

#440 Contract

## Clerk's Contract and Agreement Cover Page

Year: 2008

Legistar File ID#: 2008-0308

Multi Year: 1

Amount \$8,976,840.00

Contract Type:

Construction-AIA

Contractor's Name:

Joseph J Henderson & Son, Inc.

Contractor's AKA:

Execution Date:

5/27/2008

Termination Date:

8/31/2009

Renewal Date:

Department:

Public Works/Water & Sewer

Originating Person:

John Ingram

Contract Description: Main Pumping Station - East Reservoir Addition



Monday, June 16, 2008

MAYOR  
Daniel J. McLaughlin

VILLAGE CLERK  
David P. Maher

14700 S. Ravinia Ave.  
Orland Park, IL 60462  
(708) 403-6100



VILLAGE HALL

TRUSTEES  
Bernard A. Murphy  
Kathleen M. Fenton  
Brad S. O'Halloran  
James V. Dodge  
Edward G. Schussler III  
Patricia Gira

June 16, 2008

Mr. David A. Henderson, President  
Joseph J. Henderson & Son, Inc.  
4288 Old Grand Avenue  
Gurnee, Illinois 60031

**RE: NOTICE TO PROCEED**  
**Main Pumping Station - East Reservoir Addition**

Dear Mr. Henderson:

This notification is to inform you that the Village of Orland Park has received all necessary contracts, certifications, insurance documents and bonds in order for work to commence on the above stated project. Please find enclosed, your bid bond, which is hereby released as we have received the payment and performance bonds.

Please contact John Ingram at 708-403-6104 to arrange the commencement of the work.

The Village has processed Purchase Order #48826 for this contract/service and faxed this to your company on June 16, 2008. It is imperative that this number on the Purchase Order be noted on all invoices, correspondence, etc. All invoices should be sent directly to the Accounts Payable Department at 14700 S. Ravinia Ave. Orland Park, IL 60462. Also, your final invoice for this contract/service should state that it is the final invoice pertaining to that Purchase Order.

For your records, I have enclosed one (1) original executed contract dated May 27, 2008 in an amount not to exceed Eight Million Nine Hundred Seventy-Six Thousand Eight Hundred Forty and No/100 (\$8,976,840.00) Dollars. If you have any questions, please call me at 708-403-6173.

Sincerely,

Denise Domalewski  
Contract Administrator

cc: John Ingram  
Beth Vogt, Greeley and Hansen  
Judy Konow

# ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
6/5/2008

PRODUCER Phone: 630-324-2500 Fax: 630-324-2501  
Hilb, Rogal & Hobbs  
333 E. Butterfield Rd, 5th fl.  
Lombard IL 60148

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED  
Joseph J. Henderson & Son Inc.  
4288 Old Grand Avenue  
Gurnee IL 60031-0009

## INSURERS AFFORDING COVERAGE

NAIC #

INSURER A: Old Republic Insurance Co

24147

INSURER B: St. Paul Fire & Marine

INSURER C:

INSURER D:

INSURER E:

## COVERAGES

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

INSR ADD'L LTR INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC	MWZY57939	5/31/2008	5/31/2009	EACH OCCURRENCE \$1,990,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$100,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,990,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000
A	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	MWTB57939	5/31/2008	5/31/2009	COMBINED SINGLE LIMIT (Ea accident) \$2,000,000  BODILY INJURY (Per person) \$  BODILY INJURY (Per accident) \$  PROPERTY DAMAGE (Per accident) \$
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$  OTHER THAN EA ACC \$ AUTO ONLY: AGG \$
B	<b>EXCESS/UMBRELLA LIABILITY</b> <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE  <input type="checkbox"/> DEDUCTIBLE <input checked="" type="checkbox"/> RETENTION \$10,000	CK01201592	5/31/2008	5/31/2009	EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000  \$  \$
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	MWC115591	5/31/2008	5/31/2009	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
	<b>OTHER</b>				

## DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Job: 1224-00, Orland Park Pumping Station, 8800 Thistlewood Lane, Orland Park, IL 60462.

The GL policy includes the following as Additional Insureds on a Primary and Non-contributory basis, when required by written contract, as respects work performed by the Insured on the job shown: The Village of Orland Park, and their respective officers, trustees, directors, employees and agents; Greeley and Hansen LLC; Klein and Hoffman, Inc.; Ground Engineering Consultants and Orland School District 135.  
Continued...

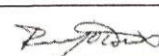
## CERTIFICATE HOLDER

Village of Orland Park, Public Works  
14700 S. Ravinia Avenue  
Orland Park IL 60462

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT.

AUTHORIZED REPRESENTATIVE



## IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

## DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

## DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS / SPECIAL PROVISIONS

The GL and Work Comp policies include a Waiver of Subrogation in favor of the Additional Insureds when required by written contract.

Umbrella Follows Form (Covers General Liability, Auto Liability and Work Comp)

ORIGINAL CONTRACT  
DOCUMENT

VILLAGE OF  
ORLAND PARK, ILLINOIS

---

NOTICE TO BIDDERS, INSTRUCTIONS TO BIDDERS, PROPOSAL, BID BOND,  
AGREEMENT, PERFORMANCE BOND AND SPECIFICATIONS

FOR

EAST RESERVOIR ADDITION

---

VILLAGE OFFICIALS

Daniel J. McLaughlin, President

TRUSTEES

Bernard A. Murphy  
Kathleen M. Fenton  
Brad S. O'Halloran  
James V. Dodge, Jr.  
Edward G. Schussler  
Patricia Gira

---

GREELEY AND HANSEN LLC

100 S. Wacker Drive, Suite 1400  
Chicago, Illinois 60606

March 2008



*Kenneth V. Johnson*

LICENSE EXPIRES 11/30/2009  
SIGNED 03/13/2008

ORIGINAL CONTRACT  
DOCUMENT

**VILLAGE OF  
ORLAND PARK, ILLINOIS**

---

**NOTICE TO BIDDERS, INSTRUCTIONS TO BIDDERS, PROPOSAL, BID BOND,  
AGREEMENT, PERFORMANCE BOND AND SPECIFICATIONS**

**FOR**

**EAST RESERVOIR ADDITION**

---

**VILLAGE OFFICIALS**

**Daniel J. McLaughlin, President**

**TRUSTEES**

Bernard A. Murphy  
Kathleen M. Fenton  
Brad S. O'Halloran  
James V. Dodge, Jr.  
Edward G. Schussler  
Patricia Gira

---

**GREELEY AND HANSEN LLC**

100 S. Wacker Drive, Suite 1400  
Chicago, Illinois 60606

**March 2008**



*Kenneth V. Johnson*  
LICENSE EXPIRES 11/30/2009  
SIGNED 03/13/2008

SECTION 00010  
Village of Orland Park  
East Reservoir Addition  
TABLE OF CONTENTS

NOTICE TO BIDDERS	00100
INSTRUCTIONS TO BIDDERS	00200
BID SUBMITTAL CHECKLIST	00210
BID FORM	00410
BID BOND (EJCDC DOCUMENT NO. C-430)	00430
FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR	00520
PERFORMANCE BOND (EJCDC DOCUMENT NO. C-610)	00610
PAYMENT BOND (EJCDC DOCUMENT NO. C-615)	00615
GENERAL AND SUPPLEMENTARY CONDITIONS (MODIFIED EJCDC DOCUMENT NO. 1910-8)	00700
SPECIAL ATTACHMENTS	00820
DIVISION 1 - GENERAL REQUIREMENTS	
Summary of Work	01110
Change Order and Work Order Procedures	01250
Payments	01290
Contract Items	01291
Coordination and Meetings	01310
Progress Schedule	01325
Submittals	01330
References	01422
Quality Control	01450
Construction Facilities and Temporary Controls	01500
Material and Equipment	01600

## DIVISION 1 - GENERAL REQUIREMENTS (Cont'd)

Lines and Grades	01722
Cutting and Patching	01732
Cleaning	01740
Contract Close Out	01789

## DIVISION 2 - SITEWORK

Demolition	02220
Site Clearing	02230
Tieback Sheeting	02251
Excavation	02316
Backfilling	02317
Slope Protection and Erosion Control	02370
Laying and Jointing Buried Pipelines	02500
Reinforced Concrete Sewer Pipe	02502
Prestressed Concrete Cylinder Pipe and Fittings	02503
Buried Ductile Iron Pipe and Fittings	02505
Buried Polyvinyl Chloride (PVC) Sewer and Pressure Pipe	02507
Sewer Manholes	02509
Disinfection	02512
Leakage Tests	02516
Paving and Surfacing	02840
Landscaping Work	02900

## DIVISION 3 - CONCRETE

Concrete Formwork	03100
Concrete Accessories	03150
Concrete Reinforcement	03200
Cast-In-Place Concrete	03310
Grout	03600

## DIVISION 5 - METALS

Metal Fabrications	05500
Metal Castings	05560

## DIVISION 9 - FINISHES

Painting	09900
----------	-------

DIVISION 15 - MECHANICAL

Valves

15110

STANDARD DETAILS

(NO TEXT FOR THIS PAGE)

SECTION 00100

NOTICE TO BIDDERS

VILLAGE OF ORLAND PARK  
COOK COUNTY, ILLINOIS

EAST RESERVOIR ADDITION

Sealed Bids for East Reservoir Addition, invited by the Board of Trustees of the Village of Orland Park, County of Cook, State of Illinois, will be received by the Village Clerk of the Village of Orland Park, 14700 Ravinia Avenue, Orland Park, Illinois, 60462, on May 1, 2008 at 11:00 a.m. Prevailing Time. All sealed bids must be submitted to the Village of Orland Park – Clerk's Office, located at the previously stated address. All sealed bids submitted properly will be publicly opened and read aloud immediately following the stated submission time.

The Work comprises furnishing all labor, materials, equipment, supplies and services for the construction of the new East Reservoir at the existing Main Pumping Station (8800 Thistlewood Lane, Orland Park) including all miscellaneous and appurtenant work for a complete and ready-to-use installation.

A pre-bid conference will be held at 10:00 a.m. on April 4, 2008 at the Village of Orland Park Public Works located at 15655 S. Ravinia Avenue, Orland Park, Illinois 60462. Prospective Bidders are not required to attend the conference. Following the pre-bid conference, prospective bidders will be provided access to the Main Pumping Station site until 3:00 p.m. on April 4, 2008.

The Bidding and Contract Documents, including Instructions to Bidders, Bid Form, Form of Bid Bond, Agreement, Form of Performance Bond, Form of Payment Bond, General and Supplementary Conditions, Specifications, Drawings, and Addenda, if any, may be obtained for examination at the Village of Orland Park – Clerk's Office or at the offices of Greeley and Hansen, 100 South Wacker Drive, Chicago, Illinois 60606. Copies of these Contract Documents may be obtained from Greeley and Hansen upon the payment of a non-refundable charge of one hundred fifty dollars (\$150.00) for each set of bid documents. Make checks payable to Greeley and Hansen, LLC.

No bid shall be withdrawn after the opening without the consent of the Village for a period of 60 days after the scheduled time of opening and reading of the bids.

Each Bid must be accompanied by a certified or bank cashier's check on a solvent bank or trust company, drawn to the order of the Village of Orland Park, or an acceptable Bid Bond on the form attached, in an amount of not less than ten percent of the total bid. This sum is a guarantee that, if the Bid is accepted, a contract will be entered into and its performance properly secured. The successful bidder will be required to furnish satisfactory performance and payment bonds for the full amount of the executed Contract.

The President and Board of Trustees reserves the right to reject any or all bids or parts thereof and to waive any informalities, technicalities and irregularities in the bids and to disregard all non-conforming or conditional bids and to hold the bids for sixty (60) days from the opening above set forth.

The successful bidder shall be required to comply with the provisions of all State of Illinois and federal laws concerning public works projects, as well as the State of Illinois Human Rights Act and the regulations of the Illinois Human Rights Commission. Any contract executed is subject to the Illinois Prevailing Wage Act.

By order of the President and Board of Trustees of the Village of Orland Park, Cook County, Illinois.

President and Board of Trustees  
Village of Orland Park

By: David P. Maher  
Village Clerk

Dated \_\_\_\_\_

SECTION 00200  
INSTRUCTIONS TO BIDDERS

ARTICLE 1    DEFINED TERMS

- 1.01      Terms used in these Instructions to Bidders will have the meanings indicated in the General and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:
- A.      Bidder - The individual or entity who submits a Bid directly to OWNER.
  - B.      Issuing Office - The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
  - C.      Successful Bidder - The lowest, responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

ARTICLE 2    COPIES OF BIDDING DOCUMENTS

- 2.01      Refer to the Notice to Bidders for information on how and where copies of the Bidding Documents may be examined or obtained.
- 2.02      Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents or documents obtained from third party sources.
- 2.03      OWNER and ENGINEER in making copies of Bidding Documents available do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.
- 2.04      The Plans which are applicable to this Contract are titled as follows:

VILLAGE OF ORLAND PARK, ILLINOIS  
LAKE MICHIGAN WATER SUPPLY

EAST RESERVOIR ADDITION

ARTICLE 3    QUALIFICATIONS OF BIDDERS

- 3.01      To demonstrate Bidder's qualifications to perform the Work, within five days of OWNER's request, Bidder shall submit written evidence such as financial data,

previous experience, additional references, present commitments and other such data as may be requested.

#### ARTICLE 4 EXAMINATION OF CONTRACT DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 On request, OWNER will provide plan holders access to the Pump Station site for the purpose of viewing existing site and taking such measurements as potential bidders may deem necessary. Site visit hours will be limited to 8:00 am to 3:00 pm. Contact John Ingram at (708) 403-6350 to arrange for site visits.

4.02 It is the responsibility of each Bidder before submitting a Bid to:

- A. Examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;
- B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
- D. Obtain and carefully study (or assume responsibility for doing so) all examinations, investigations, explorations, tests, studies, and data concerning conditions at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
- E. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- F. Become aware of the general nature of the work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;
- G. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- H. Promptly give ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder, and

- I. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.03 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 Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by ENGINEER are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

#### ARTICLE 5 PREBID CONFERENCE

A pre-bid conference will be held at 10:00 a.m. on April 4, 2008 at the Village of Orland Park Public Works located at 15655 S. Ravinia Avenue, Orland Park, Illinois 60462. Representatives of OWNER and ENGINEER will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. ENGINEER will transmit to all prospective Bidders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements made during the prebid conference are not to be relied upon and will not be binding or legally effective. Following the pre-bid conference, prospective bidders will be provided access to the Main Pumping Station site until 3:00 p.m. on April 4, 2008.

#### ARTICLE 6 SITE AND OTHER AREAS

The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR.

#### ARTICLE 7 INTERPRETATIONS AND ADDENDA

- 7.01 No interpretation of the meaning of the Plans, Drawings or other Contract Documents will be made to any Bidder orally. All questions about the meaning or intent of the Bidding Documents are to be directed to ENGINEER in writing, addressed to: Greeley and Hansen, Attn: Ms. Beth Vogt, 100 South Wacker Drive, Suite 1400, Chicago, Illinois 60606. Questions may be sent via fax to Ms.

Beth Vogt at 312-558-1986. Call Ms. Vogt at 312-578-2321 to advise her that a fax has been sent. Mail copies of all faxes sent to Ms. Vogt to her at the address given above. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda which, if issued, will be sent to all parties recorded by ENGINEER as having received the Bidding Documents, not later than 5 days prior to the date fixed for the Bid opening. Questions received less than seven 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 be without legal effect.

If requested, a copy of an Addendum will be given to a prospective Bidder's representative at the office of the ENGINEER. Failure of any Bidder to receive any addenda does not relieve said Bidder from any obligation under the Bid as submitted. All addenda issued become part of the Contract Documents.

- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

#### ARTICLE 8 BID SECURITY

- 8.01 Each Bid must be accompanied by Bid Security made payable to OWNER in an amount of ten percent of Bidder's maximum Bid price and in the form of a certified or bank cashier's check or a Bid Bond, on the form attached, issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General and Supplementary Conditions. In Paragraph 6 of the attached Bid Bond form (Section 00430), the suit limitation of one year shall be stricken.
- 8.02 The bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within ten business days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of the seventh day after the Effective Date of the Agreement or the 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.
- 8.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

## ARTICLE 9 CONTRACT TIME

- 9.01 The number of days within which the Work is to be ready for Final Acceptance is set forth in the Agreement.

## ARTICLE 10 LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

## ARTICLE 11 SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in the General and Supplementary Conditions.

## ARTICLE 12 SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 If the General and Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to OWNER a list of all such Subcontractors, Suppliers, individuals, or entities 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, individual, or entity if requested by OWNER. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, OWNER may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid 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.
- 12.02 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, individuals, or entities. Declining to make requested

substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which OWNER or ENGINEER makes no 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 Agreement as provided in paragraph 6.06 of the General and Supplementary Conditions.

- 12.03 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom CONTRACTOR has reasonable objection.

#### ARTICLE 13 PREPARATION OF BID

- 13.01 All blanks on the Bid Form shall be completed by printing in blue or black ink and the Bid Form must be signed. A Bid price shall be indicated for each Bid item listed therein.
- 13.02 A bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- 13.03 A bid by a partnership shall be executed in the partnership name and signed by a partner, whose title must appear under the signature, accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.
- 13.04 A bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.
- 13.05 A bid by an individual shall show the Bidder's name and official address.
- 13.06 A bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture must be shown below the signature.
- 13.07 Print all names in black ink below the signatures.
- 13.08 Acknowledge receipt of all Addenda (the numbers of which must be filled in) on the Bid Form.
- 13.09 Show the address, telephone number, facsimile number and e-mail address for communications regarding the Bid.

- 13.10 Provide evidence of authority to conduct business as an out-of-state corporation in the state where the Work is to be performed in accordance with Part 3 above. Show state contractor license number, if any.

#### ARTICLE 14 BASIS OF BID, EVALUATION OF BIDS

14.01 Lump Sum

- A. Bidders shall submit a Bid on a lump sum basis as set forth in the Bid Form.

- 14.02 The bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General and Supplementary Conditions.

#### ARTICLE 15 SUBMITTAL OF BID

- 15.01 A bid shall be submitted no later than the time and place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope, marked with the Project title and name and address of 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 containing the Bid must be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed bid shall be addressed to, Village of Orland Park – Village Clerk, 14700 Ravinia Avenue, Orland Park, Illinois, 60462, and sent by Certified Mail or overnight courier. Mailed Bids must be received no later than the time fixed for opening Bids.
- 15.02 Bidder must submit three (3) complete, sealed, signed and attested copies of the bid, one (1) of which shall be a complete bound copy and two (2) of which shall be a complete, identical, unbound copy of the bid, free of staples and other fasteners, and shall have provided all requested information, and submitted all appropriate forms, certificates, affidavits and addendum acknowledgements in each copy in order to be considered responsive. The bound copy shall be the forms with the original signatures and the unbound copy may be photocopies (please include a photocopy of the bid bond or check in the unbound copies).

#### ARTICLE 16 MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 16.02 If, within 24 hours after Bids are opened, any Bidder files a duly signed, written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the

preparation of its Bid, that Bidder may withdraw its Bid and the Bid security will be returned. Thereafter, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

#### ARTICLE 17 OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the advertisement or Invitation to Bid and, unless obviously nonresponsive, read aloud publicly.

#### ARTICLE 18 BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

#### ARTICLE 19 AWARD OF CONTRACT

- 19.01 OWNER reserves the right to reject any or all Bids, including, without limitation, nonconforming, nonresponsive, unbalanced or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. OWNER may also 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.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 19.03 In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications and financial ability of Bidders to perform the Work in accordance with the Contract Documents.
- 19.05 Bidders shall provide the OWNER with the names and contact information of three (3) references for which they have performed similar work. The bidders grant the OWNER permission to contact said references and ask questions regarding prior work performance. OWNER shall use the information gained from bidder's references to further evaluate the bidders.

- 19.06 If the contract is to be awarded, OWNER will award the contract to the Bidder whose Bid will be in the best interests of the Project.
- 19.07 Award of the Contract is subject to Village of Orland Park Board of Trustees approval.

## ARTICLE 20 CONTRACT SECURITY AND INSURANCE

- 20.01 Article 5 of the General and Supplementary Conditions sets forth OWNER's requirements as to Performance and Payment Bonds and insurance. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by such Bonds. In Paragraph 11 of the attached Payment Bond form (Section 00615), the suit limitation of one year shall be stricken. In Paragraph 9 of the attached Performance Bond form (Section 00610), the suit limitation of two years shall be stricken.
- 20.02 Insurance – Contractor shall purchase and maintain, at all times during the performance of the work under this Contract, insurance coverage, including Worker's Compensation, Automobile Liability, Comprehensive General Liability and Excess Liability in the amounts set forth in the Owner's Insurance Requirements Certification included as an attachment to this document, labeled Special Attachment No. 11. Contractor shall purchase and maintain, all other coverages required in Article 5 of the General and Supplementary Conditions. **Bidders must sign and submit with the bid, the Insurance Requirements Certification, as recognition of the basic insurance coverages and amounts (hereinafter referred to as "coverage(s)") that will be required to be in place before the commencement of any Work by the successful bidder. By signing this form, the bidder is certifying that in the event the bidder does not already have the required insurance coverages in place, that the bidder has checked with their insurance carrier and verified that the coverages requested will be able to be obtained by the bidder within ten (10) days after the date of the Notice of Award of the Contract.** The bidder has the sole responsibility of verifying that the coverages will be available for purchase and has made any and all inquiries necessary to satisfy this requirement and fully inform themselves in regards to any additional policy premiums the successful bidder may incur as a result of obtaining said required coverages. The bidder also represents that they have taken the insurance requirements into account and at the bidders' sole discretion, has factored this into the bid prices submitted. The successful bidder is solely and entirely responsible for the payment of policy premiums and in no event will the Village of Orland Park be obligated to incur any additional expense, nor will the Village increase the amount of the Contract above the amount bid, as a result of any expense the successful bidder may incur to satisfy the obligations required herein.

**Please submit with the bid, a current policy Specimen Certificate of Insurance showing the insurance coverages the bidder currently has in force.**

Upon award of the contract, any insurance policies providing the coverages required of the Contractor shall be specifically endorsed to identify "The Village of Orland Park, and their respective officers, trustees, directors, employees and agents" as Additional Insureds on a primary/non-contributory basis with respect to all claims arising out of operations by or on behalf of the named insured. If the named insureds have other applicable insurance coverage, that coverage shall be deemed to be on an excess or contingent basis. The policies shall also contain a Waiver of Subrogation in favor of the Additional Insureds in regards to General Liability and Workers Compensation coverage's. The certificate of insurance shall also state this information on its face. Certificates of insurance must state that the insurer shall provide the Owner with thirty (30) days prior written notice of any change in, or cancellation of required insurance policies. The words "endeavor to" and ", but failure to do so shall impose no obligation or liability of any kind upon the insurer, its agents or representatives" must be stricken from all Certificates of Insurance submitted to the Owner, but failure of the insurer to strike this reference shall not be a waiver of the obligation to provide any written notice.

#### ARTICLE 21 SIGNING OF AGREEMENT

- 21.01 When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within ten business days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Payment and Performance Bonds.
- 21.02 Within ten days thereafter, OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings.

#### ARTICLE 22 SALES AND USE TAXES

The OWNER is exempt from the Illinois Use Tax Act and the Retailers Occupation Tax. The OWNER's exemption identification number issued by the Illinois Department of Revenue is E9998-1807-05. Any taxes for which the OWNER is not exempt shall be paid by the CONTRACTOR. Refer to paragraph 6.10 of the General and Supplementary Conditions for additional information.

#### ARTICLE 23 RETAINAGE

Provisions concerning retainage are set forth in the Agreement.

END OF SECTION

## SECTION 00210

### BID SUBMITTAL CHECKLIST

In order to be responsive, the bidder must submit all of the following items:

- Sealed Bid Envelope - Addressed to the Village of Orland Park, Village Clerk's Office, 14700 S. Ravinia Ave., Orland Park, Illinois 60462 and labeled **East Reservoir Addition - Bid**, in the lower left hand corner.
- Bid - Bidder must submit three (3) complete, sealed, signed and attested copies of the bid, two (2) of which shall be unbound copies of the bid, and shall have provided all requested information, and submitted all appropriate forms certificates, affidavits and addendum acknowledgements in order to be considered responsive.
- Certified or Cashier's Check or Bid Bond for 10% of the bid amount
- All forms completed:
  - Bid Form (Section 00410)
  - Bid Bond Form (Section 00430)
  - References (Section 00820 Special Attachment No. 1)
  - Certification of Eligibility to enter into Public Contracts (Section 00820 Special Attachment No. 2)
  - Tax Certification (Section 00820 Special Attachment No. 3)
  - Certification of Compliance With the Illinois Prevailing Wage Act (Section 00820 Special Attachment No. 4)
  - Sexual Harassment Policy (Section 00820 Special Attachment No. 7)
  - Equal Employment Opportunity (Section 00820 Special Attachment No. 8)
  - Apprenticeship and Training Program Certification (Section 00820 Special Attachment No. 9)
  - Insurance Requirements (Section 00820 Special Attachment No. 11)
  - Certification of Compliance with the Substance Abuse Prevention Program (Section 00820 Special Attachment No. 12)
  - Business Organization Certification (Section 00820 Special Attachment No. 13)
  - Certification Regarding Criminal Background Investigations and Authorization for Criminal Background Investigation of Contractor's Employee Who Has Direct Daily Contact with Pupils of Orland School District No. 135 (Section 00820 Special Attachment No. 14)
- A current policy Specimen Certificate of Insurance showing Bidder's current coverages.

END OF SECTION

(NO TEXT FOR THIS PAGE)

SECTION 00410

BID FORM

To the President and Board of Trustees of the Village of Orland Park, 14700 Ravinia Avenue, Orland Park, Illinois, 60462:

For the construction of the East Reservoir Addition at the Main Pumping Station.

Date of Bid May 1, 2008

Made by David A. Henderson, President

Name of Bidder Joseph J. Henderson & Son, Inc.  
(individual, firm, corporation, or joint venture as case may be)

Business Address of Bidder 4288 Old Grand Avenue, Gurnee, Illinois 60031

Bidder's Telephone Number (847) 244-3222

Bidder's Fax Number (847) 244-9572

Bidder's E-Mail Address LindaZ@JJHenderson.com

Residence Address of Bidder (If an individual) Not applicable

(If Bidder is a firm, fill in the names and addresses of all partners in the following blanks)

Names of Partners

Addresses of Partners

<u>Not applicable</u>	

(If Bidder is a corporation, fill in the following blanks):

Organized under the laws of the State of Illinois

Name and Address of President David A. Henderson  
7541 Bittersweet Drive, Gurnee, Illinois 60031

Name and Address of Vice President Not applicable

Name and Address of Secretary Mary Ellen Henderson  
15724 W. Guerin Road, Libertyville, Illinois 60048

Name and Address of Treasurer Robert J. Bernhardt  
5419 87th Place, Pleasant Prairie, Wisconsin 53158

(If the Bidder is a joint venture, fill in the following blanks):

Made by Not applicable

Name of Bidder \_\_\_\_\_  
(Individual firm or corporation as the case may be)

Place of Business of Bidder \_\_\_\_\_

Made by \_\_\_\_\_

Name of Bidder \_\_\_\_\_  
(Individual firm or corporation as the case may be)

Place of Business of Bidder \_\_\_\_\_

Made by \_\_\_\_\_

Name of Bidder \_\_\_\_\_  
(Individual firm or corporation as the case may be)

Place of Business of Bidder \_\_\_\_\_

(Each joint venture member must be listed whether individual, partnership and corporation)

- 1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents, subject to modification, to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.
- 2.01 Bidder accepts all of the terms and conditions of the Notice to Bidders and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the day of Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.
- 3.01 In submitting this Bid, Bidder represents, set forth in the Agreement, that:
- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged:
- Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_
- Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_
- Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_
- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: drawings of physical conditions in or relating to existing structures and equipment which have been identified in paragraph 4.02 of the General and Supplementary Conditions. Bidder accepts the determination set forth in paragraph 4.02 of the General and Supplementary Conditions of the extent of the "technical data" contained in such reports and drawings upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General and Supplementary Conditions. Bidder acknowledges that such reports and drawings are not Contract Documents and may not be complete for Bidder's purposes. Bidder acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the site.
- E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site or otherwise which may affect cost, progress, or

performance of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

- F. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies and data with the Bidding Documents.
- I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of the Work for which this Bid is submitted.
- K. Bidder is not in arrears to the Village of Orland Park, upon debt or contract; is not a defaulter, as surety or otherwise, upon any obligation to the Village of Orland Park; and has not been delinquent or unfaithful in any former contract with the Village of Orland Park.
- L. That no officer or employee or person whose salary is payable in whole or in part by the Owner is, shall be or become interested, directly or indirectly, as a contracting party, partner, stockholder, surety or otherwise, in this Bid, or in the performance of the Contract, or in the supplies, materials, or equipment and Work or labor to which it relates, or in any portion of the profits thereof.
- M. Bidder is a duly registered Contractor in the State of Illinois and has been issued registration No. \_\_\_\_\_. (A successful Bidder who fails to list his registration number, shall furnish proof of possession thereof before the Contract will be awarded.)
- N. Bidder has submitted a copy of their current policy specimen certificate of insurance, demonstrating their coverages. If current coverages do not meet the minimum requirements as stated in the bid documents, the bidder agrees to purchase, at their own expense, upon award of the contract, the required coverages.

- O. Bidder has provided the names and contact information of three (3) references for which they have performed similar work by completing the form in Special Attachment No. 1, Section 00820. The Bidder grants the OWNER permission to contact said references and ask questions regarding prior work performance.
- 4.01 Bidder agrees to observe and comply at all times with all laws, ordinances and regulations of the federal, state, local and Village governments, which may in any manner affect the preparation of bids or the performance of the Contract. In submitting this Bid, Bidder represents that:
- A. Bidder is in compliance with Section 33E of State of Illinois Criminal Code of 1961 and has completed the Certification of Eligibility to Enter into Public Contracts, Special Attachment No. 2 in Section 00820.
  - B. Bidder certifies that he is not delinquent in payment of any tax administered by the Illinois Department Revenue by completing the Tax Certification, Special Attachment No. 3 in Section 00820.
  - C. Bidder agrees to comply with the Illinois Prevailing Wage Act (820 ILCS 130/0.01, et seq.) and has completed the Certification of Compliance with the Illinois Prevailing Wage Act, Special Attachment No. 4 in Section 00820. Not less than the Prevailing Rate of Wages as found by the Village of Orland Park or the Department of Labor shall be paid to laborers, workmen, and mechanics performing work under the Contract. If awarded the Contract, contractor must comply with all provisions of the Illinois Prevailing Wage Act, including, but not limited to, providing certified payroll records to the Village Clerk. Contractor and subcontractors shall be required to comply with all applicable federal laws, state laws and regulations regarding minimum wages, limit on payment to minors, minimum fair wage standards for minors, payment of wage due employees, and health and safety of employees. Contractor and subcontractor are required to pay employees all rightful salaries, medical benefits, pension and social security benefits pursuant to applicable labor agreements and federal and state statutes and to further require withholdings and deposits therefore.
  - D. Bidder agrees to comply with all requirements of the Illinois Human Rights Act, 775 ILCS 5/1-101 et seq., including the provision dealing with sexual harassment and that if awarded the Contract will not engage in any harassment as defined in that Act and will require that its subcontractors agree to the same restrictions. Bidder has a written sexual harassment policy in compliance with 775 ILCS 5/2-105(A) and has completed the Sexual Harassment Policy certification, Special Attachment No. 7 in Section 00820
  - E. Bidder agrees to the Equal Employment Opportunity Clause by completing the form in Special Attachment No. 8, Section 00820. The CONTRACTOR shall maintain, and require that its subcontractors maintain, policies of equal

employment opportunity which shall prohibit discrimination against any employee or applicant for employment on the basis of race, religion, color, sex, national origin, ancestry, citizenship status, age, marital status, physical or mental disability unrelated to the individual's ability to perform the essential functions of the job, association with a person with a disability, or unfavorable discharge from military service. Contractors and all subcontractors shall comply with all requirements of the Act and of the Rules of the Illinois Department of Human Rights with regard to posting information on employees' rights under the Act. Contractors and all subcontractors shall place appropriate statements identifying their companies as equal opportunity employers in all advertisements for workers to be employed in work to be performed.

- F. Bidder participates in apprenticeship and training programs approved and registered with the United States Department of Labor Bureau of Apprenticeship Training and has completed the Apprenticeship and Training Program Certification, Special Attachment No. 9 in Section 00820.
- G. Bidder agrees to indemnify and hold the OWNER (Village of Orland Park), its trustees, officers, agents and employees harmless from all liability, claims, liens, losses, or causes of action for property damage, personal injury or death, or other damages, judgments, costs, damages and expenses of any kind, including costs and reasonable attorneys' fees, which may in any way be suffered by the OWNER or any of its trustees, officers, agents and employees, or which may accrue against or be charged to or recovered from the OWNER or its trustees, officers, agents and employees which may arise or which may be alleged to have arisen out of or in connection with the work covered by the Agreement. The CONTRACTOR shall defend all such claims in the name of the OWNER and shall pay for all reasonable attorney's fees and expenses of the OWNER incurred as a result thereof.
- H. Bidder agrees to comply with all requirements of Public Act 95-0635, including the provisions for Substance Abuse Prevention and that if awarded the Contract will provide a written copy of their Substance Abuse Prevention Program that meets or exceeds the requirements in that Act or certifies that a collective bargaining agreement in effect dealing with Substance Abuse Prevention. Bidder has completed the Substance Abuse Prevention certification, Special Attachment No. 12 in Section 00820.
- I. Bidder has completed the Business Organization certification, Special Attachment No. 13 in Section 00820.
- J. Bidder has completed the Certification Regarding Criminal Background Investigations and Authorization for Criminal Background Investigation of Contractor's Employee Who Has Direct Daily Contact with Pupils of Orland School District No. 135, Special Attachment No. 14 in Section 00820.

- 5.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

6.01 Bidder will complete the Work in accordance with the Contract Documents for the following prices:

Contract Item No.	Estimated Quantity	Description and Price in Words	Price in Figures	
			Computed Unit Price	Total Price For Item
1	Lump Sum	For the construction of all structures, equipment and site work associated with East Reservoir Addition, other than unit price work, complete in place for the lump sum price of <u>eight million eight hundred twelve thousand</u> dollars and <u>no</u> cents.	L.S	\$ <u>8,812,000</u>
2	2,960 L.F.	For providing Temporary Fencing, for the unit price of <u>twenty-nine</u> dollars and <u>no</u> cents per lineal foot.	\$ <u>29</u>	\$ <u>85,840</u>
3	1,000 Cu.Yds.	Over-excavation, complete in place, for the unit price of <u>fifteen</u> dollars and <u>no</u> cents per cubic yard.	\$ <u>15</u>	\$ <u>15,000</u>
4	1,000 Cu.Yds.	Additional Select Fill, complete in place, for the unit price of <u>thirty-four</u> dollars and <u>no</u> cents per cubic yard.	\$ <u>34</u>	\$ <u>34,000</u>
5	100 Cu.Yds.	Additional Class D Concrete, complete in place, for the unit price of <u>two hundred fifty</u> dollars and <u>no</u> cents per cubic yard.	\$ <u>250</u>	\$ <u>25,000</u>
6	5,000 pounds	Additional Steel Reinforcing, complete in place, for the unit price of <u>one</u> dollars and <u>no</u> cents per pound.	\$ <u>1</u>	\$ <u>5,000</u>
TOTAL COMPUTED PRICE			\$	<u>8,976,840</u> (Amount in Figures)

Bidder acknowledges that quantities are not guaranteed and final payment will be based on actual quantities determined as provided in the Contract Documents.

- 7.01 Bidder agrees that the Work will be ready for Final Acceptance in accordance with paragraph 14.07.B of the General and Supplementary Conditions within the number of calendar days indicated in the Agreement.
- 7.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the agreement.
- 8.01 The terms used in this Bid which are defined in the General and Supplementary Conditions or Instructions to Bidders will have the meanings indicated in the General and Supplementary Conditions or Instructions to Bidders.



(Form of affidavit where Bidder is an individual)

Not applicable

STATE OF

)

) SS:

COUNTY OF

)

\_\_\_\_\_, being duly sworn, deposes and says: That I am the person described in and who executed the foregoing Bid and that the several matters therein stated are in all respects true.

\_\_\_\_\_  
(Signature)

Subscribed and sworn to before me this \_\_\_\_\_  
day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Notary Public \_\_\_\_\_ County

(SEAL)

My Commission expires:  
\_\_\_\_\_

(Form of affidavit where Bidder is a firm)

Not applicable

STATE OF

)

) SS:

COUNTY OF

)

\_\_\_\_\_, being duly sworn,  
deposes and says: That I am a member of \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
the firm described in and which executed the foregoing Bid; that I duly subscribed the name  
of the firm thereunto on behalf of the firm; and that the several matters therein stated are in  
all respects true.

\_\_\_\_\_  
(Signature)

Subscribed and sworn to before me this \_\_\_\_\_  
day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Notary Public \_\_\_\_\_ County

(SEAL)

My Commission expires:  
\_\_\_\_\_

(Form of affidavit where Bidder is a corporation)

STATE OF Illinois )  
 ) SS:  
COUNTY OF Lake )

David A. Henderson and Linda Zoetmulder  
being duly sworn, depose and say: That we reside in the Cities of

Gurnee, Illinois and

Zion, Illinois, respectively;

that we are the President and

Assistant Secretary, respectively;

of Joseph J. Henderson & Son, Inc.

the corporation described in and which executed the foregoing instrument; that we know the seal of the corporation; that the seal affixed to this instrument is such corporate seal and was so affixed by order of the Board of Directors of the corporation; that we signed our names thereto by like order; and that we have knowledge of the several matters therein stated and they are in all respects true.

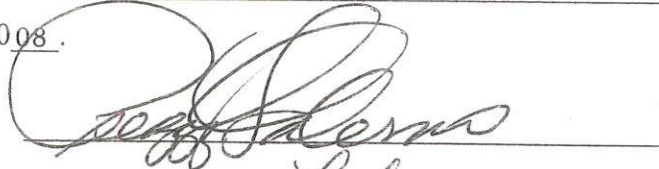
  
(Signature)

David A. Henderson, President

  
(Signature)

Linda Zoetmulder, Assistant Secretary

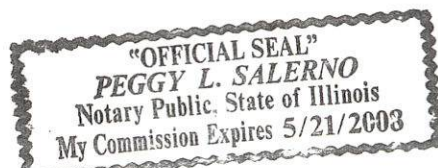
Subscribed and sworn to before me this 1st  
day of May, 2008.

  
Notary Public Lake County

(SEAL)

My Commission expires:

5-21-08



(Form of Affidavit where Bidder is a Joint Venture)

Not applicable

STATE OF

)

) SS:

COUNTY OF

)

Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Name: \_\_\_\_\_

Firm: \_\_\_\_\_

Name: \_\_\_\_\_

Firm: \_\_\_\_\_

and

Name: \_\_\_\_\_

Firm: \_\_\_\_\_

being duly sworn, depose and say: That we are members of the joint venture described in and which executed the foregoing Bid; that we duly subscribed the names of the firms forming the joint venture thereunto on behalf of each firm and that the several matters therein stated are in all respects true.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

Subscribed and sworn to before me this \_\_\_\_\_  
day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_

Notary Public \_\_\_\_\_ County

(SEAL)

My Commission expires:

\_\_\_\_\_

(NO TEXT FOR THIS PAGE)

## BID BOND

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

## BIDDER (Name and Address):

Joseph J. Henderson & Son, Inc.  
4288 Old Grand Avenue, P.O. Box 9, Gurnee, Illinois 60031-0009

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

Travelers Casualty and Surety Company of America  
215 Shuman Boulevard  
Naperville, Illinois 60563

## OWNER (Name and Address):

Village of Orland Park  
14700 Ravinia Avenue, Orland Park, Illinois 60462

## BID

Bid Due Date: May 1st, 2008

Project (Brief Description Including Location): East Reservoir Addition  
8800 Thistlewood Lane, Orland Park, Illinois

## BOND

Bond Number: Bid Bond

Date (Not later than Bid due date): May 1st, 2008

Penal sum Ten Percent of Bid Amount 10%  
(Words) (Figures)

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

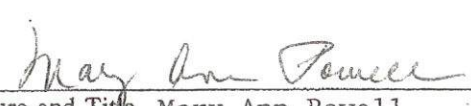
## BIDDER

## SURETY

Joseph J. Henderson & Son, Inc. (Seal) Travelers Casualty and Surety Company of America (Seal)  
Bidder's Name and Corporate Seal Surety's Name and Corporate Seal

By:   
Signature and Title  
David A. Henderson, President

Attest:   
Signature and Title  
Linda Zoetmulder, Assistant Secretary

By:   
Signature and Title Mary Ann Powell  
(Attach Power of Attorney) Attorney-In-Fact

Attest:   
Signature and Title Bond Specialist

Note: Above addresses are to be used for giving required notice.

PENAL SUM FORM

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Surety's liability.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
  - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
  - 3.2. All Bids are rejected by Owner, or
  - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

STATE OF ILLINOIS

COUNTY OF DuPage

On this 1st day of May, 2008, before me came Mary Ann Powell who executed the preceding instrument, to me personally known, and being by me duly sworn, said that he is the therein described and authorized ATTORNEY-IN-FACT of Travelers Casualty and Surety Company of America that the seal affixed to said instrument is the Corporate Seal of said Company.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal this day and year first written above.

*Christine Eitel*

Christine Eitel, Notary Public

seal



## POWER OF ATTORNEY

TRAVELERS 

Farmington Casualty Company  
 Fidelity and Guaranty Insurance Company  
 Fidelity and Guaranty Insurance Underwriters, Inc.  
 Seaboard Surety Company  
 St. Paul Fire and Marine Insurance Company

St. Paul Guardian Insurance Company  
 St. Paul Mercury Insurance Company  
 Travelers Casualty and Surety Company  
 Travelers Casualty and Surety Company of America  
 United States Fidelity and Guaranty Company

Attorney-In Fact No. 219088

Certificate No. 001941460

KNOW ALL MEN BY THESE PRESENTS: That Seaboard Surety Company is a corporation duly organized under the laws of the State of New York, that St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company and St. Paul Mercury Insurance Company are corporations duly organized under the laws of the State of Minnesota, that Farmington Casualty Company, Travelers Casualty and Surety Company, and Travelers Casualty and Surety Company of America are corporations duly organized under the laws of the State of Connecticut, that United States Fidelity and Guaranty Company is a corporation duly organized under the laws of the State of Maryland, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc. is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

Gerald C. Olson, Joanne F. Costa, John E. Adams, Mary Ann Powell, R. O. Drost, Gregory A. Field, Christine Eitel and D. L. Halper

of the City of Lombard/Palatine, State of Illinois, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 6th day of September, 2007.


Farmington Casualty Company  
 Fidelity and Guaranty Insurance Company  
 Fidelity and Guaranty Insurance Underwriters, Inc.  
 Seaboard Surety Company  
 St. Paul Fire and Marine Insurance Company

St. Paul Guardian Insurance Company  
 St. Paul Mercury Insurance Company  
 Travelers Casualty and Surety Company  
 Travelers Casualty and Surety Company of America  
 United States Fidelity and Guaranty Company



State of Connecticut  
 City of Hartford ss.

By:

  
 George W. Thompson, Senior Vice President

On this the 6th day of September, 2007, before me personally appeared George W. Thompson, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.  
 My Commission expires the 30th day of June, 2011.



  
 Marie C. Tetreault, Notary Public

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kori M. Johanson, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 1 day of May, 20 08.

  
Kori M. Johanson, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at [www.travelersbond.com](http://www.travelersbond.com). Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.

# ACORD<sup>TM</sup> CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
10/18/2007

PRODUCER Phone: 630-324-2500 Fax: 630-324-2501  
Hilb, Rogal & Hobbs  
333 E. Butterfield Rd, 5th Fl.  
Lombard IL 60148

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED  
Joseph J. Henderson & Son Inc.  
4288 Old Grand Avenue  
Gurnee IL 60031-0009

## INSURERS AFFORDING COVERAGE

## NAIC #

INSURER A: Old Republic Insurance Co 24147  
INSURER B: St. Paul Fire & Marine Insura 24767  
INSURER C:  
INSURER D:  
INSURER E:

## COVERAGES

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

INSR ADD'L LTR	INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A		<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC	MWZY57560	5/31/2007	5/31/2008	EACH OCCURRENCE \$2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$100,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$2,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000
A		<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	MWTB19883	5/31/2007	5/31/2008	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
B		<b>EXCESS/UMBRELLA LIABILITY</b> <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE  <input type="checkbox"/> DEDUCTIBLE <input checked="" type="checkbox"/> RETENTION \$10,000	QK01201592	5/31/2007	5/31/2008	EACH OCCURRENCE \$2,000,000 AGGREGATE \$2,000,000 \$ \$ \$
A		<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below OTHER	MWC115206	5/31/2007	5/31/2008	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$500,000 E.L. DISEASE - EA EMPLOYEE \$500,000 E.L. DISEASE - POLICY LIMIT \$500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

RE: Sample Certificate for Bidding Purposes Only

## CERTIFICATE HOLDER

\*Sample\*  
JJH's Bidding ONLY  
Gurnee IL 60031

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT.

AUTHORIZED REPRESENTATIVE

*[Signature]*

## IMPORTANT

If the certificate holder **is** an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate **does not** confer rights to the certificate holder in lieu of such endorsement(s).

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

## DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

File Number

4986-926-6



*To all to whom these Presents Shall Come, Greeting:*

*I, Jesse White, Secretary of State of the State of Illinois, do hereby certify that*

JOSEPH J. HENDERSON AND SON, INC., A DOMESTIC CORPORATION, INCORPORATED UNDER THE LAWS OF THIS STATE ON JULY 27, 1971, APPEARS TO HAVE COMPLIED WITH ALL THE PROVISIONS OF THE BUSINESS CORPORATION ACT OF THIS STATE RELATING TO THE PAYMENT OF FRANCHISE TAXES, AND AS OF THIS DATE, IS IN GOOD STANDING AS A DOMESTIC CORPORATION IN THE STATE OF ILLINOIS.



*In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of the State of Illinois, this 6TH day of JULY A.D. 2007 .*

*Jesse White*

SECTION 00520  
AGREEMENT FOR  
CONSTRUCTION SERVICES

THIS AGREEMENT is dated as of the 27<sup>th</sup> day of May in the year 2008 by and between the Village of Orland Park (hereinafter called OWNER) and JOSEPH J. HENDERSON & SON, INC. (hereinafter call CONTRACTOR).

WITNESSETH

In consideration of the promises and covenants made herein by the OWNER and the CONTRACTOR (hereinafter referred to collectively as the "PARTIES,") the PARTIES agree as follows:

**Article 1. WORK**

- 1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

The construction of the East Reservoir Addition at the Main Pumping Station, located at 8800 Thistlewood Lane, Orland Park, Illinois, including miscellaneous and appurtenant work for a complete and ready-to-use installation.

**Article 2. THE PROJECT**

- 2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Construction of the East Reservoir Addition at the Main Pumping Station as shown and specified in the Contract Documents

**Article 3. ENGINEER**

- 3.01 The Project has been designed by Greeley and Hansen who is hereinafter called ENGINEER and who is to 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 the completion of the Work in accordance with the Contract Documents.

#### Article 4. CONTRACT TIMES

##### 4.01 Time of the Essence

- A. All time limits for Milestones, if any, and Final Acceptance are of the essence of the Contract.

##### 4.02 Days to Achieve Final Acceptance

- A. The Work will be completed and ready for Final Acceptance in accordance with paragraph 14.06B of the General and Supplementary Conditions within 455 days after the date when the Contract Time commences to run.

##### 4.03 Liquidated Damages

- A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above plus any extensions thereof allowed in accordance with Article 12 of the General and Supplementary Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER one thousand and no/100 dollars (\$1,000.00) for each day that expires after the time specified in paragraph 4.02 for Final Acceptance until the Work is finally complete.

#### Article 5. CONTRACT PRICE

- 5.01 CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of \$ 8,976,840<sup>00</sup>, or as shown in the BID FORM schedule.

#### Article 6. PAYMENT PROCEDURES

##### 6.01 Submittal and Processing of Payments

- A. CONTRACTOR shall submit Applications for Payment to OWNER in accordance with Section 820 Special Attachment 10 for EJCDC form No. 1910-8-E (1996), Application for Payment, which is to be used for payment requests. Applications for Payment will be processed by OWNER as provided in the General Conditions as amended by Supplementary Conditions.
- B. Applications for Payment shall be for the value of the completed work less a retained amount of 10 percent of the value of the completed work as approved by OWNER until construction is 50 percent complete, after which no additional amount will be retained if CONTRACTOR is making progress to OWNER's satisfaction and there is no specific cause for withholding 10 percent of the total

value of future completed work. When the project is substantially complete as defined by the General Conditions as amended by Supplementary Conditions, the retained amount shall be reduced to only that amount estimated by OWNER as necessary to assure completion of the Work.

6.02 Payments Terms

- A. Payment terms shall be pursuant to the provisions of the Local Government Prompt Payment Act (50 ILCS 505/1 *et seq.*).

6.03 Final Payment

- A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General and Supplementary Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

**Article 7. CONTRACTOR'S REPRESENTATIONS**

7.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state and local Laws, Ordinances, Statutes, Rules and Regulations that may affect cost, progress, and performance of the Work, including but not limited to all applicable provisions of the Illinois Human Rights Act (775 ILCS 5/1-101 *et seq.*) and the Illinois Prevailing Wage Act (820 ILCS 130/0.01 *et seq.*)
- D. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that CONTRACTOR has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- E. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

## Article 8. CONTRACT DOCUMENTS

### 8.01 Contents

- A. The Contract Documents consist of the following:
1. Notice to Bidders
  2. Instructions to Bidders
  3. Bid Form and Special Attachments (as submitted by the CONTRACTOR as it is responsive to the OWNER's bid requirements)
  4. Documentation submitted by CONTRACTOR prior to Notice of Award
  5. Notice of Award
  6. This Agreement
  7. Exhibits to this Agreement
  8. Performance and Payment Bonds
  9. Notice to Proceed
  10. General and Supplementary Conditions
  11. Specifications bearing the title Village of Orland Park East Reservoir Addition.
  12. Set of Contract Drawings bearing the title Village of Orland East Reservoir Addition.
  13. Addenda (numbers   0   to   0  , inclusive.)
  14. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
    - a. Written Amendments
    - b. Work Change Directives and
    - c. Change order(s).
  15. Certificates of Insurance
- B. The documents listed in paragraphs 8.01.A are attached to this Agreement (except as expressly noted otherwise above).

- C. There are no Contract Documents other than those listed above in this Article 8.
- D. The Contract Documents may only be amended, modified or supplemented as provided in paragraph 3.05 of the General and Supplementary Conditions.

## Article 9. MISCELLANEOUS

### 9.01 Terms

- A. Terms used in this Agreement will have the meanings indicated in the General and Supplementary Conditions.

### 9.02 Assignment of Contract

- A. No assignment by a party hereto of any rights under or interests in the Contract 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.

### 9.03 Successors and Assigns

- A. 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 to all covenants, agreements and obligations contained in the Contract Documents.

