Kg dry	1.4541	ND	73	40-135			
Phenanthrene	1.09	0.726	mg/Kg dry	1.4541	ND	75	54-126			
Pyrene	1.06	0.726	mg/Kg dry	1.4541	ND	73	57-132			
Surrogate: 2-Fluorobiphenyl	1.10		mg/Kg dry	1.4541		76	38-122			
Surrogate: Nitrobenzene-d5	1.14		mg/Kg dry	1.4541		78	45-136			
Surrogate: 4-Terphenyl-d14	1.15		mg/Kg dry	1.4541		79	57-122			

Matrix Spike Dup (X003202-MSD1)

Source: 14F0346-32

Prepared: 06/18/2014 Analyzed: 06/19/2014

Acenaphthene	1.05	0.730	mg/Kg dry	1.4608	ND	72	50-135	0.2	20	
Acenaphthylene	1.09	0.730	mg/Kg dry	1.4608	ND	74	51-134	0.4	20	
Anthracene	1.03	0.730	mg/Kg dry	1.4608	ND	70	52-117	0.5	20	
Benzo(a)anthracene	1.02	0.730	mg/Kg dry	1.4608	ND	70	50-126	4	20	
Benzo(b)fluoranthene	0.828	0.730	mg/Kg dry	1.4608	ND	57	57-134	16	20	S
Benzo(k)fluoranthene	0.879	0.730	mg/Kg dry	1.4608	ND	60	59-168	7	20	
Benzo(g,h,i)perylene	0.478	0.730	mg/Kg dry	1.4608	ND	33	56-147	22	20	R, S
Benzo(a)pyrene	0.714	0.131	mg/Kg dry	1.4608	ND	49	41-133	12	20	
Chrysene	1.03	0.730	mg/Kg dry	1.4608	ND	71	52-127	7	20	
Dibenz(a,h)anthracene	0.661	0.131	mg/Kg dry	1.4608	ND	45	60-170	15	20	S
Fluoranthene	1.05	0.730	mg/Kg dry	1.4608	ND	72	57-130	2	20	
Fluorene	1.04	0.730	mg/Kg dry	1.4608	ND	71	47-154	1	20	
Indeno(1,2,3-cd)pyrene	0.649	0.730	mg/Kg dry	1.4608	ND	44	59-132	11	20	S
Naphthalene	1.05	0.730	mg/Kg dry	1.4608	ND	72	40-135	2	20	
Phenanthrene	1.08	0.730	mg/Kg dry	1.4608	ND	74	54-126	1	20	
Pyrene	1.02	0.730	mg/Kg dry	1.4608	ND	70	57-132	3	20	
Surrogate: 2-Fluorobiphenyl	1.08		mg/Kg dry	1.4608		74	38-122			
Surrogate: Nitrobenzene-d5	1.15		mg/Kg dry	1.4608		78	45-136			
Surrogate: 4-Terphenyl-d14	1.10		mg/Kg dry	1.4608		75	57-122			

LABORATORY RESULTS

Client: True North Consultants

Project: Soil Assessment: Kramer and North

Lab Order: 14F0345

Metals by ICP-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch X003141 - SW 3050B Metals

Blank (X003141-BLK1)

Prepared: 06/16/2014 Analyzed: 06/17/2014

Mercury	U	0.0800	mg/Kg wet							
Selenium	U	0.500	mg/Kg wet							
Silver	U	0.500	mg/Kg wet							

LCS (X003141-BS1)

Prepared: 06/16/2014 Analyzed: 06/17/2014

Mercury	0.950	0.0800	mg/Kg wet	1.0000		95	80-120			
Selenium	22.8	0.500	mg/Kg wet	25.000		91	80-120			
Silver	2.60	0.500	mg/Kg wet	2.5000		104	80-120			

Matrix Spike (X003141-MS1)

Source: 14F0346-12

Prepared: 06/16/2014 Analyzed: 06/17/2014

Mercury	1.51	0.127	mg/Kg dry	1.5912	0.0753	90	75-125			
Selenium	39.3	0.796	mg/Kg dry	39.781	1.66	95	75-125			
Silver	3.77	0.796	mg/Kg dry	3.9781	ND	95	75-125			

Matrix Spike Dup (X003141-MSD1)

Source: 14F0346-12

Prepared: 06/16/2014 Analyzed: 06/17/2014

Mercury	1.50	0.127	mg/Kg dry	1.5912	0.0753	89	75-125	0.6	20	
Selenium	39.6	0.796	mg/Kg dry	39.781	1.66	95	75-125	0.7	20	
Silver	3.75	0.796	mg/Kg dry	3.9781	ND	94	75-125	0.5	20	

LABORATORY RESULTS

Client: True North Consultants

Project: Soil Assessment: Kramer and North

Lab Order: 14F0345

Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch X003140 - SW 3050B Metals

Blank (X003140-BLK1)

Prepared: 06/16/2014 Analyzed: 06/17/2014

Arsenic	U	0.500	mg/Kg wet							
Barium	U	0.250	mg/Kg wet							
Cadmium	U	0.250	mg/Kg wet							
Chromium	U	0.250	mg/Kg wet							
Lead	U	0.250	mg/Kg wet							

LCS (X003140-BS1)

Prepared: 06/16/2014 Analyzed: 06/17/2014

Arsenic	25.1	0.500	mg/Kg wet	25.000		100	85-115			
Barium	25.6	0.250	mg/Kg wet	25.000		103	85-115			
Cadmium	25.5	0.250	mg/Kg wet	25.000		102	85-115			
Chromium	25.7	0.250	mg/Kg wet	25.000		103	85-115			
Lead	25.3	0.250	mg/Kg wet	25.000		101	85-115			

Matrix Spike (X003140-MS1)

Source: 14F0346-12

Prepared: 06/16/2014 Analyzed: 06/17/2014

Arsenic	44.9	0.796	mg/Kg dry	39.781	7.01	95	75-125			
Cadmium	39.5	0.398	mg/Kg dry	39.781	1.59	95	75-125			
Chromium	52.4	0.398	mg/Kg dry	39.781	12.6	100	75-125			
Lead	62.1	0.398	mg/Kg dry	39.781	27.7	87	75-125			

Matrix Spike Dup (X003140-MSD1)

Source: 14F0346-12

Prepared: 06/16/2014 Analyzed: 06/17/2014

Arsenic	45.9	0.796	mg/Kg dry	39.781	7.01	98	75-125	2	20	
Cadmium	38.1	0.398	mg/Kg dry	39.781	1.59	92	75-125	4	20	
Chromium	52.8	0.398	mg/Kg dry	39.781	12.6	101	75-125	0.6	20	
Lead	65.3	0.398	mg/Kg dry	39.781	27.7	94	75-125	5	20	

LABORATORY RESULTS

Client:

True North Consultants

Project:

Soil Assessment: Kramer and North

Lab Order: 14F0345

Conventional Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch X003169 - SW 9045C pH

Duplicate (X003169-DUP1)	Source: 14F0345-01		Prepared & Analyzed: 06/17/2014							
pH	7.7	0.010	pH Units		7.6			1	5	

Batch X003184 - ASTM D2974 Solids

Blank (X003184-BLK1)	Prepared: 06/17/2014 Analyzed: 06/18/2014									
Percent Solids	U	0.100	%							
Duplicate (X003184-DUP1)	Source: 14F0346-17		Prepared: 06/17/2014 Analyzed: 06/18/2014							
Percent Solids	32.7	0.100	%		32.5			0.6	20	

LABORATORY RESULTS

Client: True North Consultants**Project:** Soil Assessment: Kramer and North**Lab Order:** 14F0345

Notes and Definitions

- S2 Surrogate recovery exceeds the acceptance criteria due to matrix interference, but there is no observable concentration in associated analyte(s).
- S Spike recovery outside acceptance limits.
- R RPD outside acceptance limits.
- * NELAC certified compound.
- U Analyte not detected (i.e. less than RL or MDL).
-

Analytical
Systems, INCORPORATED

PAS COC Rev. 3

NOT FOR BID



STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
NELAP - RECOGNIZED
ENVIRONMENTAL LABORATORY ACCREDITATION



is hereby granted to

PRAIRIE ANALYTICAL SYSTEMS, INCORPORATED

1210 CAPITAL AIRPORT DRIVE

SPRINGFIELD, IL 62707-8413

NELAP ACCREDITED

ACCREDITATION NUMBER #100323



According to the Illinois Administrative Code, Title 35, Subtitle A, Chapter II, Part 186, ACCREDITATION OF LABORATORIES FOR DRINKING WATER, WASTEWATER AND HAZARDOUS WASTES ANALYSIS, the State of Illinois formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed below.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part 186 requirements and acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part 186. Please contact the Illinois EPA Environmental Laboratory Accreditation Program (IL ELAP) to verify the laboratory's scope of accreditation and accreditation status. Accreditation by the State of Illinois is not an endorsement or a guarantee of validity of the data generated by the laboratory.

Celeste M. Crowley
Acting Manager
Environmental Laboratory Accreditation Program

John South
Accreditation Officer
Environmental Laboratory Accreditation Program

Certificate No.: 003353
Expiration Date: 01/31/2015
Issued On: 01/30/2014

State of Illinois
Environmental Protection Agency

Certificate No.: 003353

Awards the Certificate of Approval to:

Prairie Analytical Systems, Incorporated
1210 Capital Airport Drive
Springfield, IL 62707-8413

According to the Illinois Administrative Code, Title 35, Subtitle A, Chapter II, Part 186, ACCREDITATION OF LABORATORIES FOR DRINKING WATER, WASTEWATER AND HAZARDOUS WASTES ANALYSIS, the State of Illinois formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed below.

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FOT Name: Drinking Water, Inorganic

Method: SM2130B,18Ed

Matrix Type: Potable Water

Turbidity

Method: SM2320B,18Ed

Matrix Type: Potable Water

Alkalinity

Method: SM2340B,18Ed

Matrix Type: Potable Water

Hardness

Method: SM4110B,18Ed

Matrix Type: Potable Water

Chloride

Nitrate

Orthophosphate

Fluoride

Nitrite

Sulfate

Method: SM4500CN-CE,18Ed

Matrix Type: Potable Water

Cyanide

Method: SM4500H-B,18Ed

Matrix Type: Potable Water

Hydrogen ion (pH)

Method: SM5310C,20Ed

Matrix Type: Potable Water

Total Organic Carbon (TOC)

Method: USEPA150.1

Matrix Type: Potable Water

Hydrogen ion (pH)

Method: USEPA180.1

Matrix Type: Potable Water

Turbidity

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FOT Name: Drinking Water, Inorganic

Method: USEPA200.7R4.4

Matrix Type: Potable Water

Aluminum	Arsenic
Barium	Beryllium
Cadmium	Calcium
Chromium	Copper
Hardness (calc.)	Iron
Magnesium	Manganese
Nickel	Silver
Sodium	Zinc

Method: USEPA200.8R5.4

Matrix Type: Potable Water

Aluminum	Antimony
Arsenic	Barium
Beryllium	Cadmium
Chromium	Copper
Lead	Manganese
Mercury	Molybdenum
Nickel	Selenium
Silver	Thallium
Zinc	

Method: USEPA300.0R2.1

Matrix Type: Potable Water

Chloride	Fluoride
Nitrate	Nitrite
Orthophosphate	Sulfate

FOT Name: Drinking Water, Organic

Method: USEPA524.2R4.1

Matrix Type: Potable Water

1,1,1-Trichloroethane	1,1,2-Trichloroethane
1,1-Dichloroethene	1,2,4-Trichlorobenzene
1,2-Dichlorobenzene	1,2-Dichloroethane
1,2-Dichloropropane	1,4-Dichlorobenzene
Benzene	Bromodichloromethane
Carbon tetrachloride	Chlorobenzene

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FOT Name: Drinking Water, Organic

Method: USEPA524.2R4.1

Matrix Type: Potable Water

Chloroform
Dichloromethane (Methylene chloride)
Methyl tert-butyl ether (MTBE)
Styrene
Toluene
trans-1,2-Dichloroethene
Vinyl chloride

Chlorodibromomethane
cis-1,2-Dichloroethene
Ethylbenzene
Naphthalene
Tetrachloroethene
Total trihalomethanes
Trichloroethylene
Xylenes (total)

Method: USEPA525.2R2.0

Matrix Type: Potable Water

4,4'-DDT
Aldrin
Benzo(a)pyrene
Di (2-ethylhexyl) phthalate
Endrin
Heptachlor
Hexachlorobenzene
Methoxychlor

Alachlor
Atrazine
Di (2-ethylhexyl) adipate
Dieldrin
gamma-BHC (Lindane)
Heptachlor epoxide
Hexachlorocyclopentadiene
Simazine

FOT Name: Non Potable Water, Inorganic

Method: SM2130B,2001

Matrix Type: NPW/SCM

Turbidity

Method: SM2310B,1997

Matrix Type: NPW/SCM

Acidity

Method: SM2320B,1997

Matrix Type: NPW

Alkalinity

Method: SM2340B,1997

Matrix Type: NPW

Hardness

Method: SM2540B,1997

Matrix Type: NPW

Residue (Total)

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FOT Name: Non Potable Water, Inorganic

Method: SM2540C,1997

Matrix Type: NPW

Residue (TDS)

Method: SM2540D,1997

Matrix Type: NPW

Residue (TSS)

Method: SM3500Cr-B,2009

Matrix Type: NPW/SCM

Chromium VI

Method: SM4110B,2000

Matrix Type: NPW/SCM

Bromide

Chloride

Fluoride

Nitrate

Nitrate-Nitrite (as N)

Nitrite

Orthophosphate (as P)

Sulfate

Method: SM4500Cl-G,2000

Matrix Type: NPW

Chlorine, Total Residual

Method: SM4500CN-E,1999

Matrix Type: NPW

Cyanide

Method: SM4500H-B,2000

Matrix Type: NPW

Hydrogen Ion (pH)

Method: SM4500NH3-D,1997

Matrix Type: NPW/SCM

Ammonia

Total Kjeldahl Nitrogen

Method: SM4500O-G,2001

Matrix Type: NPW

Oxygen - Dissolved

Method: SM4500P-E,1999

Matrix Type: NPW

Orthophosphate (as P)

Phosphorus

Method: SM4500S-F,2000

Matrix Type: NPW/SCM

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FOT Name: Non Potable Water, Inorganic

Method: SM4500S-F,2000

Matrix Type: NPW/SCM

Sulfide

Method: SM5210B,2001

Matrix Type: NPW

Biochemical Oxygen Demand (BOD)

Matrix Type: NPW/SCM

Carbonaceous Biochemical Oxygen Demand (CBOI)

Method: SM5220D,1997

Matrix Type: NPW

Chemical Oxygen Demand (COD)

Method: SM5310C,2000

Matrix Type: NPW

Total Organic Carbon (TOC)

Method: USEPA150.2,1982

Matrix Type: NPW/SCM

Hydrogen Ion (pH)

Method: USEPA160.4,1971

Matrix Type: NPW

Residue (Volatile)

Method: USEPA1664A

Matrix Type: NPW

Oil and Grease

Method: USEPA180.1R2.0,1993

Matrix Type: NPW

Turbidity

Method: USEPA200.7,1994

Matrix Type: NPW/SCM

Aluminum

Arsenic

Beryllium

Cadmium

Chromium

Copper

Lead

Manganese

Antimony

Barium

Boron

Calcium

Cobalt

Iron

Magnesium

Molybdenum

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FOT Name: Non Potable Water, Inorganic

Method: USEPA200.7,1994

Matrix Type: NPW/SCM

Potassium
Silver
Thallium
Titanium
Zinc

Nickel
Selenium
Sodium
Tin
Vanadium

Method: USEPA200.8,1994

Matrix Type: NPW/SCM

Aluminum
Arsenic
Beryllium
Cadmium
Chromium
Copper
Lead
Manganese
Nickel
Selenium
Sodium
Tin
Vanadium

Antimony
Barium
Boron
Calcium
Cobalt
Iron
Magnesium
Molybdenum
Potassium
Silver
Thallium
Titanium
Zinc

Method: USEPA300.0R2.1,1993

Matrix Type: NPW

Bromide
Fluoride
Nitrate-Nitrite (as N)
Orthophosphate (as P)

Chloride
Nitrate
Nitrite
Sulfate

Method: USEPA410.4R2.0,1993

Matrix Type: NPW

Chemical Oxygen Demand (COD)

Method: USEPA420.1,1978

Matrix Type: NPW

Phenolics

FOT Name: Solid and Chemical Materials, Inorganic

State of Illinois
Environmental Protection Agency

Certificate No.: 003353

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Prairie Analytical Systems, Incorporated
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FOT Name: Solid and Chemical Materials, Inorganic

Method: 1010A

Matrix Type: NPW/SCM

Ignitability

Method: 1311

Matrix Type: SCM

TCLP (Organic and Inorganic)

Method: 1312

Matrix Type: SCM

Synthetic Precipitation Leaching Procedure

Method: 6010B

Matrix Type: NPW/SCM

Aluminum

Arsenic

Beryllium

Cadmium

Chromium

Copper

Lead

Manganese

Nickel

Selenium

Sodium

Thallium

Titanium

Zinc

Antimony

Barium

Boron

Calcium

Cobalt

Iron

Magnesium

Molybdenum

Potassium

Silver

Strontium

Tin

Vanadium

Method: 6020A

Matrix Type: NPW/SCM

Aluminum

Arsenic

Beryllium

Cadmium

Chromium

Copper

Lead

Manganese

Antimony

Barium

Boron

Calcium

Cobalt

Iron

Magnesium

Mercury

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FOT Name: Solid and Chemical Materials, Inorganic

Method: 6020A

Matrix Type: NPW/SCM

Nickel
Selenium
Sodium
Vanadium

Molybdenum
Potassium
Silver
Thallium
Zinc

Method: 7196A

Matrix Type: NPW/SCM

Chromium VI

Method: 7471B

Matrix Type: SCM

Mercury

Method: 9014

Matrix Type: NPW/SCM

Cyanide

Method: 9034

Matrix Type: NPW/SCM

Sulfides

Method: 9040B

Matrix Type: NPW

Hydrogen Ion (pH)

Method: 9040C

Matrix Type: NPW

Hydrogen Ion (pH)

Method: 9045C

Matrix Type: SCM

Hydrogen Ion (pH)

Method: 9045D

Matrix Type: SCM

Hydrogen Ion (pH)

Method: 9056A

Matrix Type: NPW/SCM

Bromide
Fluoride
Nitrite

Chloride
Nitrate
Phosphate

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FOT Name: Solid and Chemical Materials, Inorganic

Method: 9056A

Matrix Type: NPW/SCM

Sulfate

Method: 9060A

Matrix Type: NPW/SCM

Total Organic Carbon (TOC)

Method: 9065

Matrix Type: NPW/SCM

Phenolics

Method: 9081

Matrix Type: NPW/SCM

Cation-exchange Capacity

Method: 9095A

Matrix Type: NPW/SCM

Paint Filter

FOT Name: Solid and Chemical Materials, Organic

Method: 8015B

Matrix Type: NPW/SCM

Diesel range organics (DRO)

Gasoline range organics (GRO)

Method: 8081A

Matrix Type: NPW/SCM

4,4'-DDD

4,4'-DDE

4,4'-DDT

Aldrin

alpha-BHC

alpha-Chlordane

beta-BHC

Chlordane - not otherwise specified

delta-BHC

Dieldrin

Endosulfan I

Endosulfan II

Endosulfan sulfate

Endrin

Endrin aldehyde

Endrin ketone

gamma-BHC (Lindane)

gamma-Chlordane

Heptachlor

Heptachlor epoxide

Methoxychlor

Toxaphene

Method: 8082

Matrix Type: NPW/SCM

PCB-1016

PCB-1221

PCB-1232

PCB-1242

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FOT Name: Solid and Chemical Materials, Organic

Method: 8082

Matrix Type: NPW/SCM

PCB-1248

PCB-1254

PCB-1260

Method: 8260B

Matrix Type: NPW/SCM

1,1,1,2-Tetrachloroethane

1,1,1-Trichloroethane

1,1,2,2-Tetrachloroethane

1,1,2-Trichloroethane

1,1-Dichloroethane

1,1-Dichloroethene

1,1-Dichloropropene

1,2,3-Trichlorobenzene

1,2,3-Trichloropropane

1,2,4-Trichlorobenzene

1,2,4-Trimethylbenzene

1,2-Dibromo-3-chloropropane (DBCP)

1,2-Dibromoethane (EDB)

1,2-Dichlorobenzene

1,2-Dichloroethane

1,2-Dichloropropane

1,3,5-Trimethylbenzene

1,3-Dichlorobenzene

1,3-Dichloropropane

1,4-Dichlorobenzene

2,2-Dichloropropane

2-Butanone (Methyl ethyl ketone, MEK)

2-Chloroethyl vinyl ether

2-Chlorotoluene

2-Hexanone

4-Chlorotoluene

4-Methyl-2-pentanone (Methyl isobutyl ketone, MIBK)

Acetone

Acetonitrile

Acrolein (Propenal)

Acrylonitrile

Benzene

Bromobenzene

Bromochloromethane

Bromodichloromethane

Bromoform

Bromomethane

Carbon disulfide

Carbon tetrachloride

Chlorobenzene

Chlorodibromomethane (Dibromochloromethane)

Chloroethane

Chloroform

Chloromethane

cis-1,2-Dichloroethene

cis-1,3-Dichloropropene

Dibromomethane

Dichlorodifluoromethane

Dichloromethane (Methylene chloride)

Ethylbenzene

Hexachlorobutadiene

Isopropylbenzene

Methyl-t-butyl ether

Naphthalene

n-Butylbenzene

n-Propylbenzene

p-Isopropyltoluene

sec-Butylbenzene

Styrene

tert-Butylbenzene

Tetrachloroethene

Toluene

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FOT Name: Solid and Chemical Materials, Organic

Method: 8260B

Matrix Type: NPW/SCM

trans-1,3-Dichloropropene
Trichlorofluoromethane
Vinyl chloride

trans-1,2-Dichloroethene
Trichloroethene
Vinyl acetate
Xylenes (Total)

Method: 8270C

Matrix Type: NPW/SCM

1,2,4-Trichlorobenzene
1,3-Dichlorobenzene
2,4,5-Trichlorophenol
2,4-Dichlorophenol
2,4-Dinitrophenol
2,6-Dinitrotoluene (2,6-DNT)
2-Chlorophenol
2-Methylphenol (o-Cresol)
2-Nitrophenol
3-Nitroaniline
4-Bromophenyl phenyl ether
4-Chloroaniline
4-Methylphenol (p-Cresol)
4-Nitrophenol
Acenaphthylene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Bis(2-chloroethyl) ether
Bis(2-ethylhexyl) phthalate
Carbazole
Chlorobenzilate
Dibenz(a,h)anthracene
Diethyl phthalate
Di-n-butyl phthalate
Fluoranthene
Hexachlorobenzene
Hexachlorocyclopentadiene
Indeno(1,2,3-cd) pyrene

1,2-Dichlorobenzene
1,4-Dichlorobenzene
2,4,6-Trichlorophenol
2,4-Dimethylphenol
2,4-Dinitrotoluene (2,4-DNT)
2-Chloronaphthalene
2-Methylnaphthalene
2-Nitroaniline
3,3'-Dichlorobenzidine
4,6-Dinitro-2-methylphenol
4-Chloro-3-methylphenol
4-Chlorophenyl phenyl ether
4-Nitroaniline
Acenaphthene
Anthracene
Benzo(a)pyrene
Benzo(g,h,i)perylene
Bis(2-chloroethoxy) methane
Bis(2-chloroisopropyl) ether
Butyl benzyl phthalate
Carbofuran (Furaden)
Chrysene
Dibenzofuran
Dimethyl phthalate
Di-n-octyl phthalate
Fluorene
Hexachlorobutadiene
Hexachloroethane
Isophorone

State of Illinois
Environmental Protection Agency

Certificate No.: 003353

Awards the Certificate of Approval

Prairie Analytical Systems, Incorporated
1210 Capital Airport Drive
Springfield, IL 62707-8413

FOT Name: Solid and Chemical Materials, Organic

Method: 8270C

Matrix Type: NPW/SCM

Nitrobenzene
N-Nitrosodi-n-propylamine
o-Cresol (2-Methylphenol)
Pentachlorophenol
Phenol

Naphthalene
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
p-Cresol (4-Methylphenol)
Phenanthrene
Pyrene

Method: 8270C Mod_Farm Chemicals

Matrix Type: NPW/SCM

Acetochlor
Atrazine
Chlorpyrifos
EPTC
Metribuzin
Prometon
Terbufos

Alachlor
Butylate
Cyanazine
Metolachlor
Pendimethalin
Simazine
Trifluralin

Method: 8321B

Matrix Type: NPW/SCM

2,4,5-T
2,4-D
Aldicarb (Temik)
Dalapon
Dinoseb
MCP

2,4,5-TP (Silvex)
2,4-DB
Carbofuran (Furaden)
Dicamba
MCPA
Oxamyl

NOT FOR BID

EDR VISTACheck® Report

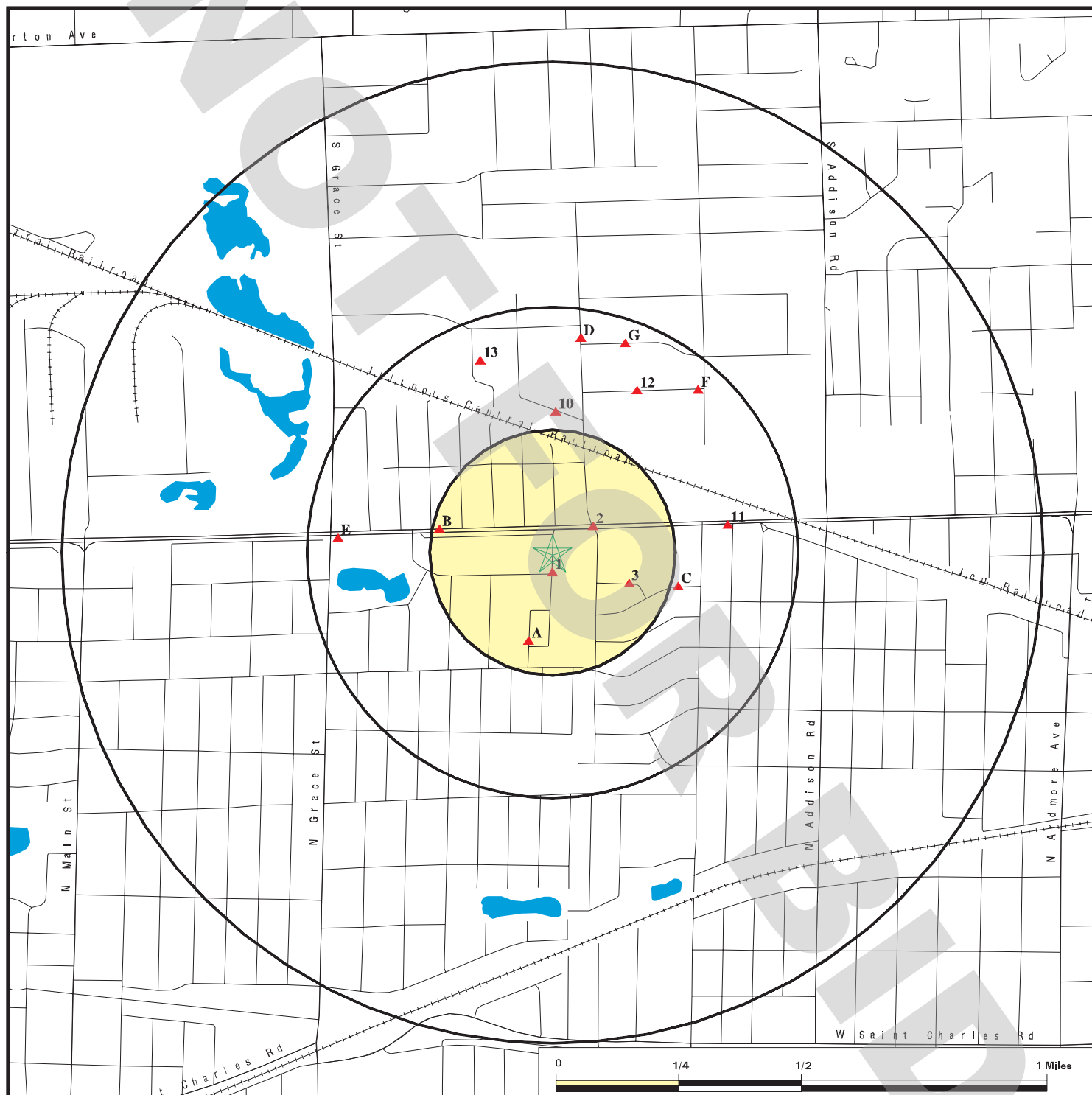
Winston Engineering
Kramer Avenue
Lombard, IL 60148