### 9.04 Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provisions or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

### 9.05 Law and Venue

- A. The laws of the State of Illinois shall govern this Contract and venue for legal disputes shall be Cook County, Illinois

9.06 Indemnification

- A. The CONTRACTOR shall indemnify and hold the OWNER, its trustees, officers, agents and employees harmless from all liability, claims, liens, losses, or causes of action for property damage, personal injury or death, or other damages, judgments, costs, damages and expenses of any kind, including costs and reasonable attorneys' fees, which may in any way be suffered by the OWNER or any of its trustees, officers, agents and employees, or which may accrue against or be charged to or recovered from the OWNER or its trustees, officers, agents and employees which may arise or which may be alleged to have arisen out of or in connection with the work covered by this Contract. The CONTRACTOR shall defend all such claims in the name of the OWNER and shall pay for all reasonable attorney's fees and expenses of the OWNER incurred as a result thereof.

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

This Agreement shall become effective on the date last shown herein and upon execution by duly authorized agents of the parties.

OWNER:

VILLAGE OF ORLAND PARK

14700 S. Ravinia Ave.  
Orland Park, Illinois 60462

By: Ellen J. Buer

Name: ELLEN J. BUER

Title: ACTING VILLAGE MANAGER

Date: 6/12/08

Address for Giving Notices:

Denise Domalewski  
Contract Administrator  
Village of Orland Park  
14700 S. Ravinia Ave.  
Orland Park, Illinois 60462  
Phone: (708) 403-6173  
Facsimile: (708) 403-9212  
e-mail: ddomalewski@orland-park.il.us

Designated Representative:

John J. Ingram  
Utility Superintendent  
Village of Orland Park  
15655 S. Ravinia Ave.  
Orland Park, Illinois 60462  
Phone: (708) 403-6350  
Facsimile: (708) 403-8798

CONTRACTOR:

JOSEPH J. Henderson & Son, Inc  
4288 Old Grand Ave  
Gurnee, IL 60031

By: David A. Henderson

Name: DAVID A. HENDERSON

Title: PRESIDENT

Date: MAY 27, 2008

Address for Giving Notices:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

License No. \_\_\_\_\_

(Where applicable)

Designated Representative:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

Facsimile: \_\_\_\_\_

(NO TEXT FOR THIS PAGE)

VOPERA

00520-8

# PERFORMANCE BOND

Bond#104910093

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

**CONTRACTOR (Name and Address):**

Joseph J. Henderson & Son, Inc.  
4288 Old Grand Avenue, Gurnee, IL

**OWNER (Name and Address):**

Village of Orland Park  
14700 Ravinia Avenue, Orland Park, IL 60462

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

Travelers Casualty and Surety Company of America  
215 Shuman Boulevard, Naperville, IL 60563

**CONTRACT**

Date: May 27th, 2008

Amount: \$8,976,840.00

Description (Name and Location): East Reservoir Addition  
8800 Thistlewood Lane, Orland Park, IL

**BOND**

Bond Number: 104910093

Date (Not earlier than Contract Date): May 27th, 2008

Amount: \$8,976,840.00

Modifications to this Bond Form: None

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: Joseph J. Henderson & Son, Inc.

Signature: [Signature] (Seal)  
Name and Title: PRESIDENT

**SURETY**

Travelers Casualty and Surety  
Company of America (Seal)  
Surety's Name and Corporate Seal

By: [Signature]  
Signature and Title Mary Ann Powell  
(Attach Power of Attorney) Attorney-In-Fact

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

Attest: [Signature]  
Signature and Title Bond Specialist

**CONTRACTOR AS PRINCIPAL**

Company:

Signature: \_\_\_\_\_ (Seal)  
Name and Title: \_\_\_\_\_

**SURETY**

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_  
Signature and Title: \_\_\_\_\_

EJCDC No. C-610 (2002 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. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.
2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.
3. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
  - 3.1. Owner has notified Contractor and Surety, at the addresses described in Paragraph 10 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
  - 3.2. Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 3.1; and
  - 3.3. Owner has agreed to pay the Balance of the Contract Price to:
    1. Surety in accordance with the terms of the Contract;
    2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.
4. When Owner has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:
  - 4.1. Arrange for Contractor, with consent of 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 Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and Contractor selected with 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 Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor 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 Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
    2. Deny liability in whole or in part and notify Owner citing reasons therefor.
5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 4.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.
6. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To a limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:
  - 6.1. The responsibilities of Contractor for correction of defective Work and completion of the Contract;
  - 6.2. Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions or failure to act of 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 Contractor.
7. Surety shall not be liable to Owner or others for obligations of 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 Owner or its heirs, executors, administrators, or successors.
8. Surety hereby waives notice of any change, including changes of time, to 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 Contractor ceased working or within two years after 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 Surety, Owner, or 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 requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory 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 Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
  - 12.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
  - 12.3. Contractor Default: Failure of 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 Owner, which has neither been remedied nor waived, to pay 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  
 Surety Agency or Broker  
 Owner's Representative (engineer or other party)

HRH  
 333 E. Butterfield Road, Suite 5  
 Lombard, IL 60148 630-324-2500

## PAYMENT BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable. Bond#104910093

**CONTRACTOR (Name and Address):**

Joseph J. Henderson & Son, Inc.  
4288 Old Grand Avenue, Gurnee, IL

**OWNER (Name and Address):**

Village of Orland Park  
14700 Ravinia Avenue, Orland Park, IL 60462

**CONTRACT**

Date: May 27th, 2008

Amount: \$8,976,840.00

Description (Name and Location): East Reservoir Addition  
8800 Thistlewood Lane, Orland Park, IL

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

Travelers Casualty and Surety Company of America  
215 Shuman Boulevard, Naperville, IL 60563

**BOND**

Bond Number: 104910093

Date (Not earlier than Contract Date): May 27th, 2008

Amount: \$8,976,840.00

Modifications to this Bond Form: None

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: Joseph J. Henderson & Son, Inc.

Signature: [Signature] (Seal)

Name and Title: PRESIDENT

**SURETY**

Travelers Casualty and Surety  
Company of America

Surety's Name and Corporate Seal (Seal)

By: [Signature]  
Signature and Title: Mary Ann Powell  
(Attach Power of Attorney) Attorney-In-Fact

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

Attest: [Signature]  
Signature and Title: Sr. Bonds Specialist

**CONTRACTOR AS PRINCIPAL**

Company:

Signature: \_\_\_\_\_ (Seal)

Name and Title:

**SURETY**

Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_  
Signature and Title:

EJCDC No. C-615 (2002 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. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to Owner, this obligation shall be null and void if Contractor:
  - 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
  - 2.2. Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and 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 Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
  - 4.1. Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the addresses described in Paragraph 12) and sent a copy, or notice thereof, to 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 Contractor:
    1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to 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 or equipment were furnished or supplied, or for whom the labor was done or performed; and
    2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
    3. Not having been paid within the above 30 days, have sent a written notice to Surety and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:
  - 6.1. Send an answer to that Claimant, with a copy to 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. 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 Surety.
8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.
9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. 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. 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 Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or 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 requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory 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, 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 Contractor, or with a first-tier subcontractor of 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 Contractor and 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 Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 15.3. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay 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  
 Surety Agency or Broker:  
 Owner's Representative (engineer or other party):

HRH 630-324-2500  
 333 E. Butterfield Road, Lombard, IL 60148

**PAYMENT BOND  
RIDER**

**TRAVELERS CASUALTY AND SURETY  
COMPANY OF AMERICA**  
Hartford, Connecticut 06183

This Rider is executed concurrently with and shall be attached to and form a part of Payment Bond No. 104910093 (hereinafter referred to as the "Payment Bond").

WHEREAS, on or about the 27<sup>th</sup> day of May 2008, Joseph J. Henderson & Son, Inc. (hereinafter referred to as "Principal") entered into a written agreement with the Village of Orland Park, "Project" for East Reservoir Addition 8800 Thistlewood Lane, Orland Park, Illinois (hereinafter referred to as "Contract"); and

WHEREAS, the Principal is obligated under the Contract to provide a payment bond in connection with the Contract naming The Village of Orland Park as Oblige; and

WHEREAS, the Principal and Travelers Casualty and Surety Company of America have agreed to execute and deliver the Payment Bond on the conditions herein stated.

NOW, THEREFORE, the Payment Bond is hereby modified as follows:

Paragraph 6 in the Payment Bond is deleted in its entirety and the following is substituted in its place:

6. When the Claimant has satisfied the conditions of Paragraph 4, and has submitted all supporting documentation and any proof of claim requested by the Surety, the Surety shall, with reasonable promptness, notify the Claimant of the amounts that are undisputed and the basis for challenging any amounts that are disputed, including, but not limited to, the lack of substantiating documentation to support the claim as to entitlement or amount, and the Surety shall, with reasonable promptness, pay or make arrangements for payment of any undisputed amount; provided, however, that the failure of the Surety to timely discharge its obligations under this paragraph or to dispute or identify any specific defense to all or any part of a claim shall not be deemed to be an admission of liability by the Surety as to such claim or otherwise constitute a waiver of the Contractor's or Surety's defenses to, or right to dispute, such claim. Rather, the Claimant shall have the immediate right, without further notice, to bring suit against the Surety to enforce any remedy available to it under this Bond.

Except as herein modified, the Payment Bond No. 104910093 shall be and remains in full force and effect.

Signed, sealed and dated this 27 day of May, 2008.

Joseph J. Henderson & Son, Inc.  
(Principal) (Seal)  
By: [Signature] PRESIDENT  
(Title)

Travelers Casualty and Surety Company of America  
(Seal)  
By: [Signature]  
Mary Ann Powell, Attorney-in-Fact

STATE OF ILLINOIS

COUNTY OF DUPAGE

On this 27th of May, 2008 before me came Mary Ann Powell who executed the preceding instrument, to me personally known, and being by me duly sworn, said that he is the therein described and authorized ATTORNEY-IN-FACT of Travelers Casualty and Surety Company of America that the seal affixed to said instrument is the Corporate Seal of said Company.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal this day and year first written above.

(Seal)



  
Christine Eitel Notary Public



## POWER OF ATTORNEY

Farmington Casualty Company  
 Fidelity and Guaranty Insurance Company  
 Fidelity and Guaranty Insurance Underwriters, Inc.  
 Seaboard Surety Company  
 St. Paul Fire and Marine Insurance Company

St. Paul Guardian Insurance Company  
 St. Paul Mercury Insurance Company  
 Travelers Casualty and Surety Company  
 Travelers Casualty and Surety Company of America  
 United States Fidelity and Guaranty Company

Attorney-In Fact No. 219088

Certificate No. 001941509

KNOW ALL MEN BY THESE PRESENTS, that Seaboard Surety Company is a corporation duly organized under the laws of the State of New York, that St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company and St. Paul Mercury Insurance Company are corporations duly organized under the laws of the State of Minnesota, that Farmington Casualty Company, Travelers Casualty and Surety Company, and Travelers Casualty and Surety Company of America are corporations duly organized under the laws of the State of Connecticut, that United States Fidelity and Guaranty Company is a corporation duly organized under the laws of the State of Maryland, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc. is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

Gerald C. Olson, Joanne F. Costa, John E. Adams, Mary Ann Powell, R. O. Drost, Gregory A. Field, Christine Eitel and D. L. Halper

of the City of Lombard/Palatine, State of Illinois, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 6th day of September, 2007

Farmington Casualty Company  
 Fidelity and Guaranty Insurance Company  
 Fidelity and Guaranty Insurance Underwriters, Inc.  
 Seaboard Surety Company  
 St. Paul Fire and Marine Insurance Company

St. Paul Guardian Insurance Company  
 St. Paul Mercury Insurance Company  
 Travelers Casualty and Surety Company  
 Travelers Casualty and Surety Company of America  
 United States Fidelity and Guaranty Company



State of Connecticut  
 City of Hartford ss.

By:

*George W. Thompson*  
 George W. Thompson, Senior Vice President

On this the 6th day of September, 2007, before me personally appeared George W. Thompson, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.  
 My Commission expires the 30th day of June, 2011.



*Marie C. Tetreault*  
 Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kori M. Johanson, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., Seaboard Surety Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 27 day of MAY, 2008.

  
Kori M. Johanson, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at [www.travelersbond.com](http://www.travelersbond.com). Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.

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 and SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*a practice division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

---

AMERICAN CONSULTING ENGINEERS COUNCIL

---

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General Contractors of America

Construction Specifications Institute

These General Conditions have been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2) (1996 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 User's Guide (No. 1910-50). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition).

Copyright ©1996

National Society of Professional Engineers  
1420 King Street, Alexandria, VA 22314

American Consulting Engineers Council  
1015 15th Street N.W., Washington, DC 20005

American Society of Civil Engineers  
345 East 47th Street, New York, NY 10017

**NOTICE: SUPPLEMENTARY CONDITIONS HAVE BEEN INTEGRATED INTO THE TEXT  
OF THE STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT**

Supplementary Conditions are shown in **BOLD PRINT** where additions are made to the Standard General Conditions and by **DELETION USING STRIKEOUT** where items in the Standard General Conditions have been removed by deletion.

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 edition of EJCDC) and other provisions of the Contract Documents as indicated below.

All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof.

## TABLE OF CONTENTS

	<u>Page</u>
ARTICLE 1 - DEFINITIONS AND TERMINOLOGY .....	00700 - 6
1.01 <i>Defined Terms</i> .....	00700 - 6
1.02 <i>Terminology</i> .....	00700 - 89
ARTICLE 2 - PRELIMINARY MATTERS .....	00700 - 9
2.01 <i>Delivery of Bonds</i> .....	00700 - 9
2.02 <i>Copies of Documents</i> .....	00700 - 9
2.03 <i>Commencement of Contract Times; Notice to Proceed</i> .....	00700 - 9
2.04 <i>Starting the Work</i> .....	00700 - 910
2.05 <i>Before Starting Construction</i> .....	00700 - 910
2.06 <i>Preconstruction Conference</i> .....	00700 - 10
2.07 <i>Initial Acceptance of Schedules</i> .....	00700 - 10
ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE.....	00700 - 1011
3.01 <i>Intent</i> .....	00700 - 1011
3.02 <i>Reference Standards</i> .....	00700 - 1112
3.03 <i>Reporting and Resolving Discrepancies</i> .....	00700 - 1112
3.04 <i>Amending and Supplementing Contract Documents</i> .....	00700 - 12
3.05 <i>Reuse of Documents</i> .....	00700 - 12
ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS.....	00700 - 1213
4.01 <i>Availability of Lands</i> .....	00700 - 1213
4.02 <i>Subsurface and Physical Conditions</i> .....	00700 - 1213
4.03 <del><i>Differing Subsurface or Physical Conditions</i></del> .....	00700 - 1415
4.04 <i>Underground Facilities</i> .....	00700 - 1415
4.05 <i>Reference Points</i> .....	00700 - 1516
4.06 <i>Hazardous Environmental Condition at Site</i> .....	00700 - 1516
ARTICLE 5 - BONDS AND INSURANCE.....	00700 - 1617
5.01 <i>Performance, Payment, and Other Bonds</i> .....	00700 - 1617
5.02 <i>Licensed Sureties and Insurers</i> .....	00700 - 1718
5.03 <i>Certificates of Insurance</i> .....	00700 - 1718
5.04 <del><i>CONTRACTOR's Liability Insurance</i></del> <i>Required Coverages</i> .....	00700 - 1819
5.05 <del><i>OWNER's Liability Insurance</i></del> <i>Insurance Companies &amp; Policies</i> .....	00700 - 1820
5.06 <del><i>Property Insurance</i></del> <i>Insurance Coverages</i> .....	00700 - 1921
5.07 <i>Waiver of Rights</i> .....	00700 - 2122
5.08 <i>Receipt and Application of Insurance Proceeds</i> .....	00700 - 2223
5.09 <i>Acceptance of Bonds and Insurance; Option to Replace</i> .....	00700 - 2224
5.10 <i>Partial Utilization, Acknowledgment of Property Insurer</i> .....	00700 - 2224
ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES .....	00700 - 2224
6.01 <i>Supervision and Superintendence</i> .....	00700 - 2224
6.02 <i>Labor; Working Hours</i> .....	00700 - 2324
6.03 <i>Services, Materials, and Equipment</i> .....	00700 - 2324
6.04 <i>Progress Schedule</i> .....	00700 - 2425
6.05 <i>Substitutes and "Or-Equals"</i> .....	00700 - 2425
6.06 <i>Concerning Subcontractors, Suppliers, and Others</i> .....	00700 - 2526
6.07 <i>Patent Fees and Royalties</i> .....	00700 - 2627
6.08 <i>Permits</i> .....	00700 - 2628
6.09 <i>Laws and Regulations</i> .....	00700 - 2728
6.10 <i>Taxes</i> .....	00700 - 2728

6.11	<i>Use of Site and Other Areas</i> .....	00700 - 2729
6.12	<i>Record Documents</i> .....	00700 - 2829
6.13	<i>Safety and Protection</i> .....	00700 - 2830
6.14	<i>Safety Representative</i> .....	00700 - 3331
6.15	<i>Hazard Communication Programs</i> .....	00700 - 3331
6.16	<i>Emergencies</i> .....	00700 - 3331
6.17	<i>Shop Drawings and Samples</i> .....	00700 - 3331
6.18	<i>Continuing the Work</i> .....	00700 - 3533
6.19	<i>CONTRACTOR's General Warranty and Guarantee</i> .....	00700 - 3533
6.20	<i>Indemnification</i> .....	00700 - 3534
ARTICLE 7 - OTHER WORK .....		00700 - 3634
7.01	<i>Related Work at Site</i> .....	00700 - 3634
7.02	<i>Coordination</i> .....	00700 - 3735
ARTICLE 8 - OWNER'S RESPONSIBILITIES.....		00700 - 3735
8.01	<i>Communications to Contractor</i> .....	00700 - 3735
8.02	<i>Replacement of ENGINEER</i> .....	00700 - 3735
8.03	<i>Furnish Data</i> .....	00700 - 3735
8.04	<i>Pay Promptly When Due</i> .....	00700 - 3735
8.05	<i>Lands and Easements; Reports and Tests</i> .....	00700 - 3735
8.06	<i>Insurance</i> .....	00700 - 3735
8.07	<i>Change Orders</i> .....	00700 - 3735
8.08	<i>Inspections, Tests, and Approvals</i> .....	00700 - 3735
8.09	<i>Limitations on OWNER's Responsibilities</i> .....	00700 - 3735
8.10	<i>Undisclosed Hazardous Environmental Condition</i> .....	00700 - 3736
8.11	<i>Evidence of Financial Arrangements</i> .....	00700 - 3837
8.12	<b>OWNER Not Responsible for Acts or Omissions of CONTRACTOR</b> .....	00700 - 3837
8.13	<b>OWNER Not Responsible for Planning, Scheduling, or Execution</b> .....	00700 - 3837
8.14	<b>OWNER Not Responsible to Exercise Authority for CONTRACTOR</b> .....	00700 - 3837
ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION .....		00700 - 3837
9.01	<i>OWNER'S Representative</i> .....	00700 - 3837
9.02	<i>Visits to Site</i> .....	00700 - 3837
9.03	<i>Project Representative</i> .....	00700 - 3837
9.04	<i>Clarifications and Interpretations</i> .....	00700 - 3837
9.05	<i>Authorized Variations in Work</i> .....	00700 - 3937
9.06	<i>Rejecting Defective Work</i> .....	00700 - 3938
9.07	<i>Shop Drawings, Change Orders and Payments</i> .....	00700 - 3938
9.08	<i>Determinations for Unit Price Work</i> .....	00700 - 3938
9.09	<i>Decisions on Requirements of Contract Documents and Acceptability of Work</i> .....	00700 - 3938
9.10	<i>Limitations on ENGINEER's Authority and Responsibilities</i> .....	00700 - 3938
ARTICLE 10 - CHANGES IN THE WORK; CLAIMS.....		00700 - 42
10.01	<i>Authorized Changes in the Work</i> .....	00700 - 42
10.02	<i>Unauthorized Changes in the Work</i> .....	00700 - 42
10.03	<i>Execution of Change Orders</i> .....	00700 - 4342
10.04	<i>Notification to Surety</i> .....	00700 - 4342
10.05	<i>Claims and Disputes</i> .....	00700 - 4342
ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK.....		00700 - 4443
11.01	<i>Cost of the Work</i> .....	00700 - 4443
11.02	<i>Cash Allowances</i> .....	00700 - 4645
11.03	<i>Unit Price Work</i> .....	00700 - 4645

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES.....	00700 - 46
12.01 <i>Change of Contract Price</i> .....	00700 - 46
12.02 <i>Change of Contract Times</i> .....	00700 - 4746
12.03 <i>Delays Beyond CONTRACTOR's Control</i> .....	00700 - 47
12.04 <i>Delays Within CONTRACTOR's Control</i> .....	00700 - 47
12.05 <i>Delays Beyond OWNER's and CONTRACTOR's Control</i> .....	00700 - 4847
12.06 <i>Delay Damages</i> .....	00700 - 47
ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK.....	00700 - 4948
13.01 <i>Notice of Defects</i> .....	00700 - 4948
13.02 <i>Access to Work</i> .....	00700 - 4948
13.03 <i>Tests and Inspections</i> .....	00700 - 4948
13.04 <i>Uncovering Work</i> .....	00700 - 49
13.05 <i>OWNER May Stop the Work</i> .....	00700 - 5049
13.06 <i>Correction or Removal of Defective Work</i> .....	00700 - 5049
13.07 <i>Correction Period</i> .....	00700 - 50
13.08 <i>Acceptance of Defective Work</i> .....	00700 - 50
13.09 <i>OWNER May Correct Defective Work</i> .....	00700 - 5150
ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION.....	00700 - 51
14.01 <i>Schedule of Values</i> .....	00700 - 51
14.02 <i>Progress Payments</i> .....	00700 - 51
14.03 <i>CONTRACTOR's Warranty of Title</i> .....	00700 - 54
14.04 <del>Substantial Completion</del> <i>Preliminary Inspection</i> .....	00700 - 55
14.05 <i>Partial Utilization</i> .....	00700 - 55
14.06 <del>Final Inspection</del> <i>Final Inspection and Final Acceptance</i> .....	00700 - 56
14.07 <i>Final Payment</i> .....	00700 - 56
14.08 <i>Final Completion Delayed</i> .....	00700 - 57
14.09 <i>Waiver of Claims</i> .....	00700 - 57
ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION .....	00700 - 57
15.01 <i>OWNER May Suspend Work</i> .....	00700 - 57
15.02 <i>OWNER May Terminate for Cause</i> .....	00700 - 5758
15.03 <i>OWNER May Terminate For Convenience</i> .....	00700 - 58
15.04 <i>CONTRACTOR May Stop Work or Terminate</i> .....	00700 - 58
ARTICLE 16 - DISPUTE RESOLUTION .....	00700 - 59
16.01 <i>Methods and Procedures</i> .....	00700 - 59
ARTICLE 17 - MISCELLANEOUS.....	00700 - 59
17.01 <i>Giving Notice</i> .....	00700 - 59
17.02 <i>Computation of Times</i> .....	00700 - 59
17.03 <i>Cumulative Remedies</i> .....	00700 - 59
17.04 <i>Survival of Obligations</i> .....	00700 - 59
17.05 <i>Controlling Law</i> .....	00700 - 59
17.06 <i>Wage Rates</i> .....	00700 - 59
17.07 <i>Severability</i> .....	00700 - 60

## GENERAL CONDITIONS

### ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

---

#### 1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the 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. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements*--~~The Advertisement or Invitation to Bid~~ **Notice to Bidders**, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds*--Performance and payment bonds and other instruments of security.

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*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR 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 Substantial Completion; and (ii) 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. *ENGINEER's Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions. **ENGINEER's consultants are Klein and Hoffman, Inc. and Ground Engineering Consultants**

21. *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.

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

23. *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.

24. *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.

25. *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.

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

27. *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.

28. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *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.

30. *OWNER*--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs*--Polychlorinated biphenyls.

33. *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.

34. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *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.

36. *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.

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. *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.

40. *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.

41. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *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.

43. *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.

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

45. *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.

46. *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.

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

48. *Work*--The entire completed 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.~~

**Work is the result of performing or furnishing labor and the result of furnishing and incorporating materials and equipment into the construction, and the result of performing or furnishing services, and documentation, all as required by the Contract Documents.**

49. *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.

50. *Written Amendment*--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

51. **"Additional Insureds", except where otherwise expressly defined, shall mean:**

Village of Orland Park  
Greeley and Hansen LLC  
Klein and Hoffman, Inc.  
Ground Engineering Consultants  
Orland School District #35

1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or 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 action or determination will be solely to evaluate, in general, the completed 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 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 9.10 or any other provision of the Contract Documents.

B. Day

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

2. "Workday" or "workdays", except where otherwise expressly defined, shall mean a day or days of twenty-four hours each, excluding Saturdays, Sundays and federal or State legal holidays.

C. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or 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).

D. 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.

E. 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

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02 Copies of Documents

A. OWNER shall furnish to CONTRACTOR up to ten **five(5)** copies of the Contract Documents. 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.~~

**A. The Notice to Proceed shall designate a date for commencement of Contract Times.**

### 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. **CONTRACTOR's Review of Contract Documents:** 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; however, 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. **Preliminary Schedules:** Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its 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 Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; 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.

**4. a listing of proposed subcontractors and major material and equipment suppliers.**

C. **Evidence of Insurance:** Before any Work at the Site is started **execution of the Agreement**, 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.

### 2.06 Preconstruction Conference

A. Within 20 days after the Contract Times start to run, ~~but before any Work at the Site is started~~, a conference attended by 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.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

### 2.07 Initial Acceptance of Schedules

A. Unless otherwise provided in the Contract Documents, at least ten 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.B. CONTRACTOR shall have an additional ten 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 any specified Milestones and 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 Shop Drawing and Sample 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 called for by one is as binding as if called for by all.

The Contract Documents will be governed by applicable Laws and Regulations of the place of the Project and OWNER, and those of any other Unit of Local Government with jurisdiction, except where Federal Laws or Regulations have precedence.

A.1 Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or if not correctly inserted, then upon the application of either party, the Contract Documents shall forthwith be physically amended to make such insertion.

A.2 In resolving conflicts, the Contract Documents shall be given preference as may be reasonably inferred by ENGINEER as being consistent with their overall intent and required to produce the intended result. In resolving conflicts, within the Contract Documents existing on the Effective Date of the Agreement, and as long as not in conflict with this fundamental priority order, ENGINEER will give preference to the Contract Documents in the following order: Supplementary Conditions, General Conditions, Specifications and Contract Drawings, CONTRACTOR's Bid, Performance and other Bonds including Work History

Statement, and Contract Agreement including CONTRACTOR's Certification, and Notice to Proceed all as supplemented below.

A.3 If the issue of priority involves Divisions 2 through 16 of the Specifications and the Drawings, figured dimensions shall govern over scaled dimensions, but Work not dimensioned shall be as directed by ENGINEER, and Work not particularly shown, identified, sized, or located shall be the same as similar Work that is shown or specified. Detail Drawings shall govern over general Drawings, larger scale Drawings take precedence over smaller scale Drawings. Whenever notes, specifications, dimensions, details or schedules in the Specifications, or in the Drawings, or between the Specifications and Drawings, or between Change Order or Work Change Directive Drawings and Contract Drawings, or between the provisions of the Contract Documents and those of any referenced standard specifications, manual, or code of any technical society, organization or association, conflict, the higher cost requirement shall be furnished by CONTRACTOR, unless otherwise directed by ENGINEER.

A.4 Given the intent of the Contract Documents, CONTRACTOR accepts the conditions that compliance with the priority specified in this Section shall not justify any changes in the Work, or any increase in Contract Price or Contract Times.

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.~~

In addition to Work expressly called for in the Drawings and Specifications, any other services, labor, transportation, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be provided at no increase in Contract Price or extension in Contract Times, and

**without requiring any changes in the Work, whether or not specifically called for.**

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, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees 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. 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 report it to ENGINEER in writing at once. 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; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to

report any such conflict, error, ambiguity, or discrepancy 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 in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) 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: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) 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 any of the Work under a direct or indirect contract with OWNER: (i) shall not 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 Consultant, including electronic media editions; and (ii) shall not 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. This prohibition will survive final payment, completion, and

acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

#### ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL 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, 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. Any additional lands, rights-of-way and easements not furnished that CONTRACTOR deems necessary shall be obtained by CONTRACTOR at no increase in Contract Price or Contract Times. CONTRACTOR shall obtain (and submit to OWNER) permits and written approvals from the U.S. Government, or the appropriate Unit of Local Government or property owner(s) for the use of lands and access so obtained and assume any resultant cost or delay.~~

##### 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.

3. In the preparation of Drawings and Specifications, ENGINEER has relied upon the following drawings related to existing structures and equipment which are at or contiguous to the site of work. Such documents are not part of the Contract Documents.

##### **-TITLES OF DOCUMENTS-**

**Pumping Station and Reservoir Contract Documents – dated September 1984**

**Addition of New Primary Pumps Contract Documents – dated August 1986**

4. The following reports of explorations at the site may be obtained from the office of the ENGINEER at the address listed in the Notice to Bidders. Such documents are not part of the Contract Documents.

##### **-TITLES OF DOCUMENTS-**

**Subsurface Exploration and Geotechnical Engineering Report for the Proposed East Reservoir Addition at the Village of Orland Park, dated March 2, 2006**

**Soil Mechanics Investigation Buried Water Reservoir Addition (West), dated September 16, 1987**

**L-25095 West Reservoir Addition, Orland Park, Illinois, dated January 19, 1988**

**Soils Investigation and Excavation Alternatives Proposed Pumping Station and Reservoir for the Village of Orland Park, Illinois, dated July 1, 1983**

**Report Site Selection Evaluation, Proposed Pumping Station and Reservoir for the Village of Orland Park, Illinois, dated January 14, 1983**

**Copies of these reports and drawings that are not included with Bidding Documents may be**

examined at office of the OWNER, Village of Orland Park, 14700 Ravinia Avenue, Orland Park, Illinois, 60462, during regular business hours. These reports and drawings are not part of the Contract Documents, but the technical data contained therein upon which CONTRACTOR is entitled to rely as provided in paragraph 4.02B. of the General Conditions and as identified and established above are incorporated therein by reference. CONTRACTOR is not entitled to rely upon other information and data utilized by ENGINEER and ENGINEER's Consultants in the preparation of Drawings and Specifications.

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, ENGINEER, or any of ENGINEER's Consultants 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 9.08 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 in respect of 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 within the time and 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, ENGINEER, and ENGINEER's Consultants 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.~~

**4.03 The CONTRACTOR, by execution of the Contract Agreement, represents that it has visited and has had full opportunity to examine the site or sites upon which the Work is to be performed and to examine the Contract Drawings and Specifications and other Contract Documents; that it has satisfied itself as to the requirements of the Work and of all conditions, including subsurface conditions, conditions of existing public and private roads and of clearances, restrictions, bridge load limits, utilities, and other limitations affecting transportation, ingress and egress at the Work site or sites, that may affect performing the Work; that its entry into the Contract has not been induced either wholly or in part by any promises, representations or statements on behalf of the OWNER or ENGINEER, or their agents or representatives other than those set forth in the Contract Documents; and that any information or data pertaining to local conditions that are distributed with the Contract Documents or made available to CONTRACTOR were included or made available for the convenience of the CONTRACTOR and not as a representation or warranty of any fact, condition or information. It is expressly understood that neither the OWNER nor the ENGINEER will be responsible for any**

**interpretation or conclusion drawn therefrom by the CONTRACTOR and that the determination of the character of subsurface conditions and materials shall be the sole responsibility of the CONTRACTOR. The CONTRACTOR further represents that the Contract Price, and all component elements thereof, set forth in the Contract Agreement has been determined with due regard to all such conditions and requirements affecting the Work, including the Contract Times specified as well as the difficulties, hindrances and delays incident to Work of the nature contemplated hereby, and with due allowance for contingencies and unanticipated or unpredictable conditions and occurrences. CONTRACTOR agrees that no claim for any increase in Contract Price or claim for extension of time for completion of the Work shall be made for subsurface and physical conditions except as specifically provided in the Contract.**

#### **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 of 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, ENGINEER or any of ENGINEER's Consultants 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); 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, ENGINEER, ENGINEER's Consultants and the officers, directors, partners, employees, agents, other 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, provided that such 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.E 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, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other 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.F 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 are not intended to 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 CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, 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 such 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 within 20 days thereafter substitute another Bond and

surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

D. The forms of the Performance and Labor and Material Payment Bonds included in the Contract Documents shall be used for this Project. Note instructions thereon as to the form applicable. Each form contemplates one corporate surety only. In case co-sureties or individual sureties will be utilized, proper forms therefor shall be obtained. Besides the stipulation of paragraph 5.01.B of the General Conditions, the surety on the Bonds shall be licensed to underwrite contracts in the state of the project location with a general rating of A, and a financial size category of Class X or better in Bests Insurance Guide, and a certificate to that effect shall be attached to the Bonds.

No changes, modifications, alterations, omissions, deletions, additions, extensions of time or forbearances on the part of either party to the other in or to the terms of this Contract, in or to the schedules, Contract Drawings and Specifications, in or to the method or manner of performance of the Work, in or to Owner-furnished facilities, equipment, material, service or sites, or in or to the mode or manner of payment therefor shall operate to release, discharge or affect the obligation of any surety or sureties under any bond and all notice of any and all of the foregoing changes, modifications, alterations, omissions, deletions, additions, extensions of time or forbearances, and notice of any and all defaults by Contractor or of Owner's termination of Contractor shall be waived by any surety or sureties under any bond.

The bond must name the OWNER as the Obligee, which is the entity protected by the bond in the event of a loss.

If the principal is an individual, his full name and residence shall be inserted in the body thereof, and he shall sign the Bonds with his usual signature on the line opposite the scroll seal.

If the principals are partners, their individual names shall appear in the body of the Bonds, with the recital that they are partners comprising a firm, naming it, and all the members of the firm shall execute the Bonds as individuals. The signature of a witness shall appear in the appropriate places, attesting the signatures of each individual party to the Bonds. If the principal is a corporation, the name of the state in which incorporated shall be inserted

in the appropriate place in the body of the Bonds, and said instrument shall be executed and attested under the corporate seal as indicated on the form. If the corporation has no seal, the face shall be stated, in which case a scroll or adhesive seal shall appear following the corporate name. This also applies to execution by surety.

The date of the bonds must not be prior to the date of the Contract for which given.

A power of attorney, authorizing the execution of the Bonds by an attorney-in-fact, or agent, shall be attached to one executed counterpart of the Bonds. If the Bonds are executed by an out-of-state agent, it shall be countersigned by a licensed resident agent of the state of the project location and evidence of his being so licensed shall be furnished.

#### 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. 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.

B. Additional insured are as follows:  
The OWNER, its agents, ENGINEER, ENGINEER's Project Representative, ENGINEER's Consultants, Design Engineer, attorneys, servants, elected and appointed officials, officers and employees, and owners of property where the Work is to be completed.

#### 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: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) 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 so required by this paragraph 5.04 to be purchased and maintained shall:~~

1. ~~with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, 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, and other 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 6.07, 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 thirty 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 (and 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).~~

#### 5.04 **Required Coverages**

A. **CONTRACTOR shall, prior to and at all times while providing, performing, or completing the Work, including, without limitation, at all times while repairing, correcting, or replacing all or any part of the Work that is defective, damaged, flawed, unsuitable, nonconforming, or that fails to meet warranty subject to correction by CONTRACTOR pursuant to Section 13.03 or Section 13.06 of these General Conditions of Contract, procure, maintain, and keep in force, at Contractor's expense, all insurance necessary to protect and save harmless OWNER, the Work, the Work Site, and all property**

located at or about the Work Site, including but not limited to the insurance coverages specified in Section 5.06 below and in the Special Conditions of Contract("Required Coverages").

#### 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.~~

#### 5.05 Insurance Companies and Policies

A. All Required Coverages shall be provided by insurance companies rated A VII or better in Best's Insurance Guide and otherwise acceptable to, and approved by, OWNER. Required Coverages may be in any combination of primary, excess, and umbrella policies. Any excess or umbrella policy must provide excess coverage over underlying insurance on a following-form basis such that when any loss covered by the primary policy exceeds the limits under the primary policy, the excess or umbrella policy becomes effective to cover such loss. No policy may have a deductible or self-insured retention of more than one percent of the policy limit. Contractor shall furnish to OWNER two copies of a certificate of insurance for each Required Coverage. Each such certificate and policy shall be in a form satisfactory to OWNER and shall provide that no change, modification in, or cancellation of the insurance represented by it shall become effective until the expiration of 30 Days after written notice thereof shall have been given by the insurance company to OWNER and any Additional Insured.

#### 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, ENGINEER, ENGINEER's Consultants, and any other individuals or entities~~

~~identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other 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 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, 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, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, 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 or Written Amendment. 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.~~

## 5.06 Insurance Coverages

**A. Minimum Coverages:** Unless otherwise provided in the Special Conditions of Contract, CONTRACTOR shall, prior to and at all times while providing, performing, or completing the Work, procure, maintain, and keep in force, at Contractor's expense, at least the following minimum insurance coverages:

### 1. Worker's Compensation and Employer's Liability with limits not less than:

(a) *Worker's Compensation:* Statutory;

(b) *Employer's Liability:*

\$1,000,000 injury-per occurrence

\$1,000,000 disease-per employee

\$1,000,000 disease-policy limit

Such insurance shall evidence that coverage applies to the State of the project and contain an "all States" endorsement.

2. *Comprehensive Motor Vehicle Liability* with a combined single limit of liability for bodily injury and property damage of not less than \$1,000,000 for vehicles owned, nonowned, or rented.

All employees must be included as insureds.

3. *Comprehensive General Liability* with coverage written on an "occurrence" basis and with limits no less than:

(a) General Aggregate: \$2,000,000

(b) Bodily Injury and  
Property Damage: \$1,000,000 per  
occurrence combined single limit

(c) Other Coverages: \$1,000,000 or as  
otherwise approved or  
required by Owner

Coverages shall include:

- Premises Operations
  - Products/Completed Operations (to be maintained for two years following Final Payment)
  - Independent Contractors
  - Personal Injury (with Employment Exclusion deleted)
  - Broad Form Property Damage Endorsement
  - Blanket Contractual Liability (must expressly cover the indemnity provisions contained in the General Conditions of the Construction Contract)
  - Bodily injury and property damage
- "X" Explosion, "C" Collapse, and "U" Underground exclusions shall be deleted.

Blasting exclusions shall be deleted if Work involves blasting.

Such insurance policies shall have all Railroad exclusions deleted, if any Work Site is within 50 feet of railroad tracks.

All employees shall be included as insureds.

**4. Umbrella Liability Insurance:** This coverage shall be written for a minimum of \$5,000,000 each occurrence for Bodily Injury and Property Damage.

This Policy shall apply in excess of the limits stated in 1., 2., and 3. above.

The required insurance described in 5.06 A2 through 5.06 A4 shall be endorsed to include, as additional insured, the OWNER, its agents, ENGINEER, ENGINEER's Project Representative, ENGINEER's Consultants, Design Engineer, attorneys, servants, elected and appointed officials, officers and employees, and owners of property where the Work is to be completed.

**5. Builders Risk Insurance:** This insurance shall be written in completed value form, shall protect CONTRACTOR, OWNER, and ENGINEER against "all risks" of direct physical loss to buildings, structures, equipment, and materials to be used in providing, performing, and completing the Work, including without limitation fire, extended coverage, vandalism and malicious mischief, sprinkler, leakage, flood, earth movement and collapse, and shall be designed for the circumstances that may affect the Work.

This insurance shall be written with limits not less than the insurable value of the Work at completion. The insurable value shall include the aggregate value of all OWNER-furnished equipment and materials to be constructed or installed by CONTRACTOR.

This insurance shall include coverage while equipment or materials are in warehouses or storage areas, during installation, during testing, and after the Work is completed, but prior to Final Payment. This insurance shall include coverage while OWNER is occupying or using all or any part of the Work prior to Final Payment without the need for the insurance company's consent.

This insurance coverage requirement shall not be construed as a waiver of CONTRACTOR'S duties stated in Article 6 or these General Conditions of Contract.

**6. OWNER'S and CONTRACTOR'S Protective Liability Insurance:** CONTRACTOR, as its sole cost and expense, shall purchase this Insurance in the names of OWNER and ENGINEER, as will protect OWNER and ENGINEER against claims which may arise from operations under the Contract Documents, for the period between the Commencement Date and Final Payment, with a combined single limit of liability for bodily injury and property damage of \$5,000,000.

The named insureds for this insurance shall be the OWNER and ENGINEER (Greeley and Hansen LLC) (The "Named OCP Insureds"). The coverage afforded the Named OCP Insureds by this insurance shall be primary insurance for the Named OCP Insureds. If the Named OCP Insureds have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the insurance company's liability under this policy of insurance shall not be reduced by the existence of such other insurance. This policy of insurance shall be specifically endorsed to provide such primary coverage for OWNER and ENGINEER (Greeley and Hansen LLC). In addition to the submittal requirements of Section 5.04 above, CONTRACTOR shall furnish to ENGINEER one copy of a certificate of insurance for this Required Coverage.

**B. Additional Coverages:** The insurance coverages and limits required by this Section shall be deemed to be minimum coverages and limits and shall not be construed in any way as a limitation on CONTRACTOR'S duty to carry adequate insurance as required by Section 5.04 above or on CONTRACTOR'S liability for losses and damages under this Contract. CONTRACTOR shall at all times carry such additional coverages and limits as may be necessary to fully comply with this Contract.

**C. Subcontractor Insurance:** Unless otherwise provided in the Special Conditions of Contract or unless otherwise approved by OWNER in a Change Order, CONTRACTOR shall not allow any Subcontractor to commence or continue any part of the Work until and unless such Subcontractor provides and has in force Comprehensive General

Liability insurance coverage equal to \$2,000,000 or the amount of its Subcontract, whichever is greater, and Worker's Compensation and Employer's Liability and Comprehensive Motor Vehicle Liability insurance coverages equal to those required of CONTRACTOR by this Article.

#### 5.07 Waiver of Rights

A. OWNER and CONTRACTOR intend intends that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, 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, and other 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 waives all rights against each other OWNER and their respective officers, directors, partners, employees, agents, and other 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, ENGINEER, ENGINEER's Consultants, 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, and other 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.

**No Waiver of Subrogation by Owner.** Notwithstanding any inconsistent or contrary provision in the General Conditions, the OWNER shall not be deemed to have waived any right of subrogation which it, its insurance carrier, any self insurance risk pool or risk management association, (or any combination of these entities) may have against the CONTRACTOR, the ENGINEER or any subcontractor of any tier for any damage caused by the CONTRACTOR, the ENGINEER, or any

subcontractor of any tier, to OWNER or OWNER'S property.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other 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 peril 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, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other 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 or Written Amendment.

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 2.05.C. 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, but 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. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

##### **1. Relationship of the Parties**

**The Contractor shall act as an Independent Contractor in the performance of the Work. No right of observation or review; requirement of approval; or other provision of the Contract or subsequent conduct of the parties shall be construed to create the relationship of principal and agent, partners, or joint adventurers between the parties. The rights of the Owner under this Contract, either directly or through the Engineer, in the control of the quality and completeness of the Work shall not make the Contractor an agent of the Owner, and the liability of the Contractor for all damages to persons or to public or private property, arising from the Contractor's execution of the Work, shall not be lessened because of the existence, exercise or non-exercise of such rights.**

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto 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, lay out, and construct the Work as required by the Contract Documents. CON-

TRACTOR 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, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

1. Normal working hours shall be as allowed by Laws or Regulations, or based on a schedule beginning between 7:00 a.m. and 6:00 p.m., excluding Work on Saturdays, Sundays and legal holidays, not exceeding forty (40) hours per week. If Work during other than normal working hours is scheduled by CONTRACTOR, except where specifically required in these Contract Documents, he shall reimburse OWNER for all of ENGINEER's charges to OWNER while acting as OWNER's representative.

2. Reimbursement for ENGINEER's charges shall be in amounts equal to ENGINEER's charges to OWNER for observation during hours other than normal working hours under the terms of ENGINEER's agreement with OWNER. In event CONTRACTOR fails to pay such costs within thirty (30) days after receipt of an invoice from OWNER, the unpaid amount will be deducted from CONTRACTOR's pay estimates and charged to the Contract.

#### 6.03 Services, Materials, and Equipment

A. Unless otherwise specified in the General Requirements, 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 warranties and guarantees

specifically called for 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. 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.

1. All items of materials and equipment shall be properly protected against damage throughout the furnishing and performance of the Work so that they remain of good quality and in as-new condition.

2. Suppliers of materials and equipment shall furnish complete information as to preventive maintenance and operating requirements, parts lists in sufficient detail to facilitate ordering replacements, and any applicable special conditions. Should the manner or method of installation, specified performance or test results be contrary to the manufacturer's recommendations, CONTRACTOR shall promptly notify ENGINEER in writing of that conflict before proceeding with the Work; otherwise, he shall be deemed to have certified that the Specifications will be met by the materials or equipment, and that the cost and the time required to perform or complete that Work have been included in the Contract Price and in CONTRACTOR's schedule for performing the Work within the Contract Times.

3. Should any workmanship or materials, equipment or supplies be needed that are not directly or indirectly set forth in the Contract Documents, but are nevertheless necessary to the proper execution according to the obvious intent thereof, the CONTRACTOR shall understand the same to be implied and shall provide what is needed in performing the Work.

#### 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 (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

#### 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: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, 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 procedure 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 first 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 shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, 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 work on the Project) to adapt the design to the proposed substitute item and 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. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also 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, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and 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 procedure for review by ENGINEER will be similar to that provided in subparagraph 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 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 time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such 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 or Written Amendment signed. 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.~~

A. CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization, (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom OWNER may have 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. CONTRACTOR shall not be required to employ any Subcontractor, other person or organization against whom CONTRACTOR has reasonable objection. The OWNER may require that all subcontractors that the CONTRACTOR will be using to perform the Work will execute the Subcontractor's Certification Statement bound into the Contract Documents within ten (10) days after CONTRACTOR enters into any subcontracts.

**CONTRACTOR shall submit to OWNER the executed Subcontractor's Certification Statement.**

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 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 shall it 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, ENGINEER, ENGINEER's Consultants, 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, and other 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. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants 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. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

**6.09 Laws and Regulations**

A. CONTRACTOR shall give all notices and 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 may 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.

**B. The materials and supplies to be used in the Work of the Contract may be exempt from the Sales and Use Tax of the place of the Project. In this case, CONTRACTOR shall obtain the proper certifications, maintain the necessary records, and otherwise comply with the requirements of applicable law.**

#### 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, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants 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 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, Written Amendments, 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.

**B. CONTRACTOR shall submit to ENGINEER periodic reports recording the status of the Work at the site, labor and equipment utilized, materials and equipment received, visits by Suppliers, and other similar pertinent information. Such reports shall be at intervals as approved by ENGINEER but not less frequent than monthly.**

#### **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**

**a. In the event of temporary suspension of the Work, or during inclement weather, CONTRACTOR shall, and shall cause Subcontractors, to protect carefully the Work and materials against damage or injury from the weather. If, in the opinion the OWNER, any portion of Work or materials shall have been damaged or injured by reason of failure on the part of CONTRACTOR or any Subcontractors to so protect the Work, such Work and materials shall be removed and replaced at the expense of CONTRACTOR.**

**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.**

**a. Contractor's Sole Responsibility**  
**Contractor shall be solely and completely responsible for conditions of the Work site or sites, including safety of all persons and**

**property during performance of the Work. This requirement will apply continuously and shall not be limited to normal working hours. Contractor shall take all safety precautions as shall be necessary to prevent damage to persons or property.**

**b. No Duty.** The duty of the OWNER or ENGINEER to observe CONTRACTOR's performance does not include any review of the adequacy of CONTRACTOR's safety measures in, on, or near the Work site or sites. ENGINEER has not been retained or compensated to provide design and construction review services relating to CONTRACTOR's safety precautions required for CONTRACTOR to perform the Work.

**c. No Liability.** Neither the OWNER, nor any official or employee of the OWNER, nor the ENGINEER, or any authorized assistant or agent of any of them, shall be responsible for safety precautions and programs in connection with the Work, or any liability arising therefrom.

**d. Protection of Operations.** The CONTRACTOR shall take all necessary precautions so as to cause no unauthorized interruption in any essential part of Pumping Station operations. Pumping Station operations must be maintained at the same level during construction as existed prior to construction except as otherwise provided.

The Village officials shall retain the authority to require the cessation of construction activities and return to service of any component of the Pumping Station should the need arise.

**e. Accident Records Maintenance.** CONTRACTOR shall maintain an accurate record of all accidents resulting in death, injury, occupational disease, or damage to any property whether or not that of the OWNER and shall promptly report any of the same to the OWNER.

**f. Kotecki Waiver.** CONTRACTOR (and any subcontractor into whose subcontract this clause is incorporated) agrees to assume the entire liability for all personal injury claims

suffered by its own employees asserted by persons allegedly injured on the Project; waives any limitation of liability defense based upon the Worker's Compensation Act, court interpretations of said Act or otherwise; and agrees to indemnify and defend the OWNER and ENGINEER and DESIGN ENGINEER and their agents, employees and consultants (the "Indemnitees") from and against all such loss, expense, damage or injury, including reasonable attorneys' fees, that the Indemnitees may sustain as a result of such claims, except to the extent that Illinois law prohibits indemnity for the Indemnitees' own negligence.

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. 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 ENGINEER's Consultant, 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). 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 to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The 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.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, 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.

#### D. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. 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 means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR 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 indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

#### E. *ENGINEER's Review*

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the

schedule of Shop Drawings and Sample 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 of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.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 approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

4. ENGINEER, generally, will process shop drawings and return them to the CONTRACTOR in not more than 10 working days from day of receipt. If the nature of the shop drawing is such that the review cannot be completed in 10 working days, ENGINEER will advise the CONTRACTOR giving a schedule for performing the review."

#### a. *Special Requirements for Structural Design.*

All structures to be provided by the CONTRACTOR, (except those structures for which details are shown on the Contract Drawings), that require structural design shall be designed and constructed under the supervision of a structural engineer, registered in the State of the Project (or a qualified professional engineer for the state

without provision of structural engineer registration), acting for and retained by the CONTRACTOR. Drawings and calculations for such structures shall be prepared and sealed by the structural engineer and submitted to the ENGINEER for record. A clear outline of the proposed construction procedure shall be shown on the drawings. A statement in writing by the structural engineer attesting that said engineer has visited the Work site or sites, that the design does satisfy the conditions as actually encountered and that the actual construction conforms to the drawings and calculations, as submitted, must be submitted to the ENGINEER before the Work related to such structures will be considered complete.

All temporary structures, including sheeting and bracing for excavations, that affect the safety of the public, workmen, inspectors, or OWNER's or ENGINEER's personnel shall be regarded as structures that require structural design.

#### F. 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, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. 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.

B. 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 acceptance by OWNER or any failure to do so;

6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;

7. any inspection, test, or approval by others; or

8. any correction of defective Work by OWNER.

C. The CONTRACTOR further warrants and guarantees that all Work and services to be performed under this Contract, and all workmanship, materials, equipment and supplies performed, furnished, used or installed in the construction of same, shall be free from defects and flaws in workmanship and shall be fit and sufficient for the purposes expressed in, or reasonably inferred from the Contract Documents. The CONTRACTOR further warrants and guarantees that the strength of all parts of all manufactured materials, equipment and supplies shall be adequate, and as specified, and that the performance requirements of the Contract shall be fulfilled.

#### 6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other 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:

1. 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; and

2. is caused in whole or in part 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, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

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 Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them 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.