Latitude (North): 41.904309 - 41°54'15.5124"
Longitude (West): 87.999216 - 87°59'57.1776"

April 27, 2014



Nationwide Customer Service
Telephone: 1-800-352-0050
Internet: www.edrnet.com



- ★ Target Property
- ▲ Toxic Sites
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA

NOT FOR BID

EDR VISTACheck® Report

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Map Findings	7
Orphan Summary	28

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NOT FOR BID

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	0.500		0	0	0	NR	NR	0
Proposed NPL	0.500		0	0	0	NR	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	0.500		0	0	0	NR	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	1,000		0	0	0	0	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	1	NR	NR	1
Federal RCRA CORRACTS facilities list								
CORRACTS	0.500		0	0	0	NR	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		1	0	NR	NR	NR	1
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SSU	0.500		0	0	0	NR	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
LF SPECIAL WASTE	0.500		0	0	0	NR	NR	0
IL NIPC	0.500		0	0	0	NR	NR	0
CCDD	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	2	11	NR	NR	13

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LUST TRUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	1	NR	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	1	NR	NR	1
State and tribal voluntary cleanup sites								
SRP	0.500		0	0	1	NR	NR	1
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	0.500		0	0	0	NR	NR	0
FUDS	0.500		0	0	0	NR	NR	0
CONSENT	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
ROD	0.500		0	0	0	NR	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
HWAR	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
IMPDMENT	0.500		0	0	0	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
TIER 2	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	0.500		0	0	0	NR	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
PIMW	0.250		0	0	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
BOL	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	0.500	0	0	0	NR	NR	0
EDR US Hist Auto Stat	0.250	1	3	NR	NR	NR	4
EDR US Hist Cleaners	0.250	0	0	NR	NR	NR	0

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST	0.500	0	0	8	NR	NR	8

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
RGA HWS	0.500		0	0	0	NR	NR	0
RGA LF	0.500		0	0	0	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID			EDR ID Number
Direction			
Distance			
Distance (ft.)	Site	Database(s)	EPA ID Number

1		EDR US Hist Auto Stat	1015608541
South	705 N KRAMER AVE		N/A
< 1/8	LOMBARD, IL 60148		
0.039 mi.			
208 ft.			

EDR Historical Auto Stations:

Name:	WHOLESALE AUTO SERVICE CLUB
Year:	2002
Address:	705 N KRAMER AVE

2	AMOCO 5892	RCRA-SQG	1000825027
ENE	743 W NORTH AND LINCOLN	FINDS	ILD984914283
< 1/8	VILLA PARK, IL 60181		
0.099 mi.			
525 ft.			

RCRA-SQG:

Date form received by agency:	03/15/1993
Facility name:	AMOCO 5892
Facility address:	743 W NORTH AND LINCOLN VILLA PARK, IL 60181
EPA ID:	ILD984914283
Mailing address:	2021 SPRING RD 400 OAK BROOK, IL 60521
Contact:	LINDA CURRAN
Contact address:	2021 SPRING RD 400 OAK BROOK, IL 60521
Contact country:	US
Contact telephone:	(708) 990-2277
Contact email:	Not reported
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	AMOCO OIL CO
Owner/operator address:	2021 SPRING RD 400 OAK BROOK, IL 60521
Owner/operator country:	Not reported
Owner/operator telephone:	(708) 990-2277
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

AMOCO 5892 (Continued)

1000825027

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:

Waste code: D001
Waste name:

IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKEY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Violation Status: No violations found

FINDS:

Registry ID: 110007549698

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

3
ESE
1/8-1/4
0.168 mi.
888 ft.

IBRAHIM, IBRAHIM T.
686 ROY ST.
VILLA PARK, IL 60181

LUST S103293498
BOL N/A

LUST:

Incident Num: 922191
IL EPA Id: 0430805086
Product: Fuel Oil
IEMA Date: 08/11/1992
Project Manager: Weller
Project Manager Phone: (217) 524-4647
Email: Melinda.Weller@illinois.gov
PRP Name: Ibrahim T. Ibrahim
PRP Contact: Ibrahim T. Ibrahim
PRP Address: P.O. Box 623
PRP City,St,Zip: Warrenville, IL 60555
PRP Phone: Not reported
Site Classification: Not reported
Section 57.5(g) Letter: 731
Date Section 57.5(g) Letter: Not reported
Non LUST Determination Letter: Not reported
20 Report Received: 09/03/1992
45 Report Received: 11/06/1992

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

IBRAHIM, IBRAHIM T. (Continued)

S103293498

NFA/NFR Letter: 11/09/1994
NFR Date Recorded: Not reported

BOL:

Site Id: 170000560355
Inv Num: 0430805086
Interest Name: Ibrahim, Ibrahim T
Interest Type: BOL
Media Code: LAND

A4
SSW
1/8-1/4
0.178 mi.
941 ft.

FORMER VFW POST 5815/ VILLAGE OF LOMBARD
635 PARKER DRIVE
LOMBARD, IL 60148

LUST **U003805700**
UST **N/A**
BOL

Site 1 of 2 in cluster A

LUST:

Incident Num: 20011835
IL EPA Id: 0430605224
Product: Gasoline
IEMA Date: 11/05/2001
Project Manager: Davis
Project Manager Phone: (217) 785-7492
Email: Valerie.A.Davis@illinois.gov
PRP Name: Village of Lombard
PRP Contact: John Burg
PRP Address: 255 East Wilson Ave.
PRP City,St,Zip: Lombard, IL 60148
PRP Phone: 6306205765
Site Classification: Not reported
Section 57.5(g) Letter: 732
Date Section 57.5(g) Letter: Not reported
Non LUST Determination Letter: Not reported
20 Report Received: 11/27/2001
45 Report Received: 01/02/2002
NFA/NFR Letter: 02/06/2002
NFR Date Recorded: 02/15/2002

UST:

Facility ID: 2040701
Facility Status: EXEMPT
Facility Type: NONE
Owner Id: U0009328
Owner Name: Village of Lombard
Owner Address: 255 E. Wilson Avenue
Owner City,St,Zip: Lombard, IL 60148

Tank Number: 1
Tank Status: Exempt from registration
Tank Capacity: 500
Tank Substance: Heating Oil
Last Used Date: 12/30/1973
OSFM First Notify Date: 11/20/2001
Red Tag Issue Date: Not reported
Install Date: Not reported
Green Tag Decal: Not reported
Green Tag Issue Date: Not reported

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

FORMER VFW POST 5815/ VILLAGE OF LOMBARD (Continued)

U003805700

Green Tag Expire Date: Not reported
Self Service Permit Inspection Date: Not reported
Self Service Permit Expire Date: Not reported
Fee Due: Not reported

BOL:

Site Id: 170000559483
Inv Num: 0430605224
Interest Name: Former VFW Post 5815
Interest Type: BOL
Media Code: LAND

**A5
SSW
1/8-1/4
0.192 mi.
1015 ft.**

**618 PARKER DR
LOMBARD, IL 60148**

**EDR US Hist Auto Stat 1015578492
N/A**

Site 2 of 2 in cluster A

EDR Historical Auto Stations:

Name: E & M AUTO SERVICES
Year: 2005
Address: 618 PARKER DR

**B6
WNW
1/8-1/4
0.230 mi.
1216 ft.**

**620 E NORTH AVE
LOMBARD, IL 60148**

**EDR US Hist Auto Stat 1015579488
N/A**

Site 1 of 2 in cluster B

EDR Historical Auto Stations:

Name: AREAWIDE AUTOMOTIVE INC
Year: 2005
Address: 620 E NORTH AVE

Name: AREAWIDE AUTOMOTIVE
Year: 2008
Address: 620 E NORTH AVE

Name: AREAWIDE AUTOMOTIVE
Year: 2010
Address: 620 E NORTH AVE

Name: AREAWIDE AUTOMLNTIVF
Year: 2011
Address: 620 E NORTH AVE

Name: AREAWIDE AUTOMOTIVE
Year: 2012
Address: 620 E NORTH AVE

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site
Database(s)
EDR ID Number
EPA ID Number

B7
WNW
1/8-1/4
0.241 mi.
1270 ft.
610 E NORTH AVE
LOMBARD, IL 60148
Site 2 of 2 in cluster B
EDR US Hist Auto Stat
1015574566
N/A

EDR Historical Auto Stations:

Name: M & A AUTO REPAIR INCORPORATED
Year: 1999
Address: 610 E NORTH AVE

Name: M & A AUTO REPAIR INCORPORATED
Year: 2000
Address: 610 E NORTH AVE

Name: WOOD DALE TRANSMISSION EXCHNG
Year: 2001
Address: 610 E NORTH AVE

Name: AREAWIDE AUTOMOBILE
Year: 2005
Address: 610 E NORTH AVE

C8
ESE
1/4-1/2
0.265 mi.
1399 ft.
IBRAHIM, IBRAHIM T.
638 WEST RIDGE ST.
VILLA PARK, IL 60181
Site 1 of 2 in cluster C
LUST
S104526078
N/A

LUST:

Incident Num: 911001
IL EPA Id: 0430805059
Product: Fuel Oil
IEMA Date: 04/13/1991
Project Manager: NOT ASSIGNED
Project Manager Phone: Not reported
Email: Not reported
PRP Name: Ludwig Migrzejewski
PRP Contact: Not reported
PRP Address: 3451 North Neva
PRP City,St,Zip: Chicago, IL 60634
PRP Phone: Not reported
Site Classification: Not reported
Section 57.5(g) Letter: 731
Date Section 57.5(g) Letter: Not reported
Non LUST Determination Letter: Not reported
20 Report Received: Not reported
45 Report Received: Not reported
NFA/NFR Letter: 11/09/1994
NFR Date Recorded: Not reported

Incident Num: 930020
IL EPA Id: 0430805086
Product: Fuel Oil
IEMA Date: 01/04/1993
Project Manager: NOT ASSIGNED
Project Manager Phone: Not reported
Email: Not reported
PRP Name: Ibrahim T. Ibrahim
PRP Contact: Ibrahim T. Ibrahim

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

IBRAHIM, IBRAHIM T. (Continued)

S104526078

PRP Address: P.O. Box 623
PRP City,St,Zip: Warrenville, IL 60555
PRP Phone: Not reported
Site Classification: Not reported
Section 57.5(g) Letter: 731
Date Section 57.5(g) Letter: Not reported
Non LUST Determination Letter: Not reported
20 Report Received: Not reported
45 Report Received: Not reported
NFA/NFR Letter: 11/09/1994
NFR Date Recorded: Not reported

C9
ESE
1/4-1/2
0.265 mi.
1399 ft.

MIGRZEJEWSKI, LUDWIG
638 WEST RIDGE RD.
VILLA PARK, IL

RGA LUST S115513096
N/A

Site 2 of 2 in cluster C

RGA LUST:

2012	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2011	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2010	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2009	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2008	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2007	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2006	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2005	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2004	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2003	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2002	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2001	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.
2000	MIGRZEJEWSKI, LUDWIG	638 WEST RIDGE RD.

10
North
1/4-1/2
0.288 mi.
1522 ft.

GLEN ELLYN STORAGE CORP
445 W KAY AVE
ADDISON, IL 60101

RCRA-SQG 1000322161
LUST ILD024978710

RCRA-SQG:

Date form received by agency: 12/12/2000
Facility name: GLEN ELLYN STORAGE CORP
Facility address: 445 W KAY AVE
ADDISON, IL 60101
EPA ID: ILD024978710
Contact: DAVID J HENNICKE
Contact address: 445 W KAY AVE
ADDISON, IL 60101
Contact country: US
Contact telephone: (630) 543-2200
Contact email: Not reported
EPA Region: 05
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

GLEN ELLYN STORAGE CORP (Continued)

1000322161

hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: NAME NOT REPORTED
Owner/operator address: ADDRESS NOT REPORTED
CITY NOT REPORTED, AK 99998
Owner/operator country: Not reported
Owner/operator telephone: (312) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: HENNICKE DAVID J
Owner/operator address: 445 W KAY AVE
ADDISON, IL 60101
Owner/operator country: Not reported
Owner/operator telephone: (630) 543-2200
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 12/12/2000
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 09/09/1988
Facility name: GLEN ELLYN STORAGE CORP
Classification: Small Quantity Generator

Hazardous Waste Summary:

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKEY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

GLEN ELLYN STORAGE CORP (Continued)

1000322161

Waste code: F001
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

LUST:

Incident Num: 931680
IL EPA Id: 0434125189
Product: Gasoline
IEMA Date: 06/22/1993
Project Manager: Wallace
Project Manager Phone: (217) 524-1283
Email: Donna.Wallace@illinois.gov
PRP Name: George Gorman
PRP Contact: Not reported
PRP Address: 17 Ivy Ln.
PRP City,St,Zip: Oak Brook, IL 60521
PRP Phone: Not reported
Site Classification: Not reported
Section 57.5(g) Letter: 731
Date Section 57.5(g) Letter: Not reported
Non LUST Determination Letter: Not reported
20 Report Received: 07/08/1993
45 Report Received: 08/03/1993
NFA/NFR Letter: 11/24/1993
NFR Date Recorded: Not reported

11
East
1/4-1/2
0.362 mi.
1912 ft.

EUROPEAN CLEANERS
1025 WEST NORTH AVENUE
VILLA PARK, IL 60181

INST CONTROL S106540857
SRP N/A

IL INSTITUTIONAL CONTROL:

Illinois EPA Id: 0430805083
NFR Letter: 10/10/2007
Date NFR Recorded: 10/30/2007
Type Of Site: Industrial/Commercial
Comprehensive / Focused: Focused
Remediation Applicant Title: Mr.
Remediation Applicant Name: Jung Bong Suh
RA Company: Not reported
RA Address: 1025 West North Avenue
RA Secondary Address: Not reported
RA City,St,Zip: Villa Park, IL 60181-
Institutional Controls: Groundwater use restriction
Engineered Barriers: Not reported
Worker Caution: False
Acres: 0.140

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

EUROPEAN CLEANERS (Continued)

S106540857

SRP:
IL EPA Id: 0430805083
US EPA Id: ILD984901611
Longitude: -88.00412
Latitude: 41.90440
Contact Name: Jung Bong Suh
Contact Address: 1025 West North Avenue
Contact Address2: Not reported
Contact City,St,Zip: Villa Park, IL 60181-
Contact Phone: (630) 495-9073
Date Enrolled: 12/08/2006
Point Of Contact: Yong H. Yu
Consultant Company: Hydrodynamics Consultants, Inc.
Consultant Address: 5403 Patton Drive
Consultant Address2: #215
Consultant City,St,Zip: Lisle, IL 60532-
Consultant Phone: (630) 724-0098
Proj Mgr Assigned: Guy
Sec. 4 Letter Date: Not reported
NFR Recorded: 10/30/2007
Active: False
Total Acres: 0.140
No Further Remediation Letter Dt: 10/10/2007
Remediation Applicant Co: Not reported
Remediation Applicant Title: Mr.
Remediation Applicant Name: Mr. Jung Bong Suh
Remediation Applicant Company: Not reported
Remediation Applicant Address: 1025 West North Avenue
Remediation Applicant Address 2: Not reported
Remediation Applicant City,St,Zip: Villa Park, IL 60181-
Illinois EPA: 0430805083
Site Name: European Cleaners
NFR Letter: 2007-10-10
NFR Letter Date Recorded: 2007-10-30
Site Type: Industrial/Commercial
Comprehensive/Focused: Focused
Institutional Controls: Groundwater use restriction
Barrier: Not reported
Worker Caution: False
Acres: 0.140

IL EPA Id: 0430805083
US EPA Id: ILD984901611
Longitude: -88.00412
Latitude: 41.90440
Contact Name: Jung Bong Suh
Contact Address: 1025 West North Avenue
Contact Address2: Not reported
Contact City,St,Zip: Villa Park, IL 60181-
Contact Phone: (630) 495-9073
Date Enrolled: 12/08/2006
Point Of Contact: Yong H. Yu
Consultant Company: Hydrodynamics Consultants, Inc.
Consultant Address: 5403 Patton Drive
Consultant Address2: #215
Consultant City,St,Zip: Lisle, IL 60532-

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

EUROPEAN CLEANERS (Continued)

S106540857

Consultant Phone: (630) 724-0098
Proj Mgr Assigned: Guy
Sec. 4 Letter Date: Not reported
NFR Recorded: Not reported
Active: False
Total Acres: 0.140
No Further Remediation Letter Dt: 06/05/2007
Remediation Applicant Co: Not reported
Remediation Applicant Title: Mr.
Remediation Applicant Name: Mr. Jung Bong Suh
Remediation Applicant Company: Not reported
Remediation Applicant Address: 1025 West North Avenue
Remediation Applicant Address 2: Not reported
Remediation Applicant City,St,Zip: Villa Park, IL 60181-
Illinois EPA: 0430805083
Site Name: European Cleaners
NFR Letter: 2007-10-10
NFR Letter Date Recorded: 2007-10-30
Site Type: Industrial/Commercial
Comprehensive/Focused: Focused
Institutional Controls: Groundwater use restriction
Barrier: Not reported
Worker Caution: False
Acres: 0.140

12
NNE
1/4-1/2
0.373 mi.
1971 ft.

HERITAGE INK CO
310 GERRI LN
ADDISON, IL 60101

CERC-NFRAP 1015733682
RCRA NonGen / NLR ILD050576214

CERC-NFRAP:
Site ID: 0506873
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

Program Priority:
Description: RCRA Deferral Audit

Description: RCRA Deferral - New Decision

CERCLIS-NFRAP Assessment History:
Action: PRELIMINARY ASSESSMENT
Date Started: / /
Date Completed: 09/08/92
Priority Level: Deferred to RCRA (Subtitle C)

Action: SITE REASSESSMENT
Date Started: / /
Date Completed: 09/17/01
Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

Action: DISCOVERY
Date Started: / /
Date Completed: 03/25/92

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

HERITAGE INK CO (Continued)

1015733682

Priority Level: Not reported

Action: ARCHIVE SITE

Date Started: / /

Date Completed: 09/25/95

Priority Level: Not reported

RCRA NonGen / NLR:

Date form received by agency: 03/01/1991

Facility name: HERITAGE INK CO

Facility address: 310 GERRI LN

ADDISON, IL 60101

EPA ID: ILD050576214

Mailing address: 310 GERRI LANE

ADDISON, IL 60101

Contact: Not reported

Contact address: Not reported

Not reported

Contact country: Not reported

Contact telephone: Not reported

Contact email: Not reported

EPA Region: 05

Land type: Facility is not located on Indian land. Additional information is not known.

Classification: Non-Generator

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: GEORGE MURPHY

Owner/operator address: ADDRESS NOT REPORTED
CITY NOT REPORTED, AK 99998

Owner/operator country: Not reported

Owner/operator telephone: (312) 555-1212

Legal status: Private

Owner/Operator Type: Owner

Owner/Op start date: Not reported

Owner/Op end date: Not reported

Owner/operator name: NAME NOT REPORTED

Owner/operator address: ADDRESS NOT REPORTED
CITY NOT REPORTED, AK 99998

Owner/operator country: Not reported

Owner/operator telephone: (312) 555-1212

Legal status: Private

Owner/Operator Type: Operator

Owner/Op start date: Not reported

Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No

Mixed waste (haz. and radioactive): No

Recycler of hazardous waste: No

Transporter of hazardous waste: No

Treater, storer or disposer of HW: Yes

Underground injection activity: No

On-site burner exemption: No

Furnace exemption: No

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

HERITAGE INK CO (Continued)

1015733682

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 10/09/1980
Facility name: HERITAGE INK CO
Classification: Not a generator, verified

Date form received by agency: 07/07/1980
Facility name: HERITAGE INK CO
Classification: Not a generator, verified

Hazardous Waste Summary:

Waste code: K049
Waste name: SLOP OIL EMULSION SOLIDS FROM THE PETROLEUM REFINING INDUSTRY

Waste code: K078
Waste name: K078

Facility Has Received Notices of Violations:

Regulation violated: Not reported
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 11/12/1987
Date achieved compliance: 05/20/1988
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/22/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:

Evaluation date: 11/12/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 05/20/1988
Evaluation lead agency: State

13
NNW
1/4-1/2
0.419 mi.
2211 ft.

CARTEX CORP.
930 SPILES DR.
ADDISON, IL 60101

LUST S104002970
N/A

LUST:

Incident Num: 910666
IL EPA Id: 0430055260
Product: Gasoline, Deisel
IEMA Date: 03/14/1991

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

CARTEX CORP. (Continued)

S104002970

Project Manager: Hamilton
Project Manager Phone: (217) 782-6762
Email: Not reported
PRP Name: Cartex Corp.
PRP Contact: Robert Boyer
PRP Address: 930 Spiles Dr.
PRP City,St,Zip: Addison, IL 60101
PRP Phone: Not reported
Site Classification: Not reported
Section 57.5(g) Letter: 731
Date Section 57.5(g) Letter: Not reported
Non LUST Determination Letter: Not reported
20 Report Received: 02/29/1992
45 Report Received: 02/29/1992
NFA/NFR Letter: 01/15/1993
NFR Date Recorded: Not reported

D14
North
1/4-1/2
0.426 mi.
2247 ft.

DURANTE BROTHERS INC.
925 SOUTH WESTWOOD AVE.
ADDISON, IL 60101

LUST S104524301
N/A

Site 1 of 3 in cluster D

LUST:

Incident Num: 923423
IL EPA Id: 0430055347
Product: Gasoline
IEMA Date: 12/02/1992
Project Manager: Mathur
Project Manager Phone: Not reported
Email: Not reported
PRP Name: Durante Brothers Inc.
PRP Contact: George Durante
PRP Address: 925 South Westwood Ave.
PRP City,St,Zip: Addison, IL 60101
PRP Phone: Not reported
Site Classification: Not reported
Section 57.5(g) Letter: 731
Date Section 57.5(g) Letter: Not reported
Non LUST Determination Letter: Not reported
20 Report Received: 12/21/1992
45 Report Received: 01/27/1993
NFA/NFR Letter: 02/17/1993
NFR Date Recorded: Not reported

D15
North
1/4-1/2
0.426 mi.
2247 ft.

DURANTE BROTHERS INC.
925 SOUTH WESTWOOD AVE.
ADDISON, IL

RGA LUST S115504377
N/A

Site 2 of 3 in cluster D

RGA LUST:

2012	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2011	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2010	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2009	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

DURANTE BROTHERS INC. (Continued)

S115504377

2008	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2007	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2006	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2005	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2004	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2003	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2002	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2001	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.
2000	DURANTE BROTHERS INC.	925 SOUTH WESTWOOD AVE.

E16
West
1/4-1/2
0.426 mi.
2251 ft.

DENNY BUREN PROPERTIES
404 EAST NORTH AVE.
LOMBARD, IL

Site 1 of 8 in cluster E

RGA LUST **S115503868**
N/A

RGA LUST:

2012	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2011	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2010	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2009	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2008	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2007	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2006	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2005	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2004	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2003	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2002	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2001	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.
2000	DENNY BUREN PROPERTIES	404 EAST NORTH AVE.

E17
West
1/4-1/2
0.426 mi.
2251 ft.

DENNY BUREN PROPERTIES
404 EAST NORTH AVE.
LOMBARD, IL 60148

Site 2 of 8 in cluster E

LUST **S104525027**
N/A

LUST:

Incident Num:	921014
IL EPA Id:	0430605112
Product:	Gasoline
IEMA Date:	04/17/1992
Project Manager:	Irwin
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Denny Buren Properties
PRP Contact:	Troy Anunson
PRP Address:	2050 North 15th Ave.
PRP City,St,Zip:	Melrose Park, IL 60160
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Date Section 57.5(g) Letter:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	05/29/1992
45 Report Received:	08/04/1992
NFA/NFR Letter:	08/28/1992
NFR Date Recorded:	Not reported

MAP FINDINGS

Map ID	Direction	Distance	Distance (ft.)	Site	Database(s)	EPA ID Number
E18	West	1/4-1/2	0.445 mi.	2352 ft.	LUST	S103691020
				AMOCO OIL CO. #18901		N/A
				IL. RT. 64, 401 EAST NORTH AVE.		
				LOMBARD, IL 60148		
				Site 3 of 8 in cluster E		
				LUST:		
				Incident Num:	891849	
				IL EPA Id:	0430605094	
				Product:	Gasoline	
				IEMA Date:	09/21/1989	
				Project Manager:	Rahman	
				Project Manager Phone:	(217) 782-9848	
				Email:	Mohammed.Rahman@illinois.gov	
				PRP Name:	Amoco Oil Co.	
				PRP Contact:	Lyle Bruce	
				PRP Address:	28100 Torch Pkwy., 6-S	
				PRP City,St,Zip:	Warrenville, IL 60555	
				PRP Phone:	Not reported	
				Site Classification:	HIGH	
				Section 57.5(g) Letter:	732	
				Date Section 57.5(g) Letter:	Not reported	
				Non LUST Determination Letter:	Not reported	
				20 Report Received:	Not reported	
				45 Report Received:	07/01/1993	
				NFA/NFR Letter:	04/18/2001	
				NFR Date Recorded:	07/17/2001	
F19	NE	1/4-1/2	0.446 mi.	2355 ft.	FINDS	1008119032
				MIELEC TRANSPORT	LUST	N/A
				205 GERRI LN	AIRS	
				ADDISON, IL		
				Site 1 of 2 in cluster F		
				FINDS:		
				Registry ID:	110018156519	
				Environmental Interest/Information System		
				ACES (Illinois - Agency Compliance And Enforcement System) is the		
				Illinois EPA Project to facilitate the permitting operations		
				LUST:		
				Incident Num:	900204	
				IL EPA Id:	0430055227	
				Product:	Gasoline, Deisel	
				IEMA Date:	01/22/1990	
				Project Manager:	NOT ASSIGNED	
				Project Manager Phone:	Not reported	
				Email:	Not reported	
				PRP Name:	Ameritech	
				PRP Contact:	John Lerch	
				PRP Address:	205 Gerri Ln.	
				PRP City,St,Zip:	Addison, IL 60101	
				PRP Phone:	Not reported	
				Site Classification:	Not reported	
				Section 57.5(g) Letter:	731	
				Date Section 57.5(g) Letter:	Not reported	

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

MIELEC TRANSPORT (Continued)

1008119032

Non LUST Determination Letter: Not reported
20 Report Received: 02/29/1992
45 Report Received: 02/29/1992
NFA/NFR Letter: 02/22/1991
NFR Date Recorded: Not reported

IL AIRS:
Facility ID: 4499
ID Number: 043005AKW
Year: Not reported
Contact Name: Deen Oscarson
Contact Title: VP Operations
Contact Tele: 312-543-2700
Contact Extention: Not reported
Contact EMail: Not reported
Contact Fax: 708-543-2706
Cease Operation Date: 1/25/1996 10:24:44 AM
SIC Code: 3479
Address Type Code: LOC

F20
NE
1/4-1/2
0.446 mi.
2355 ft.

AMERITECH
205 GERRI LN.
ADDISON, IL

RGA LUST S115497669
N/A

Site 2 of 2 in cluster F

RGA LUST:

2012	AMERITECH	205 GERRI LN.
2011	AMERITECH	205 GERRI LN.
2010	AMERITECH	205 GERRI LN.
2009	AMERITECH	205 GERRI LN.
2008	AMERITECH	205 GERRI LN.
2007	AMERITECH	205 GERRI LN.
2006	AMERITECH	205 GERRI LN.
2005	AMERITECH	205 GERRI LN.
2004	AMERITECH	205 GERRI LN.
2003	AMERITECH	205 GERRI LN.
2002	AMERITECH	205 GERRI LN.
2001	AMERITECH	205 GERRI LN.
2000	AMERITECH	205 GERRI LN.