## ARTICLE 7 - OTHER WORK

---

### 7.01 *Related Work at Site*

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let 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 and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and 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. Unless otherwise provided in the Contract Documents, 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.

### 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 Promptly When Due

A. OWNER shall make payments to CONTRACTOR promptly 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.~~

A. In the event that Contractor or others performing any portion of the Work encounter in the soil, air, or water at the Site, materials reasonably believed to be or contain "hazardous constituents," as the term and its derivatives are defined under the environmental laws, including those wastes and substances which are brought to the Site by Contractor, in levels in excess of any applicable standards set forth under the environmental laws, Contractor shall immediately stop the Work in the area affected and report the condition to Owner and Engineer and confirm such report within 24 hours in writing. Contractor shall take reasonable precautions to prevent or contain the release, movement, spread, or disturbance of such Hazardous Constituents and to protect persons and property and shall notify Owner and Engineer immediately of such actions.

B. 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.

C. All Hazardous Constituents which must be disposed of or treated, stored, or removed from the Site, shall be collected, handled, transported, treated, stored, disposed of, or otherwise remediated in accordance with all laws and the Contract Documents for the Work and procedures approved in advance by Owner and delivered to a disposal site or other facility, acceptable to Owner, at Owner's sole discretion. In the event that the Hazardous Constituents existed at the Site prior to the commencement of the Work, Owner shall be responsible for arranging for the collection, handling, transportation, treatment, storage, and disposal of such Hazardous Constituents in accordance with such procedures. In the event that the Hazardous Constituents were introduced at the Site by Contractor, subcontractors, or any other person or entity performing any portion of the Work, Contractor shall collect, handle, transport, treat, store, and dispose of such Hazardous Constituents in accordance with such procedures and Environmental Laws provided, however, Contractor shall not communicate with or submit any document to a governmental authority or agency referring or relating to the Site without first obtaining the Owner's approval. Contractor shall perform the Work to minimize improper activities by subcontractors, and any other person or entity performing any portion of the Work, in connection with any Hazardous Constituents. Contractor shall coordinate the Work with the entities that collect, handle,

transport, treat, store, and dispose of such Hazardous Constituents. Copies of all waste manifests for waste to be disposed of by Contractor shall be furnished to Owner. Contractor shall provide to the Owner any requested record concerning the Site which Contractor Possesses or can reasonably obtain and shall provide such information that the Owner may reasonably require from time to time to determine compliance by Contractor with this paragraph.

D. CONTRACTOR shall not under any circumstances apply to, or enter into negotiations with, any governmental authority or agency for acceptance of variations from or revisions to safety or health, or air, water, noise pollution, or other environmental laws or regulations relating to the Contract or the Work or to the performance thereof, without Owner's prior written consent.

E. To the fullest extent permitted by law, Contractor shall indemnify and hold harmless Owner, Engineer, Engineer's consultants, and the officers, directors, partners, employees, agents, other 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 E. shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

#### 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.

**8.12 OWNER will not be responsible for the acts or omissions of CONTRACTOR or any Subcontractor or Supplier, or other persons or organizations, or of anyone for whose acts any of them may be liable.**

**8.13 OWNER's review of any of the CONTRACTOR'S Progress Schedule Submittals, or OWNER'S decision to raise or not to raise any objections about those Submittals, shall not in any way whatsoever impose on OWNER a responsibility for the planning, scheduling or execution of the Work.**

8.14 OWNER'S authority to object to any of CONTRACTOR's progress schedules, or to any of the insurance that CONTRACTOR is required to purchase or maintain, shall not in any way give rise to any duty or responsibility on the part of OWNER to exercise the authority for the benefit of CONTRACTOR, any Subcontractor or Supplier, or any other person or organization, or any other third party.

## 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 9.10, and 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 responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. 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 Clarifications and Interpretations

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. 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, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

### 9.05 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 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, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

### 9.06 Rejecting Defective Work

A. ENGINEER will have authority to disapprove or 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.

#### 9.07 Shop Drawings, Change Orders and Payments

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

#### 9.08 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.

#### 9.09 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. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, 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. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

#### 9.10 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.

**1) Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 B or paragraph 9.10 C.**

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 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

F. The duties, responsibilities and limitations of authority of the Resident Project Representative (RPR) and assistants as defined in paragraphs 9.03 and 9.10 of the General Conditions shall be as follows:

The duties and responsibilities of the RPR and assistants are limited to those of ENGINEER described in the construction Contract Documents, and are further limited and described as follows:

### a. General

RPR is ENGINEER's representative at the site, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the on-site work shall in general be with ENGINEER and CONTRACTOR keeping OWNER advised as necessary. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of CONTRACTOR. RPR shall generally communicate with OWNER with the knowledge of and under the direction of ENGINEER.

### b. Duties and Responsibilities of RPR

#### 1. Schedules: Review the

progress schedule, schedule of Shop Drawing submittals and schedule of values prepared by CONTRACTOR and consult with ENGINEER concerning acceptability.

2. Conferences and Meetings: Attend meetings with CONTRACTOR, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings.

#### 3. Liaison:

a) Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent and assist in understanding the intent of the Contract Documents; and assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER's on-site operations.

b) Assist in obtaining from OWNER additional details or information, when required for proper execution of the Work.

#### 4. Shop Drawings & Samples:

a) Record date of receipt of Shop Drawings and samples.

b) Receive samples which are furnished at the site by CONTRACTOR, and notify ENGINEER of availability of samples for examination.

c) Advise ENGINEER and CONTRACTOR of the commencement of any Work requiring a Shop Drawing or sample if the submittal has not been approved by ENGINEER.

#### 5. Review of Work, Rejection of Defective Work, Inspections and Tests:

a) Conduct on-site observations of the Work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents.

b) Report to ENGINEER whenever RPR believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise ENGINEER of Work that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

c) Observe that tests, equipment and systems startups and operating and maintenance training are conducted in the presence of appropriate personnel and that CONTRACTOR maintains adequate records thereof; and observe, record and report to ENGINEER appropriate details relative to test procedures and startups.

d) Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to ENGINEER.

#### **6. Interpretation of Contract Documents:**

Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and transmit to CONTRACTOR clarifications and interpretations as issued by ENGINEER.

#### **7. Modifications:**

Consider and evaluate CONTRACTOR's suggestions for modifications in Drawings or Specifications and report with RPR's recommendations to ENGINEER. Transmit to CONTRACTOR decisions as issued by ENGINEER.

#### **8. Records:**

a) Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions of original Contract Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional Drawings issued subsequent to the execution of the

Contract, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.

b) Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of Work Directive Changes, Change Orders or changed conditions, list of job site visitors, Work activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures.

c) Record names, addresses and telephone numbers of all CONTRACTORS, subcontractors and major suppliers of materials and equipment.

#### **9. Reports:**

a) Furnish ENGINEER periodic reports as required of progress of the Work and of CONTRACTOR's compliance with the progress schedule and schedule of Shop Drawing and sample submittals.

b) Consult with ENGINEER in advance of scheduled major tests, inspections or start of important phases of the Work.

c) Draft proposed Change Orders and Work Change Directives, obtaining backup material from CONTRACTOR and recommend to ENGINEER Change Orders, Work Change Directives, and Field Orders.

d) Report immediately to ENGINEER and OWNER upon the occurrence of any accident.

#### **10. Payment Requests:**

Review applications for payment with CONTRACTOR for compliance with the established procedure for their submission and forward with recommendations to ENGINEER, noting particularly the relationship of the payment requested to the schedule of values, Work completed and materials and equipment delivered at the site but not

incorporated in the Work.

**11. Certificates, Maintenance and Operation Manuals:**

During the course of the Work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by CONTRACTOR are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to ENGINEER for review and forwarding to OWNER prior to final payment for the Work.

**12. Completion:**

a) When CONTRACTOR advises that Work is near completion, review Work with CONTRACTOR and submit to CONTRACTOR a list of observed items requiring completion or correction.

b) Conduct a final review in the company of ENGINEER, OWNER, and CONTRACTOR and prepare a final list of items to be completed or corrected.

c) Observe that all items on final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance.

**c. Limitations of Authority**

**Resident Project Representative:**

1. Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment, unless authorized by ENGINEER.

2. Shall not exceed limitations of ENGINEER's authority as set forth in the Agreement or the Contract Documents.

3. Shall not undertake any of the responsibilities of CONTRACTOR, subcontractors or CONTRACTOR's superintendent.

4. Shall not advise on, issue directions relative to or assume control over any

aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.

5. Shall not advise on, nor issue directions regarding nor assume responsibilities regarding safety and protection in connection with the Work.

6. Shall not accept Shop Drawing or sample submittals from anyone other than CONTRACTOR.

7. Shall not authorize OWNER to occupy the Project in whole or in part.

8. Shall not participate in specialized field or laboratory tests or Work conducted by others except as specifically authorized by ENGINEER.

G. On-site observations by ENGINEER, Resident Project Representative and assistants shall not relieve CONTRACTOR from his obligations to perform the Work in accordance with the Contract Documents, represent acceptance of defective Work, or give rise to any duty on their part to make the observations for the benefit of CONTRACTOR or any other party.

**ARTICLE 10 - CHANGES IN THE WORK; CLAIMS**

**10.01 Authorized Changes in the Work**

A. Without invalidating the Agreement 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 Written Amendment, 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 (or Written Amendments) 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.

**4. A Change Order, or Work Change Directive signed by the OWNER and also signed by the CONTRACTOR provides for an all inclusive settlement for all changes to the Work involved and for all direct, supplemental, indirect, consequential and cumulative costs and delays, and CONTRACTOR's signature represents a waiver of any and all rights to file a claim on account of that instrument.**

**5. A Change Order, or Work Change Directive signed by OWNER, but not signed by CONTRACTOR, or signed by CONTRACTOR with a notice of reservation or rights to claim additional adjustments, shall become final and binding on CONTRACTOR, without**

**consideration of his reservation of rights, unless he delivers to OWNER written notice of a claim within ~~thirty (30) days~~ seven (7) calendar days after receipt of that instrument.**

**6. Any proposed Change Order is subject to approval by the Owner in accordance with the requirements of Section 33 E-9, Act 5, of the Illinois Criminal Code of 1961. (720 Illinois Compiled Statutes 5/33E-9)**

#### 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 and Disputes

A. **Notice:** Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than ~~30 days~~ **seven calendar days**) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within ~~60 days~~ **fifteen calendar 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, dispute, or other matter). 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~~ **seven calendar days** after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. **ENGINEER's Decision:** ENGINEER will render a formal decision in writing within ~~30 days~~ **fifteen days** after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and

CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

## ARTICLE 11 - COST OF THE WORK; CASH 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 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, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, 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, 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 Cash 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 as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the 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

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the 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.

B. 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. 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 9.08.

B. 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.

C. 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. if 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 or by a Written Amendment. 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 (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) 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 (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

## 12.03 *Delays Beyond CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) 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, **different site conditions, unusual delay in transportation**, or acts of God.

## 12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (or Milestones) will not be extended due to 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.

#### 12.05 Delays Beyond OWNER's and CONTRACTOR's Control

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

#### 12.06 Delay Damages

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or

2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, differing site conditions, unusual delay in transportation, or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

C. **No Damage for Delay.** No payment, compensation or adjustment of any kind other than the extension of time provided for below shall be made to the CONTRACTOR for damages because of hindrances or delays from any cause in the commencement, prosecution or completion of the Work, including but not limited to:

- (i) any act or omission on the part of the OWNER or the ENGINEER or any other contractor employed by the OWNER, or any of their officers, agents, or employees with respect to late drawings, plans or specifications, changes in sequence, lack of decision, acceleration, deceleration, lack of access, lack of right-

of-way or easement, interference, errors, suspensions, lack of approvals, erroneous bid specifications, lack of payments, issuance of change orders, occupancy, or use or placement into service of the building, structure, equipment, or appurtenances to be constructed hereunder prior to final completion and acceptance of the Work;

(ii) differing site conditions;

(iii) presence and operations of other contractors;

(iv) strikes, lockouts, labor or material shortages;

(v) unusual delay in transportation;

(vi) acts of God, such as tornadoes, earthquakes or floods, or extreme weather which can be demonstrated to be unusually severe considering the time of year and particular locality involved;

Whether such hinderance or delays be avoidable or unavoidable, the CONTRACTOR agrees that it shall make no claim for, nor be entitled to, compensatory, acceleration, disruption damages or mitigation of liquidated damages, if any, or any other damages of any kind or nature for any such delays or hindrances and will accept in full satisfaction for such delays the extension of time set forth below. The no damage for delay provision of this paragraph 12.06 C shall include, but shall not be limited to, increase in time-related costs, additional equipment, effect on other contracts, increased premiums, lower labor productivity, lost alternative income, additional labor head count, additional premium time labor, additional supervision and demobilization and remobilization costs.

1. **Avoidable Delays.** Avoidable delays or hindrances in the commencement, prosecution or completion of the Work shall include all delays from any cause whatsoever that might have been avoided in the exercise of care, prudence, foresight, or diligence on the part of the Contractor. Delays in the prosecution of parts of the Work that may in themselves be unavoidable

but do not necessarily prevent or delay the prosecution or other parts of the Work nor the completion of the whole Work within the time herein specified, reasonable loss of time resulting from the necessity of submitting plans to the Engineer for review, from the making of surveys, measurements and inspections, and from such interruptions as may occur in the prosecution of the Work on account of the reasonable interference of other contractors employed by the OWNER which do not necessarily prevent the completion of the Work within the time herein specified shall be deemed avoidable delays within the meaning of this Contract.

**2. Unavoidable Delays.** Unavoidable delays in the prosecution or completion of the Work under this Contract shall include all delays which may through causes beyond the control of the CONTRACTOR and which it could not have provided against by the exercise of care, prudence, foresight or diligence. Orders issued by the OWNER changing the amount of Work to be done, the quantity of material to be furnished, or the manner in which the Work is to be prosecuted, failure of the OWNER to provide rights-of-way, and unforeseen delays in the completion of the work of other contractors under contract with the OWNER will be considered unavoidable delays, so far as they necessarily interfere with the CONTRACTOR's completion of the whole of the Work.

#### 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, ENGINEER's Consultants, 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.B; 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.

**1) If the testing, inspection or approval reveals failure of any part of the Work, CONTRACTOR shall not be allowed to recover any associated costs, and he shall reimburse OWNER for all of**

**direct, indirect and consequential costs made necessary by that failure including those of repeated procedures and compensation for ENGINEER's services.**

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. If it is found that such 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. If, however, such 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 Milestones), 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. 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).

#### 13.07 Correction Period

A. If within one year after the date of Substantial Completion final payment for the Work by Owner or such longer period of time as may be prescribed by Laws or Regulations or 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: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) 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. If CONTRACTOR does not promptly comply with the terms of such 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, and 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.

B. In special circumstances where a particular item of equipment is placed in continuous service before ~~Substantial Completion of all the Work~~ **final payment for the Work by Owner**, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. 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.

D. 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 and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and 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 (or Milestones) 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 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.

4. Unless a different method of payment is set forth in the Contract Agreement, the OWNER shall pay to the CONTRACTOR ninety percent (90%) of the Work completed and of materials and equipment not incorporated in the Work but delivered and suitably stored at the site,

accompanied by documentation satisfactory to OWNER up to the day before the Application for Progress Payment, less the aggregate of all previous progress payments (10% retainage). The total amount paid in this manner prior to the final acceptance of the completed Work by the OWNER shall not exceed ninety percent (90%) of the Contract Price.

Payment for off-site storage is normally reserved for sensitive or very large pieces of equipment that in ENGINEER's opinion would not be practical to have stored on the site. Payment for off-site stored items shall be limited to 75% of the invoiced value of the item, less contract retainage. The remaining 25% of the invoiced value of the item, less contract retainage, will be paid when the equipment item is installed in its designated location at the Work site. CONTRACTOR shall reimburse OWNER the cost of inspecting off-site stored items. When off-site storage is approved, CONTRACTOR shall provide Insurance Certificate and Document of Ownership to OWNER.

Within thirty (30) days following the OWNER's approval of the amount of the Progress Payment, the CONTRACTOR shall submit CONTRACTOR's partial or final waiver of lien.

The CONTRACTOR shall be paid no later than thirty (30) days following the OWNER's approval of the amount of the Progress Payment provided all the documentation required to be submitted has been submitted in proper form.

### 5. Withholding

Notwithstanding the foregoing and without prejudice to any of its other rights or remedies, the OWNER shall have the right at any time or times to withhold from any payment that may be or become due under the terms of Subsection 14.02 A 4 such amount as may reasonably appear necessary to compensate the OWNER for any actual or prospective loss due to Work that is defective or does not conform to the Contract Documents; damage for which the CONTRACTOR is liable hereunder; state or local sales, use or excise taxes that may have been paid by CONTRACTOR or any of its Subcontractors; liens or claims of lien regardless of merit; claims of third parties, Subcontractors or materialmen regardless of

merit; inability of the CONTRACTOR to complete the performance of the Work; or any other failure of the CONTRACTOR to perform any of its obligations under the Contract. The OWNER shall be entitled to retain any and all amounts so withheld until the CONTRACTOR shall have either performed the obligation in question or furnished security for such performance satisfactory to the OWNER; provided, however, that nothing herein shall be construed to require the OWNER to release any funds being held by it pursuant to subsection 14.02 A 6 below.

#### 6. Deductions

The OWNER shall have the right to charge to the CONTRACTOR and may deduct from the progress and final payments for the Work a charge for ENGINEER's engineering and inspection in connection with any overtime Work.

Overtime Work shall, for purposes of this provision mean any Work conducted beyond the regular eight (8) hour workday, and Work conducted beyond the Contract Completion Date.

For any such overtime during (and beyond) the time set forth in the Contract Agreement for commencement and completion of the Work, such charge shall be one hundred twenty dollars (\$120.00) for each hour of such Work times the number of ENGINEER's personnel reasonably required to be present during such Work.

#### 7. Remedies for Avoidable Delays.

If (i) the Work called for under this Contract is not finished and completed by the CONTRACTOR, in accordance with all requirements, within the time specified for completion in the Contract Agreement, including extensions of time granted because of unavoidable delay, authorized Change Orders or suspensions of Work not due to the contractor's failure to perform according to the Contract Documents; or, (ii) if at any time prior to the expiration of said time it should appear to OWNER that CONTRACTOR will be unable to finish and complete said Work as aforesaid within said time, then in that event the OWNER may terminate this Contract, as provided in paragraph 15.03 of the General Conditions, or may, in the exercise of its sole and absolute

discretion, permit CONTRACTOR to complete the Work but charge to CONTRACTOR and deduct from the final payment due for the Work, engineering and resident project representative expenses computed on the basis of a per diem charge of nine hundred sixty dollars (\$960.00) per 8 hour day until completion of the Work for each resident project representative, in addition to any damages caused by such delay or any liquidated damages provided for in the Contract Agreement. Notwithstanding an election made pursuant to this paragraph, the OWNER may thereafter terminate the Contract, as provided in paragraph 15.02 and 15.03 of the General Conditions, if OWNER is not adequately assured of prompt completion.

#### 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 ~~completion of the Work~~, 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 9.08, 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 represent-

ed that: (i) 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 (ii) 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 to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or 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 referred to 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 Written Amendment or 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~~ **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 **pursuant to the provisions of the local government Prompt Payment Act "50ILCS 505/1 ET SEQ"**.

#### 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 must 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.

**B. No materials or supplies for the Work shall be purchased by CONTRACTOR or Subcontractor subject to any chattel mortgage or under a condition sale contract or other agreement by which an interest is retained by the seller. CONTRACTOR warrants that he has good title to all materials and supplies used by him in the Work, free from all liens, claims or encumbrances.**

**C. CONTRACTOR shall indemnify and save OWNER harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this Contract. CONTRACTOR shall at OWNER's request, furnish satisfactory evidence that all obligations of the nature hereinbefore designated have been paid, discharged, or waived. If CONTRACTOR fails to do so, then OWNER may, after having served written notice on the said CONTRACTOR either pay unpaid bills, of which OWNER has written notice, direct, or withhold from CONTRACTOR's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to CONTRACTOR shall be resumed, in accordance with the terms of this Contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon OWNER to either CONTRACTOR or his surety. In paying any unpaid bills of CONTRACTOR, OWNER shall be deemed the agent of CONTRACTOR and any payment so made by OWNER, shall be considered as payment made under the Contract by OWNER to CONTRACTOR and OWNER shall not be liable to CONTRACTOR for any such payment made in good faith.**

**D. Contractor agrees that all payments made by the Owner shall be applied to the payment or reimbursement of the costs with respect to which they were paid, and not to any pre-existing or unrelated debt between the Contractor and Owner or between the Contractor and any Subcontractors or Suppliers.**

#### **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. Promptly thereafter, 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. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and 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. 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.~~

~~B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.~~

#### 14.04 Preliminary Inspection.

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 ready for inspection.

B. Within a reasonable time thereafter, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the WORK to determine the status of completion. If ENGINEER or OWNER does not consider the Work to be complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor and attaching a list of items ("punchlist") to be completed or corrected before final inspection.

1) If all Work is considered by the ENGINEER and OWNER to be complete after the preliminary inspection, final payment processing may proceed in accordance with paragraphs 14.06, 14.07, 14.08, and 14.09 hereinafter.

#### 14.05 Partial Utilization

A. Use by OWNER at OWNER's option of 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, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If 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. 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. 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.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.06 and 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.~~

#### 14.06 Final Inspection and Final Acceptance

A. **Notice of Completion.** When the Work has been completed and is ready in all respects for acceptance by OWNER, CONTRACTOR shall notify ENGINEER, with a copy to OWNER, and request a final inspection ("Notice of Completion"). CONTRACTOR'S Notice of Completion shall be given sufficiently in advance of the Completion Date to allow for scheduling of the final inspection and for completion or correction before the Completion Date of any items identified by such inspection as being defective, damaged, flawed, unsuitable, nonconforming, incomplete, or otherwise not in full compliance with the requirements of this Contract ("Punch List Work"). Before giving its Notice of Completion, CONTRACTOR shall satisfy itself that the whole Work, and every part thereof, has been completed in full compliance with, and as required by or pursuant to, this Contract, that all defects, damage, flaws, and nonconformities have been corrected, and that the Work Site and adjacent areas are fully restored, clean, and in good order.

B. **Punch List and Final Acceptance.** The Work shall be finally accepted when, and only when, the whole and all parts thereof shall have been completed to the satisfaction of OWNER in full

compliance with, and as required by or pursuant to, this Contract and the Work Site and adjacent areas shall have been fully restored, cleaned, and placed in good order and in at least the same condition as immediately prior to commencement of the Work. Upon receipt of CONTRACTOR'S Notice of Completion and at a time mutually agreeable to OWNER, ENGINEER, and CONTRACTOR, ENGINEER shall make a review of the Work and shall complete and correct all Punch List Work, if any, to be completed and corrected ("Punch List") and of the time, not later than the Completion Date, by which CONTRACTOR shall complete or correct all Punch List Work or, if the Work is complete in full compliance with, and as required by or pursuant to, this Contract and the Work Site and adjacent areas are fully restored, clean, and in good order and in at least the same condition as immediately prior to commencement of the Work, prepare and deliver to OWNER a written recommendation that the Work be finally accepted. Following CONTRACTOR'S completion or correction of all Punch List Work, ENGINEER shall make another review of the Work and shall either prepare and deliver to Contractor another Punch List or, if the Work is complete in full compliance with, and as required by or pursuant to, this Contract and the Work Site and adjacent areas are fully restored, clean, and in good order and in at least the same condition as immediately prior to commencement of the Work, prepare and deliver to OWNER a written recommendation that the Work be finally accepted.

The failure of ENGINEER to list any item on a Punch List shall not relieve CONTRACTOR of its obligation to provide, perform and complete the Work in full compliance with, and as required by or pursuant to, this Contract.

Upon being satisfied that the Work and Work Site are ready for final acceptance pursuant to the requirements of this Contract, OWNER shall issue its written notice of final acceptance of the Work to CONTRACTOR ("Final Acceptance").

#### **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: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) 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. 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~~ **After** the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR pursuant to the provisions of the local government Prompt Payment Act "50ILCS 505/1 ET SEQ".

#### 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 and recommendation of ENGINEER, and without terminating the Agreement, 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 writing which are 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 allowed 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 the surety, if any) seven days written notice, terminate the services of CONTRACTOR, 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), 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 finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any

further payment until the Work is finished. 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.

C. 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.

#### 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, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for 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. for 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. for 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. for 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, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or 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. 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. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

### 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 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 if 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, and 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 Agreement.

#### 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 Wage Rates

A. Wage rates for the Work shall be not less

than the current prevailing wages established for the Cook County area as determined by the U.S. Department of Labor under the Davis-Bacon and related Acts and as determined by the Department of Labor of the State of Illinois. Recent prevailing wages applicable to this project are attached hereto as Special Attachments 5 and 6 (Section 00820), and made a part of the General and Supplementary Conditions. The CONTRACTOR is advised that the prevailing wages are subject to revision and that the then current prevailing wages shall apply.

#### 17.07 Severability

A. If any portion of the Contract Documents is invalid or unenforceable pursuant to applicable law, such portion shall be void in the jurisdiction where it is invalid or unenforceable, and the remainder of the Contract Documents shall remain binding upon the parties hereto.

(NO TEXT FOR THIS PAGE)

## SECTION 00820

### SPECIAL ATTACHMENTS

The following Special Attachments to the Bid Form, Agreement and General and Supplementary Conditions are appended to this section.

- Special Attachment No. 1: References
- Special Attachment No. 2: Certification of Eligibility to Enter into Public Contracts
- Special Attachment No. 3: Tax Certification
- Special Attachment No. 4: Certification of Compliance with the Illinois Prevailing Wage Act
- Special Attachment No. 5: Davis-Bacon Wage Determinations for Cook County Prevailing Wage
- Special Attachment No. 6: Cook County Prevailing Wage for March 2008
- Special Attachment No. 7: Sexual Harassment Policy
- Special Attachment No. 8: Equal Employment Opportunity
- Special Attachment No. 9: Apprenticeship and Training Program Certification
- Special Attachment No. 10: EJCDC form No. 1910-8-E (1996), Application for Payment
- Special Attachment No. 11: Insurance Requirements
- Special Attachment No. 12: Certification of Compliance with the Substance Abuse Prevention Program
- Special Attachment No. 13: Business Organization Certification
- Special Attachment No. 14: Certification Regarding Criminal Background Investigations and Authorization for Criminal Background Investigation of Contractor's Employee Who Has Direct Daily Contact with Pupils of Orland School District No. 135

(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 1**

(NO TEXT FOR THIS PAGE)

## REFERENCES

(Please type)

ORGANIZATION American Water Company

ADDRESS 1000 Internationale Parkway

CITY, STATE, ZIP Woodridge, Illinois 60517

PHONE NUMBER (630) 739-8827

CONTACT PERSON Bob Khan

DATE OF PROJECT Completed June 2007

ORGANIZATION Terra Cotta Realty

ADDRESS 3702 S. Route 31

CITY, STATE, ZIP Crystal Lake, Illinois 60012

PHONE NUMBER (815) 333-8235

- CONTACT PERSON Kathy Martinez

DATE OF PROJECT Completed February 2007

ORGANIZATION City of Lake Forest

ADDRESS 220 E. Deerpath Road

CITY, STATE, ZIP Lake Forest, Illinois 60045

PHONE NUMBER (312) 207-1769

CONTACT PERSON Roger McCarran

DATE OF PROJECT Completed November 2004

Proposer's Name: David A. Henderson, President

Signature: Joseph J. Henderson & Son, Inc.

Signature: 

(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 2**


(NO TEXT FOR THIS PAGE)

**CERTIFICATION OF ELIGIBILITY  
TO ENTER INTO PUBLIC CONTRACTS**

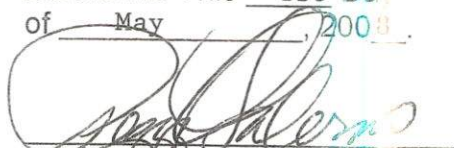
**IMPORTANT:      THIS CERTIFICATION MUST BE EXECUTED.**

I, David A. Henderson, being first duly sworn certify  
and say that I am President  
(insert "sole owner," "partner," "president," or other proper title)

of Joseph J. Henderson & Son, Inc., the Prime  
Contractor submitting this proposal, and that the Prime Contractor is not barred from  
contracting with any unit of state or local government as a result of a violation of either Section  
33E-3, or 33E-4 of the Illinois Criminal Code, or of any similar offense of "bid-rigging" or "bid-  
rotating" of any state or of the United States.

  
\_\_\_\_\_  
Signature of Person Making Certification  
David A. Henderson, President

Subscribed and Sworn To  
Before Me This 1st Day  
of May, 2008.

  
\_\_\_\_\_  
Notary Public



(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 3**

(NO TEXT FOR THIS PAGE)

## TAX CERTIFICATION

I, David A. Henderson, having been first duly sworn depose and state as follows:

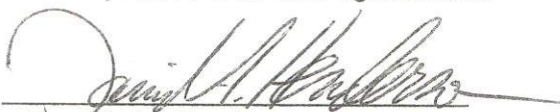
I, David A. Henderson, am the duly authorized agent for Joseph J. Henderson & Son, Inc., which has submitted a proposal to the Village of Orland Park for

East Reservoir Addition and I hereby certify  
(Name of Project)

that Joseph J. Henderson & Son, Inc. is not

delinquent in the payment of any tax administered by the Illinois Department of Revenue, or if it is:

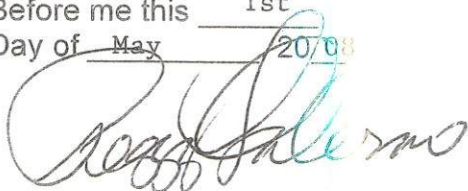
- a. it is contesting its liability for the tax or the amount of tax in accordance with procedures established by the appropriate Revenue Act; or
- b. it has entered into an agreement with the Department of Revenue for payment of all taxes due and is currently in compliance with that agreement.

By:   
David A. Henderson  
Title: President

Subscribed and Sworn to

Before me this 1st

Day of May 20/08





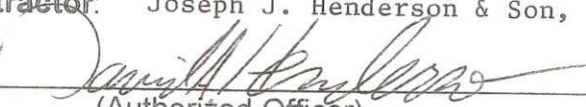
**SPECIAL ATTACHMENT NO. 4**

**CERTIFICATION OF COMPLIANCE WITH THE  
ILLINOIS PREVAILING WAGE ACT  
(820 ILCS 130/0.01, et seq.)**

It is hereby stipulated and certified to the Village of Orland Park, that the undersigned Contractor shall pay not less than the prevailing hourly rate of wages, the generally prevailing rate of hourly wages for legal holiday and overtime work, and the prevailing hourly rate for welfare and other benefits as determined by the Illinois Department of Labor and as set forth in the schedule of prevailing wages for this contract to all laborers, workers and mechanics performing work under this contract. The undersigned Contractor further stipulates and certifies that he/she/it has maintained a satisfactory record of Prevailing Wage Act compliance with no significant Prevailing Wage Act violations for the past three (3) years. In accordance with Public Act 94-0515, the Contractor will submit to the Village certified payroll records (to include for every worker employed on the project the name, address, telephone number, social security number, job classification, hourly wages paid in each pay period, number of hours worked each day and starting and ending time of work each day) on a monthly basis, along with a statement affirming that such records are true and accurate, that the wages paid to each worker are not less than the required prevailing rate and that the Contractor is aware that knowingly filing false records is a Class B Misdemeanor.

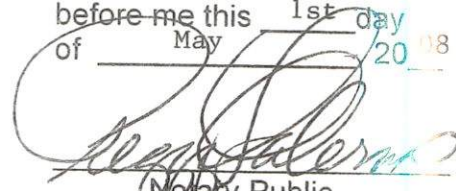
**Contractor:** Joseph J. Henderson & Son, Inc.

**By:**

  
(Authorized Officer)

David A. Henderson, President

Subscribed and Sworn to  
before me this 1st day  
of May 2008

  
Notary Public

**"OFFICIAL SEAL"**  
**PEGGY L. SALERNO**  
Notary Public, State of Illinois  
My Commission Expires 5/21/2008

(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 5**

GENERAL DECISION: IL20080009 02/22/2008 IL9

Date: February 22, 2008

General Decision Number: IL20080009 02/22/2008

Superseded General Decision Number: IL20070009

State: Illinois

Construction Types: Building, Heavy, Highway and Residential

County: Cook County in Illinois.

BUILDING, RESIDENTIAL, HEAVY, AND HIGHWAY PROJECTS (does not include landscape projects).

Modification Number	Publication Date
0	02/08/2008
1	02/22/2008

ASBE0017-001 06/01/2007

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER includes preparation, wetting, stripping removal scrapping, vacuuming, bagging and disposal of all insulation materials, whether they contain asbestos or not, from mechanical systems.....	\$ 26.00	15.48
Insulator/asbestos worker Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems.....	\$ 37.15	19.18

-----  
BOIL0001-001 07/01/2004

	Rates	Fringes
BOILERMAKER.....	\$ 35.07	16.26

-----  
BRIL0021-001 06/01/2007

	Rates	Fringes
BRICKLAYER.....	\$ 36.43	16.72

-----  
BRIL0021-004 06/01/2007

	Rates	Fringes
Marble Mason.....	\$ 36.43	16.72

-----  
BRIL0052-001 06/01/2007

	Rates	Fringes
Pointer, cleaner and caulker.....	\$ 36.90	14.66

-----

CARP0555-001 06/01/2004

	Rates	Fringes
CARPENTER CARPENTERS, LATHERS, MLLWRIGHTS, PILEDRIIVER, & SOFT FLOOR LAYERS.....	\$ 34.32	10.93

-----

CARP0555-002 10/01/2004

	Rates	Fringes
CARPENTER (Excluding structures with elevators and structures over 3 1/2 stories)...	\$ 34.32	10.91

-----

ELEC0009-003 05/28/2007

	Rates	Fringes
Line Construction Groundman.....	\$ 29.09	18.63
Lineman and Equipment Operator.....	\$ 37.30	23.89

-----

ELEC0134-001 06/04/2007

	Rates	Fringes
ELECTRICIAN Building.....	\$ 37.80	18.63
Residential.....	\$ 37.80	18.23

-----

ELEC0134-002 04/01/1998

	Rates	Fringes
ELECTRICIAN ((CLASS B) (Install magnetic or electronic replacement ballasts either singly or in groups including necessary wiring within fixture; Install replacement lamp holders and/or sockets including necessary wiring within fixture including relocating sockets within fixture; Install replacement lighting circuit breakers		

where necessary; Install  
 replacement lighting switches  
 where necessary; Repair  
 lighting fixtures other than  
 ballast or socket  
 replacements; Rewire  
 chandeliers or incandescent  
 fixtures only within fixtures  
 themselves.) .....\$ 20.71                      2.975+a+b

FOOTNOTES:

a-Paid Vacation- Employees who have been employed for one year but less than three years receive 1 week of paid vacation; employees who have been employed three years but less than ten years receive 2 weeks of paid vacation; Employees who have been employed ten years but less than twenty years receive 3 weeks of paid vacation; and employees who have worked twenty or more years receive 4 weeks of paid vacation.

b-Funeral Leave- In the instance of the death of a mother, other-in-law-; father, father-in-law, sister, brother, husband, wife, or a child of an employee shall receive up to three days of paid funeral leave.

-----  
 ELEC0134-003 06/07/2004

	Rates	Fringes
ELECTRICIAN		
ELECTRICAL TECHNICIAN.....	\$ 30.89	12.59

The work shall consist of the installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice sound vision production and reproduction, telephone and telephone interconnect, facsimile, data apparatus, coaxial, fibre optic and wireless equipment, appliances and systems used for the transmission and reception of signals of any nature, business, domestic, commercial, education, entertainment and residential purposes, including but not limited to communication and telephone, electronic and sound equipment, fibre optic and data communication systems, and the performance of any task directly related to such installation or service whether at new or existing sites, such tasks to include the placing of wire and cable and electrical power conduit or other raceway work within the equipment room and pulling wire and/or cable through conduit and the installation of any incidental conduit.

-----  
 \* ELEV0002-003 01/01/2008

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 43.93	16.285+A+B

FOOTNOTES:

A. Eight paid holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Day after Thanksgiving; Veterans' Day and Christmas Day.

B. Employer contributes 8% of regular basic hourly rate as vacation pay credit for employees with more than 5 years of service; and 6% for 6 months to 5 years of service.

-----  
\* ENGI0150-006 06/01/2006

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 41.55	15.05
GROUP 2.....	\$ 40.25	15.05
GROUP 3.....	\$ 37.70	15.05
GROUP 4.....	\$ 35.95	15.05

#### POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Mechanic; Asphalt Plant\*; Asphalt Spreader; Autograde\*; Backhoes with Caisson attachment\*; Batch Plant\*; Benoto (Requires two Engineers); Boiler and Throttle Valve; Caisson Rigs\*; Central Redi-Mix Plant\*; Combination Backhoe Front Endloader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted)\*; Concrete Conveyor; Concrete Conveyor, Truck Mounted; Concrete Paver over 27E cu. ft.\*; Concrete Paver 27E cu ft and Under\*; Concrete Placer\*; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes\*; Cranes, Hammerhead\*; Cranes, (GCI and similar type Requires two operators only); Creter Crane; Crusher, Stone, etc; Derricks; Derricks, Traveling\*; Formless Curb and Gutter Machine\*; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2 1/4 yd. and over; Hoists, Elevators, Outside Type Rack and pinion and similar Machines; Hoists, One, Two, and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes\*; Hydraulic Boom Trucks; Hydraulic Vac (and similar equipment); Locomotives; Motor Patrol\*; Pile Drivers and Skid Rig\*; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram (Requiring frequent Lubrication and Water); Pump Cretes; Squeeze Cretes-Screw Type Pumps Gypsum Bulker and Pump; Raised and Blind Hole Drill\*; Roto Mill Grinder (36" and Over)\*; Roto Mill Grinder (Less Than 36")\*; Scoops-Tractor Drawn; Slip-Form Paver\*; Straddle Buggies; Tournapull; Tractor with Boom, and Side Boom; and Trenching Machines\*.

GROUP 2: Bobcat (over 3/4 cu yd); Boilers; Broom, Power Propelled; Bulldozers; Concrete Mixer (Two Bag and over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front End loaders under 2 1/4 cu yd; Automatic Hoists, Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted)\*; Rollers; Steam Generators; Tractors; Tractor Drawn Vibratory Roller (Receives an additional \$.50 per hour);

Winch Trucks with "A" Frame.

GROUP 3: Air Compressor-Small 250 and Under (1 to 5 not to exceed a total of 300 ft); Air Compressor-Large over 250; Combination-Small Equipment Operator; Generator- Small 50 kw and under; Generator-Large over 50 kw; Heaters, Mechanical; Hoists, Inside Elevators (Remodeling or Renovatin work); Hydrualic Power Units (Pile Driving, Extracting, and Drilling); Low Boys; Pumps Over 3" (1 To 3 not to exceed a total of 300 ft); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches; Bobcat (up to and including 3/4 cu yd)

GROUP 4 - Bobcats and/or other Skid Steer Loaders; Brick Forklifts; Oilers

\*-Requires Oiler

\* ENGI0150-025 06/01/2006

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 39.75	15.05
GROUP 2.....	\$ 39.20	15.05
GROUP 3.....	\$ 37.15	15.05
GROUP 4.....	\$ 35.75	15.05
GROUP 5.....	\$ 34.55	15.05

#### POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt Plant\*; Asphalt Heater and Planer combination; Asphalt Heater Scarfire\*, Asphalt Spreader; Autograder/ GOMACO or similar; ABG Paver\*, Backhoes with Caisson attachment\*, Ballast Regulator, Belt Loader\*; Caisson Rigs\* Car Dumper, Central Redi-Mix Plant\*, Combination Backhoe; Front End Loader Machine (1 cu yd or over Backhoe bucket or with attachments); Concrete Breaker (truck mounted); Concrete Conveyor; Concrete Paver over 27E cu ft\*; Concrete Placer\*; Concrete Tube Float; Cranes, all attachments\*; Cranes, Hammerhead, Linden, Peco and machines of a like nature\*; Creter Crane; Crusher, stone; All Derricks; Derrick Boats; Derricks, traveling\*; Dowell Machine with Air Compressor (\$1.00 above Class 1); Dredges\*; Field Mechanic Welder; Formless Curb and Gutter Machine\*; Gradall and machines of a like nature\*; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver mounted\*; Hoists, one, two, and three Drum; Hydraulic Backhoes\*; Backhoes with Shear attachments\*; Mucking Machine; Pile Drivers and Skid Rig\*; Pre-Stress Machine; Pump Cretes Dual Ram (requires frequent lubrication and water)\*; Rock Drill- Crawler or Skid Rig\*; Rock Drill truck mounted\*; Rock/ Track Tamper; Roto Mill Grinder, (36" and over)\*; Slip-Form Paver\*; Soil Test Drill Rig, truck mounted\*; Straddle Buggies; Hydraulic Telescoping Form (tunnel); Tractor Drawn Belt Loader\*; Tractor Drawn Belt Loader with attached Pusher (two engineers); Tractor with

boom; Tractaire with attachment; Traffic Barrier Transfer Machine\*; Trenching Machine; Truck Mounted Concrete Pump with boom\*; Underground Boring and/or Mining Machines 5 ft in diameter and over tunnel, etc.\*; Wheel Excavator\* & Widener (Apsco); Raised or Blind Hoe Drill, Tunnel & Shaft\*

GROUP 2: Batch Plant\*; Bituminous Mixer; Boiler and Throttle Valve; Bulldozer; Car Loader Trailing Conveyors; Combination Backhoe Front End Loader Machine, (less than 1 cu yd Backhoe Bucket with attachments); Compressor and Throttle Valve; Compressor, common receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S series to and including 27 cu ft; Concrete Spreader; Concrete Curing Machine; Burlap Machine; Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or similar type); Drills (all); Finishing Machine-Concrete; Greaser Engineer; Highlift Shovels or Front End Loader; Hoist- Sewer Dragging Machine; Hydraulic Boom Trucks, all attachments; Hydro-Blaster (requires two operators); Laser Screed\*; Locomotives, Dinky; Off-Road Hauling Units (including articulating); Pump Cretes; Squeeze Cretes-Screw Type pumps, Gypsum Bulker and Pump; Roller Asphalt; Rotary Snow Plows; Rototiller, Seaman, self-Propelled; Scoops-Tractor Drawn; Self-propelled Compactor; Spreader-Chip-Stone; Scraper; Scraper-Prime Mover in Tandem regardless of size (add \$1.00 to Group 2 hourly rate for each hour and for each machine attached thereto add \$1.00 to Group 2 hourly rate for each hour); Tank Car Heater; Tractors, Push, pulling Sheeps Foot, Disc, or Compactor, etc; Tug Boats

GROUP 3: Boilers; Brooms, all power propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer, two bag and over; Conveyor, Portable; Farm type Tractors used for mowing, seeding, etc; Fireman on Boilers; Forklift Trucks; Grouting Machines; Hoists, Automatic; Hoists, all Elevators; Hoists, Tugger single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-hole Digger; Power Saw, Concrete, Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with A-Frame; Work Boats; Tamper-Form motor driven

GROUP 4: Air compressor - Small 250 and under (1 to 5 not to exceed a total of 300 ft); Air Compressor - Large over 250; Combination - Small Equipment Operator; Directional Boring Machine; Generators - Small 50 kw and under; Generators - Large, over 50 kw; Heaters, Mechanical; Hydraulic power unit (Pile Driving, Extracting or Drilling); Light Plants (1 to 5); Pumps, over 3" (1 to 3, not to exceed a total of 300 ft); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 small electric drill winches;

GROUP 5: Bobcats (All); Brick Forklifts; Oilers; Directional Boring

\*-Requires Oiler

-----

IRON0001-026 06/01/2007

	Rates	Fringes
IRONWORKER (Structural and Reinforcing).....	\$ 39.25	22.99

\* IRON0063-001 06/01/2007

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 37.35	12.90

\* IRON0063-002 06/01/2007

	Rates	Fringes
IRONWORKER		
Fence Erector.....	\$ 28.64	12.75
Metal Fence Erector.....	\$ 22.54	12.04

IRON0136-001 07/01/2002

	Rates	Fringes
IRONWORKER		
Machinery Movers & Riggers..	\$ 23.65	17.42
Master Riggers.....	\$ 25.40	17.42

LABO0002-006 06/01/2007

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 33.15	13.87
GROUP 2.....	\$ 33.15	13.87
GROUP 3.....	\$ 33.225	13.87
GROUP 4.....	\$ 33.25	13.87
GROUP 5.....	\$ 33.30	13.87
GROUP 6.....	\$ 33.35	13.87
GROUP 7.....	\$ 33.375	13.87
GROUP 8.....	\$ 33.375	13.87
GROUP 9.....	\$ 33.475	13.87
GROUP 10.....	\$ 33.60	13.87
GROUP 11.....	\$ 33.425	13.87
GROUP 12.....	\$ 34.15	13.87

#### LABORER CLASSIFICATIONS

GROUP 1: Building Laborers; Plasterer Tenders; Pumps for Dewatering; and other unclassified laborers.

GROUP 2: Fireproofing and Fire Shop laborers.

GROUP 3: Cement Gun.

GROUP 4: Chimney over 40 ft.; Scaffold Laborers.

GROUP 5: Cement Gun Nozzle Laborers (Gunitite); Windlass and capstan person.

GROUP 6: Stone Derrickmen & Handlers.

GROUP 7: Jackhammermen; Power driven concrete saws; and other power tools.

GROUP 8: Firebrick & Boiler Laborers.

GROUP 9: Chimney on fire brick; Caisson diggers; & Well Point System men.

GROUP 10: Boiler Setter Plastic Laborers.

GROUP 11: Jackhammermen on fire brick work only.

GROUP 12: Dosimeter use (any device) monitoring nuclear exposure); Asbestos Abatement Laborer; Toxic and Hazardous Waste Removal Laborers.

-----  
LABO0002-007 06/01/2007

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 33.15	13.87
GROUP 2.....	\$ 33.425	13.87
GROUP 3.....	\$ 33.30	13.87
GROUP 4.....	\$ 33.425	13.87
GROUP 5.....	\$ 34.15	13.87

#### LABORER CLASSIFICATIONS

GROUP 1: Common laborer; Tenders; Material expeditor (asphalt plant); Street paving, Grade separation, sidewalk, curb & gutter, strippers & All laborers not otherwise mentioned

GROUP 2: Ashpalt tampers & smoothers; Cement gun laborers

GROUP 3: Cement Gun Nozzle (laborers), Gunitite

GROUP 4: Rakers, Lutemen; Machine-Screwmen; Kettleman; Mixermen; Drun-men; Jackhammermen (asphalt); Paintmen; Mitre box spreaders; Laborers on birch, overman and similar spreader equipment; Laborers on APSCO; Laborers on air compressor; Paving Form Setter; Jackhammermen (concrete); Power drive concrete saws; other power tools.

GROUP 5: Asbestos Abatement Laborers; Toxic and Hazardous Waste Removal Laborers, Dosimeter (any device) monitoring nuclear exposure

-----  
LABO0002-008 06/01/2007

	Rates	Fringes
--	-------	---------

Laborers: (Compressed Air)

0 - 15 POUNDS.....	\$ 34.15	13.87
16 - 20 POUNDS.....	\$ 34.65	13.87
21 - 26 POUNDS.....	\$ 35.15	13.87
27 - 33 POUNDS.....	\$ 36.15	13.87
34 - AND OVER.....	\$ 37.15	13.87

Laborers: (Tunnel and Sewer)

GROUP 1.....	\$ 33.15	13.87
GROUP 2.....	\$ 33.275	13.87
GROUP 3.....	\$ 33.375	13.87
GROUP 4.....	\$ 33.50	13.87
GROUP 5.....	\$ 34.15	13.87

LABORER CLASSIFICATIONS (TUNNEL)

GROUP 1: Cage tenders; Dumpmen; Flagmen; Signalmen; Top laborers

GROUP 2: Air hoist operator; Key board operator; concrete laborer; Grout; Lock tenders (Free Air Side); Steel setters; Tuggers; Switchmen; Car pusher

GROUP 3: Concrete repairmen; Lock tenders (pressure side); Mortar men; Muckers; Grout machine operators; Track layers

GROUP 4: Air trac drill operator; Miner; Bricklayer tenders; Concrete blower operator; Drillers; Dynamiters; Erector operator; Form men; Jackhammermen; Powerpac; Mining machine operators; Mucking machine operator; Laser beam operator; Liner plate and ring setters; Shield drivers; Power knife operator; Welder-burners; Pipe jacking machine operator; skimmers; Maintenance technician

GROUP 5: Asbestos abatement laborer; Toxic and hazardous waste removal laborer; Dosimeter (any device) monitoring nuclear exposure

LABORER CLASSIFICATIONS (SEWER)

GROUP 1: Signalmen; Top laborers and All other laborers

GROUP 2: Concrete laborers and Steel setters

GROUP 3: Cement carriers; Cement mixers; Concrete repairmen; Mortar men; Scaffold men; Second Bottom men

GROUP 4: Air trac drill operator; Bottom men; Bracers-bracing; Bricklayer tenders; Catch basin diggers; Drainlayers; dynamiters; Form men; Jackhammermen; Powerpac; Pipelayers; Rodders; Welder-burners; Well point systems men

GROUP 5: Asbestos abatement laborer, Toxic and hazardous waste removal laborer; Dosimeter (any device) monitoring nuclear exposure

LABO0225-001 06/01/2007

Rates

Fringes

Laborers:

(DEMOLITION/WRECKING)

Group 1.....	\$ 26.85	13.87
Group 2.....	\$ 32.40	13.87
Group 3.....	\$ 33.15	13.87

LABORER CLASSIFICATIONS

GROUP 1 - Complete Demolition

GROUP 2 - Interior Wrecking and Strip Out Work

GROUP 3 - Asbestos Work with Complete Demolition/Wrecking or Strip Out Work

-----  
MARB0067-001 06/01/2007

	Rates	Fringes
TERRAZZO WORKER/SETTER.....	\$ 35.39	16.02
TILE FINISHER.....	\$ 30.15	12.55
TILE SETTER.....	\$ 36.63	13.88

-----  
MARB0087-001 06/01/2006

	Rates	Fringes
MARBLE FINISHER.....	\$ 26.73	14.86

-----  
PAIN0014-001 06/01/2007

	Rates	Fringes
PAINTER		
Drywall Taper.....	\$ 34.40	14.49
Painter, Brush, Decorator, and Paperhanger.....	\$ 34.40	14.52

-----  
PAIN0027-001 06/01/2007

	Rates	Fringes
GLAZIER.....	\$ 35.00	18.78

-----  
PLAS0005-002 07/01/2007

	Rates	Fringes
PLASTERER.....	\$ 36.10	15.15

-----  
PLAS0502-001 06/01/2007

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER....	\$ 39.85	14.18

-----  
PLUM0130-001 06/01/2007

	Rates	Fringes
PLUMBER.....	\$ 41.00	16.93

-----  
 PLUM0597-002 06/01/2007

	Rates	Fringes
PIPEFITTER.....	\$ 40.00	17.33

-----  
 ROOF0011-001 12/01/2007

	Rates	Fringes
ROOFER.....	\$ 35.00	11.00

-----  
 SFIL0281-001 01/01/2008

	Rates	Fringes
SPRINKLER FITTER.....	\$ 40.50	16.00

-----  
 SHEE0073-001 01/01/2007

	Rates	Fringes
Sheet Metal Worker.....	\$ 36.96	17.42

-----  
 SHEE0073-002 01/01/2007

	Rates	Fringes
Sheet Metal Worker ALUMINUM GUTTER WORK.....	\$ 24.03	17.42

-----  
 TEAM0731-001 06/01/2004

	Rates	Fringes
TRUCK DRIVER		
2 & 3 Axles.....	\$ 28.05	7.81 +A+B
4 Axles.....	\$ 28.30	7.81 +A+B
5 Axles.....	\$ 28.50	7.81 +A+B
6 Axles.....	\$ 28.70	7.81 +A+B

FOOTNOTES FOR TRUCK DRIVERS (HEAVY & HIGHWAY):

A. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

B. 900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

-----  
 TEAM0731-002 06/01/2002

	Rates	Fringes
TRUCK DRIVER (DEMOLITION)		
2 OR 3 Axles.....	\$ 25.90	7.00
4 Axles.....	\$ 26.15	7.00
5 Axles.....	\$ 26.35	7.00
6 Axles.....	\$ 26.55	7.00
-----		
TEAM0731-003 05/01/1997		

	Rates	Fringes
Traffic Control Device Monitor		
TRAFFIC SAFETY WORKERS:		
Traffic Safety Worker		
primary duties include but		
are not limited to the		
delivery, maintenance and		
pick-up of traffic control		
devices, the set-up and		
installation of traffic		
signs, pavement markings,		
barricades, crash barrels		
and glare screens, and		
traffic control		
surveillance, the repair		
and maintenance of the		
company's trucks, cars,		
arrow boards, message		
signs, barricade and sign		
fabrication equipment.....	\$ 16.15	108.75/wk+a

FOOTNOTE a:

1. The following paid holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; and Christmas Day provided the employee has earned a vacation the previous year or have worked thirty-one days in the current year before the holiday, or have seniority as stated herein; work the scheduled work day before and the scheduled day after the holiday; work one day in the holiday week; and work one scheduled work day after the holiday.
2. Paid vacation is earned the first year of employment, but may not be taken until after their first anniversary date. One and two years of employment receive 40 hours of paid vacation; Three thru nine years of employment receive 80 hours of paid vacation; Ten thru nineteen years of employment receive 120 hours of paid vacation; and Twenty years and over receive 160 hours of paid vacation.
3. Personal time (floating holidays) will be earned on a per hour worked basis. New employees will earn personal time during the first year of employment, but may not be take personal time until after their first anniversary date. Personal time is earned in the following way: One and two

years receive 8 hours of personal time; Three thru nine years receive sixteen hours of personal time; and ten years and over receive twenty-four hours of personal time.

-----  
TEAM0786-001 06/01/2004

	Rates	Fringes
TRUCK DRIVER		
2 & 3 Axles.....	\$ 27.625	d,e,f
4 Axles.....	\$ 27.875	d,e,f
5 Axles.....	\$ 28.075	d,e,f
6 Axles.....	\$ 28.625	d,e,f

FOOTNOTES FOR TRUCK DRIVERS (BUILDING & RESIDENTIAL):

d. \$327.00 per week.

e. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

f. 900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

-----  
WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.  
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

-----  
In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.  
-----

#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

GENERAL DECISION: IL20080020 02/08/2008 IL20

Date: February 8, 2008

General Decision Number: IL20080020 02/08/2008

Superseded General Decision Number: IL20070020

State: Illinois

Construction Types: Building Landscape, Heavy Landscape,  
Highway Landscape and Residential Landscape

BUILDING CONSTRUCTION (LANDSCAPE WORK):

Counties: Boone, Cook, De Kalb, Du Page, Grundy, Henry, Kane,  
Kankakee, Kendall, Lake, McHenry, McLean, Ogle, Peoria, Rock  
Island, Tazewell, Will, Winnebago and Woodford Counties in  
Illinois.

LANDSCAPING WORK ON BUILDING, RESIDENTIAL, HEAVY AND HIGHWAY  
CONSTRUCTION PROJECTS.

Modification Number	Publication Date
0	02/08/2008

\* ENGI0150-013 01/01/2008

BUILDING AND HIGHWAY CONSTRUCTION (LANDSCAPE WORK): The  
landscape work for the Landscape Equipment Operator excludes  
the preparation of sub-grade prior to application of finish  
landscape materials and the utilization of any equipment over  
one cubic yard.

BOONE, COOK, DUPAGE, GRUNDY, KANE, KENDALL, LAKE, MCHENRY, AND  
WILL COUNTIES

Rates

Fringes

Landscape Worker (Includes  
Angle Dozer, Small, Bobcat  
and other similar type  
machines, 1 cu yd or less;  
Chipping Machine; Combination  
Backhoe and Front End Loader  
1 cu yd or less; Fork Lift  
Truck; Hi-Reach and  
High-Ranger; Hydraulic Boom  
with Clam; Log Skidder; Sttrow  
Blower and Seeder; Stump  
Machine; Tractors, Crawlers,  
Rubber Tire Tractors,  
Highlift Shovels or Front End  
Loaders 1 cu yd or less; Tree  
Spades, all; Utility Tractor  
and attachments, and Rubber  
Tire Front End loader or  
similar machine of 1 to 1.5  
cu yd solely used for

placement of large decorative boulders, trees with balled soil, and other decorative landscape material too large to be accommodated in a 1 cu yd bucket. All other equipment utilized for performing landscape work, tree trimming or removal of stumps, and to install plants; transport trees; excavate plant pits; place soil and other landscape materials; and apply finish landscape material on subgrade prepared by others).....\$ 23.00                      1.65+A+B+C

FOOTNOTE:

A. Health and Welfare contribution is \$810.00 per month effective January 1, 2007 and \$895.00 per month effective January 1, 2008.

B. Paid Holidays: New Year's Day; Memorial Day; Fourth of July; Labor Day; Thanksgiving Day; and Christmas Day are provided the employee if they work their regularly scheduled work day immediately preceding and the regularly work day immediately succeeding the occurrence of the holiday.

C. Paid Vacation: All employees who have been in the employ of the Employer for a full season of work shall be entitled to one (1) week of vacation with pay. Employees who have been paid for not less than twelve hundred (1200) straight time hours since their most recent anniversary date of hire at vacation time will be deemed to have worked one full season. All employees who have been in the employ of their Employer for three(3) or more consecutive full seasons of work shall at the conclusion of their current season be entitled to two (2) weeks of paid vacation. All employees who have been in the employ of their employer for nine (9) or more consecutive full seasons of work shall be entitled to three (3) weeks of paid vacation.

-----  
ENGI0150-023 01/01/2006

HIGHWAY CONSTRUCTION (LANDSCAPE WORK): The landscape work for the Landscape Equipment Operator excludes the preparation of sub-grade prior to application of finish landscape materials and the utilization of any equipment over one cubic yard.

HENRY, MCLEAN, OGLE, PEORIA, ROCK ISLAND, TAZEWELL, WINNEBAGO & WOODFORD COUNTIES:

Rates                      Fringes

Laborer: Landscape Equipment  
Operator

Includes the following:

Angle Dozer, Small;  
Bobcat and other similar  
type machines, 1 cu yd or  
less; Chipping Machine;  
Combination Backhoe and  
Front End Loader 1 cu yd  
or less; Fork Lift Truck;  
Hi-Reach and High-  
Ranger; Hydraulic Boom with  
Clam; Log Skidder; Sttrow  
Blower and Seeder; Stump  
Machine; Tractors,  
Crawlers, Rubber Tire  
Tractors, Highlift Shovels  
or Front End Loaders 1 cu  
yd or less; Tree Spades,  
all; Utility Tractor and  
attachments, and Rubber  
Tire Front End loader or  
similar machine of 1 to  
1.5 cu yd solely used for  
placement of large  
decorative boulders, trees  
with balled soil, and  
other decorative landscape  
material too large to be  
accommodated in a 1 cu yd  
bucket. All other  
equipment utilized for  
performing landscape work,  
tree trimming or removal  
of stees, and to install  
plants; transport trees;  
excavate plant pits; place  
soil and other landscape  
materials; and apply  
finish landscape material  
on subgrade prepared by  
others.....\$ 20.55                      1.35+A+B+C

FOOTNOTE:

- A. Health and Welfare contribution of 735.00 per month
- B. Paid Holidays: New Year's Day; Memorial Day; Fourth of July; Labor Day; Thanksgiving Day; and Christmas Day are provided the employee if they work their regularly scheduled work day immediately preceding and the regularly work day immediately succeeding the occurrence of the holiday.
- C. Paid Vacation: All employees who have been in the employ of the Employer for a full season of work shall be entitled to one (1) week of vacation with pay. Employees who have been paid for not less than twelve hundred (1200) straight time hours since their most recent anniversary

date of hire at vacation time will be deemed to have worked one full season. All employees who have been in the employ of their employer for three (3) or more consecutive full seasons of work shall at the conclusion of their current season be entitled to two (2) weeks of paid vacation. All employees who have been in the employ of their employer for nine (9) or more consecutive full seasons of work shall be entitled to three (3) weeks of paid vacation.

-----  
LABO0032-004 05/01/2007

HIGHWAY CONSTRUCTION:

OGLE and WINNEBAGO COUNTIES

	Rates	Fringes
Landscape Laborer.....	\$ 24.34	16.65

-----  
LABO0362-003 09/01/2007

HIGHWAY CONSTRUCTION

MCLEAN COUNTY

	Rates	Fringes
Landscape Laborer.....	\$ 26.00	12.47

-----  
LABO0751-004 05/01/2007

HIGHWAY CONSTRUCTION

KANKAKEE COUNTY

	Rates	Fringes
Landscape Laborer.....	\$ 25.94	15.21

-----  
LABO0852-004 05/01/2006

HIGHWAY CONSTRUCTION

ROCK ISLAND AND HENRY COUNTIES:

	Rates	Fringes
Landscape Laborer.....	\$ 21.94	12.79

-----  
LABO0996-004 09/01/2007

HIGHWAY CONSTRUCTION

PEORIA, TAZEWELL, AND WOODFORD COUNTIES

	Rates	Fringes
Landscape Laborer.....	\$ 25.92	12.55

-----  
SUIL1993-001 01/18/1993

BUILDING CONSTRUCTION (LANDSCAPE WORK):

	Rates	Fringes
Laborers:		
BOONE, GRUNDY, KANE, KENDALL, LAKE, MCHENRY, & WILL COUNTIES		
LANDSCAPE LABORERS.....\$	7.14	
COOK COUNTY		
LANDSCAPE LABORERS.....\$	7.19	
LANDSCAPE PLANTSMAN.....\$	9.80	1.82
DE KALB COUNTY		
LANDSCAPE LABORERS.....\$	5.85	
LANDSCAPE OPERATORS.....\$	6.50	
LANDSCAPE PLANTSMAN.....\$	9.66	.26
DU PAGE COUNTY		
LANDSCAPE LABORERS.....\$	6.49	
LANDSCAPE PLANTSMAN.....\$	9.04	1.16
GRUNDY, LAKE & WILL COUNTIES		
LANDSCAPE DRIVER 2 & 3		
Axles.....\$	11.86	2.81
LANDSCAPE PLANTSMAN.....\$	12.00	3.32

-----

SUIL1993-002 01/19/1993

HEAVY CONSTRUCTION (LANDSCAPE WORK)

	Rates	Fringes
Laborers:		
BOONE, GRUNDY, KANE, KENDALL, LAKE, MCHENRY & WILL COUNTIES		
LANDSCAPE DRIVER, 2 & 3		
AXLES.....\$	11.94	2.42
LANDSCAPE LABORERS.....\$	6.96	
LANDSCAPE OPERATORS.....\$	13.11	3.01
LANDSCAPE PLANTSMAN.....\$	9.73	2.05
COOK COUNTY:		
LANDSCAPE DRIVER, 2 & 3		
AXLES.....\$	9.93	1.89
LANDSCAPE LABORERS.....\$	6.41	
LANDSCAPE OPERATORS.....\$	10.98	2.12
LANDSCAPE PLANTSMAN.....\$	10.08	2.06
DE KALB COUNTY:		
LANDSCAPE LABORERS.....\$	5.85	
LANDSCAPE OPERATORS.....\$	6.50	
LANDSCAPE PLANTSMAN.....\$	9.66	.26
DU PAGE COUNTY:		
LANDSCAPE DRIVER, 2 & 3		
AXLES.....\$	8.32	1.02
LANDSCAPE LABORERS.....\$	6.01	
LANDSCAPE OPERATORS.....\$	10.75	

LANDSCAPE PLANTSMAN.....\$ 10.65

SUILL1993-003 01/19/1993

HIGHWAY CONSTRUCTION (LANDSCAPE WORK):

	Rates	Fringes
Laborers:		
DE KALB COUNTY		
LANDSCAPE LABORERS.....	\$ 5.85	
LANDSCAPE OPERATORS.....	\$ 6.50	
LANDSCAPE PLANTSMAN.....	\$ 9.66	.26
KANKAKEE COUNTY:		
LANDSCAPE DRIVER.....	\$ 8.75	.17
LANDSCAPE OPERATOR.....	\$ 16.57	3.56
PEORIA, TAZEWEILL, &		
WOODFORD COUNTIES:		
TRUCK DRIVERS 2 & 3 AXLES..	\$ 17.58	5.88

TEAM0179-003 06/01/2002

HIGHWAY CONSTRUCTION:

MCLEAN COUNTY:

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES.....	\$ 27.55	a,
4 AXLES.....	\$ 27.70	a
5 AXLES.....	\$ 27.90	a
6 AXLES.....	\$ 28.10	a

FOOTNOTE: a. \$296.00 per week

TEAM0179-004 06/01/2002

HIGHWAY CONSTRUCTION:

OGLE & WINNEBAGO COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES.....	\$ 27.55	a
4 AXLES.....	\$ 27.70	a
5 AXLES.....	\$ 27.90	a
6 AXLES.....	\$ 28.10	a

FOOTNOTE: a-\$296.00 per week.

TEAM0703-001 12/01/1993

HIGHWAY CONSTRUCTION (LANDSCAPE WORK):

Rates	Fringes
-------	---------

Laborers:

BOOKE, KANE, KENDALL &  
McHENRY COUNTIES

BUILDING CONSTRUCTION

(LANDSCAPE WORK):

Landscape Plantsman.....\$ 10.38

BOONE, COOK, DUPAGE,  
GRUNDY, KANE, KENDALL,  
LAKE, McHENRY & WILL  
COUNTIES

HIGHWAY CONSTRUCTION

(LANDSCAPE WORK):

Landscape Laborers.....\$ 6.00

Landscape Plantsman.....\$ 10.38

Landscape Truck Driver-2

Axle.....\$ 11.43

A

Landscape Truck Driver-3

Axle.....\$ 11.88

A

COOK & DUPAGE COUNTIES

BUUILDING CONSTRUCTION

(LANDSCAPE WORK):

Landscape Truck Driver-2

Axle.....\$ 11.43

A

COOK & DUPAGE COUNTIES

BUILDING CONSTRUCTION

(LANDSCAPE WORK):

Landscape Truck Driver-3

Axle.....\$ 11.88

A

FOOTNOTE

A. Health and Welfare contribution of \$264.35 per month. All employees who have been employed 30 days or more shall receive the following paid holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. All employees who have been employed for a full season and who have not worked less than 1200 hours shall be entitled to one week of vacation pay. Employees who have worked 3 or more consecutive full seasons and worked at least 1200 hours per season, shall be entitled to 2 weeks of vacation pay.

-----  
WELDERS - Receive rate prescribed for craft performing  
operation to which welding is incidental.  
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

-----

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

-----

#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material,

etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 6**

(NO TEXT FOR THIS PAGE)

# Cook County Prevailing Wage for March 2008

Trade Name	RG	TYP	C	Base	FRMAN	*M-F>8	OSA	OSH	H/W	Pensn	Vac	Trng
=====	==	===	=	=====	=====	=====	===	===	=====	=====	=====	=====
ASBESTOS ABT-GEN		ALL		33.150	33.650	1.5	1.5	2.0	7.970	5.680	0.000	0.220
ASBESTOS ABT-MEC		BLD		26.000	27.500	1.5	1.5	2.0	8.760	6.410	0.000	0.000
BOILERMAKER		BLD		38.540	42.000	2.0	2.0	2.0	6.720	7.440	0.000	0.300
BRICK MASON		BLD		36.430	40.070	1.5	1.5	2.0	7.700	8.770	0.000	0.440
CARPENTER		ALL		37.770	39.770	1.5	1.5	2.0	8.960	6.910	0.000	0.490
CEMENT MASON		ALL		39.850	41.850	2.0	1.5	2.0	7.490	6.520	0.000	0.170
CERAMIC TILE FNSHER		BLD		30.150	0.000	1.5	1.5	2.0	5.850	6.600	0.000	0.340
COMM. ELECT.		BLD		33.940	36.440	1.5	1.5	2.0	7.200	5.590	0.000	0.700
ELECTRIC PWR EQMT OP		ALL		37.300	43.450	1.5	1.5	2.0	8.310	10.77	0.000	0.280
ELECTRIC PWR GRNDMAN		ALL		29.090	43.450	1.5	1.5	2.0	6.450	8.390	0.000	0.220
ELECTRIC PWR LINEMAN		ALL		37.300	43.450	1.5	1.5	2.0	8.310	10.77	0.000	0.280
ELECTRICIAN		ALL		37.800	40.400	1.5	1.5	2.0	10.00	7.650	0.000	0.750
ELEVATOR CONSTRUCTOR		BLD		43.925	49.420	2.0	2.0	2.0	8.775	6.960	2.640	0.000
FENCE ERECTOR		ALL		28.640	30.140	1.5	1.5	2.0	7.750	5.970	0.000	0.350
GLAZIER		BLD		33.000	34.500	1.5	2.0	2.0	6.740	10.15	0.000	0.600
HT/FROST INSULATOR		BLD		37.150	38.900	1.5	1.5	2.0	8.760	10.11	0.000	0.310
IRON WORKER		ALL		39.250	41.250	2.0	2.0	2.0	9.950	12.74	0.000	0.300
LABORER		ALL		33.150	33.900	1.5	1.5	2.0	7.970	5.680	0.000	0.220
LATHER		BLD		37.770	39.770	1.5	1.5	2.0	8.960	6.910	0.000	0.490
MACHINIST		BLD		38.390	40.390	2.0	2.0	2.0	4.880	6.550	2.650	0.000
MARBLE FINISHERS		ALL		27.680	0.000	1.5	1.5	2.0	7.520	8.770	0.000	0.440
MARBLE MASON		BLD		36.430	40.070	1.5	1.5	2.0	7.700	8.770	0.000	0.440
MATERIAL TESTER I		ALL		23.150	0.000	1.5	1.5	2.0	7.970	5.680	0.000	0.220
MATERIALS TESTER II		ALL		28.150	0.000	1.5	1.5	2.0	7.970	5.680	0.000	0.220
MILLWRIGHT		ALL		37.770	39.770	1.5	1.5	2.0	8.960	6.910	0.000	0.490
OPERATING ENGINEER		BLD	1	41.550	45.550	2.0	2.0	2.0	6.850	5.600	1.900	0.700
OPERATING ENGINEER		BLD	2	40.250	45.550	2.0	2.0	2.0	6.850	5.600	1.900	0.700
OPERATING ENGINEER		BLD	3	37.700	45.550	2.0	2.0	2.0	6.850	5.600	1.900	0.700
OPERATING ENGINEER		BLD	4	35.950	45.550	2.0	2.0	2.0	6.850	5.600	1.900	0.700
OPERATING ENGINEER		FLT	1	47.250	47.250	1.5	1.5	2.0	6.850	5.600	1.900	0.000
OPERATING ENGINEER		FLT	2	45.750	47.250	1.5	1.5	2.0	6.850	5.600	1.900	0.000
OPERATING ENGINEER		FLT	3	40.700	47.250	1.5	1.5	2.0	6.850	5.600	1.900	0.000
OPERATING ENGINEER		FLT	4	33.850	47.250	1.5	1.5	2.0	6.850	5.600	1.900	0.000
OPERATING ENGINEER		HWY	1	39.750	43.750	1.5	1.5	2.0	6.850	5.600	1.900	0.700
OPERATING ENGINEER		HWY	2	39.200	43.750	1.5	1.5	2.0	6.850	5.600	1.900	0.700
OPERATING ENGINEER		HWY	3	37.150	43.750	1.5	1.5	2.0	6.850	5.600	1.900	0.700
OPERATING ENGINEER		HWY	4	35.750	43.750	1.5	1.5	2.0	6.850	5.600	1.900	0.700
OPERATING ENGINEER		HWY	5	34.550	43.750	1.5	1.5	2.0	6.850	5.600	1.900	0.700
ORNAMNTL IRON WORKER		ALL		37.350	39.600	2.0	2.0	2.0	7.750	11.58	0.000	0.500
PAINTER		ALL		35.400	39.820	1.5	1.5	1.5	6.550	7.400	0.000	0.420
PAINTER SIGNS		BLD		28.970	32.520	1.5	1.5	1.5	2.600	2.310	0.000	0.000
PILEDRIIVER		ALL		37.770	39.770	1.5	1.5	2.0	8.960	6.910	0.000	0.490
PIPEFITTER		BLD		40.000	42.000	1.5	1.5	2.0	8.660	7.550	0.000	1.120
PLASTERER		BLD		36.100	38.270	1.5	1.5	2.0	7.000	7.740	0.000	0.400
PLUMBER		BLD		41.000	43.000	1.5	1.5	2.0	8.840	5.560	0.000	0.980
ROOFER		BLD		35.000	38.000	1.5	1.5	2.0	6.800	3.870	0.000	0.330
SHEETMETAL WORKER		BLD		33.400	36.070	1.5	1.5	2.0	6.460	7.850	0.000	0.590
SIGN HANGER		BLD		26.510	27.360	1.5	1.5	2.0	4.200	2.280	0.000	0.000
SPRINKLER FITTER		BLD		40.500	42.500	1.5	1.5	2.0	8.500	6.850	0.000	0.500
STEEL ERECTOR		ALL		36.250	37.750	2.0	2.0	2.0	8.970	10.77	0.000	0.300
STONE MASON		BLD		36.430	40.070	1.5	1.5	2.0	7.700	8.770	0.000	0.440
TERRAZZO FINISHER		BLD		31.810	0.000	1.5	1.5	2.0	5.850	9.200	0.000	0.280

TERRAZZO MASON	BLD	35.390	38.390	1.5	1.5	2.0	5.850	10.05	0.000	0.320
TILE MASON	BLD	36.630	40.630	1.5	1.5	2.0	5.850	7.850	0.000	0.480
TRAFFIC SAFETY WRKR	HWY	24.300	25.900	1.5	1.5	2.0	3.780	1.875	0.000	0.000
TRUCK DRIVER	E ALL 1	29.950	30.600	1.5	1.5	2.0	6.150	4.800	0.000	0.150
TRUCK DRIVER	E ALL 2	30.200	30.600	1.5	1.5	2.0	6.150	4.800	0.000	0.150
TRUCK DRIVER	E ALL 3	30.400	30.600	1.5	1.5	2.0	6.150	4.800	0.000	0.150
TRUCK DRIVER	E ALL 4	30.600	30.600	1.5	1.5	2.0	6.150	4.800	0.000	0.150
TRUCK DRIVER	W ALL 1	30.950	31.500	1.5	1.5	2.0	6.500	3.950	0.000	0.000
TRUCK DRIVER	W ALL 2	31.100	31.500	1.5	1.5	2.0	6.500	3.950	0.000	0.000
TRUCK DRIVER	W ALL 3	31.300	31.500	1.5	1.5	2.0	6.500	3.950	0.000	0.000
TRUCK DRIVER	W ALL 4	31.500	31.500	1.5	1.5	2.0	6.500	3.950	0.000	0.000
TUCKPOINTER	BLD	36.900	37.900	1.5	1.5	2.0	5.910	8.350	0.000	0.400

#### Legend:

M-F>8 (Overtime is required for any hour greater than 8 worked each day, Monday through Friday.)

OSA (Overtime is required for every hour worked on Saturday)

OSH (Overtime is required for every hour worked on Sunday and Holidays)

H/W (Health & Welfare Insurance)

Pensn (Pension)

Vac (Vacation)

Tmg (Training)

#### Explanations

COOK COUNTY

TRUCK DRIVERS (WEST) - That part of the county West of Barrington Road.

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

#### EXPLANATION OF CLASSES

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

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

#### CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed

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

COMMUNICATIONS ELECTRICIAN - Installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice sound vision production and reproduction, telephone and telephone interconnect, facsimile, data apparatus, coaxial, fibre optic and wireless equipment, appliances and systems used for the transmission and reception of signals of any nature, business, domestic, commercial, education, entertainment, and residential purposes, including but not limited to, communication and telephone, electronic and sound equipment, fibre optic and data communication systems, and the performance of any task directly related to such installation or service whether at new or existing sites, such tasks to include the placing of wire and cable and electrical power conduit or other raceway work within the equipment room and pulling wire and/or cable through conduit and the installation of any incidental conduit, such that the employees covered hereby can complete any job in full.

#### MARBLE FINISHER

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

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

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

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

#### TERRAZZO FINISHER

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

#### OPERATING ENGINEERS - BUILDING

Class 1. Mechanic; Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson attachment; Batch Plant; Benoto; Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, one, two and three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes; Squeeze Cretes-screw Type Pumps; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-form Paver; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, inside Freight Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill self-propelled; Rock Drill (truck mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch

Trucks with "A" Frame.

Class 3. Air Compressor, Combination - Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators - (Rheostat Manual Controlled); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 small Electric Drill Winches; Bobcat (up to and including 3/4 cu. yd.).

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

#### OPERATING ENGINEERS - FLOATING

Class 1. Craft foreman (Master Mechanic), diver/wet tender, engineer (hydraulic dredge).

Class 2. Crane/backhoe operator, mechanic/welder, assistant engineer (hydraulic dredge), leverman (hydraulic dredge), and diver tender.

Class 3. Deck equipment operator (machineryman), maintenance of crane (over 50 ton capacity) or backhoe (96,000 pounds or more), tug/launch operator, loader, dozer and like equipment on barge, breakwater wall, slip/dock or scow, deck machinery, etc.

Class 4. Deck equipment operator machineryman/fireman), (4 equipment units or more) and crane maintenance 50 ton capacity and under or backhoe weighing 96,000 pounds or less, assistant tug operator.

#### OPERATING ENGINEERS - HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Craft Foreman; Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines; ABG Paver; Backhoes with Caisson attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Hammerhead, Linden, Peco & Machines of a like nature; Crete Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dowell machine with Air Compressor; Dredges; Field Mechanic-Welder; Formless Curb and Gutter Machine; Gradall and Machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Backhoes with shear attachments; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Roto Mill Grinder; Slip-Form Paver; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Trenching Machine; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole; Drills (Tunnel Shaft); Underground Boring

and/or Mining Machines; Wheel Excavator; Widener (APSCO).

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

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

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

Class 5. Bobcats (all); Brick Forklifts, Oilers.

#### TRAFFIC SAFETY

Work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

#### TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION - EAST & WEST

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors;

Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; TEamsters Unskilled dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

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

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

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

#### Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 618/993-7271 for wage rates or clarifications.

#### LANDSCAPING

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

(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 7**

(NO TEXT FOR THIS PAGE)

## SEXUAL HARASSMENT POLICY

Please be advised that pursuant to Public Act 87-1257, effective July 1, 1993, 775 ILCS 5/2-105 (A) has been amended to provide that every party to a public contract must:

"Have written sexual harassment policies that shall include, at a minimum, the following information: (I) the illegality of sexual harassment; (II) the definition of sexual harassment under State law; (III) a description of sexual harassment, utilizing examples; (IV) the contractor's internal complaint process including penalties; (V) the legal recourse, investigative and complaint process available through the Department (of Human Rights) and the Commission (Human Rights Commission); (VI) directions on how to contact the Department and Commission; and (VII) protection against retaliation as provided by Section 6-101 of the Act. (Illinois Human Rights Act). (emphasis added)

Pursuant to 775 ILCS 5/1-103 (M) (2002), a "public contract" includes:

...every contract to which the State, any of its political subdivisions or any municipal corporation is a party."

I, David A. Henderson, having submitted a proposal for Joseph J. Henderson & Son, Inc.  
(Name) (Name of Contractor)  
for East Reservoir Addition (General Description of Work Proposed on) to  
the Village of Orland Park, hereby certifies that said contractor has a written sexual  
harassment policy in place in full compliance with 775 ILCS 5/2-105 (A) (4).

By:

  
Authorized Agent of Contractor

David A. Henderson, President

Subscribed and sworn to before  
me this 1st day of May, 2008.

Notary Public



(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 8**

(NO TEXT FOR THIS PAGE)

## EQUAL EMPLOYMENT OPPORTUNITY

**Section I.** This EQUAL EMPLOYMENT OPPORTUNITY CLAUSE is required by the Illinois Human Rights Act and the Rules and Regulations of the Illinois Department of Human Rights published at 44 Illinois Administrative Code Section 750, et seq.

**Section II.** In the event of the Contractor's noncompliance with any provision of this Equal Employment Opportunity Clause, the Illinois Human Right Act, or the Rules and Regulations for Public Contracts of the Department of Human Rights (hereinafter referred to as the Department) the Contractor may be declared non-responsible and therefore ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and this agreement may be canceled or avoided in whole or in part, and such other sanctions or penalties may be imposed or remedies involved as provided by statute or regulation.

During the performance of this Agreement, the Contractor agrees:

A. That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin or ancestry; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.

B. That, if it hires additional employees in order to perform this Agreement, or any portion hereof, it will determine the availability (in accordance with the Department's Rules and Regulations for Public Contracts) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.

C. That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, marital status, national origin or ancestry, age, or physical or mental handicap unrelated to ability, or an unfavorable discharge from military service.

D. That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Contractor's obligations under the Illinois Human Rights Act and Department's Rules and Regulations for Public Contract.

E. That it will submit reports as required by the Department's Rules and Regulations for Public Contracts, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and Department's Rules and Regulations for Public Contracts.

F. That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and Department for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and Department's Rules and


Regulations for Public Contracts.

G. That it will include verbatim or by reference the provisions of this Equal Employment Opportunity Clause in every subcontract it awards under which any portion of this Agreement obligations are undertaken or assumed, so that such provisions will be binding upon such subcontractor. In the same manner as the other provisions of this Agreement, the Contractor will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply therewith. In addition, the Contractor will not utilize any subcontractor declared by the Illinois Human Rights Department to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.


**Section III.** For the purposes of subsection G. of Section II, "subcontract" means any agreement, arrangement or understanding, written or otherwise, between the Contractor and any person under which any portion of the Contractor's obligations under one or more public contracts is performed, undertaken or assumed; the term "subcontract", however, shall not include any agreement, arrangement or understanding in which the parties stand in the relationship of an employer and an employee, or between a Contractor or other organization and its customers.

**ACKNOWLEDGED AND AGREED TO:**

BY:

  
David A. Henderson, President

ATTEST:

  
Linda Zoetmulder, Assistant Secretary

DATE: May 1, 2008

**SPECIAL ATTACHMENT NO. 9**

(NO TEXT FOR THIS PAGE)

APPRENTICESHIP AND TRAINING PROGRAM CERTIFICATION

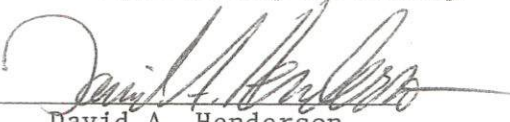
I, David A. Henderson, having been first duly sworn depose  
and state as follows:

I, David A. Henderson, am the duly authorized  
agent for Joseph J. Henderson & Son, Inc., which has  
submitted a proposal to the Village of Orland Park for

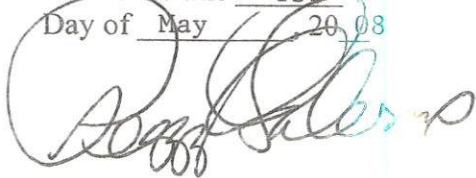
East Reservoir Addition and I hereby certify  
(Name of Project)

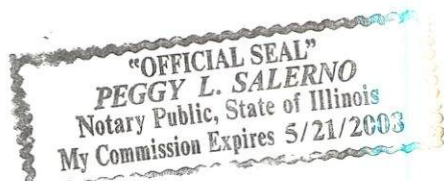
that Joseph J. Henderson & Son, Inc.  
(Name of Company)

participates in apprenticeship and training programs approved and registered with  
the United States Department of Labor Bureau of Apprenticeship and Training.

By:   
David A. Henderson  
Title: President

Subscribed and Sworn to  
Before me this 1st  
Day of May 2008





(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 10**

# APPLICATION FOR PAYMENT NO. \_\_\_\_\_

To: \_\_\_\_\_ (OWNER)  
 From: \_\_\_\_\_ (CONTRACTOR)  
 Contract: \_\_\_\_\_  
 Project: \_\_\_\_\_  
 OWNER's Contract No. \_\_\_\_\_ ENGINEER's Project No. \_\_\_\_\_  
 For Work accomplished through the date of: \_\_\_\_\_

1. Original Contract Price: \$ \_\_\_\_\_
2. Net change by Change Orders and Written Amendments (+ or -): \$ \_\_\_\_\_
3. Current Contract Price (1 plus 2): \$ \_\_\_\_\_
4. Total completed and stored to date: \$ \_\_\_\_\_
5. Retainage (per Agreement):  
     \_\_\_\_\_ % of completed Work: \$ \_\_\_\_\_  
     \_\_\_\_\_ % of stored material: \$ \_\_\_\_\_  
     Total Retainage: \$ \_\_\_\_\_
6. Total completed and stored to date less retainage (4 minus 5): \$ \_\_\_\_\_
7. Less previous Application for Payments: \$ \_\_\_\_\_
8. **DUE THIS APPLICATION (6 MINUS 7):** \$ \_\_\_\_\_

Accompanying Documentation: \_\_\_\_\_

## CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied on account to discharge CONTRACTOR's legitimate obligations incurred in connection with Work covered by prior Applications for Payment numbered 1 through \_\_\_\_\_ inclusive; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to OWNER indemnifying OWNER against any such Lien, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective.

Dated \_\_\_\_\_ CONTRACTOR

By: \_\_\_\_\_  
 State of \_\_\_\_\_  
 County of \_\_\_\_\_  
 Subscribed and sworn to before me this \_\_\_\_\_  
 day of \_\_\_\_\_

Notary Public  
 My Commission expires: \_\_\_\_\_

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Dated \_\_\_\_\_ ENGINEER

By: \_\_\_\_\_

## **APPLICATION FOR PAYMENT**

### **INSTRUCTIONS**

---

#### **A. GENERAL INFORMATION**

The sample form of Schedule of Values is intended as a guide only. Many projects require a more extensive form with space for numerous items, descriptions of Change Orders, identification of variable quantity adjustments, summary of materials and equipment stored at the site and other information. It is expected that a separate form will be developed by Engineer and Contractor at the time Contractor's Schedule of Values is finalized. Note also that the format for retainage must be changed if the Contract permits (or the law provides), and Contractor elects to deposit securities in lieu of retainage. Refer to Article 14 of the General and Supplementary Conditions for provisions concerning payments to Contractor.

#### **B. COMPLETING THE FORM**

The Schedule of Values, submitted and approved as provided in paragraphs 2.05.B.3 and 2.07 of the General and Supplementary Conditions, should be reproduced as appropriate in the space indicated on the Application for Payment form. Note that the cost of materials and equipment is often listed separately from the cost of installation. Also, note that each Unit Price is deemed to include Contractor's overhead and profit.

All Change Orders affecting the Contract Price should be identified and included in the Schedule of Values as required for progress payments.

The form is suitable for use in the Final Application for Payment as well as for Progress Payments; however, the required accompanying documentation is usually more extensive for final payment. All accompanying documentation should be identified in the space provided on the form.

#### **C. LEGAL REVIEW**

All accompanying documentation of a legal nature, such as Lien waivers, should be reviewed by an attorney, and Engineer should so advise Owner.

ITEM	UNIT PRICE	ESTIMATED QUANTITY	SCHEDULE OF VALUES AMOUNT	QUANTITY COMPLETED	AMOUNT	%	MATERIAL STORED	AMOUNT COMPLETED AND STORED
1.	\$		\$		\$		\$	\$
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								
21.								
22.								
23.								
24.								
25.								
26.								
27.								
28.								
29.								
30.								
TOTAL			\$		\$		\$	\$

Note: Total Schedule of Values Amount should equal the current Contract Price.

(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 11**

## INSURANCE REQUIREMENTS

### WORKERS COMPENSATION & EMPLOYER LIABILITY

\$1,000,000 – Each Accident \$1,000,000 – Policy Limit

\$1,000,000 – Each Employee

Waiver of Subrogation in favor of the Village of Orland Park

### AUTOMOBILE LIABILITY

\$1,000,000 – Combined Single Limit

### GENERAL LIABILITY (Occurrence basis)

\$1,000,000 – Each Occurrence

\$2,000,000 – General Aggregate Limit

\$1,000,000 – Personal & Advertising Injury

\$2,000,000 – Products/Completed Operations Aggregate

Waiver of Subrogation in favor of the Village of Orland Park

### EXCESS LIABILITY (Umbrella-Follow Form Policy)

\$5,000,000 – Each Occurrence

\$5,000,000 – Aggregate

**EXCESS MUST COVER:** General Liability, Automobile Liability, Workers Compensation

Any insurance policies providing the coverages required of the Contractor, shall be specifically endorsed to identify "The Village of Orland Park, and their respective officers, trustees, directors, employees and agents, Greeley and Hansen LLC, Klein and Hoffman, Inc., Ground Engineering Consultants, and Orland School District 135 as Additional Insureds on a primary/non-contributory basis with respect to all claims arising out of operations by or on behalf of the named insured." If the named insureds have other applicable insurance coverage, that coverage shall be deemed to be on an excess or contingent basis. The policies shall also contain a "Waiver of Subrogation in favor of the Additional Insureds in regards to General Liability and Workers Compensation coverage's." The certificate of insurance shall also state this information on its face. Certificates of insurance must state that the insurer shall provide the Village with thirty (30) days prior written notice of any change in, or cancellation of required insurance policies. The words "endeavor to" and "but failure to do so shall impose no obligation or liability of any kind upon the insurer, its agents or representatives" must be stricken from all Certificates of insurance submitted to the Village. Any insurance company providing coverage must hold an A VII rating according to Best's Key Rating Guide. Permitting the contractor, or any subcontractor, to proceed with any work prior to our receipt of the foregoing certificate and endorsement however, shall not be a waiver of the contractor's obligation to provide all of the above insurance.

The proposer agrees that if they are the selected contractor, within ten days after the date of notice of the award of the contract and prior to the commencement of any work, you will furnish evidence of Insurance coverage providing for at minimum the coverages and limits described above directly to the Village of Orland Park, Denise Domalewski, Contract Administrator, 14700 S. Ravinia Avenue, Orland Park, IL 60462. Failure to provide this evidence in the time frame specified and prior to beginning of work may result in the termination of the Village's relationship with the selected proposer and the contract may be awarded to another proposer.

ACCEPTED & AGREED THIS 1st DAY OF May, 2008



Signature  
David A. Henderson, President  
Printed Name & Title

Authorized to execute agreements for:  
Joseph J. Henderson & Son, Inc.  
Name of Company

**SPECIAL ATTACHMENT NO. 12**

(NO TEXT FOR THIS PAGE)

**CERTIFICATION OF COMPLIANCE WITH THE  
SUBSTANCE ABUSE PREVENTION PROGRAM  
(Public Act 95-0635, effective 01/01/2008)**

I, David A. Henderson, having been first duly sworn depose and state as follows:

I, David A. Henderson, am the duly authorized agent for Joseph J. Henderson & Son, Inc., which has submitted a proposal to the Village of Orland Park for East Reservoir Addition and I hereby  
(Name of Project)

certify that JOseph J. Henderson & Son, Inc. have in place either  
(Name of Company)

- ☐ a) a written Substance Abuse Prevention Program for the prevention of substance abuse among its employees which meets or exceeds the requirements in Public Act 95-0635, and has provided a written copy thereof to the Village of Orland Park; or
- ☒ b) a collective bargaining agreement in effect dealing with the subject matter of the Substance Abuse Prevention (Public Act 95-0635).

Contractor: Joseph J. Henderson & Son, Inc.

By: 

(Authorized Officer)

Title: David A. Henderson, President

Subscribed and Sworn to before me this

1st day of May, 2008

  
Notary Public



(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 13**

(NO TEXT FOR THIS PAGE)

**BUSINESS ORGANIZATION:**

\_\_\_\_\_ Sole Proprietor: An individual whose signature is affixed to this bid.

\_\_\_\_\_ Partnership: Attach sheet and state full names, titles and address of all responsible principals and/or partners. Provide percent of ownership and a copy of partnership agreement.

  X   Corporation: State of incorporation: Illinois  
Provide a disclosure of all officers and principals by name and business address, date of incorporation and indicate if the corporation is authorized to do business in Illinois.

In submitting this bid, it is understood that the Village of Orland Park reserves the right to reject any or all bids, to accept an alternate bid, and to waive any informalities in any bid.

In compliance with your Invitation to Bid, and subject to all conditions thereof, the undersigned offers and agrees, if this bid is accepted, to furnish the services as outlined.

Joseph J. Henderson & Son, Inc.

(Corporate Seal)

Business Name



Signature

David A. Henderson

Print or type name

President

Title

May 1, 2008

Date

(NO TEXT FOR THIS PAGE)

**SPECIAL ATTACHMENT NO. 14**

(NO TEXT FOR THIS PAGE)

## CERTIFICATION REGARDING CRIMINAL BACKGROUND INVESTIGATIONS

Contractor hereby represents, warrants and certifies that no officer or director thereof has any knowledge that any employee thereof has been convicted of committing or attempting to commit any one or more of the following offenses set forth in the Criminal Code of 1962, 720 ILCS 5/1-1 et seq., Sections 11-6 (indecent solicitation of a child), 11-9 (public indecency), 11-14 (prostitution), 11-15 (soliciting for prostitute), 11-15.1 (soliciting for a juvenile prostitute), 11-6 (pandering), 11-17 (keeping a place of prostitution), 11-18 (patronizing a prostitute), 11-19 (pimping), 11-19-1 (juvenile pimping), 11-10.2 (exploitation of a child), 11-20 (obscenity), 11-20.1 (child pornography), 11-21 (harmful material), 12-15 (criminal sexual assault), 12.14 (aggravated criminal sexual assault), and/or those offenses defined in the "Cannabis Control Act", 410 ICS 550/1, et seq. (except paras. 704 and 705 of that Act), and/or those offenses defined in the "Illinois Controlled Substances Act", 720 ILCS 570/100 et seq., and/or any offense committed or attempted in any other state or against the laws of the United States, which if committed or attempted in this State, would have been punishable as one or more of the foregoing offenses.

Contractor further agrees that it shall not employ any person who has direct, daily contact with the pupils of Orland School District No. 135, and for whom a criminal background investigation has not been conducted pursuant hereto, and further represents and agrees that all applicants for any such employment of a person who has direct daily contact with pupils of said School District shall furnish with their applications the attached written "Authorization for Criminal Background Investigations" form authorizing the Board of Education of Orland School District No. 135 to request a criminal background investigation of said applicant pursuant to Section 10-21.9 of the School Code of Illinois and to receive criminal history record information pursuant thereto to determine if the applicant has been convicted of committing or attempting to commit any of the criminal or drug offenses enumerated above. Contractor further agrees to submit with said authorization compensation for any costs and expenses associated with the criminal background investigation.

Contractor further represents, warrants and certifies that no applicant for employment with respect to whom the criminal investigation reveals any conviction for committing and/or attempting to commit any of the above enumerated offenses shall be employed thereby in any position that involves direct, daily contact with the students of Orland School District No. 135.

This certification is executed on the date hereinafter indicated by the designated Contractor by its duly authorized officer.

Joseph J. Henderson & Son, Inc.

By: 

David A. Henderson

Its: President

Date: May 1, 2008

**AUTHORIZATION FOR CRIMINAL BACKGROUND INVESTIGATION OF  
CONTRACTOR'S EMPLOYEE WHO HAS DIRECT DAILY CONTACT WITH  
PUPILS OF ORLAND SCHOOL DISTRICT NO. 135**

The undersigned hereby authorizes the Board of Education of Orland School District No. 135, Cook County, Illinois to request a criminal background investigation from the Illinois State Police, pursuant to Section 10-21.9 of the School Code of Illinois, para. 10-21.9 and to receive criminal history record information pursuant hereto.

\_\_\_\_\_  
(Printed or Typed Name of Contractor's Employee)

\_\_\_\_\_  
(Signature of Contractor's Employee)

Date: \_\_\_\_\_, 2008

(NO TEXT FOR THIS PAGE)

SECTION 01110  
SUMMARY OF WORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Description of Work
- B. Constraints
- C. CONTRACTOR's Use of Site
- D. Work Sequence
- E. Owner Occupancy

1.2 DESCRIPTION OF WORK

- A. General: The Work to be done under this Contract consists of the construction of a reservoir as shown and specified in Contract Documents entitled East Reservoir Addition.
- B. The Work includes:
  - 1. Furnishing all labor, equipment, supplies, materials and services to construct, test, disinfect and place into service the reservoir addition.
  - 2. Making ready a temporary construction easement for site ingress and egress with installation and maintenance of temporary construction fence and gates for controlled access.
  - 3. Perform site erosion control requirements throughout construction.
  - 4. Install prior to construction and remove upon completion of construction a temporary asphalt walk located in the vicinity of Liberty School.
  - 5. Furnishing and installing tie-back sheeting. Remove sheeting upon completion of construction
  - 6. Stripping and stockpiling of topsoil, general excavation and stockpiling of backfill material, and backfilling. Disposing of excess excavated material at an off site location arranged and paid for by the CONTRACTOR.

7. Furnishing and installing an underdrain system including select fill material and making connections to existing reservoir underdrain system.
8. Connecting piping for water conveyance and air venting between the new reservoir and the existing central reservoir.
9. Modifying existing baffle walls in the east half of the existing central reservoir.
10. Site grading and restoration.
11. Constructing a new parking area and asphalt drive to provide access to the Pumping Station, including new storm drain inlets, piping and manholes.
12. Adjusting existing storm drain inlets and manholes located within the site.
13. Restoring the construction easement to its original condition except where otherwise provided.
14. Restoring paved surfaces within the limits of the construction easement.
15. Furnishing of all labor, material, superintendence, plant, power, light, heat, fuel, water, tools, appliances, equipment, supplies, services and other means of construction necessary or proper for performing and completing the Work.
16. Assuming sole responsibility for adequacy of equipment.
17. Maintaining the Work area and site in a clean and acceptable manner.
18. Maintaining existing facilities in service at all times except where specifically provided for otherwise herein.
19. Protecting of finished and unfinished Work.
20. Repairing and restoring Work damaged during construction.
21. Furnishing as necessary proper equipment and machinery, of a sufficient capacity, to facilitate the Work and to handle all emergencies normally encountered in Work of this character.
22. Furnishing, installing, and protecting all necessary guides, track rails, bearing plates, anchor and attachment bolts, and all other appurtenances needed for the installation of the devices included in the equipment specified. Make anchor bolts of appropriate size, strength and material for the purpose intended. Furnish substantial templates and shop drawings for installation.

- C. Implied and Normally Required Work: It is the intent of these Specifications to provide the OWNER with complete operable systems, subsystems and other items of Work. Any part or item of Work which is reasonably implied or normally required to make each installation satisfactorily and completely operable is deemed to be included in the Work and the Contract Amount. All miscellaneous appurtenances and other items of Work incidental to meeting the intent of these Specifications are included in the Work and the Contract Amount even though these appurtenances may not be specifically called for in these Specifications.
- D. Quality of Work: Regard the apparent silence of the Contract Documents as to any detail, or the apparent omission from them of a detailed description concerning any Work to be done and materials to be furnished as meaning that only the best general practice is to prevail and that only materials and workmanship of the best quality are to be used. Interpretation of these specifications will be made upon this basis.

### 1.3 CONSTRAINTS

- A. The Contract Documents are intended to allow the CONTRACTOR flexibility in construction of the Work, however, the following constraints apply:
  - 1. Limit construction activities to Monday through Friday, 7:00 am to 6:00 pm. Exception to these limits may be granted on a case-by-case basis by the OWNER.
  - 2. Do not use the construction entrance between 7:15 a.m. - 8:20 a.m., 2:00 p.m. - 2:45 p.m., and 3:00 p.m. - 3:45 p.m. on school days. During these periods of time, the access gates are to be closed.
  - 3. Do not allow any construction personnel to enter the Pumping Station for any reason, except for personnel performing work in the pumping station. Damage to any part of the pumping station or existing reservoir and associated equipment, mechanical, and electrical systems shall be restored to its original condition by the CONTRACTOR at no increase to the contract amount.
  - 4. The OWNER will be responsible for initial removal of water from the east half of the existing central reservoir prior to construction work therein. Removal of any remaining water, groundwater, and sluice gate leakage is the responsibility of the CONTRACTOR. Water free of settleable solids may be pumped to the storm sewer in front of the pumping station.
  - 5. Do not cause the east half of the existing central reservoir to be out of service between March 1 and September 30.

B. Limitations on the Sequence of Construction: Include a complete sequence of construction in the CONTRACTOR's progress schedule. The following are the limitations to the sequence of construction:

1. Erect temporary fencing prior to commencement of excavation work and maintain fencing in place until final grading is complete. Remove the fence upon completion of backfilling operations.
2. Do not begin construction in the east half of the existing reservoir until the east reservoir addition has been constructed and is complete and ready for leakage testing.
3. Access the east half of the central reservoir via the roof access hatches and the 60-inch diameter pipe openings. Limit the load from equipment operating on the top slab of the existing reservoir to no more than 200 pounds per square foot.
4. Install the 60-inch diameter connecting pipes upon completion of the baffle wall construction in the east half of the existing central reservoir. Leak test the east reservoir addition and 60 inch connecting piping in accordance with Section 02516 Leakage Tests.
5. The OWNER will pay for water used for the first leakage test of the east reservoir addition and 60-inch connecting piping. The CONTRACTOR will reimburse the OWNER for subsequent tests at the rate of \$3.18 per 1,000 gallons.
6. The CONTRACTOR shall be responsible for disposal of leakage test water, occasional water, and water from the disinfection process.
7. Disinfect both the east reservoir addition and the east half of the central reservoir prior to placing into potable water storage service. Disposal of highly chlorinated water to the storm sewer is prohibited. The chlorine residual shall be reduced to less than 0.05 mg/L prior to discharge.

#### 1.4 CONTRACTOR'S USE OF SITE

A. In addition to the requirements of paragraph 6.11 of the General and Supplementary Conditions, limit use of site and premises for work and storage to allow for the following:

1. Coordination of the Work under this CONTRACT with the work of the other contractors where Work under this CONTRACT encroaches on the Work of other contractors.
2. OWNER occupancy and access to operate existing facilities.

3. Coordination of site use with ENGINEER.
4. Responsibility for protection and safekeeping of products under this CONTRACT.
5. Providing additional off site storage at no additional cost to OWNER as needed.
6. Park personal and construction vehicles within the construction easement and fenced construction area. Do not park on public roadways.