E21
West
1/4-1/2
0.451 mi.
2379 ft.

AMOCO OIL CO.
401 EAST NORTH AVE.
LOMBARD, IL 60148

LUST S104521832
N/A

Site 4 of 8 in cluster E

LUST:

Incident Num: 961897
IL EPA Id: 0430605094
Product: Gasoline
IEMA Date: 10/15/1996
Project Manager: Rahman
Project Manager Phone: (217) 782-9848
Email: Mohammed.Rahman@illinois.gov
PRP Name: Amoco Oil Co.
PRP Contact: Lyle Bruce

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

AMOCO OIL CO. (Continued)

S104521832

PRP Address: 28100 Torch Pkwy., 6-S
PRP City,St,Zip: Warrenville, IL 60555
PRP Phone: Not reported
Site Classification: HIGH
Section 57.5(g) Letter: 732
Date Section 57.5(g) Letter: Not reported
Non LUST Determination Letter: Not reported
20 Report Received: 10/24/1996
45 Report Received: 12/03/1996
NFA/NFR Letter: 04/18/2001
NFR Date Recorded: 07/17/2001

E22
West
1/4-1/2
0.451 mi.
2379 ft.

AMOCO OIL CO. #18901
IL. RT. 64, 401 EAST NORTH AVE.
LOMBARD, IL

RGA LUST S115497981
N/A

Site 5 of 8 in cluster E

RGA LUST:

2012	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2011	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2010	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2009	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2008	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2007	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2006	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2005	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2004	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2003	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2002	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2001	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.
2000	AMOCO OIL CO. #18901	IL. RT. 64, 401 EAST NORTH AVE.

E23
West
1/4-1/2
0.451 mi.
2379 ft.

BP PRODUCTS NORTH AMERICA, INC.
401 EAST NORTH AVENUE
LOMBARD, IL

RGA LUST S115500010
N/A

Site 6 of 8 in cluster E

RGA LUST:

2012	BP PRODUCTS NORTH AMERICA, INC.	401 EAST NORTH AVENUE
2011	BP PRODUCTS NORTH AMERICA, INC.	401 EAST NORTH AVENUE
2010	BP PRODUCTS NORTH AMERICA, INC.	401 EAST NORTH AVENUE
2009	BP PRODUCTS NORTH AMERICA, INC.	401 EAST NORTH AVENUE
2008	BP PRODUCTS NORTH AMERICA, INC.	401 EAST NORTH AVENUE

E24
West
1/4-1/2
0.451 mi.
2379 ft.

AMOCO OIL CO.
401 EAST NORTH AVE.
LOMBARD, IL

RGA LUST S115498275
N/A

Site 7 of 8 in cluster E

RGA LUST:

2012	AMOCO OIL CO.	401 EAST NORTH AVE.
2011	AMOCO OIL CO.	401 EAST NORTH AVE.
2010	AMOCO OIL CO.	401 EAST NORTH AVE.
2009	AMOCO OIL CO.	401 EAST NORTH AVE.

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

AMOCO OIL CO. (Continued)

S115498275

2008	AMOCO OIL CO.	401 EAST NORTH AVE.
2007	AMOCO OIL CO.	401 EAST NORTH AVE.
2006	AMOCO OIL CO.	401 EAST NORTH AVE.
2005	AMOCO OIL CO.	401 EAST NORTH AVE.
2004	AMOCO OIL CO.	401 EAST NORTH AVE.
2003	AMOCO OIL CO.	401 EAST NORTH AVE.
2002	AMOCO OIL CO.	401 EAST NORTH AVE.
2001	AMOCO OIL CO.	401 EAST NORTH AVE.
2000	AMOCO OIL CO.	401 EAST NORTH AVE.

E25
West
1/4-1/2
0.451 mi.
2379 ft.

BP PRODUCTS NORTH AMERICA, INC.
401 EAST NORTH AVENUE
LOMBARD, IL 60148

Site 8 of 8 in cluster E

LUST S109147767
N/A

LUST:

Incident Num:	20080718
IL EPA Id:	0430605094
Product:	Gasoline
IEMA Date:	05/22/2008
Project Manager:	Friedel
Project Manager Phone:	(217) 785-5736
Email:	Melinda.Friedel@illinois.gov
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	734
Date Section 57.5(g) Letter:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	06/16/2008
45 Report Received:	07/21/2008
NFA/NFR Letter:	Not reported
NFR Date Recorded:	Not reported

G26
NNE
1/4-1/2
0.452 mi.
2389 ft.

ELMHURST ELECTRIC COMPANY
330 LAURA DRIVE
ADDISON, IL

Site 1 of 2 in cluster G

RGA LUST S115504768
N/A

RGA LUST:

2012	ELMHURST ELECTRIC COMPANY	330 LAURA DRIVE
2011	ELMHURST ELECTRIC COMPANY	330 LAURA DRIVE
2010	ELMHURST ELECTRIC COMPANY	330 LAURA DRIVE
2009	ELMHURST ELECTRIC COMPANY	330 LAURA DRIVE
2008	ELMHURST ELECTRIC COMPANY	330 LAURA DRIVE

MAP FINDINGS

Map ID Direction Distance Distance (ft.)Site		EDR ID Number Database(s) EPA ID Number
G27 NNE 1/4-1/2 0.452 mi. 2389 ft.	ELMHURST ELECTRIC COMPANY 330 LAURA DRIVE ADDISON, IL 60101 Site 2 of 2 in cluster G LUST: Incident Num: 20080013 IL EPA Id: 0430055836 Product: Gasoline IEMA Date: 01/04/2008 Project Manager: Friedel Project Manager Phone: (217) 785-5736 Email: Melinda.Friedel@illinois.gov PRP Name: Not reported PRP Contact: Not reported PRP Address: Not reported PRP City,St,Zip: Not reported PRP Phone: Not reported Site Classification: Not reported Section 57.5(g) Letter: 734 Date Section 57.5(g) Letter: Not reported Non LUST Determination Letter: Not reported 20 Report Received: 03/19/2008 45 Report Received: 03/19/2008 NFA/NFR Letter: 12/01/2008 NFR Date Recorded: 12/12/2008	LUST S108966679 N/A
D28 North 1/4-1/2 0.458 mi. 2420 ft.	VARN PRODUCTS COMPANY, INC. 905 SOUTH WESTWOOD AVENUE ADDISON, IL 60101 Site 3 of 3 in cluster D LUST: Incident Num: 923051 IL EPA Id: 0430055134 Product: Other Petro IEMA Date: 10/29/1992 Project Manager: Piggush Project Manager Phone: (217) 782-3101 Email: Michael.Piggush@illinois.gov PRP Name: Varn Products Co. PRP Contact: Ron Conti PRP Address: 905 South Westwood PRP City,St,Zip: Addison, IL 60101 PRP Phone: Not reported Site Classification: LOW Section 57.5(g) Letter: 732 Date Section 57.5(g) Letter: Not reported Non LUST Determination Letter: Not reported 20 Report Received: 11/17/1992 45 Report Received: 04/18/1994 NFA/NFR Letter: 07/13/2000 NFR Date Recorded: 09/21/2000 UST: Facility ID: 2015554 Facility Status: CLOSED	LUST UST U004128101 N/A

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

VARN PRODUCTS COMPANY, INC. (Continued)

U004128101

Facility Type: INDUSTRIAL / MANUFACTURING
Owner Id: U0015656
Owner Name: Varn Products Company, Inc.
Owner Address: 905 South Westwood Avenue
Owner City,St,Zip: Addison, IL 60101

Tank Number: 24011
Tank Status: Removed
Tank Capacity: 4000
Tank Substance: Not reported
Last Used Date: 6/30/1992
OSFM First Notify Date: 1/6/1987
Red Tag Issue Date: Not reported
Install Date: 8/1/1980
Green Tag Decal: Not reported
Green Tag Issue Date: Not reported
Green Tag Expire Date: Not reported
Self Service Permit Inspection Date: Not reported
Self Service Permit Expire Date: Not reported
Fee Due: Not reported

Tank Number: 24012
Tank Status: Removed
Tank Capacity: 4000
Tank Substance: Not reported
Last Used Date: 6/30/1992
OSFM First Notify Date: 1/6/1987
Red Tag Issue Date: Not reported
Install Date: 8/1/1980
Green Tag Decal: Not reported
Green Tag Issue Date: Not reported
Green Tag Expire Date: Not reported
Self Service Permit Inspection Date: Not reported
Self Service Permit Expire Date: Not reported
Fee Due: Not reported

Tank Number: 24013
Tank Status: Removed
Tank Capacity: 4000
Tank Substance: Not reported
Last Used Date: 6/30/1992
OSFM First Notify Date: 1/6/1987
Red Tag Issue Date: Not reported
Install Date: 8/1/1980
Green Tag Decal: Not reported
Green Tag Issue Date: Not reported
Green Tag Expire Date: Not reported
Self Service Permit Inspection Date: Not reported
Self Service Permit Expire Date: Not reported
Fee Due: Not reported

Tank Number: 24014
Tank Status: Removed
Tank Capacity: 4000

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

VARN PRODUCTS COMPANY, INC. (Continued)

U004128101

Tank Substance: Not reported
Last Used Date: 6/30/1992
OSFM First Notify Date: 1/6/1987
Red Tag Issue Date: Not reported
Install Date: 8/1/1980
Green Tag Decal: Not reported
Green Tag Issue Date: Not reported
Green Tag Expire Date: Not reported
Self Service Permit Inspection Date: Not reported
Self Service Permit Expire Date: Not reported
Fee Due: Not reported

Tank Number: 24015
Tank Status: Removed
Tank Capacity: 10000
Tank Substance: Not reported
Last Used Date: 6/30/1992
OSFM First Notify Date: 1/6/1987
Red Tag Issue Date: Not reported
Install Date: 8/1/1980
Green Tag Decal: Not reported
Green Tag Issue Date: Not reported
Green Tag Expire Date: Not reported
Self Service Permit Inspection Date: Not reported
Self Service Permit Expire Date: Not reported
Fee Due: Not reported

Tank Number: 24016
Tank Status: Removed
Tank Capacity: 10000
Tank Substance: Not reported
Last Used Date: 6/30/1992
OSFM First Notify Date: 1/6/1987
Red Tag Issue Date: Not reported
Install Date: 8/1/1980
Green Tag Decal: Not reported
Green Tag Issue Date: Not reported
Green Tag Expire Date: Not reported
Self Service Permit Inspection Date: Not reported
Self Service Permit Expire Date: Not reported
Fee Due: Not reported

Count: 16 records

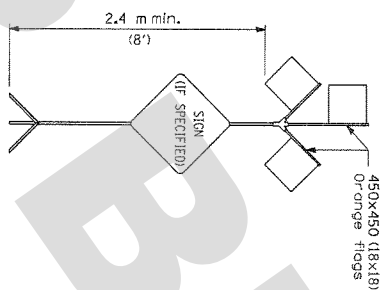
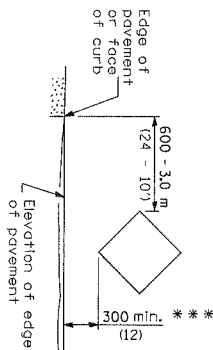
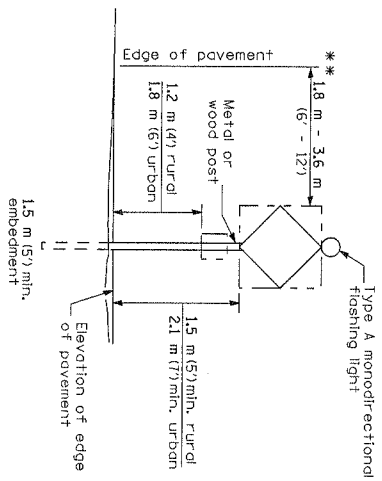
ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ADDISON	U004189967	FISCHER WOODS	4 N 440 RT. 83	60101	UST
ADDISON	U003908000	IDOT RIGHT OF WAY	SE CORNER OF RT 20 & MICHIGAN AVE	60101	UST
ADDISON	U001135144	UNITED LABORATORIES INC	155 S RT 53	60101	UST
LOMBARD	S115503471	D&M AUTO SALES	21 WEST 275 NORTH AVE.	60101	RGALUST
LOMBARD	S115504898	EMRO MARKETING	21 WEST 400 NORTH AVE.		RGALUST
LOMBARD	S115519272	SPEEDWAY #7382	21 WEST 400 NORTH AVE.		RGALUST
LOMBARD	S115519416	SPEEDWAY SUPERAMERICA	21 WEST 400 NORTH AVE.		RGALUST
LOMBARD	S115519287	SPEEDWAY STATION #7382	21 WEST 400 NORTH AVE.		RGALUST
LOMBARD	S115498371	AMOCO, MCDONALD, LOMBARD	21 WEST 408 NORTH AVE.		RGALUST
LOMBARD	S115502752	COMMONWEALTH EDISON	1 NORTH 423 SWIFT RD.		RGALUST
LOMBARD	S115503472	D&M AUTO SALES	21 WEST 475 NORTH AVE.		RGALUST
LOMBARD	S115508666	ILLINOIS BELL TELEPHONE	20 NORTH MAIN		RGALUST
LOMBARD	S115511697	LOMBARD, VILLAGE OF	635 PARKER	60181	UST
OAKBROOK TERRACE	U001144459	JUS FUN AMUSEMENTS, INC.	OS 480 RT 83	60181	UST
VILLA PARK	U001135446	SALT CREEK SANITARY DIST	201 S RT 83	60181	UST
VILLA PARK	1004698236	WALMART 1737	900 S RTE 83	60181	RCRA-SQG