#### 1.5 CONSTRUCTION WORK AREA LIMITS

- A. Limit construction efforts to the site area and construction easement shown on the Contract Drawings. Perform excavation in such a manner so as to have no impact on the structural stability of utilities located in the north parkway of Thistlewood Lane and along the eastern property line, single family residences located adjacent to the site, and any other structures in the vicinity of the site. Do not operate or place construction equipment or materials on top of the existing reservoir at any time except as otherwise provided. Do not stockpile excavated material on top of the existing reservoir.
- B. Work on Private Property: Work on this project will require operations on private property, rights of way or easements. The OWNER has secured a temporary construction easement agreement with Orland School District No. 135. Comply with all easement or rights of entry provisions including the following:
  1. The term of this easement agreement extends to March 31, 2010 and may extend beyond that date by mutual written consent between the OWNER and Orland School District No. 135.
  2. Construct a full length fence on the east, west and north sides of the easement. Provide a fence with a vision barrier a minimum of eight feet high to ensure the safety of District No. 135, staff, students and residents of nearby homes.
  3. Restore the easement area and all areas used by the Contractor or Subcontractor, to their original condition upon completion of construction. Reinstall all playground equipment to their original or better condition at locations as directed by the School District. Restore damaged walks, curbs and pavements location upon school property upon completion of construction.
  4. Agree to indemnify and hold harmless Orland School District No. 135, its Employees, agents and representatives for any liability, loss, damage, cost, claim, judgment or settlement which may be brought or entered against them as a result of any accident, loss, damage or injury associated with any

construction or other activities associated with the granting of said easement.

5. Name Orland School District No. 135 as an additional insured on all insurance policies required of the various contractors by the Village of Orland Park and provide certificates of insurance to the School District.
6. Remove trees and shrubs in the easement area that interfere with contract operations and replant the same on school sites as directed by the School District.
7. Incorporate the requirements of this temporary easement in the bid price whether or not these requirements are expressly specified in other portions of the Contract Documents. The requirements outlined above are minimum requirements and additional requirements may be contained within the Contract Documents.
8. Traffic Restrictions: Avoid construction traffic from 7:15 am – 8:15 am, 2:00 pm – 2:45 pm, and 3:00 pm – 3:45 pm. Do not interfere with School District 135 drop off and pick up traffic, which includes both busses and passenger vehicles.
9. Unauthorized Access: Provide control of the perimeter of the site and at all fencing gates to avoid access to the site by all unauthorized individuals.
10. Install a temporary asphalt path during the construction phase. Remove the path upon completion of construction. Restore the area where the path was located to its original condition prior to construction. Sod the area where the path had been located and water until established.
11. Take all necessary precautions to protect the electrical lines servicing the school. Be advised that the electrical line passes through the area where the construction entrance is shown to be located. In the event of breakage cooperate with the Village and ComEd to facilitate restoration of electrical service on an expedited basis.

#### 1.6 SPECIAL CONSTRUCTION PROCEDURES

- A. 36-inch and 24-inch Water Mains: Prior to initiation of sheeting installation and general excavation, carefully excavate and locate the existing 36-inch and 24-inch water transmission lines at the five locations shown on Drawing. G2. Expose the tops of the mains and locate the crown of the mains in both plan and elevation. Incorporate this information into the tieback sheeting submittal showing the relationship between the sheeting system and the water mains. Take all necessary precautions to not disturb the integrity of the two water mains. Upon completion of the location survey, backfill the excavation to existing grade. Mark the site of

the excavations with construction stakes to remain throughout the course of construction.

- B. At the storm drain on the north side of site, arrange the sheeting on the west side of ramp to be east of CB "B". Remove piping between CB "B" and CB "A". Provide temporary sump pump in CB "B". Arrange pump discharge piping to discharge to CB "A" in a manner to be clear of construction activities. Provide temporary power to sump pump. Size pump to pump 250 gpm (min.) to CB "A". Provide needed control to automatically operate pump. Remove temporary provisions upon completion of construction and restore storm drain to pre-construction condition.
- C. West Walkway: Construct the sidewalk located to the west of the pumping station prior to demolition of the existing driveway and walks located on the east side of the pumping station.
- D. Sprinkler System: Place all necessary piping for extension and reconnection of the existing sprinkler system prior to construction of the new parking lot and driveway.

#### 1.7 WORK SEQUENCE

- A. Construct Work in stages to accommodate OWNER's use of premises during construction period and in accordance with the limitations on the sequence of construction specified. Coordinate construction schedules and operations with ENGINEER. Refer to Constraints in Section 1.3 for additional information on work sequencing.
- B. Coordinate Work of all subcontractors.

#### 1.8 OWNER OCCUPANCY

- A. OWNER will occupy premises during entire period of construction in order to maintain normal operations. Cooperate with OWNER's representative in all construction operations to minimize conflict, and to facilitate OWNER usage.
- B. Conduct operations so as to inconvenience the general public in the least.

### PART 2 PRODUCTS

Not Used

### PART 3 EXECUTION

- A. Starting Work: Start Work within 10 days following the date stated in the Notice to Proceed and execute with such progress as may be required to prevent delay to other contractors or to the general completion of the project. Execute Work at such items and in or on such parts of the project, and with such forces, material and equipment, as to complete the Work in the time established by the Contract. At all times, schedule and direct the Work so that it provides an orderly progression to completion within the specified time for completion.

END OF SECTION

## SECTION 01250

### CHANGE ORDER AND WORK ORDER PROCEDURES

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Definitions
- B. Change Orders
- C. Work Orders

##### 1.2 DEFINITIONS

- A. Change Order: Refer to the Change Order definition in Article 1 of the General and Supplementary Conditions.
- B. Work Order: Work Order is a written directive to the CONTRACTOR issued on or after the effective date of the agreement; signed by the OWNER, recommended by the ENGINEER ordering an addition, deletion, or revision in the Work. A Work Order will subsequently be followed by the issuance of a Change Order.
- C. Overhead: Overhead is defined as the cost of administration, field office and home office costs, general superintendence, office engineering and estimating costs, other required insurance, materials used in temporary structures (not including form work) additional premiums on the performance bond of the CONTRACTOR, the use of small tools, scheduling costs, and all other costs incidental to the performance of the change or the cost of doing business.

##### 1.3 CHANGE ORDERS

- A. Initiation of Proposals:
  - 1. From time to time, the OWNER or the ENGINEER may issue a Request for a Change Order Proposal. The Request will contain a description of the intended change with supplementary or revised Drawings and Specifications as applicable, and the projected time for accomplishing the change.
  - 2. The CONTRACTOR may propose a change in the Work by submittal of a Change Order Request to the ENGINEER describing the proposed change with a statement of the reason for the change and the effect on the Contract time and price, along with supporting documentation.

B. Execution of Change Order Proposal:

1. When a Proposal is requested for changed work, submit proposal within 14 days following receipt of the Request from OWNER or ENGINEER. State the increase or decrease, if any, in Contract Completion time and Contract Price.
2. Explain proposal in sufficient detail to permit review by OWNER.
3. For Omitted Work the decrease in the Contract Price will be determined by the ENGINEER and will include appropriate amounts for profit and overhead.
4. The OWNER and ENGINEER will review the Proposal and may request additional information and documentation. Provide these items upon request.
5. If the OWNER decides to proceed with the change, the OWNER will issue a Change Order for signature first by the CONTRACTOR and then by the OWNER.
6. The CONTRACTOR will promptly complete the approved change in the Work on receipt of the executed Change Order.
  - a. Failure to sign the Change Order does not relieve the CONTRACTOR from performing the Work if the Change Order is signed by the OWNER.

C. Compute the cost of both additive and deductive changes in the Work in accordance with Article 12 of the General and Supplementary Conditions and as follows:

1. Include, the costs of labor, crew foreman and general foreman performing or directly supervising the changed Work on the site.
2. To the labor cost add all net premium for Workman's Compensation, taxes pursuant to the Federal Social Security Act, and payments required under State and Federal unemployment laws.
3. Add necessary extra materials, delivered at the site..
4. Include rent for plant and equipment at unit rental costs for similar rentals from an independent firm (i.e. a firm which is not owned in whole or in part by the CONTRACTOR). If equipment is owned by CONTRACTOR or rented from a firm in which the CONTRACTOR has an interest, calculate the rent in accordance with the applicable provisions and terms of the

current "Cost Reference Guide for Construction Equipment" published by Dataquest.

#### 1.4 WORK ORDERS

- A. Initiation by OWNER: OWNER may issue a Work Order with a Notice to Proceed without a prior Request for a Change Order Proposal or the CONTRACTOR's signature.
- B. Payment Determination: The OWNER will designate the method of determining the amount of compensation or credit, if any, based on one of the methods contained in Article 12 of the General and Supplementary Conditions.
- C. Timing: Proceed with the change in the Work immediately upon receipt of the Work Order.
- D. Addition to Contract: The Work Order will be incorporated into the Contract Documents via a Change Order at a later date.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

Not Used

END OF SECTION

(NO TEXT FOR THIS PAGE)

## SECTION 01290

### PAYMENTS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Schedule of Values
- B. Application for Payment

##### 1.2 SCHEDULE OF VALUES

- A. Approval of Schedule: Submit for approval a preliminary schedule of values, in duplicate, for all of the Work. Prepare preliminary schedule in accordance with paragraph 2.05 of the General and Supplementary Conditions. Submit preliminary schedule of values within 15 calendar days after date established in Notice to Proceed. Submit final schedule of values in accordance with paragraph 2.07 of the General and Supplementary Conditions.
- B. Format: Utilize a format similar to the Table of Contents of the Project Specifications. Identify each line item with number and title of the major specification section. Identify site mobilization, bonds and insurance. Include within each line item, a direct proportional amount of CONTRACTOR'S overhead and profit.
- C. Revisions: With each Application for Payment revise schedule to list approved Change Orders.

##### 1.3 APPLICATION FOR PAYMENT

- A. Required Copies: Submit three copies of each application on EJCDC Form No. 1910-8-E (1996) or approved equal. Present required information in typewritten form or on electronic media printout.
- B. Execute certification by signature of authorized officer.
- C. Use data from approved Schedule of Values.
- D. Stored Materials: When payment for materials stored is permitted, submit a separate schedule for Materials Stored showing line item, description, previous value received, value incorporated into the Work and present value.

- E. Change Orders: List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of work.
- F. Final Payment: Prepare Application for Final Payment as required in paragraph 14.07 of the General and Supplementary Conditions.
- G. Submit an updated construction schedule with each Application for Payment.
- H. Submit application for payment to ENGINEER on, or before, the first of each month.

## PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

Not Used

END OF SECTION

## SECTION 01291

### CONTRACT ITEMS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Contract Items

##### 1.2 CONTRACT ITEM 1 - STRUCTURES AND EQUIPMENT WORK

- A. Description: Under the Contract Item for Structures and Equipment Work, furnish all labor, materials, equipment and services, and do all Work for the construction, maintenance, testing and placing in trouble-free operation all structures and equipment. The Work includes making ready a temporary construction easement for site ingress and egress; asphalt path installation, removal and restoration; stripping and stockpiling of topsoil; furnishing and installation of sheeting; general excavation; stockpiling of backfill materials; off site disposal of excess excavated materials at locations arranged and paid for by the CONTRACTOR; furnishing and installing underdrain system; connection piping; addition of new baffle walls in the existing reservoir; furnishing all labor and materials for construction of new below-grade reinforced concrete reservoir; leakage testing; disinfection; backfilling of reservoir; new parking lot and access drive; site grading and restoration; restoration of the temporary construction easement to its original condition except where otherwise provided; restoration of paved surfaces within the limits of construction easement; construction of storm drain inlets and manholes located within the site; and all appurtenant Work as shown and specified for a complete installation, except for Work specifically included under other Contract Items.
- B. Payment: Payment for Structures and Equipment Work will be made at the lump sum price for Contract Item 1.

##### 1.3 CONTRACT ITEM 2 – TEMPORARY FENCING

- A. Description: Under the Contract Item for Temporary Fencing, furnish all labor, materials, supplies and services, and do all Work for the erection, maintenance, and removal of temporary fencing including gates. Arrange temporary fencing as generally shown on the Plans except as otherwise directed by the ENGINEER in writing.
- B. Measurement for Payment: The length of temporary fencing to be measured for payment under Contract Item 2 will be lineal footage of fence actually erected and

measured in place, in accordance with a plan approved by the ENGINEER. All gates located within the fencing shall be included within the measurement and paid for on the same unit price basis.

- C. Payment: Payment for temporary fencing will be made at the Contract unit price per lineal footage for Contract Item 2. Seventy five percent of the unit price will be payable upon erection of the fencing in accordance with the plans. The remaining twenty five percent of the unit price will be payable upon removal of the fence.

#### 1.4 CONTRACT ITEM 3 – OVER-EXCAVATION

- A. Description: Under the Contract Item for Over-Excavation, perform additional earth excavation ordered in writing. The Work includes protection of the structures and adjacent property, placing, maintenance, and removal of shoring, sheeting and bracing, removal of water, backfilling, disposal of surplus excavated material, and other Work appurtenant to the additional earth excavation as specified.
- B. Measurement for Payment: The quantity of Over-Excavation, in cubic yards, to be measured for payment under this Contract Item 3 will be the total excavation, as ordered and approved, beyond and outside the established lines and grades which would have controlled and been maintained had not the additional excavation been ordered. Over-excavation for placement as select fill material other than that for pipe bedding or to permit construction of other types of pipeline foundations will be included for payment under this Contract Item. Unauthorized additional earth excavation will not be measured or paid for.
- C. Payment: Payment for Over-Excavation ordered in writing will be made at the Contract unit price per cubic yard for Contract Item 3.

#### 1.5 CONTRACT ITEM 4 - ADDITIONAL SELECT FILL MATERIAL

- A. Description: Under the Contract Item for Additional Select Fill Material, furnish, transport, place and compact select fill material which may be required in addition to that shown or specified, including disposal of surplus excavated material and all labor and equipment. Excavation for placement of additional select fill material will be paid for under other Contract Items. Provide select fill material that meets the requirements of Section 02317 Backfilling. Only material which has been ordered in writing and approved will be paid for under this Contract Item.
- B. Measurement for Payment: The quantities of Additional Select Fill Material, in cubic yards, to be measured for payment under Contract Item 4 will be the volume of select fill material, compacted in place, within the limiting lines shown or directed. Select fill material used to fill voids resulting from unauthorized excavation, or where required for dewatering, will not be measured for payment

even though its use is ordered. Select fill material for pipe bedding will not be measured for payment under this Contract Item.

- C. Payment: Payment for Additional Select Fill Material ordered in writing will be made at the Contract unit price per cubic yard for Contract Item 4.

#### 1.6 CONTRACT ITEM 5 - ADDITIONAL CLASS D CONCRETE

- A. Description: Under the Contract Item for Additional Class D Concrete, furnish and place concrete which may be required in addition to that shown or specified. The Work includes all materials, mixing, placing, forming of the concrete and Work incidental thereto. Excavation for placement of additional concrete will be paid for under other Contract Items. Only concrete which has been ordered in writing and approved will be paid for under this Contract Item.
- B. Measurement for Payment: The quantities of Additional Class D Concrete, in cubic yards, to be measured for payment under Contract Item 5 will be the actual volumes of concrete placed in the Work, measured in place, within the lines and grades as ordered, except that the quantity of Class D concrete ordered for pipeline cradle or encasement shall be in accordance with quantities shown. All concrete placed outside lines and grades as shown or ordered, placed to fill unauthorized excavation, and all concrete for replacing defective Work will not be measured or paid for. Unauthorized additional concrete will not be measured or paid for.
- C. Payment: Payment for Additional Class D Concrete ordered in writing by the ENGINEER will be made at the Contract unit price per cubic yard for Contract Item 5.

#### 1.7 CONTRACT ITEM 6 - ADDITIONAL STEEL REINFORCING

- A. Description: Under the Contract Item for Additional Steel Reinforcing, furnish, transport and place steel reinforcing which may be required in addition to that shown or specified. Only steel reinforcing ordered in writing and approved will be paid for under this Contract Item.
- B. Measurement for Payment: The quantity of Additional Steel Reinforcing, in pounds, to be measured for payment under Contract Item 6 will be the total weight of steel reinforcing placed in the Work as ordered and approved. Unauthorized additional steel reinforcing will not be measured or paid for.
- C. Payment: Payment for Additional Steel Reinforcing ordered in writing will be made at the Contract unit price per pound for Contract Item 6.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

## SECTION 01310

### COORDINATION AND MEETINGS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Coordination
- B. Preconstruction Conference
- C. Progress Meetings

##### 1.2 COORDINATION

- A. General: Coordinate scheduling, submittals, and Contract work to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Accessory Placement: Place conduits, saddles, boxes, cabinets, sleeves, inserts, foundation bolts, anchors and other like work in floors, roofs or walls of buildings and structures in conformity with the construction program.

##### 1.3 PRECONSTRUCTION CONFERENCE

- A. General: Prior to commencement of the Work, in accordance with paragraph 2.06 of the General and Supplementary Conditions, the OWNER will conduct a preconstruction conference to be held at a predetermined time and place.
- B. Delineation of Responsibilities: The purpose of the conference is to designate responsible personnel, to establish a working relationship among the parties and to identify the responsibilities of the OWNER, ENGINEER and the CONTRACTOR. Matters requiring coordination will be discussed and procedures for handling such matters, established. The agenda will include:
  - 1. Submittal procedures
  - 2. Partial Payment procedures
  - 3. Maintenance of Records
  - 4. Schedules, sequences and maintenance of facility operations
  - 5. Safety and First Aid responsibilities
  - 6. Change Orders
  - 7. Use of site
  - 8. Housekeeping
  - 9. Equipment delivery

- C. Attendees: The preconstruction conference is to be attended by the representatives of the CONTRACTOR, the OWNER and the ENGINEER who will be associated with the project. Representatives of regulatory agencies, subcontractors, and principal suppliers may also attend when appropriate.
- D. Chair and Minutes: The preconstruction conference will be chaired by the ENGINEER who will also arrange for the keeping and distribution of summary notes to all attendees.

#### 1.4 PROGRESS MEETINGS

- A. Meeting Frequency and Format: The OWNER will schedule progress meetings as required commensurate with the work in progress. Invite subcontractors and suppliers to attend as appropriate. The ENGINEER will prepare notes summarizing meeting discussions and key decisions made. Request that a progress meeting be scheduled if circumstances so warrant.

### PART 2 PRODUCTS

Not Used

### PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01325  
PROGRESS SCHEDULE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Form of Schedules
- B. Content of Schedules: Submit for approval, a preliminary progress schedule in duplicate, in accordance with paragraph 2.05 of the General and Supplementary Conditions.
- C. Schedule Revisions
- D. Submittal Requirements

1.2 FORM OF SCHEDULES

- A. Prepare schedules in form of a horizontal bar chart.
  - 1. Provide separate horizontal bar for each trade or operation.
  - 2. Utilize a horizontal time scale and identify first work day of each week.
  - 3. Utilize scale and spacings to allow space for notations and future revisions.
- B. Utilize a listing format which chronologically indicates the order of start of each item of work.
- C. Identify each listing by major specification section numbers.

1.3 CONTENT OF SCHEDULES

- A. Completion Dates: Show the beginning and ending contract dates stated in documents. Schedules showing completion prior to the contract completion date will be accepted but in no event will they be considered basis for a claim for delay against the OWNER by the CONTRACTOR for the period between the early completion date and the completion date provided in the Contract Documents.
- B. Show complete sequence of construction by activity.

C. Show dates for beginning and completion of each major element of construction and installation dates for major items of equipment. Elements shall include, but not be limited to, the following:

1. Shop drawing receipt from supplier/manufacture submitted to ENGINEER, review and return to supplier/manufacture
2. Material and equipment order, manufacture, delivery, installation, and checkouts
3. Performance tests and supervisory services activity
4. Demolition
5. Construction of temporary easement fencing
6. Excavation, sheeting, shoring, dewatering
7. Concrete placement sequence
8. Piping and equipment installation
9. Sewer installation
10. Connection to existing sewers
11. Miscellaneous concrete placement
12. Subcontractor's items of work
13. Backfilling, grading, seeding, sodding, landscaping, and paving
14. Final cleanup
15. Allowance for inclement weather
16. Coordination with concurrent Work on site

D. Show projected percentage of completion for each item as of first day of each month.

#### 1.4 SCHEDULE REVISIONS

A. As a minimum, revise construction schedule every 30 calendar days to reflect changes in progress of Work for duration of Contract. Submit a revised construction schedule with each partial payment request.

- B. Indicate progress of each activity at date of submittal.
- C. Show changes occurring since previous submittal of schedule.
  - 1. Major change in scope
  - 2. Activities modified since previous submittal
  - 3. Revised projections of progress and completion
  - 4. Other identifiable changes
- D. Provide a written report as needed to define:
  - 1. Problem areas, anticipated delays, and impact on schedule
  - 2. Corrective action recommended and its effect
  - 3. Effect of changes on schedules of other Contractors

#### 1.5 SUBMITTAL REQUIREMENTS

- A. Schedule: Submit final progress schedule in accordance with paragraph 2.07 of General and Supplementary Conditions.
- B. For preliminary and final submittal of construction progress schedule and subsequent revisions thereof, furnish three copies to ENGINEER.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

Not Used

END OF SECTION

(NO TEXT FOR THIS PAGE)

## SECTION 01330

### SUBMITTALS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Description of Requirements
- B. Submittal Procedures
- C. Specific Submittal Requirements
- D. Action on Submittals
- E. Repetitive Reviews
- F. Forms

##### 1.2 DESCRIPTION OF REQUIREMENTS

- A. This section specifies procedural requirements for shop drawings, product data, working drawings, samples, and other miscellaneous Work-related submittals.
- B. Do not proceed with the Work until shop drawings, product data, working drawings, samples and other Work-related submittals are "approved" or "approved as noted" in writing. Do not proceed with the Work until submittals required by the Contract Documents to be prepared by the CONTRACTOR's licensed Professional Engineer have been accepted for conformity with the Contract Documents. Do not proceed with the Work until certifications, or other submittals not requiring approval, have been accepted for conformity with the Contract Documents.
- C. Promptly prepare and make submittals to insure proper construction, assembly and installation of the Work using those materials and equipment that comply with the Contract Documents. The ENGINEER may request submittals in addition to those specified when deemed necessary to adequately describe the Work. Use the same units of weights and measures used in the Contract Documents on all submittals. Make each submittal complete and in sufficient detail to allow ready determination of compliance with the Contract Documents and apply and complete a certification stamp on each submitted item and attach a completed transmittal form to each submittal package, as specified herein in Subsection 1.3C. Clearly identify proposed deviations from the Contract Documents.

- D. Procedures concerning submittals such as the listing of manufacturers, suppliers, and subcontractors; construction progress schedule; schedule of shop drawing submissions; bonds; payment applications; insurance certificates; and schedule of values are specified elsewhere.
- E. Submittal Definitions:
1. Substitution or "Or Equal" Submittals:
    - a. Materials or equipment the CONTRACTOR requests the ENGINEER to consider accepting, after bids are received, as substitutes for items specified or shown in the Contract Documents.
  2. Shop Drawings:
    - a. Technical data, drawings and other similar information specially prepared for this Project by manufacturers and suppliers, including fabrication and installation drawings, diagrams, actual performance curves, data sheets, schedules, templates, patterns, reports, instructions, design mix formulas, measurements, and similar information not in standard printed form.
    - b. Standard information prepared without specific reference to the Project is not considered a Shop Drawing.
  3. Product Data:
    - a. Stock or standard printed information on materials and equipment that has not been specially prepared for this Project, including specifications, installation instructions, catalog cuts, wiring diagrams, performance curves, and color charts.
  4. Working Drawings:
    - a. Technical data, drawings and other similar information specially prepared for this Project by the CONTRACTOR, including fabrication and installation drawings, diagrams, and other similar information.
  5. Samples:
    - a. Physical examples of materials that are used to show size, configuration, color, texture, pattern, and the like or that are to be used for independent evaluation and testing.

- b. Mock-ups are special types of samples that are too large or otherwise inconvenient for handling in the manner specified for transmittal of sample submittals.
- 6. Miscellaneous Submittals:
  - a. Submittals that do not fit into the previous categories, such as mill reports, guarantees, warranties, certifications, experience records, maintenance agreements, operation and maintenance manuals, workmanship bonds, survey data and reports, physical work records, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, and similar information.

### 1.3 SUBMITTAL PROCEDURES

#### A. Scheduling:

- 1. Submit for approval a preliminary schedule of submittals in duplicate and in accordance with paragraph 2.05 of the General and Supplementary Conditions.
- 2. Schedule, prepare and transmit each submittal to ENGINEER sufficiently in advance of scheduled performance of related work and other applicable activities.

#### B. Coordination

- 1. Coordinate the preparation and processing of submittals with the performance of the Work. Coordinate each submittal with other submittals and related activities, such as substitution requests, testing, purchasing, fabrication, delivery, and similar activities that require sequential performance.
- 2. Coordinate submission of different items of interrelated work so that one submittal will not be delayed by ENGINEER's need to review a related submittal. ENGINEER may withhold action on any submittal requiring coordination with other submittals until related submittals are forthcoming.

#### C. Submittal Preparation:

- 1. Review each submittal to determine that:
  - a. The items depicted in the submittal are intended for incorporation into the Work.
  - b. The items depicted in the submittal will fit in the space available.

- c. The information in the submittal has been coordinated with the requirements of the Contract Documents; work to be performed by all trades involved; field measurements and other requirements of the Work.

After each submittal has been reviewed and compliance with paragraph 1 above determined, place and complete a certification stamp on each submittal document. Use a stamp containing the information shown in the Forms Subsection herein.

2. Standard printed information will not be accepted for review unless full identification of the project-specific portions and any project-specific supplementary information is shown thereon in ink or typewritten form.
3. A submittal shall not encompass more than one Section of the Specifications.
4. Accurately and distinctly present the following on shop drawings and working drawings:
  - a. Manufacturer's name, address and telephone number.
  - b. All working and erection dimensions.
  - c. Arrangements and sectional views.
  - d. Necessary details, including complete information for making connections between work in this project and work in other related projects.
  - e. Electrical wiring connections between all equipment furnished including all internal wiring between internal components of equipment.
  - f. Kinds of materials and finishes.
  - g. Parts list and descriptions thereof.
5. Present, where applicable, such data as dimensions, weights, and performance characteristics on drawings for mechanical and electrical equipment. Show conformance with the performance characteristics and other criteria included in the Contract Documents.
6. Transmittal Form: Use the Submittal Transmittal form found at the end of this Section to forward each specific submittal package to the ENGINEER. Include all the information requested on the form and answer each question.

7. Submittal Numbering:

a. Number all submittals as follows:

(A) - (B)

Where:

(A) = Specification Section Number

(B) = Consecutive submittal number for the Specification Section Number listed in (A), with an alphabetic suffix indicating the sequential version of the submittal.

Examples: 01300-001A indicates the initial version of submittal number 001 for Specification Section 01300.

01300-001B indicates the second version of submittal number 001 for Specification Section 01300.

01300-002A indicates the initial version of submittal number 002 for Specification Section 01300.

b. When an item is resubmitted for any reason, use a new Submittal Transmittal Form with the same submittal number and a new, sequential alphabetic suffix.

D. Resubmittal Preparation:

1. Comply with the requirements described in the Submittal Preparation subsection above. In addition:

a. Identify on the Submittal Transmittal Form that submittal is a resubmission.

b. Make and clearly identify any corrections or changes required by ENGINEER's notations on the previous, returned submittal.

c. Respond to ENGINEER's notations:

(1) On the Submittal Transmittal Form or on a separate page(s) attached to the Submittal Transmittal Form, answer or acknowledge, in writing, all notations or questions indicated by ENGINEER on the ENGINEER's response to the previous submittal.

(2) Identify each response by the corresponding question or notation number established by ENGINEER.

- (3) If CONTRACTOR does not respond to each notation or question, the ENGINEER will return the resubmission without action. Additional resubmittals will be required until the CONTRACTOR provides a written response to all of the ENGINEER's notations or questions.

d. CONTRACTOR initiated revisions or variations:

- (1) On the Submittal Transmittal Form identify variations or revisions from the previously reviewed submittal, other than those called for by ENGINEER.
- (2) ENGINEER's responsibility for variations or revisions is established in paragraphs 6.17.D.3 and 6.17.E.3 of the General and Supplementary Conditions.

#### 1.4 SPECIFIC SUBMITTAL REQUIREMENTS

- A. Specific submittals required for individual elements of work are specified in the individual Specification Sections. Except as otherwise indicated in the Specification Sections, comply with requirements specified herein for each type of submittal.
- B. Requests for Substitution or "Or Equal"
  1. Assemble all items related to a substitution or "or equal" request into one submittal in accordance with paragraph 6.05 of the General and Supplementary Conditions.
  2. Allow sufficient time for ENGINEER to:
    - a. Evaluate the substitution or "or equal" request.
    - b. Review additional information relative to the substitution or "or equal" request, if required by the ENGINEER
    - c. Review alternate materials or equipment if the substitution or "or equal" request is denied.
  3. If the CONTRACTOR intends to request a substitute(s) for the materials or equipment specified but not identified in the Specifications as requiring a submittal(s), schedule substitution request(s) in the schedule of submittals and submit as scheduled.

C. Shop and Working Drawings:

1. Submit graphical information at accurate scale. Indicate company name of manufacturer or supplier, address and telephone number. Show dimensions and clearly note which are based on field measurement. Identify materials and equipment that are included in the Work. Identify any revisions. Indicate compliance with standards. Note coordination requirements with other work. Highlight, encircle or otherwise indicate variations from the Contract Documents or previous submittals.
2. Include on each drawing or page:
  - a. Preparation date and revision dates.
  - b. Project name and, where applicable, project division number
  - c. Identification of Work-related items.
  - d. Specification Section number and page number.
  - e. Identification of equipment or materials.
  - f. Name of CONTRACTOR (and Subcontractor if applicable).
  - g. Name of Supplier and/or Manufacturer.
  - h. Field dimensions, clearly identified.
  - i. Standards or industry specification references.
  - j. Identification of deviations from the Contract Documents.
  - k. CONTRACTOR's stamp, signed and dated, certifying review of submittal, field measurements and compliance with the Contract Documents (see Subsection 1.7).
  - l. Physical location and location relative to other facilities that the Work-related equipment or materials are to be installed adjacent to or connected with.
3. Provide 8-inch wide by 3-inch high blank space for CONTRACTOR's and ENGINEER's stamps.
4. Number of Submittal copies:
  - a. Submit 3 blue or black line prints. One reproducible or one print will be returned with review comments.

5. Distribution:

- a. Do not proceed with the installation of materials, or equipment until stamped "approved" or "approved as noted" submittals are in the possession of the installer.
- b. Maintain one set of approved submittals at the Project site, available for use by the ENGINEER and others.
- c. After a submittal is stamped "Approved" (See Subsection 1.5), place the date of approval on three additional copies of the submittal and transmit to the ENGINEER together with one copy of a Submittal Transmittal Form containing substantially the same information required in Subsection 1.3.C. above.
- d. Identify any changes, other than those noted by the ENGINEER, when making a distribution submittal.
- e. Unless required elsewhere, provide distribution of approved submittals to subcontractors, suppliers, governing authorities, and others as necessary for proper performance of the Work.
- f. After a submittal is stamped "Examined and Returned for Correction" (See Subsection 1.5), make the necessary corrections and resubmit in accordance with Subsection 1.3.D. above. Revise and make resubmittals until approval is obtained.

D. Product Data:

1. Preparation:

- a. Assemble all data into a single submittal for each element of work or system. Where product data has been printed to include information on several similar products, some of which are not required for use on the subject Project, clearly mark copies to show such information is not applicable.
- b. Where data must be specially prepared for required materials or equipment because standard printed data are not suitable for use, submit the data as a shop drawing and not as product data.

2. Submittals:

- a. Submit product data with appropriate shop or working drawings, when applicable.

- b. Submit 3 copies.
    - 3. Distribution:
      - a. Follow distribution described in Subsection 1.4.C. 5 above.
  - E. Samples:
    - 1. Preparation:
      - a. Whenever possible, provide samples physically identical with the materials proposed for incorporation into the Work. Where variations in color, pattern or texture and the like are inherent in materials represented by samples, submit multiple samples (not less than 3) showing the approximate range of variations.
    - 2. Submittals:
      - a. Submit samples for visual review of generic kind, color, pattern, texture, and for final check of coordination of these characteristics with other related elements of Work.
      - b. Include information with each sample to provide a generic description of the item, and it's name, manufacturer, limitations, and compliance with standards.
      - c. Submit 3 sets of samples, where specifications indicate selection of color, pattern, texture or similar characteristics from manufacturer's range of standard choices is necessary.
    - 3. Distribution:
      - a. Follow distribution described in Subsection 1.4,C.5 above.
      - b. Maintain returned final set of samples at the Project site, in suitable condition and available for quality control comparisons throughout the course of performing the Work.
      - c. Incorporate only undamaged samples into the Work, when permitted by the Contract Documents.
  - F. Mock-Ups:
    - 1. Mock-ups and similar samples specified are recognized as special types of samples. Comply with samples submittal requirements to the greatest extent possible. Process Submittal Transmittal Forms to provide a record of activity.

G. Miscellaneous Submittals:

1. Inspection and Test Reports:

- a. Identify each inspection and test report as either specially prepared for the Project or a standard publication of workmanship control testing at point of production. Process inspection and test reports in accordance with the requirements for shop drawings or product data as described in this Section.

2. Guarantees, Warranties, Maintenance Agreements, and Workmanship Bonds:

- a. Refer to Specification sections for specific requirements.

3. Survey Data:

- a. Refer to Specification sections for specific requirements on property surveys, building or structure condition surveys, field measurements, quantitative records of actual Work, damage surveys, photographs, and similar data required by Specification sections. Copies will not be returned.

(1) Survey Copies: Furnish 2 copies. Provide 10 copies of final property survey (if any).

(2) Condition Surveys: Furnish 2 copies.

4. Certifications:

- a. Refer to Specification sections for specific requirements on submittal of certifications. Submit 7 copies. Certifications are submitted for review of conformance with specified requirements and information. Submittal is final when reviewed and returned by ENGINEER with no further action required.

5. Closeout Submittals:

- a. Refer to Specification sections and Section 01789 for specific requirements on submittal of closeout information, materials, tools, and similar items such as:

(1) Record Documents.

(2) Materials and Tools: Spare parts, extra and overrun stock, maintenance tools and devices, keys, and similar physical units to be submitted.

(3) Operation and maintenance data.

## 1.5 ACTION ON SUBMITTALS

### A. ENGINEER's Action:

#### 1. General:

- a. Except for submittals for record and similar purposes, ENGINEER will review each submittal, mark with appropriate action, and return. Where submittal must be held for coordination, ENGINEER will also advise CONTRACTOR without delay.
- b. ENGINEER will stamp each submittal with uniform, self-explanatory action stamp, appropriately marked.

### B. Action Stamps:

#### 1. Approved:

- a. Final Unrestricted Release: Where submittals are marked "Approved", Work covered by submittal may proceed PROVIDED THE WORK COMPLIES WITH CONTRACT DOCUMENTS. Acceptance of Work will depend upon that compliance.

#### 2. Approved As Noted:

- a. When submittals are marked "Approved as Noted", Work covered by submittal may proceed PROVIDED IT COMPLIES WITH BOTH ENGINEER'S NOTATIONS AND CORRECTIONS ON SUBMITTAL AND WITH CONTRACT DOCUMENTS. Acceptance of Work will depend on that compliance.
- b. Revise submittal in accordance with ENGINEER's notations in accordance with Paragraph 1.3.D, as applicable, of this section. Make resubmittal without delay. Repeat if necessary to obtain an "Approved" action marking.

#### 3. Examined and Returned for Correction or Incomplete Submittal:

- a. When submittals are marked "Examined and Returned for Correction" or "Incomplete Submittal", do not proceed with Work covered by

submittal. Do not permit Work covered by submittal to be used at Project site or elsewhere where Work is in progress.

- b. Revise submittal or prepare new submittal in accordance with ENGINEER's notations in accordance with Paragraph 1.3.D of this section. Make resubmittal without delay. Repeat if necessary to obtain different action marking.

#### 1.6 REPETITIVE REVIEWS

- A. Cost of Repetitive Reviews: Submitted items will be reviewed no more than three times (initial submittal plus two resubmittals) at the OWNER's expense. All subsequent reviews will be performed at times convenient to the ENGINEER and at the CONTRACTOR's expense based on the ENGINEER's then prevailing rates including all direct and indirect costs and fees. Reimburse the OWNER for all such fees invoiced to the OWNER by the ENGINEER for fourth and subsequent submittals.
- B. Time Extension: Any need for more than one resubmission, or any other delay in ENGINEER's review of submittals, will not entitle CONTRACTOR to an extension of the Contract Time.

1.7 FORMS

- A. Attach a completed Submittal Transmittal Form to each submittal. A copy of the Form is furnished at the end of this section.
- B. Use rubber stamps on submittal documents to certify that the submittal meets Contract Document requirements. Stamp format should be similar to the following:

<i>CONTRACTOR'S NAME</i>
<div style="display: flex; align-items: center;"><div style="width: 50px; border-bottom: 1px solid black; margin-right: 10px;"></div><div>Approved and Certified to comply with the Contract Documents.</div></div>
<div style="display: flex; align-items: center;"><div style="width: 50px; border-bottom: 1px solid black; margin-right: 10px;"></div><div>Approved and Certified to comply with the Contract Documents, with the exceptions or corrections specifically noted on the submittal data and/or attached documents.</div></div>
PRINTED NAME: <div style="border-bottom: 1px solid black; width: 80%; display: inline-block;"></div>
TITLE: <div style="border-bottom: 1px solid black; width: 80%; display: inline-block;"></div>
SIGNATURE: <div style="border-bottom: 1px solid black; width: 80%; display: inline-block;"></div>
DATE: <div style="border-bottom: 1px solid black; width: 80%; display: inline-block;"></div>

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

**CONTRACTOR'S NAME**  
**SUBMITTAL TRANSMITTAL FORM**

TO: \_\_\_\_\_

DATE: \_\_\_\_\_

SITE: \_\_\_\_\_

PROJECT NAME: \_\_\_\_\_

ATTN: \_\_\_\_\_

SPEC. REF. NO. \_\_\_\_\_

FROM: \_\_\_\_\_

DRAWING REF. NO. \_\_\_\_\_

SUBMITTAL NO. \_\_\_\_\_

SUPPLIER: \_\_\_\_\_

1. The following submittals are forwarded for your review:

No. of Repros/Copies	Supplier	Description	Dwg. No.	Date
/				
/				
/				
/				
/				
/				

2. Will item submitted for review fit in space provided in the Contract Documents? \_\_\_\_\_ Yes \_\_\_\_\_ No
3. Has work indicated in this submittal been coordinated with all trades: \_\_\_\_\_ Yes \_\_\_\_\_ No
4. Contractor has approved submittal and has affixed certification stamp? \_\_\_\_\_ Yes \_\_\_\_\_ No
5. Contractor's description and justification for deviations from the Contract Documents. (Use additional pages, if necessary)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. Remarks: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_

END OF SECTION

## SECTION 01422

### REFERENCES

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Reference Abbreviations
- B. Abbreviations
- C. Reference Standards
- D. Definitions

##### 1.2 REFERENCE ABBREVIATIONS

- A. Reference to a technical society, trade association or standards setting organization, may be made in the Specifications by abbreviations in accordance with the following list:

AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ACI	American Concrete Institute
ADC	Air Diffusion Council
AFBMA	Anti-friction Bearing Manufacturers Association
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AHA	Association of Home Appliance Manufacturers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Movement and Control Association, Inc.
ANSI	American National Standards Institute
APA	American Plywood Association
ARI	American Refrigeration Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute

AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders' Hardware Manufacturers Association
BIA	Brick Institute of American
CABO	Council of American Building Officials
CAGI	Compressed Air and Gas Institute
CISPI	Cast Iron Soil Pipe Institute
CMAA	Crane Manufacturers Association of America
CRD	U.S. Corps of Engineers Specifications
CRSI	Concrete Reinforcing Steel Institute
CTI	Cooling Tower Institute
DHI	Door and Hardware Institute
DOH	Department of Health
DOT	Department of Transportation
FCC	Federal Communications Commission
Fed. Spec.	Federal Specifications
FGMA	Flat Glass Marketing Association
FM	Factory Mutual
HMI	Hoist Manufacturing Institute
HPMA	See HPVA
HPVA	Hardwood Plywood Veneer Association
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers
IFI	Industrial Fasteners Institute
ISO	International Standards Organization
MIL	Military Specifications
MSS	Manufacturer's Standardization Society
NAAMM	National Association of Architectural Metal Manufacturers
NACM	National Association of Chain Manufacturers
NBS	National Bureau of Standards, See NIST
NEBB	National Environmental Balancing Bureau
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NETA	National Electrical Testing Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NFPA	National Fluid Power Association
NIST	National Institute of Standards and Technology
NLMA	National Lumber Manufacturers Association
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Act
PCI	Prestressed Concrete Institute
PDI	Plumbing and Drainage Institute
SAE	Society of Automotive Engineers
SCPRF	Structural Clay Products Research Foundation
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association

SPI	Society of the Plastics Industry
SSPC	Steel Structures Painting Council
STI	Steel Tank Institute
TCA	Tile Council of American
TIMA	Thermal Insulation Manufacturers' Association
UL	Underwriters' Laboratories, Inc.
USBR	U. S. Bureau of Reclamation
USBS	U. S. Bureau of Standards, See NIST

### 1.3 ABBREVIATIONS

- A. Abbreviations which may be used in individual Specification Sections Divisions 1 through 16 are as follows:

alternating current..... ac  
 American wire gauge.....AWG  
 ampere(s)..... amp  
 ampere-hour(s)..... AH  
 annual..... ann  
 Ampere Interrupting  
   Capacity..... AIC  
 atmosphere(s)..... atm  
 average..... avg  
  
 biochemical oxygen demand .....BOD  
 Board Foot..... FBM  
 brake horsepower..... bhp  
 Brinell Hardness ..... BH  
 British thermal unit(s)..... Btu  
  
 calorie (s) ..... cal  
 carbonaceous biochemical  
   oxygen demand..... CBOD  
 Celsius (centigrade)..... C  
 Center to Center..... C to C  
 centimeter(s) ..... cm  
 chemical oxygen demand .....COD  
 coefficient, valve flow ..... C<sub>v</sub>  
 condensate return.....CR  
 cubic..... cu  
 cubic centimeter(s) .....cc  
 cubic feet per day..... cfd  
 cubic feet per hour ..... cfh  
 cubic feet per minute ..... cfm  
 cubic feet per minute,  
   standard conditions..... scfm  
 cubic feet per second ..... cfs  
 cubic foot (feet)..... cu ft  
 cubic inch(es)..... cu in  
 cubic yard(s) ..... cu yd  
  
 decibels ..... dB  
 decibels (A scale).....dBa  
 degree(s) ..... deg  
 dewpoint temperature ..... dpt  
 diameter ..... dia  
 direct current..... dc  
 dissolved oxygen ..... DO  
 dissolved solids..... DS  
 dry-bulb temperature ..... dbt

efficiency ..... eff  
 elevation ..... el  
 entering water temperature.....ewt  
 entering air temperature.....eat  
 equivalent direct radiation ..... edr  
  
 face area..... fa  
 face to face..... f to f  
 Fahrenheit..... F  
 feet per day ..... fpd  
 feet per hour..... fph  
 feet per minute..... fpm  
 feet per second.....fps  
 foot (feet)..... ft  
 foot-candle..... fc  
 foot-pound ..... ft-lb  
 foot-pounds per minute ..... ft-lb/min  
 foot-pounds per second ..... ft-lb/sec  
 formazin turbidity unit(s) .....FTU  
 frequency ..... freq  
 fuel oil..... FO  
 fuel oil supply..... FOS  
 fuel oil return.....FOR  
  
 gallon(s)..... gal  
 gallons per day..... gpd  
 gallons per day per  
   cubic foot..... gpd/cu ft  
 gallons per day per  
   square foot ..... gpd/sq ft  
 gallons per hour ..... gph  
 gallons per minute ..... gpm  
 gallons per second ..... gps  
 gas chromatography and  
   mass spectrometry .....GC-MS  
 gauge .....ga  
 grain(s)..... gr  
 gram(s)..... g  
 grams per cubic centimeter.....gm/cc  
  
 Heat Transfer Coefficient..... U  
 height..... hgt  
 Hertz..... Hz  
 horsepower ..... hp  
 horsepower-hour.....hp-hr  
 hour(s) ..... hr

humidity, relative..... rh  
 hydrogen ion concentration ..... pH  
  
 inch(es) ..... in  
 inches per second..... ips  
 inside diameter..... ID  
  
 Jackson turbidity unit(s) ..... JTU  
  
 kelvin ..... K  
 kiloamperes..... kA  
 kilogram(s)..... kg  
 kilometer(s)..... km  
 kilovar (kilovolt-amperes  
 reactive) ..... kvar  
 kilovolt(s)..... kV  
 kilovolt-ampere(s) ..... kVA  
 kilowatt(s)..... kW  
 kilowatt-hour(s) ..... kWh  
  
 linear foot (feet) ..... lin ft  
 liter(s)..... L  
  
 megavolt-ampere(s) ..... MVA  
 meter(s) ..... m  
 micrograms per liter..... ug/L  
 miles per hour ..... mph  
 milliamperes(s)..... mA  
 milligram(s) ..... mg  
 milligrams per liter ..... mg/L  
 milliliter(s) ..... mL  
 millimeter(s) ..... mm  
 million gallons ..... MG  
 million gallons per day ..... mgd  
 millisecond(s) ..... ms  
 millivolt(s) ..... mV  
 minute(s) ..... min  
 mixed liquor suspended  
 solids..... MLSS  
  
 nephelometric turbidity  
 unit ..... NTU  
 net positive suction head..... NPSH  
 noise criteria ..... nc  
 noise reduction coefficient..... NRC  
 number ..... no

ounce(s) ..... oz  
 outside air ..... oa  
 outside diameter ..... OD  
  
 parts per billion..... ppb  
 parts per million..... ppm  
 percent ..... pct  
 phase (electrical)..... ph  
 pound(s)..... lb  
 pounds per cubic foot ..... pcf  
 pounds per cubic foot  
 per hour..... pcf/hr  
 pounds per day..... lbs/day  
 pounds per day per  
 cubic foot..... lbs/day/cu ft  
 pounds per day per  
 square foot ..... lbs/day/sq ft  
 pounds per square foot ..... psf  
 pounds per square foot  
 per hour..... psf/hr  
 pounds per square inch ..... psi  
 pounds per square inch  
 absolute..... psia  
 pounds per square inch  
 gauge ..... psig  
 power factor..... PF  
 pressure drop or  
 difference..... dp  
 pressure, dynamic  
 (velocity) ..... vp  
 pressure, vapor..... vap pr  
  
 quart(s)..... qt  
  
 Rankine..... R  
 relative humidity..... rh  
 resistance ..... res  
 return air ..... ra  
 revolution(s) ..... rev  
 revolutions per minute..... rpm  
 revolutions per second..... rps  
 root mean squared ..... rms  
  
 safety factor ..... sf  
 second(s)..... sec  
 shading coefficient ..... SC  
 sludge density index ..... SDI

## Sound Transmission

Coefficient ..... STC  
specific gravity ..... sp gr  
specific volume ..... Sp Vol  
sp ht at constant pressure ..... Cp  
square ..... sq  
square centimeter(s) ..... sq cm  
square foot (feet) ..... sq ft  
square inch (es) ..... sq in  
square meter(s) ..... sq m  
square yard(s) ..... sq yd  
standard ..... std  
static pressure ..... st pr  
supply air ..... sa  
suspended solids ..... SS

temperature ..... temp  
temperature difference ..... TD  
temperature entering ..... TE  
temperature leaving ..... TL  
thousand Btu per hour ..... Mbh  
thousand circular mils ..... kcmil  
thousand cubic feet ..... Mcf  
threshold limit value ..... TLV  
tons of refrigeration ..... tons  
torque ..... TRQ  
total dissolved solids ..... TDS  
total dynamic head ..... TDH  
total kjeldahl nitrogen ..... TKN  
total oxygen demand ..... TOD  
total pressure ..... TP  
total solids ..... TS  
total suspended solids ..... TSS  
total volatile solids ..... TVS

vacuum ..... vac  
viscosity ..... visc  
volatile organic chemical ..... VOC  
volatile solids ..... VS  
volatile suspended solids ..... VSS  
volt(s) ..... V  
volts-ampere(s) ..... VA  
volume ..... vol

watt(s) ..... W  
watthour(s) ..... Wh

watt-hour demand ..... WHD  
watt-hour demand meter ..... WHDM  
week(s) ..... wk  
weight ..... wt  
wet-bulb ..... WB  
wet bulb temperature ..... WBT  
  
yard(s) ..... yd  
year(s) ..... yr

- B. Use ASME Y1.1-1989, "Abbreviations for use on Drawings and in Text" for abbreviations for units of measure not included herein in Paragraph 1.4.

#### 1.4 REFERENCE STANDARDS

- A. Latest Edition: Construe references to furnishing materials or testing, which conform to the standards of a particular technical society, organization, or body, to mean the latest standard, code, or specification of that body, adopted and published as of the date of bidding this Contract. Standards referred to herein are made a part of these Specifications to the extent which is indicated or intended.
- B. Precedence: The duties and responsibilities of the OWNER, CONTRACTOR or ENGINEER, or any of their consultants, agents or employees are set forth in the Contract Documents, and are not changed or altered by any provision of any referenced standard specifications, manuals or code, whether such standard manual or code is or is not specifically incorporated by reference in the Contract Documents. Any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority, to undertake responsibility contrary to the powers of the ENGINEER as set forth in the Contract Documents cannot be assigned to the ENGINEER or any of the ENGINEER's consultants, agents or employees.

#### 1.5 DEFINITIONS

- A. In these Contract Documents the words furnish, install and provide are defined as follows:
  - 1. Furnish (materials): to supply and deliver to the project ready for installation and in operable condition.
  - 2. Install (services or labor): to place in final position, complete, anchored, connected in operable condition.
  - 3. Provide: to furnish and install complete. Includes the supply of specified services. When neither furnish, install or provide is stated, provide is implied.

### PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01450  
QUALITY CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Inspection Services
- B. Inspection of Materials
- C. Quality Control
- D. Costs of Inspection
- E. Acceptance Tests
- F. Failure to Comply with Contract

1.2 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Certificate Submittals: Furnish the ENGINEER authoritative evidence in the form of Certificates of Manufacture that the materials and equipment to be used in the Work have been manufactured and tested in conformity with the Contract Documents. Include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

1.3 INSPECTION SERVICES

- A. OWNER's Access: At all times during the progress of the Work and until the date of final completion, afford the OWNER and ENGINEER every reasonable, safe, and proper facility for inspecting the Work at the site. The observation and inspection of any work will not relieve the CONTRACTOR of any obligations to perform proper and satisfactory work as specified. Replace work rejected due to faulty design, inferior, or defective materials, poor workmanship, improper installation, excessive wear, or nonconformity with the requirements of the Contract Documents, with satisfactory work at no additional cost to the OWNER. Replace as directed, finished or unfinished work found not to be in strict accordance with the Contract, even though such work may have been previously approved and payment made therefor.