APPENDIX B – IDOT TRAFFIC CONTROL STANDARDS

NOT FOR BIDD

NOT FOR BID



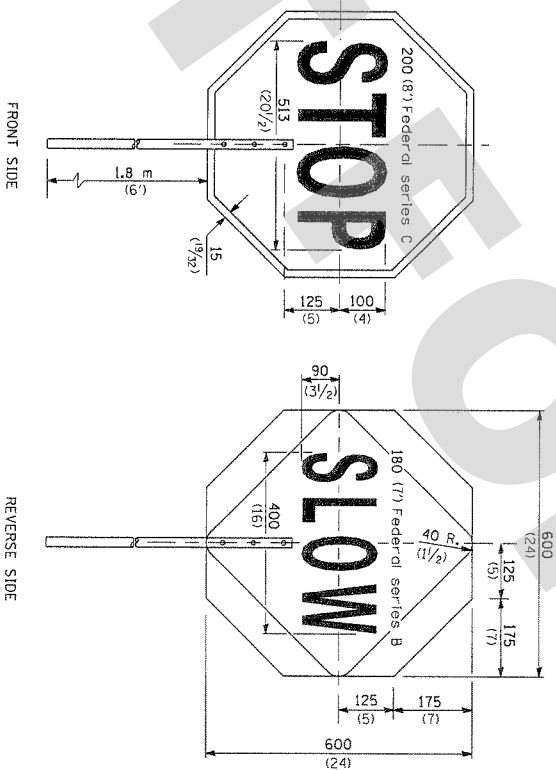
SIGNS ON TEMPORARY SUPPORTS

*** When work operations exceed four days, this dimension shall be 1.5 m (5') min.

HIGH LEVEL WARNING DEVICE

*** When curb or paved shoulder are present this dimension shall be 600 (24) to the edge of the paved shoulder.

POST MOUNTED SIGNS



FLAGGER TRAFFIC CONTROL SIGN

Illinois Department of Transportation
 APPROVED April 1, 2008
 AUTHORITY OF DESIGN
 APPROVED April 1, 2008
 ENGINEER OF DESIGN AND ENVIRONMENT
 ISSUED 1-1-97

TRAFFIC CONTROL
 DEVICES
 (Sheet 2 of 3)
 STANDARD 702001-06

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

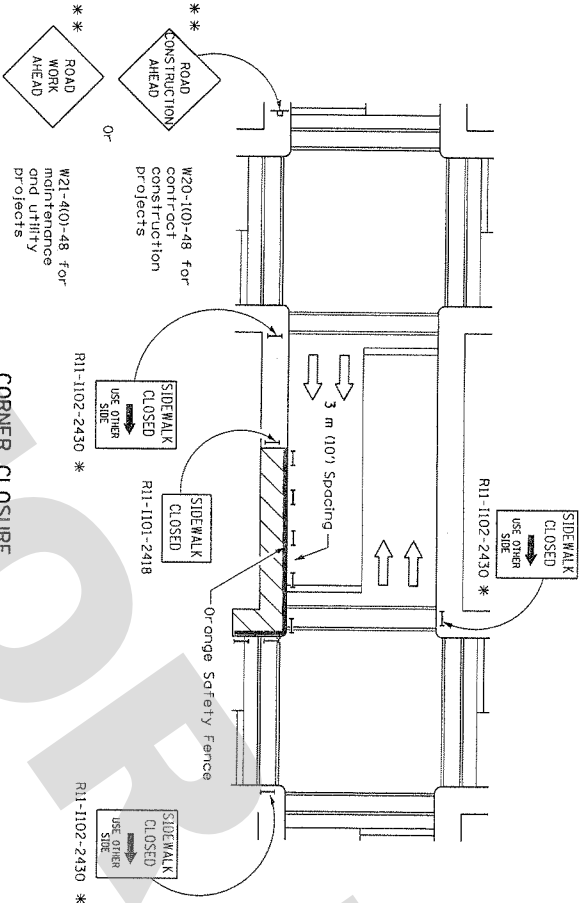
END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 3200 m (2 miles).
 ROAD CONSTRUCTION sign shall be placed 150 m (500') in advance of project limits.
 This signing is required for all projects 3200 m (2 miles) or more in length.
 ROAD CONSTRUCTION NEXT X MILES sign shall be placed 150 m (500') in advance of project limits.

WORK LIMIT SIGNING

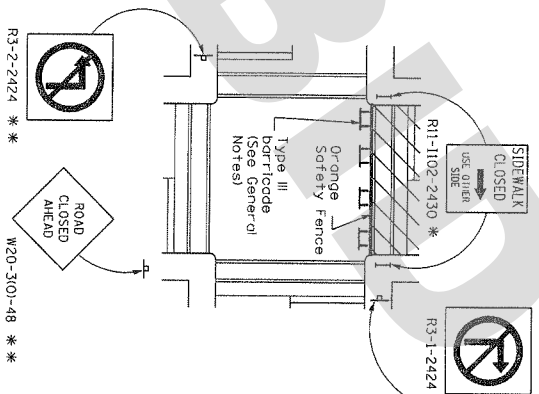


SYMBOLS

-  Work or ego
-  Sign on portable or permanent support
-  Barricade or drum
-  Cone, drum or barricade
-  Type III barricade



CORNER CLOSURE



CROSSWALK CLOSURE

GENERAL NOTES

Where, at any time, pedestrian traffic must be rerouted due to work being performed.

The SIDEWALK CLOSED / USE OTHER SIDE sign shall be placed at the nearest crosswalk intersection to each end of the closure. When the closure occurs at a corner, the signs shall be placed on the corners. The SIDEWALK CLOSED sign shall be placed at the ends of the actual closures.

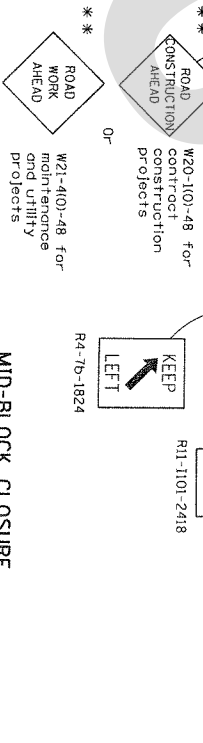
Type III barricades and R11-2-4830 signs shall be positioned as shown in "ROAD CLOSED TO ALL TRAFFIC" detail on Standard 702001.

* May be used when applicable

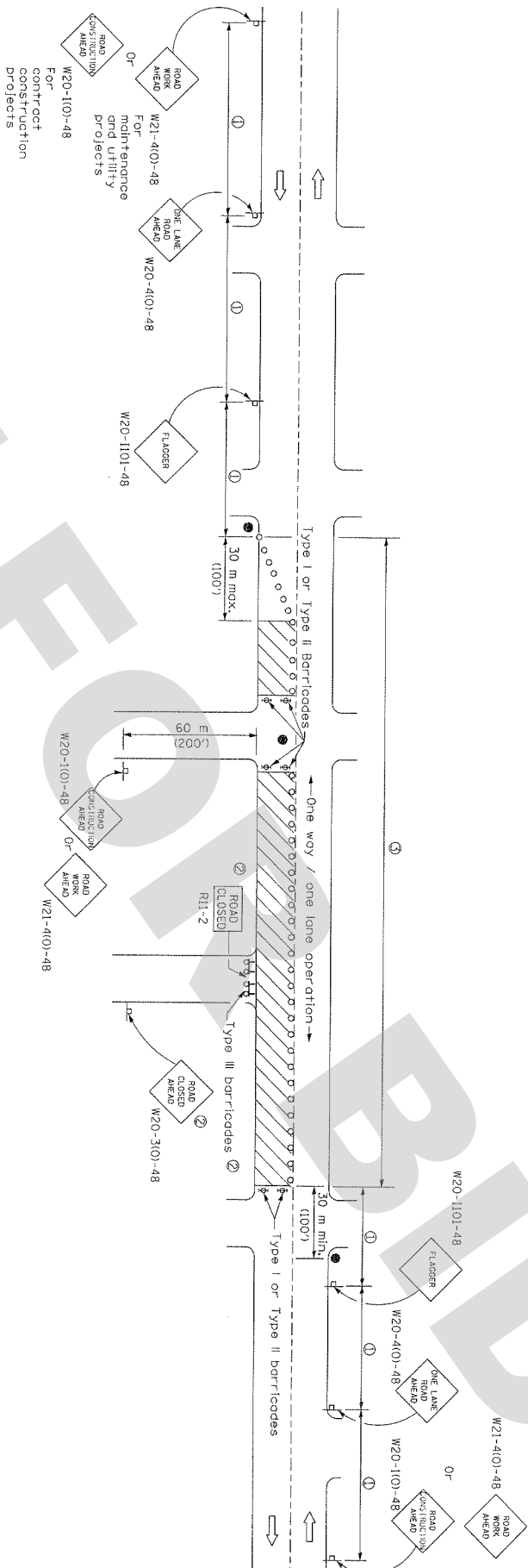


* Omit whenever duplicated by road work traffic control.

MID-BLOCK CLOSURE



DATE	REVISIONS	LANE CLOSURE MULTILANE 1W OR 2W CROSSWALK OR SIDEWALK CLOSURE
1-1-00	Revised Standard Title and KEEP LEFT sign	
1-1-99	Revised barricade or drum symbol.	
		STANDARD 701801-03



SIGN SPACING		
Posted Speed Sign Spacing	55	164 m (500')
	50-45	115 m (350')
	<45	60 m (200')

SYMBOLS

- Work area
- Cone, drum or barricade (not required for moving operations)
- Sign on portable or permanent support
- Flagger with traffic control sign
- Barricade or drum with flashing light
- Type III barricade with flashing lights

- ① Refer to SIGN SPACING TABLE for distances.
- ② For approved slideroad closures.
- ③ Cones at 8 m (25') centers for 75 m (250'). Additional cones may be placed at 15 m (50') intervals between devices or used, the interval between devices may be doubled.

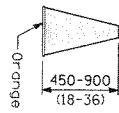
GENERAL NOTES

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

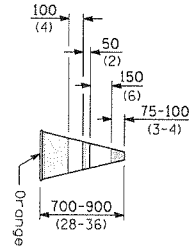
All dimensions are in millimeters (inches) unless otherwise shown.

APPROVED	JANUARY 1, 2008
ENGINEER OF RELATIONS	APPROVED
ENGINEER OF DESIGN AND ENVIRONMENT	JANUARY 1, 1999
ISSUED	1-1-97

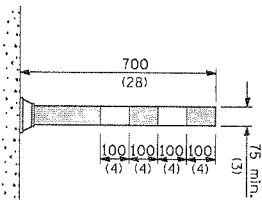
DATE	REVISIONS
1-1-05	Deleted FLAGGER SYMBOL sign and repositioned
1-1-93	Rev. Barr. or drum w/ flashing light sym. & add Type III barr. sym.
STANDARD 701501-03	



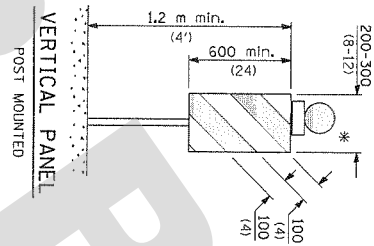
CONE



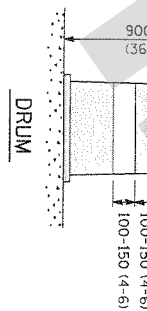
REFLECTORIZED CONE



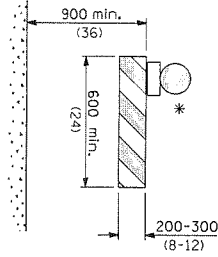
FLEXIBLE DELINEATOR



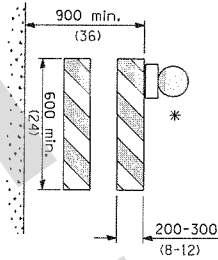
POST MOUNTED VERTICAL PANEL



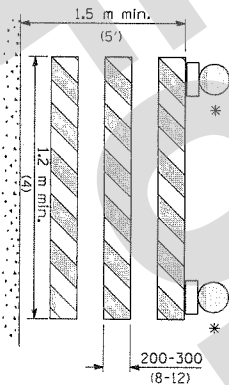
DRUM



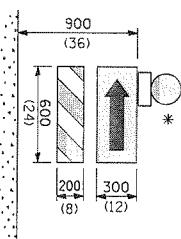
TYPE I BARRICADE



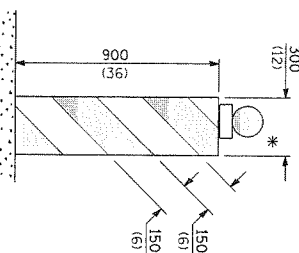
TYPE II BARRICADE



TYPE III BARRICADE



DIRECTION INDICATOR BARRICADE



VERTICAL BARRICADE

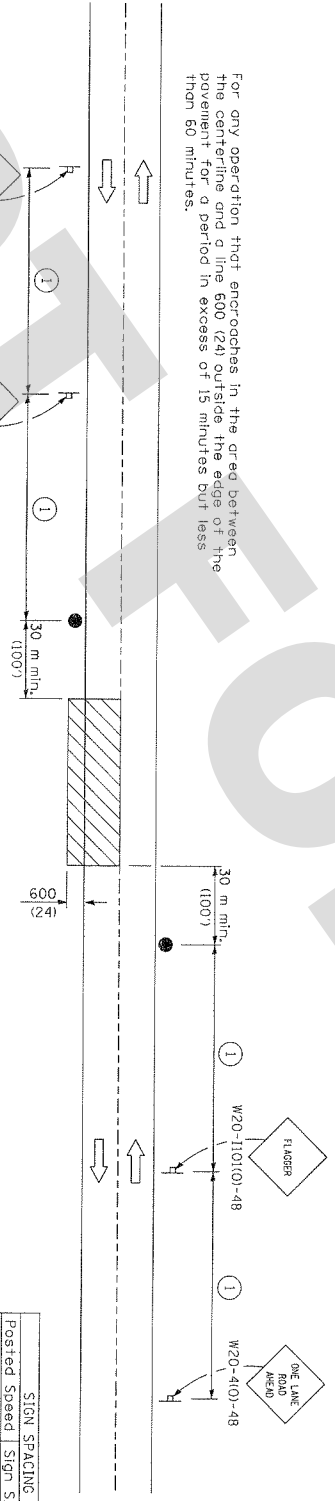
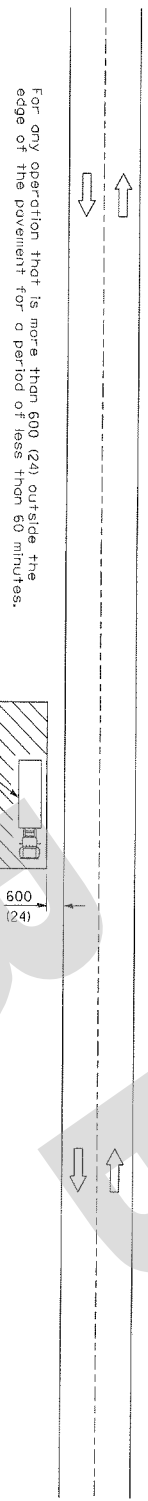
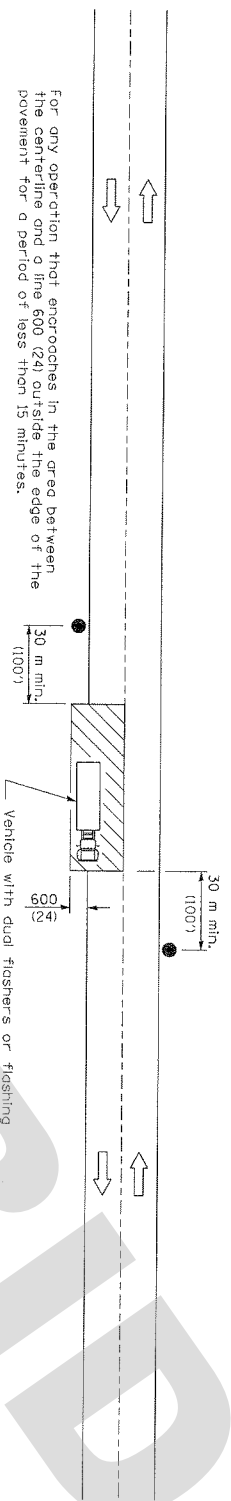
* Warning lights (if required)