- B. Rejection: The OWNER and the OWNER's Authorized Representatives have the right to reject materials and workmanship which are defective or require correction. Promptly remove rejected work and materials from the site.
- C. Inferior Work Discoveries: Failure or neglect on the part of the OWNER or the OWNER's Authorized Representatives to condemn or reject bad or inferior work or materials does not imply an acceptance of such work or materials. Neither is it to be construed as barring the OWNER or the OWNER's Authorized Representatives at any subsequent time from recovering damages or a sum of money needed to build anew all portions of the Work in which inferior work or improper materials were used.
- D. Removal for Examination: Should it be considered necessary or advisable by the OWNER or the OWNER's Authorized Representatives, at any time before final acceptance of the Work, to make examinations of portions of the Work already completed, by removing or tearing out such portions, promptly furnish all necessary facilities, labor, and material, to make such an examination. If such Work is found to be defective in any respect, defray all expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the cost of examination and restoration of the Work will be considered a change in the Work to be paid for in accordance with applicable provisions of the Contract.
- E. Operation Responsibility: Assume full responsibility for the proper operation of equipment during tests and instruction periods. Make no claim for damage which may occur to equipment prior to the time when the OWNER accepts the Work.
- F. Rejection Prior to Warranty Expiration: If at anytime prior to the expiration of any applicable warranties or guarantees, equipment is rejected by the OWNER, repay to the OWNER all sums of money received for the rejected equipment on progress certificates or otherwise on account of the Contract lump sum prices, and upon the receipt of the sum of money, OWNER will execute and deliver a bill of sale of all its rights, title, and interest in and to the rejected equipment. Do not remove the equipment from the premises of the OWNER until the OWNER obtains from other sources, equipment to take the place of that rejected. The OWNER hereby agrees to obtain other equipment within a reasonable time and the CONTRACTOR agrees that the OWNER may use the equipment furnished by the CONTRACTOR without rental or other charge until the other new equipment is obtained.

#### 1.4 INSPECTION OF MATERIALS

- A. Premanufacture Notification: Give notice in writing to the ENGINEER sufficiently in advance of the commencement of manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. When required, notice to include a request for inspection, the date of commencement, and the expected date of completion of the

manufacture or preparation of materials. Upon receipt of such notice, ENGINEER will arrange to have a representative present at such times during the manufacture or testing as may be necessary to inspect the materials, or will notify CONTRACTOR that the inspection will be made at a point other than the point of manufacture or testing, or that the inspection will be waived. Comply with these provisions before shipping any materials. Such inspection will not constitute a release from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

- B. Testing Standards: Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with recognized, applicable test codes except as may otherwise be stated herein.

## 1.5 QUALITY CONTROL

### A. Testing

#### 1. Field and Laboratory

- a. Provide personnel to assist the ENGINEER in performing the following periodic observation and associated services.
  - (1) Soils: Observe and test excavations, placement and compaction of soils. Determine suitability of excavated material. Observe subgrade soils and foundations.
  - (2) Concrete: Observe forms and reinforcement; observe concrete placement; witness air entrainment tests, facilitate concrete cylinder preparation and assist with other tests performed by ENGINEER.
  - (3) Masonry: Sample and test mortar and grout; inspect brick and block samples and sample panels; inspect placement of reinforcement and grouting.
  - (4) Structural Steel: Verify that all welders are certified; visually inspect all structural steel welds; mechanically test high-tensile bolted connections.
- b. When specified in Divisions 2 through 16 of the Contract Documents, provide an independent laboratory testing facility to perform required testing. Qualify the laboratory as having performed previous satisfactory work. Prior to use, submit to the ENGINEER for approval.
- c. Cooperate with the ENGINEER and laboratory testing representatives. Provide at least 24 hours notice prior to when

specified testing is required. Provide labor and materials, and necessary facilities at the site as required by the ENGINEER and the testing laboratory.

2. Equipment: Coordinate and demonstrate test procedures as specified in the Contract Documents or as otherwise required during the formal tests.
3. Pipeline and Other Testing: Conform to test procedures and requirements specified in the appropriate Specification Section.

B. Reports

1. Certified Test Reports: Where transcripts or certified test reports are required by the Contract Documents, meet the following requirements:
  - a. Before delivery of materials or equipment submit and obtain approval of the ENGINEER for all required transcripts, certified test reports, certified copies of the reports of all tests required in referenced specifications or specified in the Contract Documents. Perform all testing in an approved independent laboratory or the manufacturer's laboratory. Submit for approval reports of shop equipment tests within thirty days of testing. Transcripts or test reports are to be accompanied by a notarized certificate in the form of a letter from the manufacturer or supplier certifying that tested material or equipment meets the specified requirements and the same type, quality, manufacture and make as specified. The certificate shall be signed by an officer of the manufacturer or the manufacturer's plant manager.
2. Certificate of Compliance: At the option of the ENGINEER, or where not otherwise specified, submit for approval a notarized Certificate of Compliance. The Certificates may be in the form of a letter stating the following:
  - a. Manufacturer has performed all required tests
  - b. Materials to be supplied meet all test requirements
  - c. Tests were performed not more than one year prior to submittal of the certificate
  - d. Materials and equipment subjected to the tests are of the same quality, manufacture and make as those specified
  - e. Identification of the materials

## 1.6 COSTS OF INSPECTION

- A. OWNER's Obligation: Initial inspection and testing of concrete, mortar, grout, backfill and structural steel furnished under this Contract will be performed by the OWNER or his authorized Representatives or inspection bureaus without cost to the CONTRACTOR. If subsequent testing is necessary due to failure of the initial tests or because of rejection for noncompliance, reimburse the OWNER for expenditures incurred in making such tests.
- B. CONTRACTOR's Obligation: Include in the Contract Price, the cost of all off-site testing required by the Contract Documents. The OWNER may perform tests on any material or equipment furnished under this Contract at any time during the Contract. If tests performed by the OWNER result in failure or rejection for noncompliance, reimburse the OWNER for expenditures incurred in making such tests. Tests performed by the OWNER shall prevail in determining compliance with Contract requirements.
- C. Reimbursements to OWNER:
  - 1. Materials and equipment submitted by the CONTRACTOR as the equivalent to those specifically named in the Contract may be tested by the OWNER for compliance. Reimburse the OWNER for expenditures incurred in making such tests on materials and equipment which are rejected for noncompliance.
  - 2. Reimburse OWNER for the costs of any jobsite inspection between the hours of 6:00 p.m. and 7:00 a.m.

## 1.7 ACCEPTANCE TESTS

- A. Preliminary Field Tests: As soon as conditions permit, furnish all labor and materials and services to perform preliminary field tests of all equipment provided under this Contract. If the preliminary field tests disclose that any equipment furnished and installed under this Contract does not meet the requirements of the Contract Documents, make all changes, adjustments and replacements required prior to the acceptance tests.
- B. Final Field Tests: Upon completion of the Work and prior to final payment, subject all equipment, piping and appliances installed under this Contract to specified acceptance tests to demonstrate compliance with the Contract Documents. Furnish all labor, fuel, energy, water and other materials, equipment, instruments and services necessary for all acceptance tests. Conduct field tests in the presence of the ENGINEER.
- C. Failure of Tests: If the acceptance tests reveal defects in material or equipment, or if the material or equipment in any way fails to comply with the requirements of the Contract Documents, then promptly correct such deficiencies. Failure or

refusal to correct the deficiencies, or if the improved materials or equipment, when tested again, fail to meet the guarantees or specified requirements, the OWNER, notwithstanding its partial payment for work and materials or equipment, may reject said materials or equipment and may order the CONTRACTOR to remove the defective work from the site at no addition to the Contract Price, and replace it with material or equipment which meets the Contract Documents.

#### 1.8 FAILURE TO COMPLY WITH CONTRACT

- A. Unacceptable Materials: If it is ascertained by testing or inspection that the material or equipment does not comply with the Contract, do not deliver said material or equipment, or if delivered remove it promptly from the site or from the Work and replace it with acceptable material without additional cost to the OWNER. Fulfill all obligations under the terms and conditions of the Contract even though the OWNER or the OWNER's Authorized Representatives fail to ascertain noncompliance or notify the CONTRACTOR of noncompliance.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

Not Used

END OF SECTION

## SECTION 01500

### CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. General Requirements
- B. Temporary Utilities
- C. Temporary Construction
- D. Barricades and Enclosures
- E. Fences
- F. Security
- G. Temporary Controls
- H. Traffic Regulation
- I. Field Offices and Sheds
- J. Engineer's Field Office

##### 1.2 GENERAL REQUIREMENTS

- A. Plant and Facilities: Furnish, install, maintain and remove all false work, scaffolding, ladders, hoistways, braces, pumping plants, shields, trestles, roadways, sheeting, centering forms, barricades, drains, flumes, and the like, any of which may be needed in the construction of any part of the Work and which are not herein described or specified in detail. Accept responsibility for the safety and efficiency of such works and for any damage that may result from their failure or from their improper construction, maintenance or operation.
- B. First Aid: Maintain a readily accessible, completely equipped first aid kit at each location where work is in progress.
- C. Safety Responsibility: Accept sole responsibility for safety and security at the site. Indemnify and hold harmless the OWNER and the OWNER's Authorized Representatives, including Greeley and Hansen, for any safety violation, or

noncompliance with governing bodies and their regulations, and for accidents, deaths, injuries, or damage at the site during occupancy or partial occupancy of the site by CONTRACTOR's forces while performing any part of the Work.

- D. Hazard Communication: Furnish two copies of the CONTRACTOR's Hazard Communication Program required under OSHA regulations before beginning on site activities. Furnish two copies of amendments to Hazard Communications Program as they are prepared.

### 1.3 TEMPORARY UTILITIES

- A. Water: Provide all necessary and required water without additional cost, unless otherwise specified. If necessary, provide and lay water lines to the place of use; secure all necessary permits; pay for all taps to water mains and hydrants and for all water used at the established rates.
- B. Light and Power: Provide without additional cost to the OWNER temporary lighting and power facilities required for the proper construction and inspection of the Work. If, in the ENGINEER's opinion, these facilities are inadequate, do NOT proceed with any portion of the Work affected thereby. Maintain temporary lighting and power until the Work is accepted.
- C. Heat: Provide temporary heat, whenever required, for work being performed during cold weather to prevent freezing of concrete, water pipes, and other damage to the Work or existing facilities.
- D. Sanitary Facilities: Provide sufficient sanitary facilities for construction personnel. Prohibit and prevent nuisances on the site of the Work or on adjoining property. Remove from the site any employee who violates this rule for the duration of the contract. Abide by all environmental regulations or laws applicable to the Work.
- E. Connections to Existing Utilities:
  - 1. Unless otherwise specified or indicated, make all necessary connections to existing facilities including structures, drain lines, and utilities such as water, sewer, gas, telephone, and electricity. In each case, obtain permission from the OWNER or the owning utility prior to undertaking connections. Protect facilities against deleterious substances and damage.
  - 2. Thoroughly plan in advance all connections to existing facilities. Have on hand at the time of undertaking the connections, all material, labor and required equipment. Proceed continuously to complete connections in minimum time. Arrange for the operation of valves or other appurtenances on existing utilities, under the direct supervision of the owning utility.

#### 1.4 TEMPORARY CONSTRUCTION

- A. Bridges: Design and place suitable temporary bridges where necessary for the maintenance of vehicular and pedestrian traffic. Assume responsibility for the sufficiency and safety of all such temporary work or bridges and for any damage which may result from their failure or their improper construction, maintenance, or operation. Indemnify and save harmless the OWNER and the OWNER's representatives, including Greeley and Hansen, from all claims, suits or actions, and damages or costs of every description arising by reason of failure to comply with the above provisions.

#### 1.5 BARRICADES AND ENCLOSURES

- A. Protection of Workmen and Public: Effect and maintain at all times during the prosecution of the Work, barriers and lights necessary for the protection of Workmen and the Public. Provide suitable barricades, lights, "danger" or "caution" or "street closed" signs and watchmen at all places where the Work causes obstructions to normal traffic, excavation sites, or constitutes in any way a hazard to the public.

#### 1.6 FENCES

- A. Existing Fences: Obtain written permission from the OWNER prior to relocating or dismantling fences which interfere with construction operations. Reach agreements with the fence owner as to the period the fence may be left relocated or dismantled. Install adequate gates where fencing must be maintained. Keep gates closed and locked at all times when not in use.
- B. Restoration: Restore all fences to their original or better condition and to their original location on completion of the Work.
- C. Temporary Construction Fences: Provide temporary fencing as shown and additional fencing as needed to protect the site and restrict access to the site.

#### 1.7 SECURITY

- A. Preservation of Property:
  - 1. Preserve from damage, all property along the line of the Work, in the vicinity of or in any way affected by the Work, the removal or destruction of which is not called for by the Drawings. Preserve from damage, public utilities, trees, lawn areas, building monuments, fences, pipe and underground structures, and public streets. Note: Normal wear and tear of streets resulting from legitimate use by the CONTRACTOR are not considered as damage. Whenever damages occur to such property,

immediately restore to its original condition. Costs for such repairs are incidental to the Contract.

2. In case of failure on the part of the CONTRACTOR to restore property or make good on damage or injury, the OWNER may, upon 24 hours written notice, proceed to repair, rebuild, or otherwise restore such property as may be deemed necessary, and the cost thereof will be deducted from any moneys due or which may become due the CONTRACTOR under this Contract. If removal, repair or replacement of public or private property is made necessary by alteration of grade or alignment authorized by the OWNER and not contemplated by the Contract Documents, the CONTRACTOR will be compensated, in accordance with the General Conditions, provided that such property has not been damaged through fault of the CONTRACTOR or the CONTRACTOR's employees.

B. Public Utility Installations and Structures:

1. Public utility installations and structures include all poles, tracks, pipes, wires, conduits, vaults, manholes, and other appurtenances and facilities, whether owned or controlled by public bodies or privately owned individuals, firms or corporations, used to serve the public with transportation, gas, electricity, telephone, storm and sanitary sewers, water, or other public or private utility services. Facilities appurtenant to public or private property which may be affected by the Work are deemed included hereunder.
2. The Contract Documents contain data relative to existing public utility installations and structures above and below the ground surface. Existing public utility installations and structures are indicated on the Drawings only to the extent such information was made available to, or found by, the ENGINEER in preparing the Drawings. These data are not guaranteed for completeness or accuracy, and the CONTRACTOR is responsible for making necessary investigations to become fully informed as to the character, condition, and extent of all public utility installations and structures that may be encountered and that may affect the construction operations.
3. Contact utility locating service sufficiently in advance of the start of construction to avoid damage to the utilities and delays to the completion date.
4. Remove, replace, relocate, repair, rebuild, and secure any public utility installations and structures damaged as a direct or indirect result of the Work under this Contract. Costs for such work are incidental to the Contract. Be responsible and liable for any consequential damages done to or suffered by any public utility installations or structures. Assume and accept

responsibility for any injury, damage, or loss which may result from or be consequent to interference with, or interruption or discontinuance of, any public utility service.

5. Repair or replace any water, electric, sewer, gas, or other service connection damaged during the Work with no addition to the Contract price.
  6. Take all necessary precautions to protect the electrical lines servicing the school. Be advised that the electrical line passes through the area where the construction entrance is shown to be located. In the event of breakage cooperate with the Village and ComEd to facilitate restoration of electrical service on an expedited basis.
  7. At all times in performance of the Work, employ proven methods and exercise reasonable care and skill to avoid unnecessary delay, injury, damage, or destruction to public utility installations and structures. Avoid unnecessary interference with, or interruption of, public utility services. Cooperate fully with the owners thereof to that end.
  8. Give written notice to the owners of all public utility installations and structures affected by proposed construction operations, sufficiently in advance of breaking ground in any area or on any unit of the Work, to obtain their permission before disrupting the lines and to allow them to take measures necessary to protect their interests. Advise the Chiefs of Police, Fire and Rescue Services of any excavation in public streets or the temporary shut-off of any water main. Provide at least 24 hours notice to all affected property owners whenever service connections are taken out of service.
- C. Work on Private Property: Conduct operations along rights-of-way and easements through private property to avoid damage to the property and to minimize interference with its ordinary use. Upon completion of the Work through such property, restore the surface and all fences or other structures disturbed by the construction as nearly as possible to the preconstruction conditions. Do not remove any material from private property without the consent of the property owner or responsible party in charge of such property. Save the OWNER harmless from any claim or damage arising out of or in connection with the performance of work across and through private property.
- D. Miscellaneous Structures: Assume and accept responsibility for all injuries or damage to culverts, building foundations and walls, retaining walls, or other structures of any kind met with during the prosecution of the Work. Assume and accept liability for damages to public or private property resulting therefrom. Adequately protect against freezing all pipes carrying liquid.

E. Protection of Trees and Lawn Areas:

1. Protect with boxes, trees and shrubs, except those ordered to be removed. Do not place excavated material so as to cause injury to such trees or shrubs. Replace trees or shrubs destroyed by accident or negligence of the CONTRACTOR or CONTRACTOR's employees with new stock of similar size and age, at the proper season, at no additional cost to the OWNER.
2. Leave all existing lawn areas in as good condition as before the start of the Work. Restore all existing lawn areas damaged, removed or destroyed during the Work and that are to remain lawn areas by seeding or sodding.

F. Maintenance of easement and site: Maintain the construction easement, the site area within the temporary fencing, the area between the temporary fencing and adjacent property lines, and the easement area between the temporary fencing and the easement limit. Maintenance includes mowing, weed control and trash removal. Perform maintenance on an as-needed basis, generally at least once per week.

1.8 TEMPORARY CONTROLS

A. During Construction:

1. Keep the site of the Work and adjacent premises free from construction materials, debris, and rubbish. Remove this material from any portion of the site if such material, debris, or rubbish constitutes a nuisance or is objectionable.
2. Remove from the site all surplus materials and temporary structures when they are no longer needed.
3. Neatly stack construction materials such as concrete forms and scaffolding when not in use. Promptly remove splattered concrete, asphalt, oil, paint, corrosive liquids, and cleaning solutions from surfaces to prevent marring or other damage.
4. Properly store volatile wastes in covered metal containers and remove from the site daily.
5. Do not bury or burn on the site or dispose of into storm drains, sanitary sewers, streams, or waterways, any waste material. Remove all wastes from the site and dispose of in a manner complying with applicable ordinances and laws.

B. Smoke Prevention:

1. Strictly observe all air pollution control regulations.
2. Open fires will be allowed only if permitted under current ordinances.

C. Noises:

1. Maintain acceptable noise levels in the vicinity of the Work. Limit noise production to acceptable levels by using special mufflers, barriers, enclosures, equipment positioning, and other approved methods.
2. Supply written notification to the OWNER sufficiently in advance of the start of any work which violates this provision. Proceed only when all applicable authorizations and variances have been obtained in writing.

D. Hours of Operation:

1. Operation of construction equipment between the hours of 6:00 p.m. and 7:00 a.m. the following day is prohibited. For operation of this equipment during this period obtain prior written consent from the OWNER at least 48 hours in advance of such proposed operation.
2. Do not carry out nonemergency work, including equipment moves, on Sundays without prior written authorization by the OWNER.

E. Dust Control:

1. Take measures to prevent unnecessary dust. Keep earth surfaces exposed to dusting moist with water or a chemical dust suppressant. Cover materials in piles or while in transit to prevent blowing or spreading dust.
2. Adequately protect buildings or operating facilities which may be affected adversely by dust. Protect machinery, motors, instrument panels, or similar equipment by suitable dust screens. Include proper ventilation with dust screens.

F. Temporary Drainage Provisions:

1. Provide for the drainage of stormwater and any water applied or discharged on the site in performance of the Work. Provide adequate drainage facilities to prevent damage to the Work, the site, and adjacent property.
2. Supplement existing drainage channels and conduits as necessary to carry all increased runoff from construction operations. Construct dikes as necessary to divert increased runoff from entering adjacent property (except in natural

channels), to protect the OWNER's facilities and the Work, and to direct water to drainage channels or conduits. Provide ponding as necessary to prevent downstream flooding.

3. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- G. Erosion Control: Provide erosion control in accordance with Section 02370 – Slope Protection and Erosion Control.
- H. Pollution: Prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris, and other substances resulting from construction activities. Do not permit sanitary wastes to enter any drain or watercourse other than sanitary sewers. Do not permit sediment, debris, or other substances to enter sanitary sewers. Take reasonable measures to prevent such materials from entering any drain or watercourse.

#### 1.9 TRAFFIC REGULATION

- A. Parking: See Section 01110 1.4 A.6 for project parking requirements.
- B. Traffic Restrictions: Avoid construction traffic from 7:15 am – 8:15 am, 2:00 pm – 2:45 pm, and 3:00 pm – 3:45 pm. Do not interfere with School District 135 drop off and pick up traffic, which includes both busses and passenger vehicles.
- C. Access: Conduct Work to interfere as little as possible with public travel, whether vehicular or pedestrian. Provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of public and private travel. Whenever it is necessary to cross, obstruct, or close roads, driveways, and walks, whether public or private, give reasonable notice to owners of private drives before interfering with them. Such maintenance of traffic will not be required when the CONTRACTOR has obtained permission from the owner or tenant of private property, or from the authority having jurisdiction over the public property involved, to obstruct traffic at the designated point.
- D. Unauthorized Access: Provide control of the perimeter of the site and at all fencing gates to avoid access to the site by all unauthorized individuals.

#### 1.10 FIELD OFFICES AND SHEDS

- A. CONTRACTOR's Office: Erect, furnish, and maintain a field office with a telephone. Have an authorized agent present at this office at all times while the Work is in progress. Keep readily accessible copies of the Contract Documents, required record documents, and the latest approved shop drawings at this field office.

- B. Material Sheds and Temporary Structures: Provide material sheds and other temporary structures of sturdy construction and neat appearance.
- C. Location: Coordinate location of field offices, material sheds and temporary structures with ENGINEER and OWNER.

#### 1.11 ENGINEER'S FIELD OFFICE

- A. General: Provide and maintain an ENGINEER'S field office trailer, together with all foundations, steps, landings, handrails, furniture, office equipment, computer equipment, utilities and all other appurtenances required for a complete and functional installation. Provide the ENGINEER'S trailer at the project site for the duration of the construction project. Coordinate the location of the ENGINEER'S trailer with the OWNER. Make the completed field office trailer available for occupancy by the ENGINEER no later than the first day that the CONTRACTOR is on site to begin other construction activities.
- B. Type and Size: Provide a new mobile, tandem-axle field office trailer of not less than 36-feet exterior body length and 12-feet exterior body width.
- C. Arrangement: Arrange trailer's floor plan to provide one office sized at 11'-0" x 13'-0", one washroom, one 4'-0" x 5'-0" storage room and the remainder open area. Provide a night light over each outside door. Provide privacy locks on the interior door for the washroom and passage locks for all other doors. Provide each window with an operable sash, screen and venetian blinds. Provide an electric furnace with 2-ton air conditioner complete with heating/cooling thermostat. Provide ductwork and regulator type grills in each room. Provide 100 ampere, 120/240 volt electrical service. Provide one bottled water cooler with hot and cold taps and refrigerated storage compartment of approximately one cubic foot capacity. Provide one small refrigerator with freezer. Provide ten gallons of bottled water per week. Provide one fully-equipped standard first-aid cabinet.

Provide a security alarm system that utilizes motion detection to monitor all windows and doors. Provide a battery back up for the security alarm system.

Have the field office suitably blocked or otherwise installed in accordance with local ordinances. Enclose the air space beneath the trailer with exterior grade plywood panel siding. Provide hinged access doors at utility connection area.

- D. Furnishings: Provide the following:
  - One 30-inch by 60-inch flattop desk with drawers
  - One swivel office chair
  - Eight straight-back office chairs
  - One conference table

- One four-drawer, legal-size, steel filing cabinet with locks and keys
- One plan rack with aluminum plan holders
- Two wastebaskets
- One desktop computer with 19-inch flat panel monitor, Pentium 4 processor of the fastest speed available at the time of bid, minimum 80 gigabyte hard drive, sound card, and DVD-Rom/CD-RW combination drive
- One color printer
- One fax machine
- One copier with collator, reducing capability, multi-size copies
- One power surge protector for all electronic equipment
- One digital camera compatible with desktop computer provided and with carrying case and rechargeable battery kit, memory
- One software package – preloaded into computer and fully operational with latest version of Microsoft Office Suite including Outlook, Word, and Excel
- One cell phone with photo taking capabilities for project-related communications. Pay for any initial contract fees and project related monthly charges

E. Utility Connections:

Arrange for the local power company to provide separate, complete and metered electrical service to the field office. Provide a suitable meter installation as approved. Connect the electrical service to the trailer to provide a complete operating installation. Pay each monthly power cost for the ENGINEER'S field office.

Arrange with the local telephone company to provide one incoming telephone lines for the field office fax and telephone. Provide one telephone and pay monthly telephone charge.

Arrange with the local internet service provider to provide cable modem service to the field office. Pay each monthly internet connection charge.

- F. Final Ownership: At the completion of construction, the computer equipment will become the property of the OWNER. The trailer and all other furnishings shall remain the property of the CONTRACTOR.

## PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

(NO TEXT FOR THIS PAGE)

SECTION 01600  
MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Description
- B. Substitutions
- C. Manufacturer's Written Instructions
- D. Transportation and Handling
- E. Storage, Protection and Maintenance

1.2 DESCRIPTION

- A. Proposed Manufacturers List: Within 15 calendar days of the date of the Notice to Proceed, submit to the ENGINEER a list of the names of proposed manufacturers, materialmen, suppliers and subcontractors, obtain approval of this list by OWNER prior to submission of any shop drawings. Upon request submit evidence to ENGINEER that each proposed manufacturer has manufactured a similar product to the one specified and that it has previously been used for a like purpose for a sufficient length of time to demonstrate its satisfactory performance.
- B. Furnish and install Material and Equipment which meets the following:
  - 1. Conforms to applicable specifications and standards.
  - 2. Complies with size, make, type, and quality specified or as specifically approved, in writing, by ENGINEER.
  - 3. Will fit into the space provided with sufficient room for operation and maintenance access and for properly connecting piping, ducts and services, as applicable. Make the clear spaces that will be available for operation and maintenance access and connections equal to or greater than those shown and meeting all the manufacturers' requirements. Make all provisions for installing equipment furnished at no increase in Contract Price.
  - 4. Manufactured and fabricated in accordance with the following:

- a. Design, fabricate, and assemble in accordance with best engineering and shop practices.
  - b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
  - c. Provide two or more items of same kind identical, by same manufacturer.
  - d. Provide materials and equipment suitable for service conditions.
  - e. Adhere to equipment capabilities, sizes, and dimensions shown or specified unless variations are specifically approved, in writing, in accordance with the Contract Documents.
  - f. Adapt equipment to best economy in power consumption and maintenance. Proportion parts and components for stresses that may occur during continuous or intermittent operation, and for any additional stresses that may occur during fabrication or installation.
  - g. Working parts are readily accessible for inspection and repair, easily duplicated and replaced.
5. Use material or equipment only for the purpose for which it is designed or specified.

### 1.3 SUBSTITUTIONS

#### A. Substitutions:

- 1. CONTRACTOR'S requests for changes in equipment and materials from those required by the Contract Documents are considered requests for substitutions and are subject to CONTRACTOR'S representations and review provisions of the Contract Documents when one of following conditions are satisfied:
  - a. Where request is directly related to an "or equal" clause or other language of same effect in Specifications.
  - b. Where required equipment or material cannot be provided within Contract Time, but not as result of CONTRACTOR'S failure to pursue Work promptly or to coordinate various activities properly.

- c. Where required equipment or material cannot be provided in manner compatible with other materials of Work, or cannot be properly coordinated therewith.

2. CONTRACTOR'S Options:

- a. Where more than one choice is available as options for CONTRACTOR'S selection of equipment or material, select option compatible with other equipment and materials already selected (which may have been from among options for other equipment and materials).
- b. Where compliance with specified standard, code or regulation is required, select from among products which comply with requirements of those standards, codes, and regulations.
- c. "Or Equal": For equipment or materials specified by naming one or more equipment manufacturer and "or equal", submit request for substitution for any equipment or manufacturer not specifically named.

B. Conditions Which are Not Substitution:

- 1. Requirements for substitutions do not apply to CONTRACTOR options on materials and equipment provided for in the Specifications.
- 2. Revisions to Contract Documents, where requested by OWNER or ENGINEER, are "changes" not "substitutions".
- 3. CONTRACTOR'S determination of and compliance with governing regulations and orders issued by governing authorities do not constitute substitutions and do not constitute basis for a Change Order, except as provided for in Contract Documents.

1.4 MANUFACTURER'S WRITTEN INSTRUCTIONS

- A. Instruction Distribution: When the Contract Documents require that installation, storage, maintenance and handling of equipment and materials comply with manufacturer's written instructions, obtain and distribute printed copies of such instructions to parties involved in installation, including six copies to ENGINEER.
  - 1. Maintain one set of complete instructions at jobsite during storage and installation, and until completion of work.

B. Manufacturer's Requirements: Store, maintain, handle, install, connect, clean, condition, and adjust products in accordance with manufacturer's written instructions and in conformity with Specifications.

1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult ENGINEER for further instructions.
2. Do not proceed with work without written instructions.

C. Performance Procedures: Perform work in accordance with manufacturer's written instructions. Do not omit preparatory steps or installation procedures, unless specifically modified or exempted by Contract Documents.

#### 1.5 TRANSPORTATION AND HANDLING

A. Coordination with Schedule: Arrange deliveries of materials and equipment in accordance with Construction Progress Schedules. Coordinate to avoid conflict with work and conditions at site.

1. Deliver materials and equipment in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
2. Protect bright machined surfaces, such as shafts and valve faces, with a heavy coat of grease prior to shipment.
3. Immediately upon delivery, inspect shipments to determine compliance with requirements of Contract Documents and approved submittals and that material and equipment are protected and undamaged.

B. Handling: Provide equipment and personnel to handle material and equipment by methods recommended by manufacturer to prevent soiling or damage to materials and equipment or packaging.

#### 1.6 STORAGE, PROTECTION, AND MAINTENANCE

A. On-site storage areas and buildings:

1. Conform storage buildings to requirements of Section 01500.
2. Coordinate location of storage areas with ENGINEER and OWNER.
3. Arrange on site storage areas for proper protection and segregation of stored materials and equipment with proper drainage. Provide for safe travel around storage areas and safe access to stored materials and equipment.

4. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
5. Store materials such as pipe, reinforcing and structural steel, and equipment on pallets, blocks or racks, off ground.
6. Store fabricated materials and equipment above ground, on blocking or skids, to prevent soiling or staining. Cover materials and equipment which are subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.

B. Interior Storage:

1. Store materials and equipment in accordance with manufacturer's instructions, with seals and labels intact and legible.
2. Store materials and equipment, subject to damage by elements, in weatheright enclosures.
3. Maintain temperature and humidity within ranges required by manufacturer's instructions.

C. Accessible Storage: Arrange storage in a manner to provide easy access for inspection and inventory. Make periodic inspections of stored materials or equipment to assure that materials or equipment are maintained under specified conditions and free from damage or deterioration.

1. Perform maintenance on stored materials of equipment in accordance with manufacturer's instructions, in presence of OWNER or ENGINEER.
2. Submit a report of completed maintenance to ENGINEER with each Application for Payment.
3. Failure to perform maintenance, to notify ENGINEER of intent to perform maintenance or to submit maintenance report may result in rejection of material or equipment.

D. OWNER'S Responsibility: OWNER assumes no responsibility for materials or equipment stored in buildings or on-site. CONTRACTOR assumes full responsibility for damage due to storage of materials or equipment.

E. CONTRACTOR'S Responsibility: CONTRACTOR assumes full responsibility for protection of completed construction. Repair and restore damage to completed Work equal to its original condition.

- F. Special Equipment: Use only rubber tired wheelbarrows, buggies, trucks, or dollies to wheel loads over finished floors, regardless if the floor has been protected or not. This applies to finished floors and to exposed concrete floors as well as those covered with composition tile or other applied surfacing.
- G. Surface Damage: Where structural concrete is also the finished surface, take care to avoid marking or damaging surface.

## PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01722  
LINES AND GRADES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General
- B. Surveys
- C. Datum Plane
- D. Protection of Survey Data

1.2 GENERAL

- A. Construct all work in accordance with the lines and grades shown on the Drawings. Assume full responsibility for keeping all alignment and grade.

1.3 SURVEYS

- A. Control Points: Base horizontal and vertical control points will be established or designated by the ENGINEER and used as datum for the Work. Perform all additional survey, layout, and measurement work.
  - 1. Keep ENGINEER informed, sufficiently in advance, of the times and places at which work is to be performed so that base horizontal and vertical control points may be established and any checking deemed necessary by ENGINEER may be done, with minimum inconvenience to the ENGINEER and at no delay to CONTRACTOR. It is the intention not to impede the Work for the establishment of control points and the checking of lines and grades set by the CONTRACTOR. However, when necessary, suspend working operations for such reasonable time as the ENGINEER may require for this purpose. Costs associated with such suspension are deemed to be included in the Contract Price, and no time extension or additional costs will be allowed.
  - 2. Provide an experienced survey crew including an instrument operator, competent assistants, and any instruments, tools, stakes, and other materials required to complete the survey, layout, and measurement of work performed by the CONTRACTOR.

#### 1.4 DATUM PLANE

- A. All elevations indicated or specified refer to the Mean Sea Level Datum Plane, 1929 General Adjustment, of the United States Coast and Geodetic Survey and are expressed in feet and decimal parts thereof, or in feet and inches.

#### 1.5 PROTECTION OF SURVEY DATA

- A. General: Safeguard all points, stakes, grade marks, known property corners, monuments, and bench marks made or established for the Work. Reestablish them if disturbed, and bear the entire expense of checking reestablished marks and rectifying work improperly installed.
- B. Records: Keep neat and legible notes of measurements and calculations made in connection with the layout of the Work. Furnish copies of such data to the ENGINEER for use in checking the CONTRACTOR's layout. Data considered of value to the OWNER will be transmitted to the OWNER by the ENGINEER with other records on completion of the Work.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01732  
CUTTING AND PATCHING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General Requirements
- B. Scheduling of Shutdown

1.2 GENERAL REQUIREMENTS

- A. Coordination: Perform all cutting, fitting or patching of the Work that may be required to make the several parts thereof join in accordance with the Contract Documents. Perform restoration with competent workmen skilled in the trade.
- B. Improperly Timed Work: Perform all cutting and patching required to install improperly timed work, to remove samples of installed materials for testing, and to provide for alteration of existing facilities or for the installation of new Work in the existing construction.
- C. Limitations: Except when the cutting or removal of existing construction is specified or indicated, do not undertake any cutting or demolition which may affect the structural stability of the Work or existing facilities without the ENGINEER's concurrence.

1.3 SCHEDULING OF SHUTDOWN

- A. Connections to Existing Facilities: If any connections, replacement, or other work requiring the shutdown of an existing facility is necessary, schedule such work at times when the impact on the OWNER's normal operation is minimal. Overtime, night and weekend work without additional compensation from the OWNER, may be required to make these connections, especially if the connections are made at times other than those specified.
- B. Request for Shutdowns: Submit a written request for each shutdown to the OWNER and the ENGINEER sufficiently in advance of any required shutdown.

PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Safeguards: Provide all bracing, supports, and protective devices necessary to safeguard all work and existing facilities during cutting and patching operations.
- B. Location of Embedments: Employ impulse radar (non x-ray type) nondestructive testing prior to core drilling or cutting of existing walls, floors and ceilings to identify location of embedded pipes or conduits.
- C. Material Removal: Cut and remove all materials to the extent shown or as required to complete the Work. Remove materials in a careful manner with no damage to adjacent facilities. Remove materials which are not salvageable from the site.

### 3.2 RESTORATION

- A. Final Appearance and Finish: Restore all work and existing facilities affected by cutting operations, with new materials, or with salvaged materials acceptable to the ENGINEER, to obtain a finished installation with the strength, appearance, and functional capacity required. If necessary, patch and refinish entire surfaces.

END OF SECTION

## SECTION 01740

### CLEANING

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Final Cleaning
- B. Final Inspection

##### 1.2 FINAL CLEANING

- A. Requirements: At the completion of work and immediately prior to final inspection, clean the entire project as follows:
  - 1. Thoroughly clean, sweep and wash, all work provided under the Contract. Leave the structures and site in a complete and finished condition to the satisfaction of the ENGINEER.
  - 2. Direct all subcontractors to similarly perform, at the same time, an equivalent thorough cleaning of all work and equipment provided under their contracts.
  - 3. Remove all temporary structures and all debris, including dirt, sand, gravel, rubbish and waste material.
  - 4. Should the CONTRACTOR not remove rubbish or debris or not clean the buildings and site as specified above, the OWNER reserves the right to have the cleaning done at the expense of the CONTRACTOR.
- B. Employ experienced workers, or professional cleaners, for final cleaning.
- C. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- D. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
- E. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior finished surfaces.

- F. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.
- G. Remove snow and ice from access to buildings.
- H. Handle materials in a controlled manner with as few handlings as possible. Do not drop or throw materials from heights.
- I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on previously cleaned surfaces.
- J. Perform touch-up painting.
- K. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.
- L. Remove erection plant, tools, temporary structures and other materials.
- M. Remove and dispose of all water, dirt, rubbish or any other foreign substances.

### 1.3 FINAL INSPECTION

- A. After cleaning is complete the final inspection may be scheduled. The inspection will be done with the OWNER and ENGINEER.

## PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01789  
CONTRACT CLOSE OUT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Warranties and Bonds
- B. Record Drawings

1.2 WARRANTIES AND BONDS

Prior to final payment deliver to the OWNER the original and one copy of all bonds, warranties, guarantees and similar documents, including those customarily provided by manufacturers and suppliers which cover a period greater than the one year correction period. Show OWNER as beneficiary of these documents.

1.3 AS-BUILT DRAWINGS

At the site keep and maintain one record copy of all Contract Documents, reference documents and all technical documents submitted in good order. On mylar tracing media, and using drafting symbols and standards consistent with the original documents, annotate Contract Drawings to show all changes made during the construction period. Annotated drawings are to be made available to ENGINEER for reference at all times.

At completion of the CONTRACT and before final payment is made, deliver to the ENGINEER one set of clearly readable, reproducible Contract Drawings reflecting all changes made during construction. Mark each drawing "As-Built Drawing" in ink.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

(NO TEXT FOR THIS PAGE)

## SECTION 02220

### DEMOLITION

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: All work necessary for the removal and disposal of drainage structures, piping, sidewalks, paving and roadways, or any part thereof including masonry, steel, reinforced concrete, plain concrete, and any other material or equipment shown or specified to be removed.
- B. Basic Procedures and Schedule: Carry out demolition so that adjacent structures, which are to remain, are not endangered. Schedule the work so as not to interfere with the day to day operation of the existing facilities. Do not block doorways or passageways in existing facilities.
- C. Additional Requirements: Provide dust control and make provisions for safety.

##### 1.2 SUBMITTALS

- A. Provide all submittals, including the following, as specified in Division 1.
- B. Site Inspection: Visit the site and inspect all existing structures. Observe and record any defects which may exist in buildings or structures adjacent to but not directly affected by the demolition work. Provide the OWNER with a copy of this inspection record and obtain the OWNER's approval prior to commencing the demolition.

##### 1.3 QUALITY ASSURANCE

- A. Limits: Exercise care to break concrete well for removal in reasonably small masses. Where only parts of a structure are to be removed, cut the concrete along limiting lines with a suitable saw so that damage to the remaining structure is held to a minimum.

#### PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

### 3.1 EXAMINATION OF EXISTING DRAWINGS

- A. Drawings of existing structures and equipment will be available for inspection at the office of the OWNER.

### 3.2 PROTECTION

- A. General Safety: Provide warning signs, protective barriers, and warning lights as necessary adjacent to the work as approved or required. Maintain these items during the demolition period.
- B. Existing Services: Undertake no demolition work until all mechanical and electrical services affected by the work have been properly disconnected. Cap, reroute or reconnect interconnecting piping or electrical services that are to remain in service either permanently or temporarily in a manner that will not interfere with the operation of the remaining facilities.
- C. Hazards: Perform testing and air purging where the presence of hazardous chemicals, gases, flammable materials or other dangerous substances is apparent or suspected, and eliminate the hazard before demolition is started.

### 3.3 DEMOLITION REQUIREMENTS

- A. Explosives: The use of explosives will not be permitted.
- B. Protection: Carefully protect all mechanical and electrical equipment against dust and debris.
- C. Removal: Remove all debris from the structures during demolition and do not allow debris to accumulate in piles.
- D. Access: Provide safe access to and egress from all working areas at all times with adequate protection from falling material.
- E. Protection: Provide adequate scaffolding, shoring, bracing railings, toe boards and protective covering during demolition to protect personnel and equipment against injury or damage.
- F. Lighting: Provide adequate lighting at all times during demolition.
- G. Closed Areas: Close areas below demolition work to anyone while removal is in progress.

- H. Material Drops: Do not drop any material to any point lying outside the exterior walls of the structure unless the area is effectively protected.

#### 3.4 DISPOSAL OF MATERIALS

- A. Final Removal: Remove all debris, rubbish, scrap pieces, equipment, and materials resulting from the demolition unless otherwise indicated. Take title to all demolished materials and remove such items from the site.

END OF SECTION

(NO TEXT FOR THIS PAGE)

## SECTION 02230

### SITE CLEARING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Requirements for clearing of all areas within the Contract limits and other areas shown, including work designated in permits and other agreements, in accordance with the requirements of Division 1.

##### 1.2 DEFINITIONS

- A. Clearing: Clearing is the removal from the ground surface and disposal, within the designated areas, of trees, brush, shrubs, down timber, decayed wood, other vegetation, rubbish and debris as well as the removal of fences.
- B. Grubbing: Grubbing is the removal and disposal of all stumps, buried logs, roots larger than 2 inches, matted roots and organic materials.

#### PART 2 MATERIALS

Not Used

#### PART 3 EXECUTION

##### 3.1 TREE REMOVAL

- A. Tree Removal Within Property Limits: Remove trees and shrubs within the property limits unless otherwise indicated.
  - 1. Remove trees and shrubs to avoid damage to trees and shrubs designated to remain.
  - 2. Grub and remove tree stumps and shrubs felled within the property limits to an authorized disposal site. Fill depressions created by such removal with material suitable for backfill as specified in Section 02317.
- B. Tree Removal Outside Property Limits: Do not cut or damage trees outside the property limits unless shown to be removed or unless written permission has been obtained from the property owner. Furnish three copies of the written permission before removal operations commence.

### 3.2 TREES AND SHRUBS TO BE SAVED

- A. Protection: Protect trees and shrubs within the construction site that are so delineated or are marked in the field to be saved from defacement, injury and destruction.
1. Work within the limits of the tree drip line with extreme care using either hand tools or equipment that will not cause damage to trees.
    - a. Do not disturb or cut roots unnecessarily. Do not cut roots 2 inches and larger unless approved.
    - b. Immediately backfill around tree roots after completion of construction in the vicinity of trees.
    - c. Do not operate any wheeled or tracked equipment within drip line.
  2. Protect vegetation from damage caused by emissions from engine-powered equipment.
  3. During working operations, protect the trunk, foliage and root system of all trees to be saved with boards or other guards placed as shown and as required to prevent damage, injury and defacement.
    - a. Do not pile excavated materials within the drip line or adjacent to the trunk of trees.
    - b. Do not allow runoff to accumulate around trunk of trees.
    - c. Do not fasten or attach ropes, cables, or guy wires to trees without permission. When such permission is granted, protect the tree before making fastening or attachments by providing burlap wrapping and softwood cleats.
    - d. The use of axes or climbing spurs for trimming will not be permitted.
    - e. Provide climbing ropes during trimming.
  4. Remove shrubs to be saved, taking a sufficient earth ball with the roots to maintain the shrub.
    - a. Temporarily replant if required, and replace at the completion of construction in a condition equaling that which existed prior to removal.

- b. Replace in kind if the transplant fails. Provide transplanting, planting, and watering and guarantee as specified in Section 02900.
- 5. Have any tree and shrub repair performed by a tree surgeon properly licensed by the State in which the Work is constructed and within 24 hours after damage occurred.

### 3.3 CLEARING AND GRUBBING

- A. Clearing: Clear all items specified to the limits shown and remove cleared and grubbed materials from the site.
  - 1. Do not start earthwork operations in areas where clearing and grubbing is not complete, except that stumps and large roots may be removed concurrent with excavation.
  - 2. Comply with erosion, sediment control and storm management measures as specified in Division 1.
- B. Grubbing: Clear and grub areas to be excavated, areas receiving less than 3 feet of fill and areas upon which structures are to be constructed.
  - 1. Remove stumps and root mats in these areas to a depth of not less than 1 foot below the subgrade of sloped surfaces.
  - 2. Fill all depressions made by the removal of stumps or roots with material suitable for backfill as specified in Section 02317.
- C. Limited Clearing: Clear areas receiving more than 3 feet of fill by cutting trees and shrubs as close as practical to the existing ground. Grubbing will not be required.

### 3.4 TOPSOIL

- A. Stripping: Strip existing topsoil from areas that will be excavated or graded prior to commencement of excavating or grading and place in well-drained stockpiles in approved locations. Arrange and pay for an offsite storage area if required.

END OF SECTION

(NO TEXT FOR THIS PAGE)

SECTION 02251  
TIEBACK SHEETING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Work required for general protection of an excavation or structure through use of tieback sheeting consisting of soldier piles and wood lagging, and soil anchor tiebacks to retain earth adjacent to the excavation in place.

1.2 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Tieback Sheetting Shop Drawings: Submit complete design calculations and working drawings showing the proposed method of tieback sheeting support. Include the following:
1. Evidence of successful completion of a least five generally similar projects using tieback sheeting and a minimum of five years experience in tieback sheeting work
  2. Lists of materials to be used
  3. Sequence of operations
  4. Sufficient number of detailed sections to clearly illustrate the scope of work
  5. Drawings showing the relationship of the soldier piles, lagging, walers, and soil anchors to the existing pumping station, other structures, utilities, streets, and new construction. Provide actual utility locations as located by the responsible agencies. Show the 24 and 36-inch water mains as located in the field.
- C. The sole responsibility for the design, methods of installation, and adequacy of the sheeting and tieback system shall be and shall remain that of the CONTRACTOR. The shop drawings will not be checked by the ENGINEER but reviewed to ensure that the procedures outlined have been followed.
- D. Certifications: Submit a CERTIFICATION, signed and sealed by a Licensed Structural Engineer qualified to perform structural engineering of this nature and registered in the State of Illinois, that certifies that the Licensed Structural

Engineer has evaluated and approved the CONTRACTOR's excavation plan and has prepared complete design calculations and working drawings for the tieback sheeting system, which will be used for excavation support. Provide a separate CERTIFICATION, identifying the applicable excavation, for each excavation before starting the excavation.

- E. Tieback records: Submit accurate records for each tieback showing the length of the installed tieback and grout bulb, volume of grout placed, variations in grout pressure, angle of inclination of the tieback, and results of performance and proof tests including tieback stress and elongation.

### 1.3 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. All Federal, State and local laws and regulations applying to the design and construction of tieback sheeting.
  - 2. National Bureau of Standards Building Science Series 127 "Recommended Technical Provisions for Construction Practice in Shoring and Sloping Trenches and Excavations."

### 1.4 DESIGN REQUIREMENTS

- A. Design the tieback sheeting system, including all component members, to safely support the required earth pressures and traffic and construction loads, including the CONTRACTOR's machinery and equipment, without objectionable deflections of the members or settlement or cracking of nearby structures, pavement, or grade.
  - 1. Prior to execution of the work, survey the condition of adjoining properties jointly with the OWNER. Take photographs and keep records of any prior settlement or cracking of structures, pavements, and the like, that may become the subject of possible damage claims.
  - 2. Locate sheeting and tiebacks to be clear of all permanent construction, allow foundation work, underdrain system, piping and utilities to be installed without obstruction, and permit the proper forming and finishing of concrete surfaces.

## PART 2 PRODUCTS

### 2.1 GENERAL

- A. Use manufacturers and materials for shoring, soldier piles, walers, soil anchor tiebacks and bracing as recommended by the CONTRACTOR's Licensed Structural Engineer who designed the tieback sheeting system.

### 2.2 MATERIALS

- A. Wood Lagging: Where wood lagging is to be left in place use oak or treated fir or treated pine. Use only environmentally safe treatment for wood lagging.

## PART 3 EXECUTION

### 3.1 GENERAL SHORING, SHEETING AND BRACING INSTALLATION

- A. General: Provide safe working conditions, prevent shifting of material, prevent damage to structures or other work, and avoid delay to the work, all in accordance with applicable laws and regulations. Properly brace all excavations that are not cut back to the proper slope, as determined by the CONTRACTOR's Licensed Structural Engineer.
  - 1. Take sole responsibility for the design and adequacy of the tieback sheeting system.
  - 2. Take sole responsibility for the methods of installation of the tieback sheeting system.
- B. Arrange tieback sheeting so as not to place any strain on portions of completed work until the general construction has proceeded far enough to provide ample strength.
- C. If the CONTRACTOR or its Licensed Structural Engineer is of the opinion that at any time the CONTRACTOR's excavation plan, shoring, sheeting or bracing is inadequate or unsuited for the purpose, take immediate and appropriate action. Provide a new CERTIFICATE if the CONTRACTOR's excavation plans and tieback sheeting require modifications.
- D. Accurately locate all underground utilities and take the required measures necessary to protect them from damage. All underground utilities shall be kept in service at all times as specified in Division 1.
- E. Sheeting left in place: For sheeting left in place, relieve tieback pre-stress forces at each level as backfilling is completed to that level. Remove the top portion of the

soldier piles and lagging to at least 5 feet below finished grade unless otherwise approved.

- F. Removal of tieback sheeting: For sheeting to be removed, obtain permission from the CONTRACTOR's Licensed Structural Engineer before the removal of any tieback sheeting. Retain the responsibility for injury to structures or to other property or persons for failure to leave such tieback sheeting in place even though permission for removal has been obtained. Remove tieback sheeting as the excavation is refilled in a manner to avoid the caving in of the bank or disturbance to adjacent areas or structures or pipe bedding.

1. Carefully fill voids left by the withdrawal of the tieback sheeting. No separate payment will be made for the filling of such voids.
2. If pipe bedding is disturbed, re-compact it to meet specified density requirements.

### 3.2 TIE-BACK SHEETING INSTALLATION

- A. Soldier Piles: Set soldier piles in augured holes and fill holes with concrete below the level of the intended excavation. Do not use driven piles.
- B. Soil Anchor Tiebacks: Install tiebacks at the elevations indicated on the CONTRACTOR's working drawings. Successfully test tiebacks before the excavation is taken to a greater depth. Do not extend tiebacks beyond adjacent property lines except where shown.
- C. Wood Lagging: Place wood lagging to closely follow the progress of excavation. Install lagging supported tight against the face of the excavation and with joints sufficiently close to prevent loss of soil. Fill any voids behind the sheeting with grout or granular material.
- D. Coordinate the schedule and progress of the sheeting and tieback work with all other related work such as dewatering; excavation; underdrain, piping and utilities installation; placing of concrete walls and slabs; or any other operations that might be affected by this work.