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

APPROVED	DATE	ISSUED
APRIL 1, 2006	APRIL 1, 2006	1-1-97
ENGINEER OF TRANSPORTATION		
APPROVED	DATE	
APRIL 1, 2006	APRIL 1, 2006	
ENGINEER OF DESIGN AND ENVIRONMENT		

DATE	REVISIONS	TRAFFIC CONTROL DEVICES
4-1-06	Revised vert. barricade, post mounted signs, and signs on temp. supports.	(Sheet 1 of 3)
1-1-05	Added note to work limit signing and re-added	
	Type I barricade.	

STANDARD 702001-06



SIGN SPACING	
Posted Speed	Sign Spacing
55	164 m (500')
50-45	115 m (350')
<45	60 m (200')

① = Refer to SIGN SPACING table for distances.

TYPICAL APPLICATIONS

- Working patches
- Field survey
- String line
- Utility operations
- Cleaning up debris on pavement

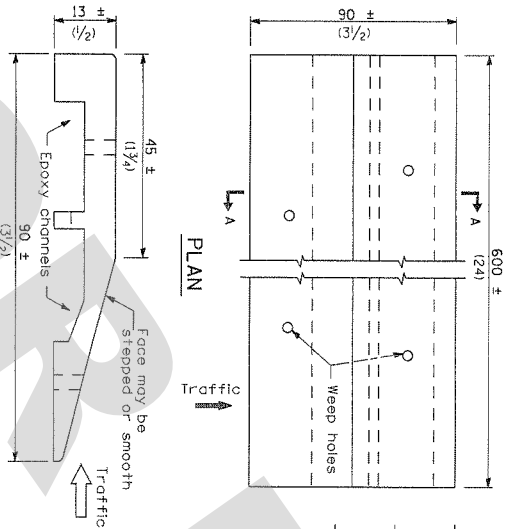
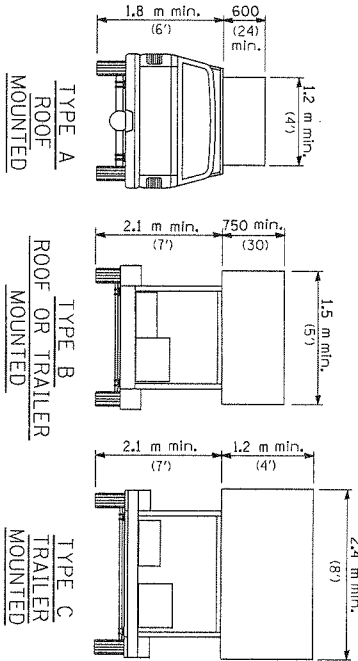
SYMBOLS

-  Work area
-  Sign on portable or permanent support
-  Flagger with traffic control sign

REVISIONS	
DATE	
1-1-05	Deleted FLAGGER SYMBOL
	sign.
1-1-00	Deleted "150 m" sign
	spacing dimension. Added
	SIGN SPACING table.

LANE CLOSURE, 2L, 2W,
SHORT TIME OPERATIONS

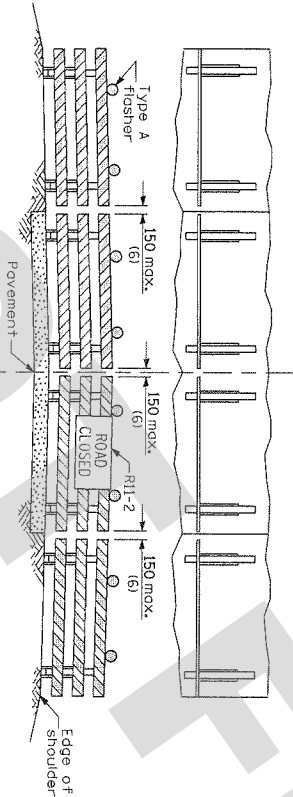
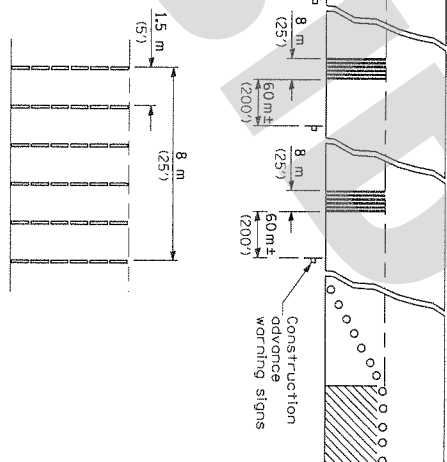
STANDARD 701301-02



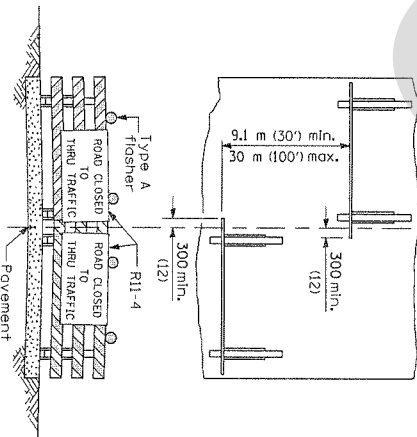
SECTION A-A
(3/2)

TEMPORARY RUMBLE STRIPS

TYPICAL INSTALLATION



Reflectorized striping may be omitted on the back side of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.



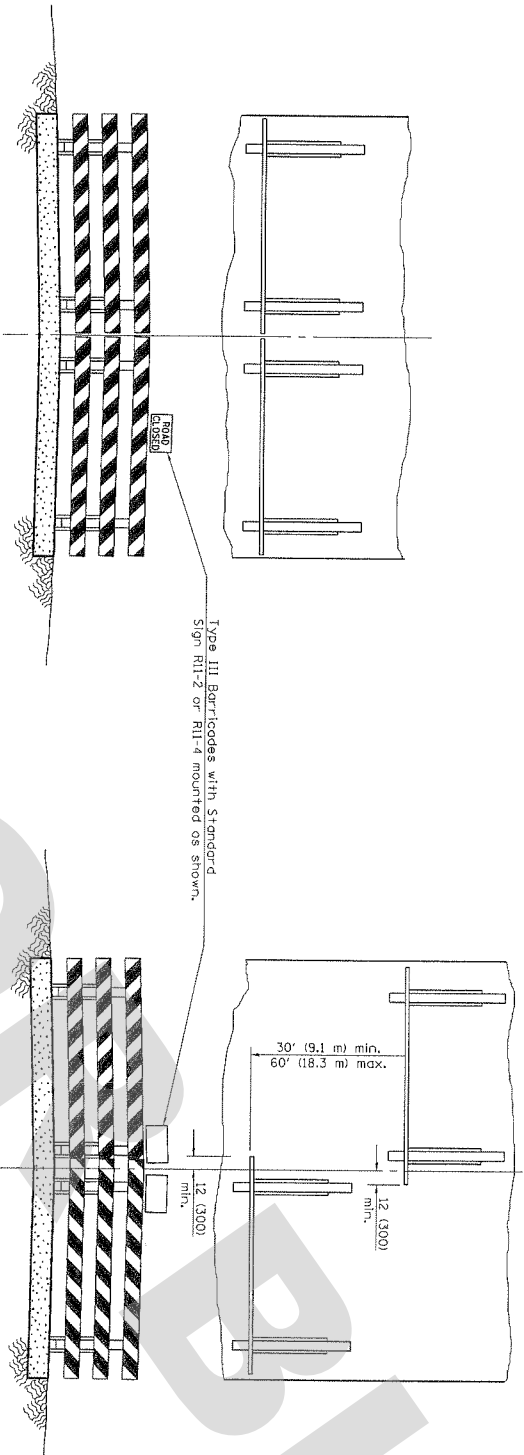
Reflectorized striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD

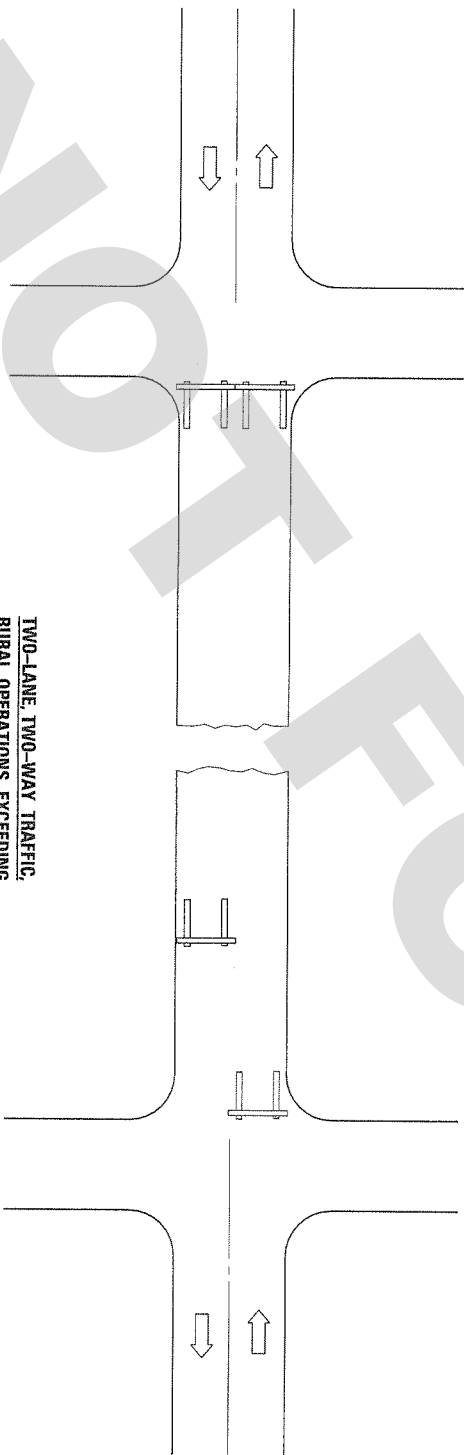
APPROVED	APRIL 1, 2006	ISSUED	1-1-97
DESIGNED BY	2006		
APPROVED BY	2006		
ENGINEER OF DESIGN AND ENVIRONMENT			

TRAFFIC CONTROL DEVICES	(Sheet 3 of 3)
STANDARD 702001-06	

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



Resident traffic and day labor forces' equipment to use road shoulder for passing barricades.



**TWO-LANE, TWO-WAY TRAFFIC,
RURAL OPERATIONS EXCEEDING
ONE DAYLIGHT PERIOD**

GENERAL NOTES

Type III barricades to be width of pavement only. Reflectized striping shall appear on both sides of barricades. Barricades shall be positioned so that stripes slope downward toward the side on which traffic is to pass.

Although not shown, advance warning signs with minimum dimensions of 36x36 (900x900) and block legends on orange reflectized backgrounds shall be utilized where needed.

This case is for use on rural local roads where the local authority considers this protection to be appropriate for the specific job conditions. All dimensions are in inches (millimeters) unless otherwise shown.

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED: *John J. ...* January 1, 2009
ENGINEER OF RURAL ROADS AND STREETS

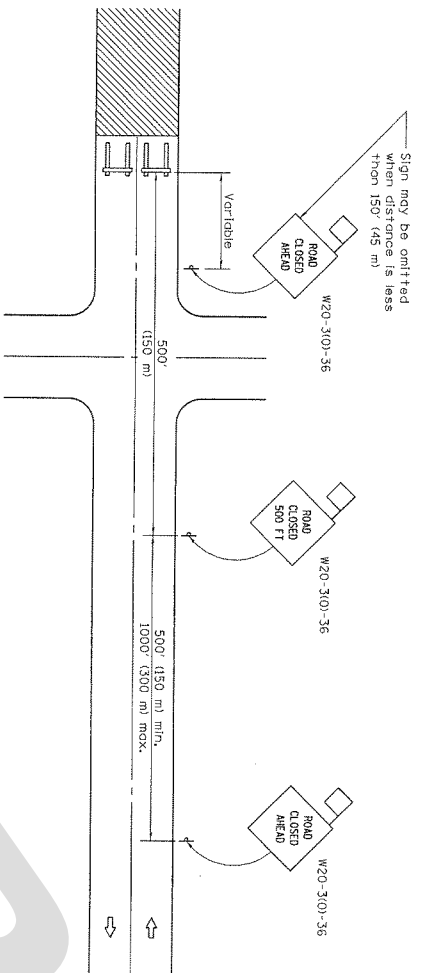
APPROVED: *Ken C. ...* January 1, 2009
DESIGNER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

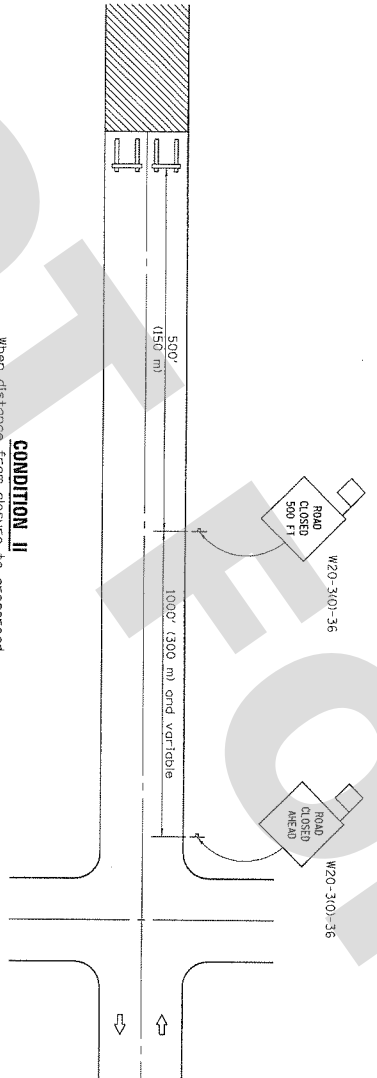
DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-98	Rev. "RII-1" to "RII-4", Rev. 4th General Note.

**TRAFFIC CONTROL DEVICES -
DAY LABOR CONSTRUCTION**

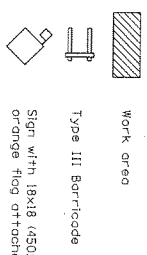
STANDARD B.L.R. 17-4



CONDITION I
When distance from closure to crossroad is less than 1500' (450 m)



CONDITION II
When distance from closure to crossroad is greater than 1500' (450 m)



SYMBOLS

GENERAL NOTES

Type III Barricades and RI-2-4B30 signs shall be positioned as shown in "Road Closed to All Traffic" detail on Highway Standard 701B01.

Two Type A Low Intensity Flashing Lights shall be used on each approach in advance of the work area during hours of darkness. One light shall be installed above the barricades and the other above the first advance warning sign.

All warning signs shall have minimum dimensions of 36" x 36" (900 x 900) and have a black legend on an orange reflectorized background.

When fluorescent signs are used, orange flags are not required.

Longitudinal dimensions may be adjusted to fit field conditions.

When the distance between the barricade and the intersection is between 1500' (450 m) and 2000' (600 m), the advance sign shall be placed at the intersection. When the distance between the barricade and the intersection is over 2000' (600 m), an additional sign shall be placed of the intersection. The additional sign shall give the distance to the barricade in miles or fractions of a mile.

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

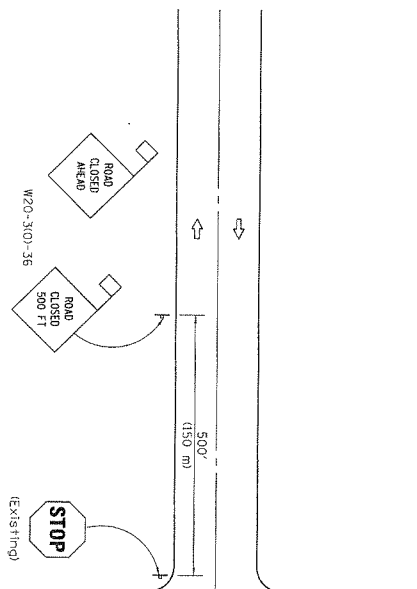
APPROVED	DESIGNED	ISSUED
1-1-12	1-1-12	1-1-12
1-1-12	1-1-12	1-1-12
1-1-12	1-1-12	1-1-12
1-1-12	1-1-12	1-1-12

DATE	REVISIONS
1-1-12	Omitted two notes from GENERAL NOTES.
1-1-12	Switched units to English (metric).
1-1-12	English (metric).

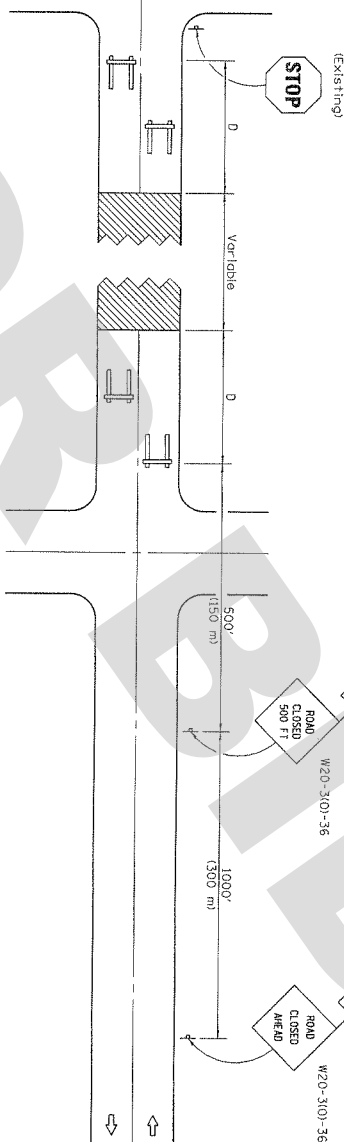
TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

STANDARD B.L.R. 21-9

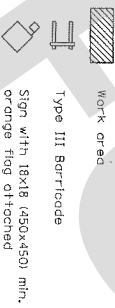
CONDITION I **APPROACH TRAFFIC STOPPED**



CONDITION II **APPROACH TRAFFIC DOES NOT STOP**



SYMBOLS



GENERAL NOTES

Type III Barricades and R11-4-6030 signs shall be positioned as shown in the "Road Closed" detail on Highway Standard D-701910. If the distance "D" exceeds 2000' (600 m), an additional set of barricades and R11-4-6030 shall be placed at each end of the work area.

Two Type A Low Intensity Flashing Lights shall be used on each approach in advance of the work area. One light shall be installed above each barricade. If only one barricade is required, the other light shall be installed above the first advance warning sign.

All warning signs shall have minimum dimensions of 36 x 36 (900 x 900) and have a black legend on an orange reflectorized background.

When fluorescent signs are used, orange flags are not required.

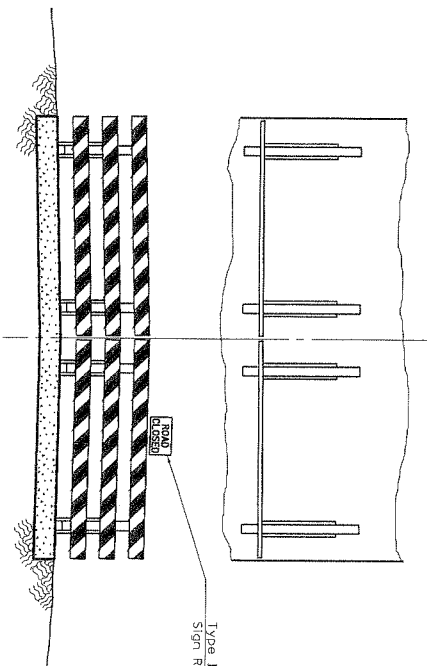
Longitudinal dimensions may be adjusted to fit field conditions.

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

APPROVED <i>[Signature]</i> ENGINEER OF LOCAL ROADS AND STREETS JANECEY, L. 2012	ISSUED 1-1-97
ILLINOIS DEPARTMENT OF TRANSPORTATION	

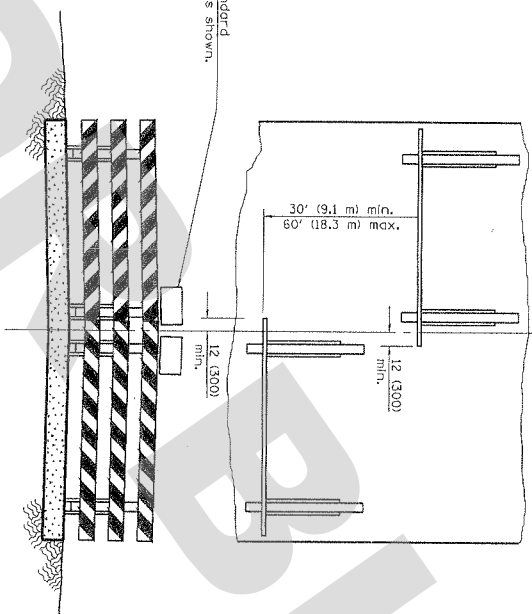
DATE	REVISIONS	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)
1-1-12	Omitted two notes from GENERAL NOTES.	STANDARD B.L.R. 22-7
1-1-09	Revised General Notes and switched units to English (metric).	

Resident traffic and day labor force's equipment to use road shoulder for passing barricades.

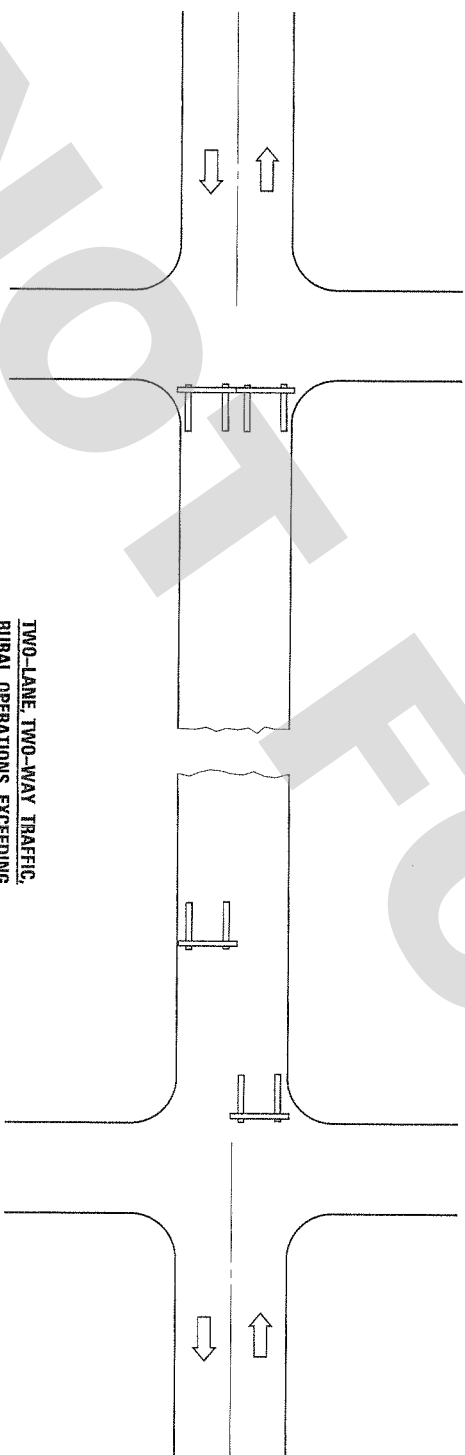


Type III Barricades with Standard Sign R11-2 or R11-4 mounted as shown.

Use when shoulders are too narrow for passage of traffic.



**TWO-LANE, TWO-WAY TRAFFIC,
RURAL OPERATIONS EXCEEDING
ONE DAYLIGHT PERIOD**



GENERAL NOTES

Type III barricades to be width of pavement only. ReflectORIZED striping shall appear on both sides of barricades. Barricades shall be positioned so that stripes slope downward toward the side on which traffic is to pass. Although not shown, advance warning signs with minimum dimensions of 16x36 (400x900) and black legends on orange reflectORIZED backgrounds shall be utilized where needed. This case is for use on rural local roads where the local authority considers this protection to be appropriate for the specific job conditions. All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
APPROVED: *[Signature]* JUNE 1, 2009
ENGINEER OF ROADWAYS AND STREETS
APPROVED: *[Signature]* JUNE 1, 2009
ENGINEER OF DESIGN AND ENVIRONMENT
ISSUED 1-1-97

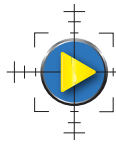
DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-98	Rev. "R11-1" to "R11-4".
	Rev. 4th General Note.

**TRAFFIC CONTROL DEVICES –
DAY LABOR CONSTRUCTION**
STANDARD B.L.R. 17-4

APPENDIX C – SECURITY SYSTEM PACKAGE

NOT FOR BID

NOT FOR BID



TacticalVIDEO

Quotation

Client Information	Shipper Information
Villa Park PD	TacticalVIDEDO 1064 104 th Street Suite 100 Naperville, IL 60564 Phone: 630.445.1209 Fax: 630.839.0005 Sales@TacticalVIDEO.com

Date	Quote #	Exp Date	Terms	Contact
Jul 22, 2014	TVI07222014-14	Aug 21, 2014	At Receipt of Invoice	Jeff Gibson

Item #	Description	Quantity	Unit Cost	Total
1	Matrix Surveillance System - Covert Pole Camera Axis Q6045 PTZ Camera 1080p w/20x zoom Verizon Cellular LTE 4G/3G Router High Power POE Switch Camera Recording to Local Memory Card ExacqVision Edge DVR Software External AC Power Port External DC Power Port 12vdc Power Conversion Unit Pole Camera Enclosure w/removable shield	1	\$ 9,861.80	\$ 9,861.80
2	Shipping - Standard Ground	1		NC
			Total	\$ 9,861.80

OPTIONS

Notes

The purchase of products and/or services from Tactical Video are subject to the standard terms and conditions located at the following URL: <http://www.tacticalvideo.com/pdf/terms.pdf>. By accepting this Quote/Order Form you are agreeing that you have read and agreed to the terms and conditions. All software renewals require prepayment. Hardware/Software orders over \$2,500 require 50% payment up front, 50% due within 15 days of receipt. Pricing valid for 30 days from date of quotation. Labor not included unless explicitly stated in writing. All Labor figures are estimates and only actual hours will be billed unless otherwise noted.

Picture is for general reference. Actual unit will be slightly different based on Villa Park's unique design requirements.



Quotation is Confidential and Proprietary

NOT FOR BID