### 3.3 FIELD QUALITY CONTROL

- A. Soil Anchor Tieback Testing: Perform performance testing on a minimum of 6 tiebacks and proof test all other tiebacks.
- B. Performance Testing: Incrementally load and unload the tieback in accordance with the following schedule. At each increment, record the movement of the end of the tieback with a dial indicator that will read accurately to 0.001 inches and maintain the load until the rate of movement is clearly approaching zero and the

change in the last five-minute interval is less than 0.01 inches. Use the following load increments for performance testing (read in column format):

0 tons	0.25 D.L.	0.75 D.L.
3 tons	0.50 D.L.	0.50 D.L.
0.25 D.L.	0.75 D.L.	0.25 D.L.
3 tons	1.00 D.L.	3 tons
0.25 D.L.	0.75 D.L.	0.25 D.L.
0.50 D.L.	0.50 D.L.	0.50 D.L.
0.25 D.L.	0.25 D.L.	0.75 D.L.
3 tons	3 tons	1.00 D.L.
0.25 D.L.	0.25 D.L.	1.20 D.L.
0.50 D.L.	0.50 D.L.	1.50 D.L.
0.75 D.L.	0.75 D.L.	1.20 D.L.
0.50 D.L.	1.00 D.L.	1.00 D.L.
0.25 D.L.	1.20 D.L.	0.75 D.L. Lock-Off Load
3 tons	1.00 D.L.	

Where:

D.L. = Design Load

Lock-Off Load = Load on the jacks which is maintained while the nuts on the tiebacks are tightened

- C. Proof Testing: Incrementally load the tieback in accordance with the following schedule. At each increment, record the movement of the end of the tieback with a dial indicator that will read accurately to 0.001 inches and maintain the load until the rate of movement is clearly approaching zero and the change in the last five-minute interval is less than 0.01 inches. Use the following load increments for proof testing:

0 tons  
0.25 D.L.  
0.50 D.L.  
0.75 D.L.  
1.00 D.L.  
1.20 D.L.  
1.00 D.L.  
0.75 D.L. Lock-Off Load

- D. Test Failure: If a tieback cannot be successfully tested to the loads required in the schedules, incorporate the tieback into the sheeting using one-half of the load which it will hold without continuous movement. Install additional tiebacks to account for the difference between the design loads and the reduced capacities of the tested tiebacks.

- E. Monitoring: Periodically monitor horizontal and vertical deflections of sheeting, shoring and bracing. Independent monitoring will also be performed by the OWNER. Install additional ties in the event of movement of the retained earth.
- F. Inclinometers: The testing agency (hired by the OWNER) will install five (5) inclinometers along the line of sheeting and in the general vicinity of the pump station. Cooperate with the OWNER's test agency to facilitate installation of the inclinometers. The testing agency will monitor the movement of the sheeting during construction using the inclinometers on a periodic basis. Take prompt corrective measures when excessive movement is detected as reported by the testing agency.

END OF SECTION

## SECTION 02316

### EXCAVATION

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Requirements for performing opencut excavations to the widths and depths necessary for constructing structures, pipelines and conduits including excavation of any material necessary for any purpose pertinent to the construction of the Work.

##### 1.2 DEFINITIONS

- A. Earth: "Earth" includes all materials which, in the opinion of the ENGINEER, do not require blasting, barring, or wedging for their removal from their original beds. Specifically excluded are all ledge and bedrock and boulders or pieces of masonry larger than one cubic yard in volume.

##### 1.3 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Dewatering Excavation Plan: Develop an excavation dewatering plan that considers site ground and groundwater conditions, the type and arrangement of the equipment to be used and the proper method of groundwater disposal. Prepare the dewatering plan before beginning excavations below groundwater. Maintain one copy of the dewatering plan at the project site to be available for inspection while all dewatering operations are underway.

##### 1.4 SITE CONDITIONS

- A. Geotechnical Investigation: A geotechnical investigation and report was prepared by Ground Engineering Consultants, Inc. and was intended only for use by the OWNER and ENGINEER in preparing the Contract Documents.
  - 1. The geotechnical investigation report may be examined for what ever value it may be considered to be worth. However, this information is not guaranteed as to its accuracy or completeness.
  - 2. The geotechnical investigation report is not part of the Contract Documents.

- B. Actual Conditions: Make any geotechnical investigations deemed necessary to determine actual site conditions.
- C. Underground Utilities: Locate and identify all existing underground utilities prior to the commencement of Work.
- D. Quality and Quantity: Make any other investigations and determinations necessary to determine the quality and quantities of earth and rock and the methods to be used to excavate these materials.

## PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

### 3.1 GENERAL

- A. Clearing: Clear opencut excavation sites of obstructions preparatory to excavation. Clearing in accordance with Section 02230, includes removal and disposal of vegetation, trees, stumps, roots and bushes, except those specified to be protected during trench excavation.
- B. Banks: Shore or slope banks to the angle of repose to prevent slides or cave-ins in accordance with Section 02251.
- C. Hazardous Materials: If hazardous materials not specifically shown or noted are encountered, proceed in accordance with General Conditions Article 4.06, Hazardous Environmental Condition at Site.

### 3.2 STRUCTURE EXCAVATION

- A. Excavation Size: Provide excavations of sufficient size and only of sufficient size to permit the Work to be economically and properly constructed in the manner and of the size specified.
- B. Excavation Shape: Shape and dimension the bottom of the excavation to the shape and dimensions of the underside of the structure or drainage blanket wherever the nature of the excavated material permits.
- C. Compaction: Before placing foundation slabs, footings or backfill, proof roll the bottom of the excavations to detect soft spots.

1. For accessible areas, proof roll with a ten wheel tandem axle dump truck loaded to at least 15 tons or similarly loaded construction equipment.
2. For small areas, proof roll with a smooth-faced steel roller filled with water or sand, or compact with a mechanical tamper.
3. Make one complete coverage, with overlap, of the area.
4. Overexcavate soft zones and replace with compacted select fill in accordance with Section 02316.

### 3.3 TRENCH EXCAVATION

- A. Preparation: Properly brace and protect trees, shrubs, poles and other structures which are to be preserved. Unless shown or specified otherwise, preserve all trees and large shrubs. Hold damage to the root structure to a minimum. Small shrubs may be preserved or replaced with equivalent specimens.
- B. Adequate Space: Keep the width of trenches to a minimum, however provide adequate space for workers to place, joint and backfill the pipe properly.
  1. Do not allow the clear width of the trench at the level of the top of the pipe to exceed the sum of the outside diameter of the pipe barrel plus 20 inches for pipe 4 through 24 inches in diameter nor the outside diameter of the pipe barrel plus 2 feet for pipe more than 24 inches in diameter, unless otherwise approved.
  2. In sheeted trenches, measure the clear width of the trench at the level of the top of the pipe to the inside of the sheeting.
  3. Should the maximum trench widths specified above be exceeded without written approval, provide concrete cradle or encasement for the pipe as directed. No separate payment will be made for such concrete cradle or encasement.
- C. Depth: Excavate trenches to a minimum depth of 6 inches below the bottom of the pipe or the bottom of encasement for electrical ducts, unless otherwise shown, specified or directed, so that bedding material can be placed in the bottom of the trench and shaped to provide a continuous, firm bearing for duct encasement, pipe barrels and bells.
- D. Unstable Materials: If unstable material is exposed at the level of the bottom of the trench excavation, excavate the material in accordance with the subsection headed "Authorized Additional Excavation".

1. When in the judgment of the ENGINEER the unstable material extends to an excessive depth, the ENGINEER may advise, in writing, the need for stabilization of the trench bottom with additional select fill material or a crushed stone or gravel mat or the need to provide firm support for the pipe or electrical duct by other suitable methods.
  2. Payment for such trench stabilization will be made under the appropriate Contract Items or where no such items exist, as a change in the Work.
- E. Length of Excavation: Keep the open excavated trench preceding the pipe or electrical duct laying operation and the unfilled trench, with pipe or duct in place, to a minimum length which causes the least disturbance. Provide ladders for a means of exit from the trench as required by applicable safety and health regulations.
- F. Water: Allow no water to rise in the trench excavation until sufficient backfill has been placed to prevent pipe or duct flotation.

#### 3.4 SHORT TUNNEL EXCAVATION

- A. Short Tunnel Requirements: In some instances, trees, shrubs, utilities, sidewalks and other obstructions may be encountered, the proximity of which may be a hindrance to open-cut trench excavation. In such cases, excavate by means of short tunnels in order to protect such obstructions against damage.
1. Construct the short tunnel by hand, auger or other approved method approximately 6 inches larger than the diameter of pipe bells or outer electrical duct encasement.
  2. Consider such short tunnel work incidental to the construction of pipelines or conduits and all appurtenances. The need for short tunnels will not be grounds for additional payment.

#### 3.5 FINISHED EXCAVATION

- A. Finish: Provide a reasonably smooth finished surface for all excavations, which is uniformly compacted and free from irregular surface changes.
- B. Finish Methods: Provide a degree of finish which is ordinarily obtainable from blade-grade operations, except as otherwise specified in Section 02317.

#### 3.6 PROTECTION

- A. Traffic and Erosion: Protect newly graded areas from traffic and from erosion.

- B. Repair: Repair any settlement or washing away that may occur from any cause, prior to acceptance. Re-establish grades to the required elevations and slopes.
- C. Other Requirements: Conduct all Work in accordance with the environmental protection requirements specified in Division 1.

### 3.7 AUTHORIZED ADDITIONAL EXCAVATION

- A. Additional Excavation: Carry the excavation to such additional depth and width as authorized in writing, for the following reasons:
  - 1. In case the materials encountered at the elevations shown are not suitable.
  - 2. In case it is found desirable or necessary to go to an additional depth, or to an additional depth and width.
- B. Refill Materials: Refill such excavated space with either authorized Class D concrete or compacted select fill material.
- C. Compaction: Where necessary, compact fill materials to avoid future settlement.
- D. Payment: Additional earth excavations so authorized and concrete or select fill materials authorized for filling such additional excavation and compaction of select fill materials will be paid for under the appropriate Contract Items or where no such items exist, as a change in the Work.

### 3.8 UNAUTHORIZED EXCAVATION

- A. Stability: Refill any excavation carried beyond or below the lines and grades shown, except as specified in the subsection headed "Authorized Additional Excavation", with such material and in such manner as may be approved in order to provide for the stability of the various structures.
- B. Refill Materials: Refill spaces beneath all manholes, structures, pipelines, or conduits excavated without authority with Class D concrete or compacted select fill material, as approved.
- C. Payment: Refill for unauthorized excavation will not be measured and no payment will be made therefor.

### 3.9 SEGREGATION STORAGE AND DISPOSAL OF MATERIAL

- A. Stockpiling Suitable Materials: Stockpile topsoil suitable for final grading and landscaping and excavated material suitable for backfilling or embankments separately on the site and within the construction easement.
- B. Stockpile Locations: Store excavated and other material a sufficient distance away from the edge of any excavation to prevent its falling or sliding back into the excavation and to prevent collapse of the wall of the excavation. Provide not less than 2 feet clear space between the top of any stockpile and other material and the edge of any excavation. Stockpile suitable backfill and topsoil within the construction easement designated stockpile area and provide off-site stockpile storage locations as needed. Arrange and pay for off-site stockpile storage locations as may be necessary.
- C. Excess Materials: Transport and dispose of surplus excavated material and excavated material unsuitable for backfilling or embankments at an off site disposal location. Obtain and pay for the off site disposal location or locations.

### 3.10 REMOVAL OF WATER

- A. Water Removal: At all times during the excavation period and until completion and acceptance of the WORK at final inspection, provide ample means and equipment with which to remove promptly and dispose of properly all water entering any excavation or other parts of the WORK. **The existing underdrainage sump pumps are of minimal capacity and shall not be used for dewatering the general excavation. Protect the existing underdrain system so that fines and excavated materials do not enter into it.**
- B. Dry Excavations: Keep the excavation dry.
- C. Water Contact: Allow no water to rise over or come in contact with masonry and concrete until the concrete and mortar have attained a set and, in any event, not sooner than 12 hours after placing the masonry or concrete.
- D. Discharge of Water: Dispose of water pumped or drained from the Work in a safe and suitable manner without damage to adjacent property or streets or to other work under construction.
- E. Protection: Provide adequate protection for water discharged onto streets. Protect the street surface at the point of discharge.
- F. Sanitary Sewers: Discharge no water into sanitary sewers.
- G. Storm Sewers: Discharge no water containing settleable solids into storm sewers.

H. Repair: Promptly repair any and all damage caused by dewatering the Work.

END OF SECTION

(NO TEXT FOR THIS PAGE)

## SECTION 02317

### BACKFILLING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Backfill all excavations to the original surface of the ground or to such other grades as may be shown or required. For areas to be covered by topsoil, leave or stop backfill 6 inches below the finished grade or as shown. Obtain approval before backfilling against masonry structures. Remove from all backfill, any compressible, putrescible, or destructible rubbish and refuse and all lumber and braces from the excavated space before backfilling is started. Leave sheeting and bracing in place or remove as the work progresses. Perform leakage testing of water-bearing structures prior to placement of backfill in accordance with Section 02516
- B. Equipment Limitations: Do not permit construction equipment used to backfill to travel against and over cast-in-place concrete structures until the specified concrete strength has been obtained, as verified by concrete test cylinders. In special cases where conditions warrant, the above restriction may be modified providing the concrete has gained sufficient strength, as determined from test cylinders, to satisfy design requirements for the removal of forms and the application of load.

##### 1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. ASTM D 1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>))
  - 2. Illinois Department of Transportation (IDOT) Standard Specification for Road and Bridge Construction

##### 1.3 SUBMITTALS

- A. Provide all submittals, including the following in accordance with Division 1.
  - 1. Certified laboratory reports of all proposed backfill material.

## PART 2 PRODUCTS

### 2.1 BACKFILL MATERIAL - GENERAL

- A. General: Backfill with sound materials, free from waste, organic matter, rubbish, boggy or other unsuitable materials.
- B. General Materials Requirements: Conform materials used for backfilling to the requirements specified. Follow common fill requirements whenever drainage or select fill is not specified. Determine and obtain the approval of the appropriate test method where more than one compaction test method is specified.
- C. Frozen Materials: Do not use frozen material for backfilling.

### 2.2 DRAINAGE FILL

- A. Materials for Drainage Fill: Use clean gravel, crushed stone, or other suitable material with gradation for conforming to IDOT Standard Specification for Road and Bridge Construction gradation CA-7. Clay and fine particles are unacceptable in drainage fill.

### 2.3 SELECT FILL

- A. Materials for Select Fill: Use gravel, crushed stone, limestone screenings or other granular or similar material as approved which can be readily and thoroughly compacted to 95 percent of the maximum dry density obtainable by ASTM D 1557.

- 1. Grade select fill between the following limits:

U.S. Standard Sieve	Percent Passing by Weight
2 inch	100
1-1/2 inch	90-100
1 inch	75-95
1/2 inch	45-70
#4	25-50
#10	15-40
#200	5-15

- 2. Very fine sand, uniformly graded sands and gravels, or other materials that have a tendency to flow under pressure when wet are unacceptable as select fill.

## 2.4 COMMON FILL

- A. **Materials for Common Fill:** Material from on-site excavation may be used as common fill provided that it can be readily compacted to 90 percent of the maximum dry density obtainable by ASTM D 1557, and does not contain unsuitable material. Select fill may be used as common fill at no change in the Contract Price.
- B. **Granular Materials On-Site:** Granular on-site material, which is fairly well graded between the following limits may be used as granular common fill:

U.S. Standard Sieve	Percent Passing by Weight
3 inch	100
#10	50-100
#60	20-90
#200	0-20

- C. **Cohesive Materials On-Site:** Cohesive site material may be used as common fill.
1. The gradation requirements do not apply to cohesive common fill.
  2. Use material having a liquid limit less than or equal to 40 and a plasticity index less than or equal to 20.
- D. **Material Approval:** All material used as common fill is subject to approval. If there is insufficient on-site material, import whatever additional off-site material is required which conforms to the specifications and at no additional cost.

## 2.5 PIPE BEDDING

- A. **Gradation for Small Piping:** For pipe 18 inches or less in diameter, comprise pipe bedding of material 90 percent of which will be retained on a No. 8 sieve and 100 percent of which will pass a 1/2-inch sieve and be well graded between those limits.
- B. **Gradation for Large Piping:** For pipe larger than 18 inches in diameter, use the same pipe bedding material as specified for smaller pipe or use a similar well graded material 90 percent of which will be retained on a No. 8 sieve and 100 percent of which will pass a 1-inch sieve.

## **PART 3 EXECUTION**

### **3.1 PRECAST MANHOLE BEDDING**

- A. **Bedding Compaction:** Bed all precast manholes in well graded, compacted, select fill conforming to the requirements except as otherwise shown, specified, or required. Compact bedding thickness no less than 6 inches for precast concrete manhole bases.
- B. **Concrete Work Mats:** Cast cast-in-place manhole bases and other foundations for structures against a Class D concrete work mat in clean and dry excavations, unless otherwise shown, specified or required.
- C. **Bedding Placement:** Place select fill used for bedding beneath precast manhole bases, in uniform layers not greater than 9 inches in loose thickness. Thoroughly compact in place with suitable mechanical or pneumatic tools to not less than 95 percent of the maximum dry density as determined by ASTM D 1557.
- D. **Use of Select Fill:** Bed existing underground structures, tunnels, conduits and pipes crossing the excavation with compacted select fill material. Place bedding material under and around each existing underground structure, tunnel, conduit or pipe and extend underneath and on each side to a distance equal to the depth of the trench below the structure, tunnel, conduit or pipe.

### **3.2 PIPE BEDDING**

- A. **Hand Placement:** Place select fill pipe bedding by hand from the bottom of the excavation to 1 foot over the top of the pipe in uniform layers not greater than 6 inches in loose thickness. Tamp under pipe haunches and thoroughly compact pipe bedding in place with suitable mechanical or pneumatic tools to not less than 95 percent of the maximum dry density as determined by ASTM D 1557 (Modified Proctor).
- B. **Stone Placement:** Do not place large stone fragments in the pipe bedding or backfill to 1 foot over the top of pipes, nor nearer than 2 feet at any point from any pipe, conduit or concrete wall.
- C. **Unallowed Materials:** Pipe bedding containing very fine sand, uniformly graded sands and gravels, or other materials that have a tendency to flow under pressure when wet is unacceptable.

### **3.3 BEDDING PLACEMENT AND BACKFILL FOR PIPE IN SHORT TUNNEL**

- A. **Bed pipelines or electrical ducts placed in short tunnels in select fill or Class D concrete.** Completely fill the remainder of the annular space between the outside of the pipe wall and the tunnel wall with select fill, suitable job-excavated material,

or Class D concrete, as approved. Suitably support pipelines or ducts in short tunnels to permit placing of backfill suitably tamped in place.

### 3.4 TRENCH BACKFILL

- A. General: Backfill trenches from 1 foot over the top of the pipe, from the top of electrical duct bedding or as shown to the bottom of pavement base course, subgrade for lawns or lawn replacement, to the top of the existing ground surface or to such other grades as may be shown or required.
- B. Materials: Provide select fill, suitable job-excavated material or other material, as specified and as approved for trench backfill.
- C. Depth of Placement - General: Except under pavements, walkways, railroad tracks, and street or highway appurtenances, or as otherwise specified, place trench backfill in uniform layers not greater than 9 inches in loose thickness and thoroughly compact in place using suitable mechanical or pneumatic equipment. Compact backfill to not less than 90 percent of the maximum dry density as determined by ASTM D 1557.
- D. Depth of Placement - Traffic Areas and Under Utilities: Where pavements, walkways, railroad tracks and street or highway appurtenances are to be placed over trenches and under utilities or utility services crossing the trench, provide trench backfill using select fill placed in uniform layers not greater than 9 inches in loose thickness and thoroughly compacted in place with equipment as specified above. Compact backfill to not less than 95 percent of the maximum dry density as determined by ASTM D 1557.
- E. Depth of Placement - Undeveloped Areas: In nondeveloped areas and where select fill material or hand-placed backfill are not specified or required, place suitable job-excavated material or other approved backfill in lifts not exceeding 12 inches in loose thickness. When the trench is full, consolidate the backfill by jetting, spading, tamping or puddling to ensure complete filling of the excavation. Mound the top of the trench approximately 12 inches to allow for consolidation of backfill.
- F. Dropping of Material on Work: Do trench backfilling work in such a way as to prevent dropping material directly on top of any conduit or pipe through any great vertical distance. Do not allow backfilling material from a bucket to fall directly on a structure or pipe and, in all cases, lower the bucket so that the shock of falling earth will not cause damage.
- G. Distribution of Large Materials: Break lumps up and distribute any stones, pieces of crushed rock or lumps which cannot be readily broken up, throughout the mass so that all interstices are solidly filled with fine material.

### 3.5 STRUCTURE BACKFILL

- A. Use of Select Fill: Use select fill underneath all structures, and adjacent to structures where pipes, connections, electrical ducts and structural foundations are to be located within this fill. Use select fill beneath all pavements and walkways, and extend to the bottom of pavement base course or ballast.
  - 1. Place backfill in uniform layers not greater than 8 inches in loose thickness and thoroughly compact in place with suitable approved mechanical or pneumatic equipment.
  - 2. Compact backfill to not less than 95 percent of the maximum dry density as determined by ASTM D 1557.
- B. Use of Common Fill: Use common granular fill adjacent to structures in all areas not specified above, unless otherwise shown or specified. Select fill may be used in place of common granular fill at no additional cost.
  - 1. Extend such backfill from the bottom of the excavation or top of bedding to the bottom of subgrade for lawns or lawn replacement, the top of previously existing ground surface or to such other grades as may be shown or required.
  - 2. Place backfill in uniform layers not greater than 8 inches in loose thickness and thoroughly compact in place with suitable equipment, as specified above.
  - 3. Compact backfill to not less than 90 percent of the maximum dry density as determined by ASTM D 1557.
- C. Use of Clay: In unpaved areas adjacent to structures for the top 1 foot of fill directly under lawn subgrades use clay backfill placed in 6-inch lifts. Compact clay backfill to not less than 90 percent of the maximum dry density as determined by ASTM D 1557.
  - 1. Use clay having a liquid limit less than or equal to 40 and a plasticity index less than or equal to 20.

### 3.6 DRAINAGE BLANKET

- A. Drainage Fill Placement: Provide a drainage blanket where shown consisting of drainage fill.
  - 1. Place drainage fill underneath all structures and adjacent to structures where pipes, connections, electrical ducts and structural foundations located within this fill, in uniform layers not greater than 8 inches in loose thickness. Compact drainage fill with suitable mechanical or pneumatic equipment to

not less than 95 percent of the maximum dry density as determined by ASTM D 1557.

2. Place drainage fill adjacent to structures in all areas not specified above in uniform layers not greater than 8 inches in loose thickness. Compact drainage fill with suitable mechanical or pneumatic equipment to not less than 90 percent of the maximum dry density as determined by ASTM D 1557.

### 3.7 COMPACTION EQUIPMENT

- A. Equipment and Methods: Carry out all compaction with suitable approved equipment and methods.
  1. Compact clay and other cohesive material with sheep's-foot rollers or similar equipment where practicable. Use hand held pneumatic tampers elsewhere for compaction of cohesive fill material.
  2. Compact low cohesive soils with pneumatic-tire rollers or large vibratory equipment where practicable. Use small vibratory equipment elsewhere for compaction of cohesionless fill material.
  3. Do not use heavy compaction equipment over pipelines or other structures, unless the depth of fill is sufficient to adequately distribute the load.

### 3.8 FINISH GRADING

- A. Final Contours: Perform finish grading in accordance with the completed contour elevations and grades shown and blend into conformation with remaining natural ground surfaces.
  1. Leave all finished grading surfaces smooth and firm to drain.
  2. Bring finish grades to elevations within plus or minus 0.10 foot of elevations or contours shown.
- B. Surface Drainage: Perform grading outside of building or structure lines in a manner to prevent accumulation of water within the area. Where necessary or where shown, extend finish grading to ensure that water will be carried to drainage ditches, and the site area left smooth and free from depressions holding water.

### 3.9 RESPONSIBILITY FOR AFTERSETTLEMENT

- A. Aftersettlement Responsibility: Take responsibility for correcting any depression which may develop in backfilled areas from settlement within one year after the work is fully completed. Provide as needed, backfill material, pavement base

replacement, permanent pavement, sidewalk, curb and driveway repair or replacement, and lawn replacement, and perform the necessary reconditioning and restoration work to bring such depressed areas to proper grade as approved.

3.10 INSPECTION AND TESTING OF BACKFILLING

- A. Sampling and Testing: Sampling and testing of all in-place backfill will be provided by the OWNER as specified in Division 1. If initial testing reveals non-compliance with Contract requirements, all additional testing will be made at the Contractor's expense.
- B. Correction of Work: Correct any areas of unsatisfactory compaction by removal and replacement, or by scarifying, aerating or sprinkling as needed and recompaction in place prior to placement of a new lift.

END OF SECTION

## SECTION 02370

### SLOPE PROTECTION AND EROSION CONTROL

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: The requirements for providing slope protection and erosion control practices for all areas within the contract limits and other area indicated, including work designated in permits and other agreements, as specified in Division 1.

##### 1.2 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Storm Water Pollution Prevention Plan: Submit a Storm Water Pollution Prevention Plan conforming to the requirements of the Village of Orland Park and of the Division of Water Pollution Control of the Illinois Environmental Protection Agency (IEPA).
- C. Submit copies of all required permits to the OWNER before performing any work.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

##### 3.1 STORM WATER POLLUTION PREVENTION PLAN

- A. General: Prepare a Storm Water Pollution Prevention Plan to include erosion control practices as specified by the IEPA Division of Water Pollution Control, Permit Section and described in the most current edition of the Stormwater Management for Construction Activities - Developing Pollution Prevention Plans and Best Management Practices - Summary Guidance prepared by the United States Environmental Protection Agency.
- B. Contents: Prepare the Storm Water Pollution Prevention Plan to include but not limited to the following information:

1. Total square area disturbed by excavation.
  2. Quantity of erosion control practices to be provided. For instance, feet of vegetative control, feet of interceptor ditches, feet of berms, cubic feet of silt traps, etc.
  3. Approximate square feet of area controlled by the erosion control practices as specified in the Storm Water Pollution Prevention Plan, and the type of erosion control practices, whether permanent or temporary.
  4. Topographical or plan maps of construction area with areas marked to indicate erosion control practices used.
  5. Drainage area, including construction site.
  6. Area of construction site in acres that fall in the following slope categories:
    - a. 0-2 percent slope
    - b. 3-4 percent slope
    - c. 4-6 percent slope
    - d. 6 percent and storm slope
  7. A summary of the disposition of the collected sediment from the slope areas listed in Item 6.
- C. Availability: Keep the Storm Water Pollution Prevention Plan at the construction site at all times available for inspection for the entire construction period.
- D. Ordinances: Comply with all erosion and siltation control ordinances in effect and required by governing bodies having jurisdiction over the construction site and provide appropriate control measures as required.
- E. Payment: Include the cost of the erosion control in the Contract Price. No separate payment will be made for these items unless otherwise specified.

### 3.2 EROSION AND SEDIMENT CONTROL

- A. Provide necessary precautions and facilities to protect all indicated areas within the Contract limits from discharges resulting from construction operations, excessive erosion runoff of the construction site, silting and any other contamination resulting from construction work. Provide erosion control practices conforming to the specified requirements and to include but not limited to the following provisions:
1. Place all erosion and siltation control measures prior to or as the first step in grading.

2. Mulch and seed all storm and sanitary sewer trenches not in streets within 15 days after backfill. Do not allow more than 500 feet of trenches to be open at any one time.
3. Place all excavated material on the uphill side of trenches where possible. Do not place materials in stream beds. Seed any stockpiled material which remains in place longer than thirty days with temporary vegetation and mulch.
4. Mulch and seed all temporary earth berms, diversions, erosion barriers and temporary stockpiles with temporary vegetative cover within 10 days after grading.
5. Do not stockpile or otherwise place dredged, excavated or other material, at any time, in or near a stream bed which may increase the turbidity of the water. If turbidity producing materials are present, hold surface drainage from cuts and fills within the construction limits and from borrow and waste disposal areas in suitable sedimentation ponds or grade surface drainage to control erosion within acceptable limits. Provide and maintain temporary erosion and sediment control measures such as berms, dikes, drains, or sedimentation basins, if required to meet the above standards, until permanent drainage and erosion control facilities are completed and operative. Hold to a minimum the area of bare soil exposed at any one time by construction operations.
6. Drain wet dredged material for a minimum of 7 days. Store the material for drainage to a maximum height of 4 feet.
7. Provide temporary erosion and sediment control measures to include but not be limited to the following:
  - a. Installation (and ultimate removal) of silt screens.
  - b. Straw bales and silt traps around construction areas for all required structures.
  - c. Diked area with earth berm and silt trap for draining dredged material.
  - d. Straw bales with silt traps along top of slope of fill area plus seeding and mulching of entire fill area not otherwise protected.

END OF SECTION

(NO TEXT FOR THIS PAGE)

## SECTION 02500

### LAYING AND JOINTING BURIED PIPELINES

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Installation of all underground pipelines. Provide pipeline materials, coatings and linings as specified and pipe of the types, sizes and classes shown or specified.

1. Use proper and suitable tools and appliances for the safe and convenient cutting, handling, and laying of the pipe and fittings.
2. Use suitable fittings where shown and at connections or where grade or alignment changes require offsets greater than those recommended and approved.
3. Lay all underground pipelines in select fill bedding material.
4. Close off all lines with bulkheads when pipe laying is not in progress.

##### 1.2 REFERENCES

- A. Codes and standards referred to in this Section are:

1. ASTM C 12 - Practice for Installing Vitrified Clay Pipe Lines
2. ASTM D 2774 - Practice for Underground Installation of Thermoplastic Pressure Piping
3. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances
4. ASTM C 361 - Specification for Reinforced Concrete Low-Head Pressure Pipe
5. ASTM A 307 - Specification for Carbon Steel Bolts and Studs, 60000 psi Tensile
6. ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings, C25, 125, 250, 800

7. ASME B16.21 - Nonmetallic Flat Gaskets for Pipe Flanges
8. AWWA C111/A21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
9. ASTM A 139 - Duplicate Entry, Specification Section 02445
10. AWWA C115/A21.15 - Flanged Ductile-Iron Pipe With Threaded Flanges
11. AWWA C206 - Field Welding of Steel Water Pipe
12. ASTM E 165 - Practice for Liquid Penetrant Examination
13. ASTM E 709 - Practice for Magnetic Particle Examination

### 1.3 DELIVERY, STORAGE AND HANDLING

- A. General: Deliver, store and handle all products and materials as specified in Division 1 and as follows:
- B. Transportation and Delivery: Take every precaution to prevent injury to the pipe during transportation and delivery to the site.
- C. Loading and Unloading: Take extreme care in loading and unloading the pipe and fittings.
  1. Work slowly with skids or suitable power equipment, and keep pipe under control at all times.
  2. Under no condition is the pipe to be dropped, bumped, dragged, pushed, or moved in any way that will cause damage to the pipe or coating.
- D. Sling: When handling the pipe with a crane, use a suitable sling around the pipe.
  1. Under no condition pass the sling through the pipe.
  2. Use a nylon canvas type sling or other material designed to prevent damage to the pipe and coating.
  3. When handling reinforced concrete pipe or uncoated steel or ductile iron pipe, steel cables, chain or like slings are acceptable.
- E. Damaged Piping: If in the process of transportation, handling, or laying, any pipe or fitting is damaged, replace such pipe or pipes.

F. Blocking and Stakes: Provide suitable blocking and stakes installed to prevent pipe from rolling.

1. Obtain approval for the type of blocking and stakes, and the method of installation.

G. Storage for Gaskets: Store gaskets for pipe joints in a cool place and protect gaskets from light, sunlight, heat, oil, or grease until installed.

1. Do not use any gaskets showing signs of checking, weathering or other deterioration.
2. Do not use gasket material stored in excess of six months without approval.

#### 1.4 FIELD CONDITIONS

A. Repair of Sanitary Sewers and Services: Rebed, in compacted select fill material, sanitary sewers which cross over the new pipe or which cross under the new pipe with less than 12 inches clear vertical separation. Compact the bedding to densities required for new pipeline construction and extend bedding below the sewer to undisturbed earth. Reconstruct sewers damaged by pipeline construction.

1. Furnish and install all materials and do all work necessary for the reconstruction or repairs of sanitary sewers and services.
2. Provide pipe for reconstruction of sanitary sewers and services meeting the appropriate specification requirements.
3. Provide pipe of the same size as the existing sewer or when the same size is not available, use the next larger size of pipe. Obtain approval of joints made between new pipe and existing pipe.

## PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

### 3.1 PREPARATION

A. Dry Trench Bottoms: Lay pipe only in dry trenches having a stable bottom.

1. Where groundwater is encountered, make every effort to obtain a dry trench bottom.

2. If a dry trench bottom has not been obtained due to improper or insufficient use of all known methods of trench dewatering, then excavate below grade and place sufficient select fill material, crushed stone, or Class D concrete over the trench bottom.
3. If all efforts fail to obtain a stable dry trench bottom and it is determined that the trench bottom is unsuitable for pipe foundation, obtain an order, in writing, for the kind of stabilization to be constructed.
4. Perform trench excavation and backfill in accordance with Sections 02316 and 02317.

### 3.2 INSTALLATION

- A. General: Install all piping in accordance with the manufacturer's recommendations and approved shop drawings and as specified in Division 1.
  1. Arrange miscellaneous pipelines, which are shown in diagram form on the Plans, clear of other pipelines and equipment.
- B. Code Requirements: Provide pipeline installations complying with AWWA C600 for iron pipe, AWWA Manual M11 for steel pipe, AWWA Manual M9 for prestressed concrete cylinder pipe, ASTM C 12 for clay pipe, ASTM D 2774 for thermoplastic pressure piping 6-inch and smaller, and as modified or supplemented by the Specifications.
- C. Pipe Laying - General:
  1. For pipelines intended for gravity flow, begin pipeline laying at the low end of a run and proceed upgrade.
  2. Generally, lay all pipe with bells pointing ahead.
  3. Carefully place each pipe and check for alignment and grade.
  4. Make adjustments to bring pipe to line and grade by scraping away or filling in select fill material under the body of the pipe.
  5. Wedging or blocking up the pipe barrel is not permitted.
  6. Bring the faces of the spigot ends and the bells of pipes into fair contact and firmly and completely shove the pipe home.
  7. As the work progresses, clean the interior of pipelines of all dirt and superfluous materials of every description.

8. Keep all lines absolutely clean during construction.

9. Lay pipelines accurately to line and grade.

D. Pipe Laying - Trenches:

1. Lay all pipelines in trench excavations on select fill bedding, Class D concrete cradle or other foundations as shown, specified or ordered in writing.

2. Properly secure the pipe against movement and make the pipe joints in the excavation as required.

3. Carefully grade and compact pipe bedding.

4. Bell Holes:

a. Cut out bell holes for each joint as required to permit the joint to be properly made and allow the barrel of the pipe to have full bearing throughout its length.

b. Thoroughly tamp bell holes full of select fill material following the making of each joint.

E. Other Foundations: Install pipelines laid on other types of foundations as specified for such other foundations or as ordered in writing.

F. Concrete Pipeline Joint Finishing: Provide the following finished joints for steel end ring concrete pipelines with rubber gaskets:

1. Exterior Joint Grouting:

a. Grout joints for concrete pipelines using rubber gaskets and steel end rings on the outside with cement mortar composed of 1 part Type II portland cement to 1 part sand by volume.

b. Thoroughly mix the materials to produce a uniform mortar with all aggregate particles well coated.

c. In grouting the exterior joint, use a cloth diaper to encase the outside diameter of the bell of the pipe and adequately straddle the joint recess to keep out dirt and to serve as a form for grouting.

d. Fill the joint space with cement mortar which is just thin enough to run around the joint.

- e. Leave the diaper in place permanently.
- f. Before the mortar has taken its initial set, examine the diaper, and if not completely filled, force additional mortar into the joint.

2. Interior Joint Grouting:

- a. Place cement grout in the interior annular joint opening of all steel end ring concrete pipe for pipe sizes 30 inches and larger in diameter.
- b. Perform interior joint grouting in two phases.
  - (1) Immediately following pipe laying.
  - (2) After backfilling the entire pipeline is complete.

3. Joints for Concrete Pipelines:

- a. Do not grout joints on the outside of the joint for concrete pipelines using rubber gaskets with all-concrete pipe ends.
- b. Fill the interior annular joint opening with cement mortar and trowel smooth for all pipe 30 inches and larger.

4. Alternative to Grouting:

- a. In place of grouting, use a joint filler consisting of a preformed loop of urethane foam impregnated with unhydrated Portland cement to fill the outside joint recess in prestressed lined cylinder pipe.
- b. Place the loop, sized to fit the spigot end of the pipe, around the spigot ring behind the gasket groove.
- c. Draw the pipe joined as described herein home, compressing the rubber gasket and forcing the urethane foam loop to fill the outside annular joint recess.

G. Ductile Iron Pipe Mechanical Joints:

- 1. Assembly: In making up mechanical joints, center the spigot in the bell.
  - a. Thoroughly brush the surfaces with which the rubber gasket comes in contact with a wire brush just prior to assembly of the joint.
  - b. Brush lubricant over the gasket just prior to installation.

- c. Place the gasket and gland in position, bolts inserted, and the nuts tightened fingertight.
  - d. Tighten the nuts with a torque wrench so that the gland is brought up toward the pipe evenly.
  - e. Prime all bolts by dipping with a bituminous coating, except the threads. Coat threads immediately prior to installation of nuts.
2. Torques: Apply bolt torques complying with AWWA C600.
  3. Remaking of Joints: If effective sealing is not obtained at the maximum torque listed above, disassemble and reassemble the joint after thorough cleaning.

#### H. Ductile Iron Pipe Rubber Gasket Joints:

1. Assembly: In making up the rubber gasket joint, brush the gasket seat in the socket thoroughly with a wire brush and wipe the gasket with a cloth.
  - a. Place the gasket in the socket with the large round end entering first so that the groove fits over the bead in the seat.
  - b. Apply a thin film of lubricant to the inside surface of the gasket that will come in contact with the entering pipe.
  - c. Brush the plain end of the pipe to be entered thoroughly with a wire brush and place it in alignment with the bell of the pipe to which it is to be joined.
  - d. Exert sufficient force on the entering pipe so that its plain end is moved past the gasket until it makes contact with the base of the socket to make the joint.
2. Positioning: Before proceeding with backfilling, feel completely around the joint using a feeler gauge to confirm that the gasket is in its proper position.
  - a. If the gasket can be felt out of position, withdraw the pipe and examine the gasket for cuts or breaks.
  - b. If the gasket has been damaged, replace it with a new one before re-installing the pipe.

3. Optional Mechanical Joints: Use mechanical joint fittings that meet the requirements of Section 02505 with the rubber gasket joint pipe when specified or when rubber gasket fittings are not available.
- I. Concrete Pipe Rubber Gasket Joints: In making O-ring rubber gasketed joints, lubricate the gasket and the pipe socket with an approved rubber gasket lubricant, and stretch the gasket over the spigot and place gasket accurately in position.
    1. Carefully center the spigot end in the socket of the preceding pipe to avoid displacement of the gasket and draw the pipe home fully compressing the gasket.
    2. Make adjustments to line and grade in such a manner that the compressed rubber gasket will not be disturbed.
  - J. Steel Pipe Bell and Spigot Rubber Gasket Joints:
    1. Assembly: Thoroughly clean the joint surfaces of both the bell and spigot ends before jointing steel pipe with bell and spigot rubber gasket joints.
      - a. Stretch a clean rubber gasket, lubricated with an approved rubber gasket lubricant, over the spigot and place accurately in position in the spigot groove.
      - b. After the gasket is placed in the spigot groove, adjust the gasket so the tension in the rubber is uniform around the circumference of the joint.
      - c. Clean and lubricate the joint surface of the bell end.
      - d. Center the spigot end in the bell, being careful to avoid dragging the spigot or displacing the gasket, and draw the pipe home, fully compressing the gasket.
      - e. Assemble the joint with the longitudinal axis of the pipe lengths in straight alignment. Deflect joints to make adjustments to line and grade after the joint has been completely assembled. Do not disturb the compressed rubber gasket when deflecting joints.
    2. Positioning: Prior to backfilling, feel completely around the joint using a feeler gauge to determine whether the gasket is in its proper position.
      - a. If the gasket can be felt out of position, withdraw the pipe and examine the gasket for cuts or breaks.
      - b. If the gasket has been damaged, replace it with a new one before re-installing the pipe.

- K. Steel Pipe Field Welded Lap Joints: For steel pipe 30 inches in diameter and larger, single weld field welded lap joints on the inside of the joint, except that, where restrained joints are shown, double weld the joints. For steel pipe less than 30 inches in diameter, single weld the field welded lap joints on the outside of the joint. Perform 1/4-inch throat fillet welds with a minimum of two passes. Provide adequate space for welding and inspection of the joints. Perform all welding in accordance with the requirements of AWWA C206.
1. Do all welding with skilled welders experienced in the welding methods to be used and with materials to be welded. Qualify the welding operator under the provisions of AWWA C206 not more than one year prior to commencing work on the pipeline. Use machines and electrodes during qualification tests similar to those used in the work.
  2. During welding of the joints, protect the pipe coating to avoid damage to the coating by hot weld spatters. Do not make welding grounds on the coated part of the pipe.
  3. Clean all dirt, slag and flux after each pass of deposited weld metal prior to making the next pass.
  4. As soon as practicable after welding the joint, test the weld around the entire circumference of the joint by the liquid penetrant test method in accordance with ASTM E 165 or the magnetic particle examination method in accordance with ASTM E 709. Repair any defect disclosed by the test and retest the joint at no additional cost.
- L. Steel Pipe Joint Coating: Wrap the exterior of all joints for buried steel pipe with a tape coating in accordance with AWWA C209. Provide tape a minimum of 6 inches wide. Apply tape by technicians certified by the manufacturer. Clean, prime and wrap each joint with two wraps of tape, 30 mils minimum thickness.
- M. Ductile Iron Pipe and Steel Pipe Joint Lining: For cement mortar lined ductile iron pipe greater than 30 inches in diameter, fill all interior joint recesses with mortar and make recesses smooth and flush with adjacent pipe interior walls in accordance with AWWA C205, Appendix A.2. For cement mortar lined steel pipe 8 inches in diameter and larger, except sleeve type coupling joints, fill all interior joint recesses with mortar and make recesses smooth and flush with adjacent pipe interior walls in accordance with AWWA C205, Appendix A.2. Use Type II portland cement in mortar for interior joint finishing of wastewater pipelines.
- N. Cast Iron Soil Pipe Joints:
1. Joints: Provide joints of lead and oakum or rubber gasket compression type.

- a. Thoroughly caulk leaded joints with picked oakum and molten lead.
  - b. Use twelve ounces of soft pig or bar lead in each joint for each 1-inch of pipe diameter.
  - c. Pour all lead in at one time.
  - d. Finish the face of lead joints with the face of the hub and leave without putty, paint or cement.
  - e. Extend gasket on rubber gasket joints the full depth of the bell and overlap the face of the bell.
2. Connection: Provide leakproof and gastight joints.
- O. Temporary Bulkheads: Provide temporary bulkheads at the ends of sections where adjoining pipelines have not been completed, and in connections built into pipelines where adjoining pipelines or structures have not been completed and are not ready to be connected.
1. Remove bulkheads encountered in connecting sewers or structures included in this Contract, or in pipelines or structures previously built, when they are no longer needed or when ordered.
- P. Sleeve Type Couplings: For sleeve type couplings, equally tighten diametrically opposite bolts on the connection so that the gaskets will be brought up evenly all around the pipe.
1. Torque Wrenches: Do the final tightening with torque wrenches set for the torque recommended by the coupling manufacturer.
- Q. Concrete Cradle
1. General: When a concrete cradle is shown, specified, or ordered in writing, lay the pipe to grade by supporting each section on concrete blocks located near each end.
    - a. Shape the tops of the blocks to fit the outside diameter of the pipe.
    - b. Set the blocks approximately 3/8 inch low.
    - c. Place the pipe on the blocks on a layer of stiff mortar of sufficient thickness to bring the pipes to exact grade.
    - d. Timber blocking, of a type approved, may be employed in place of concrete blocks.

2. Cradle: Place Class D concrete cradle, on one side only, until it has risen above the invert on the other side, after which deposit the remainder of the concrete on both sides to the pipe spring line.
  - a. Prevent movement of the pipe during concrete placement.
- R. Concrete Encasement: When concrete encasement is to be provided, as shown, specified, or ordered in writing, lay and block the pipeline and place concrete as specified for concrete cradle.
  1. Continue the placing of concrete to provide complete encasement to the dimensions shown, specified, or ordered.
- S. Jointing Concrete Pipe:
  1. Preparation of Joint Surfaces: Before joining concrete pipe using flexible rubber gaskets, wipe clean the joint surfaces of both the bell and spigot ends.
    - a. Repair any lumps, projections, burrs, or chips which would interfere with the proper compression of the gasket.
    - b. Insert the spigot end into the bell with the gasket in place and with all surfaces lubricated as recommended.
    - c. Apply pressure to seat the pipe properly in the bell.
  2. Curve Offset: Construct curves for reinforced concrete pipelines with standard pipe where the opening of the joint on the outside of the curve is less than 1/2 inch.
  3. Curve Fittings: Where greater opening of the joint would be required, construct curves using beveled or radius pipe with standard joints, short lengths of pipe, or plain end radius pipe with cast concrete collar joints, or continuous concrete encasement; or by monolithic construction.
- T. Jointing Clay Pipe: Joint clay pipe with flexible plastic joints in accordance with the manufacturer's instructions and as specified.
  1. Wipe the joint surface clean and coat with lubricant on both the bell and spigot ends.
  2. Insert the spigot end in the bell and apply sufficient force to seat the pipe properly.
- U. Valve Box Setting: Install valve boxes vertical and concentric with the valve stem.

1. Satisfactorily reset any valve box which is moved from its original position, preventing the operation of the extension valve stem.
2. Replace any extension valve stem which has been damaged so that it can be operated.

V. Erection:

1. Anchorage: Place anchorage of pipelines and appurtenances as shown or as ordered.
  - a. Accomplish anchorage by placing concrete to the dimensions shown between undisturbed earth and the fitting to be anchored.
2. Valve Setting: Erect valves carefully in their proper positions, free from all distortion and strain, with flanged, mechanical or push-on joints, and pack and leave in satisfactory operating condition.
3. Short Tunnel Construction: Joint pipes to be placed in short tunnels prior to being placed into position.
  - a. Place the pipe into position in a manner which keeps joints tight.

3.3 FIELD QUALITY CONTROL

- A. Testing: Test pipelines in accordance with Section 02516.
  1. Test valves in place, as far as practicable, and correct any defects in valves or connections.
- B. Inspection: Clean, inspect, and examine each piece of pipe and each fitting and special for defects before it is installed.
  1. Cut away any lumps or projections on the face of the spigot end or the shoulder.
  2. Do not use any cracked, broken, or defective pieces in the work.
  3. If any defective piece should be discovered after having been installed, remove and replace this piece with a sound piece in a satisfactory manner at no increase in Contract Amount.

### 3.4 CLEANING

- A. General: Thoroughly clean all pipe before it is laid and keep it clean until it is accepted in the completed work.
- B. Removal of Materials: Exercise special care to avoid leaving bits of wood, dirt, and other foreign particles in the pipe. If any particles are discovered before the final acceptance of the work, remove and clean the pipe.

### 3.5 DISINFECTION

- A. General: Disinfect all pipelines that are to carry potable water in accordance with Section 02512.

### 3.6 SCHEDULE

- A. Definitions: Abbreviations used in the schedule are:

#### 1. Pipe Materials:

a.	Al	Aluminum
b.	Br	Brass
c.	C	Concrete
d.	CI	Cast-iron
e.	CISP	Cast-iron soil pipe
f.	Cl	Clay
g.	CPVC	Chlorinated Polyvinyl Chloride
h.	CU	Copper
i.	DI	Ductile Iron
j.	PCCP	Prestressed Concrete Cylinder Pipe
k.	PE	Polyethylene
l.	PVC	Polyvinyl Chloride
m.	RCP	Reinforced Concrete Pipe
n.	RCPP	Reinforced Concrete Pressure Pipe
o.	SS	Stainless Steel
p.	St	Steel

#### 2. Joints:

a.	B	Bituminous
b.	B&S	Bell and Spigot
c.	F	Flanged
d.	G	Grooved End
e.	H	Harnessed
f.	HSC	Hub and Spigot - Compression Gasket
g.	HSL	Hub and Spigot - Lead and Oakum

h.	MJ	Mechanical Joint
i.	PO	Push-on Joint
j.	RRG	Restrained Retainer Gland
k.	RS	Rubber and Steel
l.	Sd	Soldered
m.	SI	Sleeve Type Coupling
n.	SW	Solvent Welded
o.	W	Welded

3. Coatings and Linings:

a.	BC	Bituminous - Cold Application
b.	CE	Concrete Encased
c.	CL	Cement-Mortar Lined
d.	E	Epoxy
e.	G	Galvanized
f.	GL	Glass Lined
g.	I	Insulated
h.	KL	Polyvinylidene Fluoride (PVDF or KYNAR®)
i.	P	Painted
j.	PEW	Polyethylene Wrapped
k.	PPL	Polypropylene Lined
l.	RC	Rubber Coated
m.	RL	Rubber Lined
n.	SL	Polyvinylidene Chloride (PVDC or SARAN ®)
o.	TC	Tape Coated
p.	W	Wrapped

B. Schedule: Provide products as listed in the following schedule:

END OF SECTION

# BURIED PIPING SCHEDULE

Service	Size (Inches)	Pipe Material	Protective Coatings		Joints	Test Pressure (psig) <sup>(1)</sup>	Pipe Class or Thickness	Remarks
			Int.	Ext.				
Water – Reservoir Connections	60	PCCP	--	--	RS	(2)	(3)	
Reservoir Air Vent	12	DI	CL	PEW	MJ, F	25	53	
Reservoir Fill Line	12	DI	CL	PEW	MJ, F	125	53	
Underdrain Laterals	6, 8	PVC <sup>(4)</sup>	--	--	PO, MJ <sup>(4)</sup>		150	
Underdrain Risers	6	DI			PO, MJ <sup>(5)</sup>			
Storm Sewer	12	RCP	--	--	HSC	--		

## Notes:

- (1) Measure the test pressures shown in the schedule at the centerline of the pipeline's low point. Adjust test pressures measured at other locations accordingly.
- (2) Fill existing reservoir and east reservoir addition to overflow elevation for field hydrostatic test. See Section 02516 Leakage Tests for testing requirements.
- (3) Refer to Section 02503 for pipe wall design.
- (4) Use AWWA C900 PVC pipe. Provide MJ joints and ductile iron fittings for connections to the existing 8-inch header and existing 8-inch by 6-inch header crosses. Provide PO joints and fittings for the remaining pipe.
- (5) Provide PO joints and fittings for riser pipe except for the entrance to each riser pipe, to be provided with a MJ and MJ plug.

(NO TEXT FOR THIS PAGE)

## SECTION 02502

### REINFORCED CONCRETE SEWER PIPE

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Furnishing and installing reinforced concrete sewer pipe, fittings and specials.

##### 1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. ASTM C 76 - Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe.
  - 2. ASTM C 443 - Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets (Metric).
  - 3. ASTM C 497 - Specification for Testing Concrete Pipe and Tile.

##### 1.3 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Shop Drawings: Submit complete shop drawings for all diameters and classes of reinforced concrete pipe, fittings and specials showing dimensions, strength and materials specifications and standards, joint details, reinforcement position and plastic sheet lining details for approval prior to manufacture.
- C. Materials Compliance: Submit notarized affidavits of all materials compliance with ASTM C 76.
- D. Product Compliance: Submit notarized affidavit of pipe compliance with ASTM C 76 and these specifications.
- E. Joint Compliance: Submit notarized affidavit of joint compliance with ASTM C 443 and these specifications.
- F. Quality Control: Submit certified results of all shop tests for approval.

#### 1.4 QUALITY ASSURANCE

- A. General: Provide concrete sewer pipe, fittings and specials that are precast or machine made and are the product of a concern that can demonstrate by tests and installation records satisfactory experience in manufacturing concrete pipe of the quality and type specified.
- B. Reinforced Concrete Pipe: Provide reinforced concrete pipe meeting the requirements of ASTM C 76 and these specifications.
- C. Joints: Provide joints for pipe, fittings and specials meeting the requirements of ASTM C 443 and these specifications.

#### PART 2 PRODUCT

##### 2.1 REINFORCED CONCRETE PIPE

- A. General: Manufacture all reinforced concrete pipe in lengths of not more than 16 feet and not less than 7-1/2 feet, except where shorter lengths are required for pipeline curves or at junctions with structures. Do not use admixtures or blends in concrete without prior approval.
- B. Design: Provide the classes of reinforced concrete sewer pipe as shown or specified. Conform pipe designs with the following requirements.
  - 1. Use diameter, wall thickness, compressive strength of concrete and area of circumferential reinforcement as prescribed for Classes I to IV in Tables 1 to 5 in ASTM C 76, except do not use Wall A thickness, elliptical reinforcing cages or quadrant reinforcing mats. Do not substitute modified designs for designs shown in the Tables.
  - 2. Provide special designs only for pipe with diameters and loads beyond those shown in Tables 1 to 5, pipe diameters that do not have steel reinforcement areas shown in the Tables and pipe subject to thrust forces encountered in jacking operations. Conform special designs with the requirements of Section 7.2.2 of ASTM C 76, except do not use Wall A thickness, elliptical reinforcing cages or quadrant reinforcing mats without prior approval. Retain a Registered Professional Engineer, licensed to practice structural engineering in the state in which the pipe will be installed, to prepare, sign and seal all special designs for pipe.

## 2.2 REINFORCED CONCRETE FITTINGS AND SPECIALS

- A. General: Provide reinforced concrete fittings and specials where shown, specified or required, and manufactured in accordance with the applicable sections of the respective standard for the adjoining pipe. Provide joints the same as in the adjoining pipe. Provide the interior surface of bends of the same smoothness and diameter as the adjoining pipe. Provide the center line radius of curvature of bends to be equal, in dimension, to the inside diameter of the pipe.
- B. Strength: Design all reinforced concrete fittings and specials to have the same strength as the class of the adjoining pipe. Retain a Registered Professional Engineer, licensed to practice structural engineering in the state in which the pipe will be installed to prepare, sign and seal all designs for fittings and specials.

## 2.3 JOINTS

- A. Manufacture all reinforced concrete sewer pipe, fittings and specials with watertight joints using rubber gaskets in accordance with the requirements of ASTM C 443. Provide a preformed groove in the tongue or spigot of sufficient depth to hold the gasket securely in place and produce the proper gasket compression.

## 2.4 CURING

- A. Cure all pipe, fittings and specials by steam or membrane curing. Water curing is not permitted.

## 2.5 SHOP TESTING

- A. General: Test concrete sewer pipe in accordance with the applicable provisions of ASTM C 497, as required by the ASTM Specification for the pipe and as specified herein.
- B. Basis of Acceptance: Conform the basis of acceptance for reinforced concrete pipe with Section 5.1.1 of ASTM C 76 and these specifications.
- C. Proof-of-Adequacy Tests for Special Designs: Prior to manufacturing production run pipe of special design, test one pipe of at least four feet in length of each diameter and class by the three-edge-bearing method to confirm that the pipe meets both the 0.01-inch crack and ultimate load requirements for which it is designed.
- D. Joint Adequacy Tests: Prior to manufacturing production run pipe, fittings and specials, conduct all tests required by Sections 9 and 10 of ASTM C 443 for each diameter of pipe.

- E. Finished Pipe Tests: Test one to three pipe sections of each diameter and class out of the first 100 pipe sections manufactured, or fraction thereof, by the three-edge-bearing method in accordance with Section 11.3 of ASTM C 76. The ENGINEER will select and determine the number of pipe sections to be tested. Test one pipe section, selected by the ENGINEER, of each diameter and class from each subsequent lot of 100 pipe sections manufactured, or fraction thereof.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Install all reinforced concrete sewer pipe, fittings and specials in accordance with the manufacturer's recommendations and approved shop drawings and as specified in Division 1.

#### 3.2 LEAKAGE TESTS

- A. Test the reinforced concrete sewers for leakage after completion in accordance with Section 02516.

#### 3.3 SCHEDULES

- A. Refer to the schedule contained in Section 02500 for information on the piping that is to be constructed using the pipe materials and methods specified herein.

END OF SECTION

## SECTION 02503

### PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Requirements for providing prestressed concrete cylinder pipe, fittings and appurtenances.
  - 1. Provide prestressed concrete cylinder pipe and fittings with all necessary, jointing facilities and materials, specials, adapters and other appurtenances required for proper installation in and completion of the pipelines to be constructed.
  - 2. Provide bell and spigot gasketed or welded joints as shown and specified.

##### 1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. AWWA C301 - Prestressed Concrete Pressure Pipe, Steel Cylinder Type, for Water and Other Liquids
  - 2. AWWA C304 - Design of Prestressed Concrete Cylinder Pipe
  - 3. AWWA C206 - Field Welding of Steel Water Pipe
  - 4. AWWA M9 - Concrete Pressure Pipe
  - 5. AWWA M11 - Steel Pipe - A Guide for Design and Installation
  - 6. ASTM C150 - Standard Specification for Portland Cement

##### 1.3 SYSTEM DESCRIPTION

- A. Manufacturing and Design Standards: Provide prestressed concrete cylinder pipe and fittings meeting the requirements of AWWA C301 and AWWA C304, except as specified otherwise.
  - 1. Design external loads and internal pressure data are listed in the pipe schedule at the end of this section.
  - 2. Field testing requirements are provided in Section 02516.

- B. Right to Inspect: Provide ENGINEER notice of commencement of pipe manufacture as specified in Division 1. The ENGINEER has the right to inspect and to witness any tests being performed by the Pipe material supplier or other material suppliers relative to the pipe being produced.

#### 1.4 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Submit the following shop drawings and design information:
  - 1. Pipe, pipe joints, fittings, sleeves, and couplings. Where special designs or fittings are required, show the Work in large detail and completely describe and dimension all items. Indicate location and dimensions of all required closure sections necessary to connect new piping into existing line or structure. For joints, indicate manufacturing tolerances and all other pertinent information required for manufacture. For fittings and specials, indicate the amount and position of all reinforcement. Indicate full and complete weld information including location, type, size, extent, weld symbols, and parent metal preparation. Distinguish between shop and field welds. Submit joint details and pipe cylinder or longitudinal reinforcement details proposed for harnessed sections of pipe.
  - 2. Fully dimensioned drawings of piping layouts, including closure sections, fittings, couplings, sleeves, valves, supports and anchors. Label pipe size, materials, type and class on drawings. Include the limits of each reach of restrained joints. Provide cross sections showing elevations of cleanouts, pipe, fittings, sleeves and valves.
  - 3. Submit verification of design, including:
    - a. Design Summary
    - b. Limit States Criteria
    - c. Graphical plots of load and pressure design including allowable internal pressures and external loads.

The CONTRACTOR is solely responsible for the accuracy of all engineering data submitted. The submission of engineering data does not relieve the CONTRACTOR of his responsibility to furnish pipe complying in every respect with the requirements of these specifications.

4. Catalog data for pipe, closure sections, couplings, sleeves and gaskets.
  5. Detailed written shop repair and testing procedures.
- C. Quality Control: Submit the following:
1. Submit welder qualification certificates prior to fabrication of pipe.
  2. Submit material and manufacturing test reports for the following:
    - a. AWWA C301, Section 4.6.4.3: Cylinder assembly hydrostatic test.
    - b. AWWA C301, Section 4.6.5: Concrete compression tests.
    - c. AWWA C301, Section 4.6.8.3: Mortar coating absorption tests.
    - d. AWWA C301, Section 4.4.7, 4.4.8, and 4.4.9: Physical and chemical test results on each heat of steel used for cylinder, prestressing wire and joint rings.
    - e. AWWA C301, Section 4.4.11: Physical properties of rubber used in rubber gaskets.
    - f. AWWA C301, Section 4.4.1: Physical and chemical properties of cement per ASTM C150.
    - g. AWWA C301, Section 4.4.2 and Section 4.4.3: Test results for aggregates.
    - h. AWWA C301, Section 2.6: Chemical composition of admixtures if the use of admixtures is approved by the ENGINEER.
    - i. AWWA C301, Section 4.4.7: Yield strength, ultimate tensile strength and elongation for steel used in the manufacture of cylinders and fittings.
    - j. AWWA C301, Section 4.4.8: Tension, torsion, and chemical analyses for prestressing wire.
  3. Submit results of Shop Tests on production pipe.
  4. Submit a notarized Affidavit of Compliance stating that all prestressed concrete cylinder pipe fittings and specials furnished under this Contract conform in all respects to the requirements of these specifications.

5. Wire suppliers Affidavit of Compliance that wire was manufactured and tested in accordance with these specifications and reports of all test results. Test reports will clearly reference the lot or heat involved, including the reference code or other identifiable designation on each coil of wire as delivered.

## 1.5 DELIVERY, STORAGE AND HANDLING

- A. General: Deliver, store and handle all products and materials as specified in Division 1, Section 02500 and as follows:
- B. Special Precautions
  1. Take all precautions necessary to avoid damaging pipe fittings and specials during shipping and handling. Employ cushions, carpet or other means on pipe bunks and supports and blocking to protect mortar coating. Use wide belt-type nylon slings for handling. Do not use cables, chains and caliper clamps for handling pipe.
  2. Visually inspect mortar coating prior to and during installation into the trench and during backfilling operations.
  3. Repair mortar coating determined by the ENGINEER to be damaged in accordance with the manufacturer's recommendations and as specified herein.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable manufacturers are listed below. Other manufacturers of equivalent products may be submitted.
  1. Prestressed Concrete Cylinder Pipe and Fittings
    - a. Price Brothers Company, Dayton, Ohio
    - b. Vianini Pipe Inc., Somerville, New Jersey
  2. Gaskets
    - a. John Crane, Inc.

b. Garlock Packing Company

(1) Garlock 3000 for applications with greater than 150 psi internal nonsurge pressures

c. U.S. Rubber Company

d. Smith-Blair

e. Dresser Industries

f. Price Brothers

## 2.2 MATERIALS

A. Pipe and Fittings: Manufacture pipe and fittings conforming to AWWA C301 as modified and supplemented herein.

1. Do not supply pipe from inventory.
2. Use ASTM C150, Type II Cement for the core, slurry, mortar coating and authorized repairs. No cement replacement materials or admixtures are to be used without prior approval from the Engineer.
3. Steel Reinforcement: Wire with corrosion or pitting visible under a 10X microscope is not to be used. Do not use wire other than No. 6 or 1/4 inch diameter Class I, II or III.
4. Marking: Mark each length of straight pipe and each special on the interior pipe surface within 6 inches of the bell end to identify the design pressure, manufacture date, production control number and cross reference to the laying schedule. For beveled pipe, mark the degrees of bevel and the location of maximum point of bevel. Mark bends to show the angle turned.
5. Fittings: Manufacture fittings to standard dimensions unless shown or specified otherwise. Furnish fittings in conformance with AWWA C301 Section 4.7, except as noted otherwise herein.
  - a. Provide welds that are at least the thickness of the thinner section to be joined.
  - b. Before rolling or forming longitudinal edges, lap break all plates by a continuous rolling operation or form in a press having dies that are machined to proper radius. Exert sufficient pressure during the lap breaking operation to secure a uniform curve at the edges of the plate. Roll or press form the plates to the specified diameter.
  - c. All scale and other foreign matter accumulating on the plate during rolling and forming operation must be removed by air blast so as not

to be rolled or pressed into the surface of the plate. Complete all rolling and forming prior to making butt welds.

- d. Do not form angles by heating or hammer. Prior to welding using fillet welds, the plates to be welded must be fitted closely; and held firmly together during welding.
- e. Tack weld or clamp in place in proper alignment the edges of the butt joints and so hold throughout the welding process. Do not use dogs, clips, lugs or equivalent devices welded to the steel plate for the purpose of forcing it into position.
- f. Prior to welding, clean the surfaces of all plates and members to be welded of all scale and rust for a distance of not less than 1 inch and of all oil or grease for a distance of not less than 3 inches from the welding edge on both sides of the plates in the case of butt joints.
- g. Remove grease or oil by approved means. Do not use kerosene or any heavier petroleum solvent for removal of grease or oil. When it is necessary to deposit metal over a previously welded surface, remove scale, slag or welding flux with a roughing tool, chisel, air chipping hammer, or other means.
- h. Where butt-welded joints are used, align edges to be jointed to ensure complete penetration and fusion at the bottom of the joint. Do not exceed 1/16 inch offset in abutting edges at circumferential seams and 1/32 inch at longitudinal seams.
- i. Grind all butt welds for both hand and automatic welding out to sound metal before welding reverse side.
- j. Weld longitudinal seams before girth seams. Provide full strength, ductile welds made with a technique which will ensure uniform distribution of load throughout the welded section.
- k. Produce complete fusion of the plates, free from unsound metal, pinholes, and cracks at all welded joints.
- l. Provide welded joints with finish that is uniform, smooth, and free from grooves, depressions, burrs and other irregularities. No valley or undercut in the center or edges of any weld is allowed.
- m. Provide a mounting diameter for welding-type outlets the same as that of the surface upon which they are to be mounted, except that where the mounting surface is curved to a diameter of 36 inches or more, the

outlet bottom may be flat. Provide forged or fabricated and machined steel welding-type outlets.

- n. Design steel plate fittings in accordance with AWWA C-301 and AWWA M9. Provide ASTM A36 steel plate or equal.

- B. Restrained Joints: Furnish and install steel harness clamp type restrained joints or snap ring joint type restrained joints. Manufacture all joint bolts, not encased in joint grout, of corrosion resistant alloy. Design restrained joint to withstand the full bulkhead force at the combined total of the design working pressure and transient pressure specified for each class of pipe. Submit means of mechanical joint restraint to the Engineer for approval. Obtain prior approval from the Engineer for use of welded joints.

## 2.3 PROOF-OF-DESIGN

### A. General:

1. Submit results of proof-of-design tests with verification of design for pipe, fittings and specials. Do not manufacture production pipe prior to approval of the pipe design by the ENGINEER.
2. Pipe to be tested shall be fully cured and surface dry.
3. Straight lengths of test pipe shall be at least 4 feet in length.
4. Pipe under test shall be considered to be cracked if a 0.001 inch longitudinal crack 12 inches long is on exterior or interior surfaces of the pipe after completion of tests.
5. Pipe to be hydrostatically tested may be prewetted by maintaining a hydrostatic pressure of not more than the working pressure for a period not to exceed 48 hours. Pipe shall be filled with water and suitably bulkheaded.

### B. Hydrostatic Test:

1. Test pipe at the internal working pressure and combined pressure specified in the design conditions schedule at the end of this section.
2. Maintain the internal combined pressure for 1 minute, and then reduce the pressure to the internal working pressure and maintain at the working pressure for 20 minutes. At the end of 20 minutes there must not be any cracks, leaks or seeps.
3. Pipe damaged by testing shall be disposed of.

## 2.4 SHOP TESTS ON PRODUCTION PIPE

- A. General: Select one length of pipe for hydrostatic testing.
- B. Hydrostatic Testing: Conduct hydrostatic shop tests on selected production pipe in accordance with Section 2.3.
- C. Failure of Shop Test: If a selected production pipe fails the hydrostatic shop test, select and test a minimum of two other lengths of pipe from the same lot of pipe from which the faulty pipe was selected. If either of the two additional lengths of pipe fails to pass the test, the remainder of that lot will not be accepted unless each pipe successfully passes the test.

## 2.5 QUALITY CONTROL AND INSPECTION

- A. General: The examinations and tests required shall be performed by one of the following:
  - 1. Pipe Material Supplier
  - 2. Other Material Supplier

Examinations and tests are to be performed by persons not engaged in the activity being evaluated and they are not to report directly to the production supervisor responsible for the work.

- B. Test Procedures: Perform tests in accordance with the standard procedures referenced. In the absence of established written procedures document test methods and prove by actual demonstration to the satisfaction of the ENGINEER's acceptance of the test method. Keep at least one copy of the approved test procedure at the testing site, available to all appropriate personnel.
- C. Calibration of Equipment: Materials and items including products previously checked or manufactured with equipment found to be out of calibration, in accordance with AWWA C301, Section 5.2.9, shall be considered unacceptable until it can be determined that all applicable requirements have been met.
- D. Records: Maintain records of all required tests and inspections. Required records include information and data on materials, manufacturing, examinations, repairs, tests and inspections. The ENGINEER reserves the right to request specific data be included in the report which may not otherwise be included. Include the appropriate identification number for a pipe or pipe element on all reports. Provide copies of reports to the ENGINEER in an appropriate form for permanent records.
- E. Fabrication Testing and Examination:

1. Perform testing and examination of the materials used in fabrication of the pipe in accordance with the procedures and at the frequencies listed in Table I at the end of this section.
2. Perform tests and examinations in areas properly certified for the referenced tests and examinations.
3. Where the frequency of testing differs in Table I from that required by the referenced specification or test method, the greater frequency governs.

F. Final Inspection

1. Inspect the completed pipe after placement and curing of the mortar coating.

Conduct a complete inspection and place an appropriate stamp on the lining indicating the pipe to be complete and ready for shipment in accordance with the specifications.

2. After shipment to the jobsite and prior to installation, the pipe may be reinspected by the Engineer for cracks, delaminations, spalls or other defects. In addition, the coating may be "sounded," using a ball peen hammer or other implement, over its entire exterior surface at the spacing of approximately one foot both circumferentially and longitudinally to locate any hollow or drummy areas which would indicate a delamination or void.

## PART 3 EXECUTION

### 3.1 FABRICATION

A. General Requirements:

1. The minimum manufacturing and design requirements for prestressed concrete cylinder pipe are specified in AWWA C301 and AWWA C304.
2. Provide a minimum thickness of the mortar coating such as to maintain a minimum clear cover of four times the nominal wire diameter over the exterior portion of the wire but not be less than one inch nor exceed 1.25 inches maximum.

- B. Concrete for Pipe Core: Maintain the temperature of the mix for vertically cast concrete at less than 90 degrees F at the time of placement unless the recommendations contained in Hot Weather Concreting, as reported by the ACI Committee 305 are applied to control the effect of temperature on the quality of the concrete. Do not allow the measured slump of the concrete used in embedded-cylinder pipe to vary more than 1-inch from the approved mix design, as measured

at the mixer discharge. Pipe made with a concrete slump exceeding this limit will be rejected.

- C. Curing of Core: Cure cores by the accelerated curing method only. Provide a minimum of 12 hours total continuous cure including the delay period but excluding the time required to remove the forms or end rings. Do not remove forms or rings until a minimum of 6 hours of accelerated curing, including the required 4-hour delay period has elapsed.
- D. Placing of Wire Reinforcement: Maintain the temperature of the cores at a minimum of 40°F and in a surface dry condition at the time of prestressing. Fill and patch air pockets, honey combing, holes or voids 3/8-inch depth and/or diameter or greater and offsets as defined in Section 3.2 of this specification at the time the form is removed. Adequately cure patches prior to prestressing and finish in such a manner as to prevent bridging or gaps under the prestressing wire.

Do not prestress cores prior to the second calendar day after core placement or until the required concrete strength is attained.

- E. Curing of Coating: Cure cement mortar coating by the accelerated method.

### 3.2 REPAIRS

- A. General: Prior approval of THE ENGINEER is required for pipe repairs not described in AWWA C301 or Section 02500. Pipe or fittings requiring major repairs must be discarded.

Employ the following procedures where applicable. Submit exceptions to the procedures for approval by the ENGINEER.

- B. Cylinders: To remove bumps or dents, use only a rubber or fiber mallet. Hydrostatical retest the cylinder before being reused when the concrete is knocked out of the cores.
- C. Cores:
  - 1. Repair cores having air pockets in the outer surface. If a 3/8" rod shaped as shown on Figure 1 (at the end of this section) will enter pocket to index line, the air pocket shall be patched. Remove surface skin. Repair elongated pockets of equivalent surface area.
  - 2. Remove and patch sand streaks, honeycombs, casing leaks, or soft and rotten concrete in the inner and outer envelopes.
  - 3. So that patches may cure with the pipe, make all core repairs in the bays immediately after the casings are removed and the core temperature is below

90 degrees F. Maintain the patching mix at the same temperature as the core.

D. Core Cracks Prior to Prestressing:

1. Patch pipe as soon as possible prior to prestressing.
2. Inside longitudinal cracks due to handling, plastic shrinkage, sags or tears must be patched or the concrete broken out and recast or the core rejected.
3. Lining circumferential or helical slump cracks of less than .015" in width need not be patched. Circumferential cracks in excess of .015" in width but less than 0.030" may be repaired. Do not repair cracks which exceed 0.030" width and 12 inches in length; discard the core.
4. Embedded cylinder Cores with external longitudinal cracks of any width are not acceptable.

E. Mortar Coating:

1. Remove and repair defects appearing in mortar coating, such as blisters, hollow spots, falloffs, or slippage cracks during or immediately after application, before the pipe is placed in the bay for curing.
2. Repair defective areas greater than 50 square inches or extending more than 90° circumferentially or exposing prestress wire by coating machine application, not by hand.
3. Defective areas smaller than 50 square inches which are not over the prestress wire may be hand patched. When pipe is coated horizontally, pipe to be hand repaired should be positioned so that area to be patched is on top when in curing bins.
4. Holes caused by the depth gauge used to measure the coating thickness must be fully pressed closed immediately after removing gauge.
5. Stone holes in the mortar should be filled in and repaired in the curing bins, preferably prior to curing, otherwise prior to yarding.
6. Drip holes should be repaired prior to yarding pipe.

F. Interior of Finished Pipe:

1. Do not slurry, paint over or otherwise dress core cracks to improve appearance except as described below.

2. Repair holes larger than 3/8" diameter x 1/4" deep.
  3. Slurry and handrub prestressed pipe with shrinkage cracks, either circumferential or helical in excess of .005" but less than .010" wide prior to shipping. Epoxy inject circumferential or helical cracks in excess of .010" wide prior to shipping. Circumferential cracks at the ends of prestress sections (prestress cracks) .015" or less in width can be shipped. Prestress cracks between .016" and .030" wide shall be slurried and hand rubbed. Prestress cracks wider than .030" shall be epoxy injected.
  4. Inner lining longitudinal cracks exceeding .002" width after prestress or with an offset are cause for rejection except for cracks less than .01 inch maximum width in the unstressed area between the spigot face and joint ring weld or in the unstressed area of an outlet.
- G. Exterior of Finished Pipe: For prestressed pipe, cracks in coating of pipe are cause for rejection. This does not apply to surface craze cracks whose width cannot be measured or where cracks occur over saddles which may be repaired.
- H. Ends of Finished Pipe-Over Joint Ring: Repair all visible coating cracks.

### 3.3 INSTALLATION

- A. Install all prestressed concrete cylinder pipe and fittings in accordance with the manufacturer's recommendations and approved shop drawings and as specified in Division 1 and Section 02500.
- B. PCCP pipe work includes making connections between new pipe and wall castings in existing reservoir. Excavate and expose existing castings where new connections are to be made and field verify pipe invert elevation and all dimensions required to provide new piping extending from new reservoir to existing reservoir. Include the information obtained in the field in the PCCP pipe submittal.

### 3.4 JOINT RESTRAINT

- A. Provide restrained joints at all unanchored elbows, bends, tees, crosses and valves. Consider a bevel adapter installed adjacent to the spigot end of a bevel pipe as a single bend.
- B. Design the first restrained joint and length of pipe adjacent to the elbow, bend, tee, cross or valve to withstand a longitudinal bulkhead force equal to the internal design pressures specified, applied over the cross sectional area of the pipe at the outside joint diameter. Succeeding restrained joints and lengths of pipe may be designed to resist a reduced longitudinal force, computed on the basis of a linear reduction in force from the fitting or valve to the end of the restrained section. In

all cases, design restrained joints to develop the full strength of the pipe cylinder or longitudinal reinforcing in adjacent lengths of pipe. Do not exceed 13,500 psi working stress for design of restrained joints and pipe cylinders to withstand longitudinal forces at the internal design working pressure or 17,000 psi at the internal transient pressure specified.

### 3.5 SCHEDULES

- A. Refer to the schedule contained in Section 02500 Laying and Jointing Buried Pipelines for information on the piping that is to be constructed using the pipe materials and methods specified herein.

END OF SECTION

# PCCP DESIGN CONDITIONS SCHEDULE<sup>(1)</sup>

<u>Design</u>	<u>Reservoir Connection</u> <u>Piping</u>
Pipe Size (inches)	60
Working Pressure, Pw (psig)	30
Transient Pressure, Pt (psig)	--
Field Test Pressure, Pft (psig)	See Note 4
Earth Cut to Pipe Invert,	
Max. (feet)	34
Min. (feet)	30
Backfill Density (pcf)	130
Bedding Type	R-5
External Load	H-20
Live Load <sup>(2)</sup>	

## Notes:

- (1) In accordance with AWWA C-301 and AWWA C-304
- (2) Provide manufacturer with any anticipated surcharge loads based on construction methods and equipment selected.
- (3) Harnessed joint of an approved type shall be provided at all pipe joints.
- (4) Subject new pipe to field hydrostatic test with all new pipe joints exposed. Fill existing reservoir and east reservoir addition to overflow elevation. Test per Section 02512 Leakage Tests.. Repair all new joints showing leakage.

Material	Requirements	Reference or Test Method	Frequency
Cement	Physical and chemical properties	ASTM C150	Each shipment
Aggregates	Gradation	ASTM C136	Weekly
	Moisture content	ASTM C566	Daily
	Material finer than #200 sieve	ASTM C117	Weekly
	Organic impurities	ASTM C40	Test frequency shall be on a source basis. The Engineer reserves the right to call for tests during the manufacture of the pipe.
	Flat and elongated particles	CRD-C119	Same as above
	Friable particles	ASTM C142	Same as above
	Lightweight particles	ASTM C123	Same as above
	Specific gravity and absorption	ASTM C127 or ASTM C128	Same as above
	Chlorides	ASTM D1411	Same as above
	Potential reactivity	ASTM C289	Same as above
Admixtures	Soundness	ASTM C88	Same as above
	Chemical composition	Infrared spectrophotometry, pH, and solids contents in accordance with ASTM	Each shipment

Material	Requirements	Reference or Test Method	Frequency
Concrete		C494	
	Mixer Uniformity	ASTM C94	Initially and every six months
	Sampling	ASTM C172	
	Compressive strength cylinders	ASTM C172	
	Compressive	ASTM C39	One set of 2 cylinders daily for each test age for each 100 cu. yd. or portion thereof and for each class of concrete.
	Slump	ASTM C143	First batch placed each day and every 100 cu. yd. or portion thereof for each class of concrete.
	Static Modulus of Elasticity	ASTM C469	Annually or whenever the source of cement or aggregates are changed
	Temperature		Same as above.
Coating	Proportions on pipe wash out test		Weekly
Mortar	Hardened mortar absorption	ASTM C497 Method A	Weekly
Slurry	Proportions	Specific gravity	Daily
	Application rate	Discharge nozzle flow	Daily for each size of pipe.
Prestressing Wire	Tension test Torsion test	ASTM A370, Supplement IV, ASTM A648 and	Tension, and torsion tests shall be applied to each wire coil at the wire manufacturer's plant and to every tenth wire coil at the pipe manufacturer's plant. If, after the torsion test,

Material	Requirements	Reference or Test Method	Frequency
		AWWA C301	any wire sample exhibits radial or spiral (i.e. longitudinal) split(s) extending the full length of the sample between torsion machine jaws, visible to the unaided eye, or evidenced by an abrupt offset in the wire surface detectable with a fingernail then a special retest shall be performed. The special retest sample shall have a minimum length of eight inches and the number of turns shall be proportional to three turns per eight inches of sample length. The special retest shall be stopped at that point and inspected. Radial or spiral (longitudinal) splits in the special retest sample visible under five-power magnification shall be cause for rejection of the coil. Passing the special retest shall not relieve the manufacturer of the requirement to pass the three standard retests described hereafter. If a specimen fails to comply with the specified tensile strength, reduction of area, minimum number of turns to torsion fracture or the 75% transverse shear requirements, 3 additional retests shall be made, each of which must comply with the specifications, otherwise the coil shall be rejected. If 10% or more of the coils in a lot or heat are rejected, the entire lot or heat shall be rejected.
	Tension Winding Machine Calibrations	Calibrated Load Cell	Initially and weekly thereafter over the full range of wire tensions.

(NO TEXT FOR THIS PAGE)

## SECTION 02505

### BURIED DUCTILE-IRON PIPE AND FITTINGS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Requirements for providing buried ductile-iron pipe, fittings and appurtenances except soil pipe.
1. Provide ductile-iron pipe and fittings complete with all necessary jointing facilities and materials, specials, adapters and other appurtenances required for installation in and completion of the pipelines to be constructed.
  2. Provide flanged, plain end or rubber gaskets (push-on or mechanical joint) of the types, sizes and classes shown or specified.

##### 1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
1. AWWA C104/A21.4 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
  2. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Piping for Water and Other Liquids
  3. AWWA C110/A21.10 - Ductile-Iron and Gray-Iron Fittings 3 In. Through 48 In., for Water and Other Liquids
  4. AWWA C111/A21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
  5. AWWA C115/A21.15 - Flanged Ductile-Iron Pipe With Threaded Flanges
  6. AWWA C151/A21.51 - Ductile-Iron Pipe, Centrifugally Cast, for Water and Other Liquids
  7. AWWA C153/A21.53 - Ductile-Iron Compact Fittings, 3 In. Through 12 In., for Water and Other Liquids
  8. ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings

- 9. AWWAC606 - Grooved and Shouldered Type Joints
- 10. ASTM A 307 - Carbon Steel Externally Threaded Standard Fasteners

### 1.3 SYSTEM DESCRIPTION

- A. Design Standards: Provide ductile-iron pipe meeting the requirements of AWWA C151/A21.51.
  - 1. Provide pipe of the various sizes and classes as specified in the schedule or shown, except provide minimum Thickness Class 53 for pipe with threaded flanges. Locate restrained joints and various beddings as shown.
  - 2. Construct concrete encasements where shown.

### 1.4 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Submit the following shop drawings:
  - 1. Pipe joints, fittings, sleeves and cleanouts. Where special designs or fittings are required, show the Work in large detail and completely describe and dimension all items.
  - 2. Fully dimensioned drawings of piping layouts, including fittings, couplings, sleeves, cleanouts, valves, supports and anchors. Label pipe size, materials, type, and class on drawings and include the limits of each reach of restrained joints. Provide cross sections showing elevations of cleanouts, pipes, fittings, sleeves, and valves.
  - 3. Catalog data for pipe, joints, fittings, sleeves, harnessing and cleanouts.
- C. Quality Control: Submit certificate of compliance for pipe, fittings, gaskets, lining, polyethylene encasement, coatings, specials, sleeves and cleanouts in accordance with this Section.

### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle all pipe, fittings and appurtenances as specified in Division 1 and Section 02500.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

A. Acceptable manufacturers are listed below. Manufacturers of equivalent products may be submitted.

1. Ductile-iron pipe and fittings.
  - a. American Cast Iron Pipe Company
  - b. McWane Incorporated
  - c. United States Pipe and Foundry
2. Ductile-iron retainer glands.
  - a. 3-inch through 24-inch diameter
    - (1) Nappco, Inc. Series 1246
    - (2) Ebba Iron, Inc. Series 100
  - b. larger than 24-inch diameter
    - (1) Ebba Iron, Inc. Megalug
3. Restrained push-on joints.
  - a. U.S. Pipe and Foundry TR Flex
  - b. McWane Inc. Super-Lock
  - c. American Cast Iron Pipe Company Lok-Ring or Flex-Ring
4. Gaskets.
  - a. John Crane, Inc.
  - b. Garlock Packing Company
  - c. U.S. Rubber Company
  - d. American Cast Iron Pipe Company
  - e. United States Pipe and Foundry
  - f. McWane Inc.
5. Coatings and Linings.
  - a. Kop-Coat
  - b. Tnemec
  - c. American Cast Iron Pipe Company
  - d. United States Pipe and Foundry

## 2.2 MATERIALS

A. Fittings: Provide all fittings meeting the requirements of AWWA C110/A21.10, unless shown or specified otherwise. Fittings 14 inches and larger require a pressure rating of 150 psi, or as specified, whichever is greater.

1. Flanged: Where long radius flanged fittings and other flanged fittings not covered in AWWA C110/A21.10 are shown or specified, provide items meeting the requirements of AWWA C110/A21.10 and having laying lengths conforming to ASME B16.1 for 125-pound American Standard fittings.
2. Compact Mechanical Joint and Rubber Gasket Joint: Where compact mechanical joint or rubber gasket joint fittings are shown or specified, provide items meeting the requirements of AWWA C153/A21.53.

### B. Flanged Joints

1. Threaded Flanges: Provide threaded, ductile-iron long hub flanges meeting the requirements of AWWA C115/A21.15.
  - a. Screw flanges on the threaded end of the pipe in the shop.
  - b. Reface the face of the flange and the end of the pipe together.
  - c. Design flanges to prevent corrosion of the threads from the outside and to prevent leakage through the pipe threads.
2. Facing and Drilling: Provide flanges plain faced and drilled to the requirements of AWWA C115/A21.15, unless special drilling is called for or required. Face flange accurately at right angles to the pipe axis. Drill flanges smooth and true, and cover machined faces with zinc dust and tallow or equivalent material.
3. Taps: Tap flanges where tap or stud bolts are required.
4. Fasteners: Provide bolts, stud bolts, and nuts meeting the requirements of ASTM A 307, Grade B.
5. Gaskets: Provide full-face gaskets for flanged joints on 12-inch diameter and smaller pipe and gaskets of the ring type for flanged joints on larger pipe. Provide flange gaskets meeting the requirements of AWWA C115/A21.15, except make gaskets for gas lines with neoprene and aramid.

C. Rubber Gasket Joints: Provide mechanical joints and push-on type joints meeting the requirements of AWWA C111/A21.11.

- D. **Harnessing:** For ductile-iron pipe and fittings with mechanical joints that require harnessing, provide ductile-iron mechanical joint retainer glands.
1. **Coatings:** Coat the assembly with two heavy coats of asphalt varnish conforming to AWWA C151/A21.51 after installation.
  2. **Joint Assemblies:** Design the joint assemblies to resist pullout of the joints at the test pressures specified.
- E. **Sleeves:** Provide mechanical joint solid sleeves meeting the requirements of AWWA C110/A21.10 where shown, specified or required for connection to existing facilities.
- F. **Cleanouts**
1. Provide cleanouts where shown or specified.
  2. **Size:** Provide not less than 6 inch diameter cleanout openings for pipe 8 inches in diameter or larger. Provide cleanout openings for pipe 6 inches in diameter or smaller of the same diameter as the pipe.
  3. **Cleanout Covers:** Provide cleanout covers which are blind flanges meeting the requirements of AWWA C110/A21.10, except where conformation is required with the inside curvature of the pipeline, in which case the covers are flanged plugs of proper shape with American Standard flange drilling.
    - a. Fasten covers by means of steel studs and bronze nuts. Drill and tap covers for a 1-1/2-inch diameter pipe connection.
  4. **Plugs:** Equip the flange of conformed plugs with a dowel or other suitable means for proper setting.
- G. **Wall Castings, Connecting Pieces, and Special Fittings**
1. **General:** Provide wall castings and connecting pieces, such as bell and bell, bell and spigot, bell and flange, flange and flange, flange and spigot, and flange and flare, meeting the requirements of AWWA C110/A21.10.
  2. **Design:** Provide special fittings, where required, of an approved design that have the same diameters and thicknesses as standard fittings, unless otherwise required, but their laying lengths and other functional dimensions are determined by their positions in the pipeline and by the particular piping materials to which they connect.

3. Intermediate Collar: Where watertightness is essential and at other locations where indicated, provide wall castings with an integrally cast intermediate collar located at the center of the wall.
- H. Temporary Bulkheads: Provide temporary bulkheads at the ends of sections where adjoining pipelines have not been completed and are not ready to connect.
  1. Remove all temporary bulkheads when they are no longer needed.
- I. Linings and Coatings
  1. Cement Lining: Provide ductile-iron pipe and fittings having a cement-mortar lining not less than standard thickness meeting the requirements of AWWA C104/A21.4, unless shown or specified otherwise.
  2. Asphaltic Coating: Shop coat pipe which is to be buried with the standard asphaltic outside coating specified in AWWA C151/A21.51.
  3. Encased Pipe: Do not coat or paint the outside of fittings and pipe which are to be encased in concrete.
  4. Labels: Paint the size, class designation, manufacture date, and control number cross referenced to the laying schedule conspicuously in white on the outside of each pipe, fitting, and special casting after the shop coat has hardened.
  5. Flange Joints: Immediately after facing and drilling, coat the back of the flanges and bolt holes with asphaltic coating meeting the requirements of AWWA C151/A21.51, Section 51-8.1.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Install all buried ductile iron pipe and fittings in accordance with the manufacturer's recommendations and approved shop drawings and as specified in Division 1 and Section 02500.

#### 3.2 LEAKAGE TESTING

- A. Cleaning: Flush clean and test all pipes after installation.
- B. Testing: Test pipes for leaks and repair or tighten as required.
- C. Procedures: Conduct tests in accordance with Section 02516.

### 3.3 DISINFECTION

- A. General: Disinfect all pipelines that are to carry potable water before they are placed into service as specified in Section 02512.

### 3.4 SCHEDULES

- A. Refer to the Schedules contained in Section 02500 Laying and Jointing Buried Pipelines for information on the piping that is to be constructed using the pipe materials and methods specified herein.

END OF SECTION

(NO TEXT FOR THIS PAGE)

## SECTION 02507

### BURIED POLYVINYL CHLORIDE (PVC) PRESSURE PIPE

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Requirements for providing buried PVC pipe, fittings and appurtenances.
  - 1. Provide PVC pipe and fittings complete with all necessary jointing facilities and materials, specials, adapters and other appurtenances required for installation in and completion of the pipelines to be constructed.
  - 2. Provide plain end or rubber gaskets (push-on or mechanical joint) of the types, sizes and classes shown or specified.

##### 1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4 In. through 12 In., for Water Distribution
  - 2. AWWA C905 - Polyvinyl chloride (PVC) Water Transmission Pipe, Nominal Diameters 14 In. through 36 In.
  - 3. ASTM D 2321 - Underground Installation of Thermoplastic Pipe for Sewer and Other Gravity-Flow Applications
  - 4. ASTM F 477 - Elastomeric Seals (Gaskets) For Joining Plastic Pipe
  - 5. ANSI A21.10 - Ductile-Iron and Gray-Iron Fittings 3 inches through 48 inches, for Water and Other Liquids
  - 6. ANSI A21.11 - Rubber-Gasket Joints for Ductile-Iron and Gray Iron Pressure Pipe and Fittings

##### 1.3 SYSTEM DESCRIPTION

- A. Design Standards: Provide PVC pressure pipe for reservoir underdrain system meeting the requirements of ANSI/AWWA C900 with a minimum wall thickness corresponding to standard dimension ration (SDR) 14. Provide perforated pipe in all locations below and adjacent to the reservoir base slab. See drawings for perforation locations and spacing. Provide mechanical joint ductile-iron pipe fittings for PVC pressure pipe meeting the requirements of Section 02505.

Provide Schedule 80 PVC sleeves for the underdrain riser pipe through the base slab of the reservoir as shown.

1. Provide pipe of the various sizes and classes as specified in the schedule or shown. Restrain all pressure pipe joints at fittings and within 50 feet of all fittings.
2. Construct concrete encasements where shown.

#### 1.4 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
  1. Submit the following shop drawings:
    1. Pipe joints, fittings, sleeves and cleanouts. Where special designs or fittings are required, show the work in large detail and completely describe and dimension all items.
    2. Fully dimensioned drawings of piping layouts, including fittings, couplings, sleeves, cleanouts, valves, supports and anchors. Label pipe size, materials, type, and class on drawings and include the limits of each reach of restrained joints. Provide cross sections showing elevations of cleanouts, pipes, fittings, sleeves, and valves.
    3. Catalog data for pipe, joints, fittings, sleeves, harnessing and cleanouts.
- C. Quality Control: Submit certificate of compliance for pipe, fittings, gaskets, coatings, specials, sleeves and cleanouts in accordance with this Section.

#### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle all pipe, fittings and appurtenances as specified in Division 1 and Section 02500.

### PART 2 PRODUCTS

#### 2.1 MATERIALS

- A. Joints for Pressure Pipe: Provide pipe with bell ends in accordance with AWWA C900 and AWWA C905. Provide joints with elastomeric gasket joints.
- B. Elastomeric Gasket Joints: Provide elastomeric gasket joints in accordance with ASTM F 477.

- C. Rubber Gasket Joints: Provide mechanical joints meeting the requirements of ANSI A21.11.
- D. Pressure Pipe Outside Diameter: Provide pressure pipe of the outside diameter consistent with ductile-iron pipe.
- E. Perforations: Provide perforations consisting of circular, cleanly cut holes, 3/8-inch in diameter and arranged in rows parallel to the axis of the pipe. Provide uniform hole spacing conforming to the centerline to centerline spacing as shown on the plans.
- F. Pipe Markings: Provide mark on each pipe at intervals of 10 feet or less to designate compliance with applicable ASTM or AWWA specification.
- G. Temporary Bulkheads: Provide temporary bulkheads at the ends of sections where adjoining pipelines have not been completed and are not ready to connect.
  - 1. Remove all temporary bulkheads when they are no longer needed.
- H. Date of Manufacturer: Provide pipe and fittings manufactured no earlier than 12 month period proceeding the date of the Agreement.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Install all buried PVC pipe in accordance with the manufacturer's recommendations and approved shop drawings and as specified in Division 1 and Section 02500. Orient pipe so that perforations are located as shown.

#### 3.2 LEAKAGE TESTING

- A. Cleaning: Flush clean and test all pipes after installation.
- B. Testing: Test pipes for leaks and repair or tighten as required.
- C. Procedures: Conduct tests in accordance with Section 02516.

#### 3.3 SCHEDULES

- A. Refer to the Schedules contained in Section 02500 Laying and Jointing Buried Pipelines for information on the piping that is to be constructed using the pipe materials and methods specified herein.

END OF SECTION

(NO TEXT FOR THIS PAGE)

SECTION 02509  
SEWER MANHOLES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Requirements for providing sewer manholes and all other appurtenances for a complete installation. Provide manholes in accordance with the details shown. Standard details are bound following the Specifications. Except as otherwise specified, construct sewer manholes of precast reinforced concrete sections conforming to ASTM C 478.

1.2 REFERENCE

- A. Codes and standards referred to in this Section are:
1. ASTM C 76 - Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe.
  2. ASTM C 478 - Specification for Precast Reinforced Concrete Manhole Sections
  3. ASTM C 443 - Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets [Metric]
  4. ASTM C 923 - Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes

1.3 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Shop Drawings: Submit shop drawings of sewer manholes as specified in Division 1.
- C. Quality Control: Submit shop and field test reports of concrete samples tested in an approved laboratory.

1.4 DELIVERY, STORAGE AND HANDLING

- A. General: Take every precaution to prevent injury to the manhole sections during transportation and unloading. Unload manhole sections using skids, pipe hooks,

rope slings, or suitable power equipment, if necessary, and keep the sections under control at all times. Do not allow the manhole sections to be dropped, dumped or dragged under any conditions. Follow applicable requirements specified in Division 1.

- B. **Damaged Section:** If any manhole section is damaged in the process of transportation or handling, reject and immediately remove such sections from the site, and replace the damaged manhole sections at no increase in Contract Amount.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. **Concrete, Steel Reinforcement and Aggregates:** Provide reinforced concrete, cementitious materials, aggregates and steel reinforcement conforming to the requirements of ASTM C 478.
- B. **Mortar:** Provide mortar that is composed of one part Portland cement or Portland pozzolan cement to two parts sand.
- C. **Manhole Frames and Covers:** Provide manhole frames and covers as shown that are gray iron and meeting the requirements of Section 05560.
- D. **Mating Surface Sealant:** Provide bituminous mastic sealant.
- E. **O-ring Rubber Gaskets:** Provide O-ring rubber gaskets conforming to ASTM C 443 for joining manhole sections.
- F. **Rubber Boots:** Provide rubber boots conforming to ASTM C 923.

### 2.2 CONSTRUCTION

- A. **Manhole Base Section:** Unless otherwise shown, provide manhole base sections consisting of a base riser section with an integral floor. When benches are made at the manufacturing site, provide concrete used for benched inverts conforming to the requirements for concrete used for precast sections. When benches are made in the field, Class D concrete may be used.
- B. **O-Ring Joints:** Join riser, cone and flat slab top sections with O-ring rubber gasket joints. Fill voids in the joints completely with mortar after assembly of the sections.
- C. **Provide rubber boots at pipe connections.**
- D. **Provide bituminous mastic sealant at all mating surfaces. See details for locations.**

## 2.3 SOURCE QUALITY CONTROL

- A. Concrete Strength: Manhole sections will be inspected and tested by an independent, certified testing laboratory, retained by the OWNER, to establish the strength of the concrete and the adequacy of curing, to certify the date that the sections were cast and to confirm that the reinforcing steel has been properly placed. This inspection and testing will be performed by the laboratory at the manufacturing plant prior to shipment.
1. At least three cylinders will be taken each day that manhole sections are cast, with batch samples to be designated by the laboratory representative. At least one set of cylinders will be taken from each 9 cubic yards of concrete used in manhole section construction. These samples will be tested for strength. If the samples fail to meet specified minimum concrete strength requirements, all manhole sections manufactured from the concrete from which the cylinders were made will be rejected.
  2. The OWNER reserves the right to core manholes either at the job site or point of delivery to validate strength of concrete and placement of steel. If cores fail to demonstrate the required strength or indicate incorrect placement of reinforcing steel, all sections not previously tested will be considered rejected until sufficient additional cores are tested, at no increase in Contract Amount, to substantiate conformance to these requirements.
- B. Acceptance: Base acceptance of flat slab tops passing a proof-of-design test in accordance with ASTM C 478.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Manhole Frames: Firmly embed manhole frames in mortar. Provide wedges or shims for accurate and level placing of the frames. Set manhole frame on mastic and mortar remaining space.
- B. Connections to Riser Section: Manufacture riser sections with openings properly located for making connections to sewers. Provide openings with rubber boots in accordance with ASTM C 923.

END OF SECTION

(NO TEXT FOR THIS PAGE)

## SECTION 02512

### DISINFECTION

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Disinfection of the east reservoir addition, 60-inch connecting piping, east half of the existing central reservoir and 12-inch reservoir fill pipe. Furnish all labor, water, chemicals and equipment, including taps, corporation stops, temporary pumps and other items necessary to perform the Work, except as otherwise specified.

##### 1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. AWWA C651 - Disinfecting Water Mains
  - 2. AWWA C652 - Disinfection of Water-Storage Facilities

##### 1.3 QUALITY ASSURANCE

- A. Disinfection Standards: Disinfect in accordance with AWWA C651 for water mains and AWWA C652 for water storage facilities and equipment.
- B. Local Requirements: Conform disinfection procedures to local health department requirements for new water mains and structures.
- C. Chlorinated Water Disposal: Dispose of spent highly chlorinated water in accordance with applicable regulations.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

##### 3.1 APPLICATION

- A. Disinfection Procedures for Piping: Flush pipelines with clean water before disinfecting. Disinfect by the continuous feed method, as specified in AWWA C651, using sodium hypochlorite solution. Then add chlorinated water containing

not less than 50 mg/l free available chlorine followed by clean water at one end of the section being disinfected and discharged at the far end.

1. Add the chlorinated water until the water coming from each downstream blowoff has a residual of not less than 25 mg/l of chlorine.
  2. Close the pipelines and allow the solution to remain in the lines for at least 24 hours. Recheck the chlorine residual in the pipeline. If the free chlorine residual is less than 10 mg/l after 24 hours, disinfect the pipelines again with more concentrated chlorinated water.
  3. After meeting the previous requirements in this subsection and after a 24-hour holding period, thoroughly flush out the pipelines and equipment and fill with clean water. Do not permit flushing water to discharge into existing water mains. The water for this filling will be furnished by the OWNER.
- B. Disinfection Procedures for Reservoirs: Disinfect potable water storage reservoirs in accordance with AWWA C652, Method 2 or 3, using sodium hypochlorite.
1. In Method 2, spray method, spray the entire interior surface of the reservoir with chlorinated water containing 200 mg/l of available chlorine. Disinfect all interior surfaces of the reservoir including the ceiling, columns and walls above the normal maximum water level. After spraying, allow the reservoir to stand at least two hours before filling with fresh water.
  2. In Method 3, after disinfection, dispose of the water by dechlorinating it prior to discharge to the storm drain.

### 3.2 VERIFICATION OF DISINFECTION

- A. Final Samples: Bacteriological samples will be taken and tested by the OWNER on two successive days. If the samples are not satisfactory, repeat the entire disinfection procedure.
1. Assume the expense of taking and testing additional samples until satisfactory samples are obtained.
  2. Assume the expense of all water for subsequent fillings of the pipelines, tanks and equipment.

END OF SECTION

SECTION 02516  
LEAKAGE TESTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Testing for any signs of leakage in all pipelines and structures required to be watertight.
  - 1. Test gravity sewers and drain lines by the Smoke Test Method or by an Infiltration Test, or both, as specified.
  - 2. Test air and gas lines with compressed air.
  - 3. Test all other pipelines with water under the specified pressures.
- B. Operation of Existing Facilities: Conduct all tests in a manner to minimize as much as possible any interference with the day-to-day operations of existing facilities or other contractors working on the site.

1.2 PERFORMANCE REQUIREMENTS

- A. Written Notification of Testing: Provide written notice when the work is ready for testing, and make the tests as soon thereafter as possible.
  - 1. Personnel for reading meters, gauges, or other measuring devices, will be furnished by the OWNER.
  - 2. Furnish all other labor, equipment, air, water and materials, including meters, gauges, smoke producers, blower, pumps, compressors, fuel, water, bulkheads and accessory equipment.

1.3 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. ACI 350.1R-93 - Manual of Concrete Practice, Part 4
  - 2. ASTM C 828 - Practice for Low-Pressure Air Test of Vitrified Clay Pipe Lines (4 to 12 inches)
  - 3. ASTM C 924 - Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method

4. AWWA C 600 - Installation of Ductile-Iron Water Mains and Their Appurtenances

#### 1.4 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Testing Report: Prior to placing the sewer system in service submit for review and approval a detailed bound report summarizing the leakage test data, describing the test procedure and showing the calculations on which the leakage test data is based.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

##### 3.1 PRESSURE TESTS OF EXPOSED PIPING

- A. Testing: Pressure test exposed pipelines for leakage by maintaining the fluid in the pipe at the specified pressure for a period of 60 minutes. Examine all accessible joints during the test. Stop all visible leakage.
- B. Test Pressures: Test the various pipelines at the test pressures specified in Section 02500.

##### 3.2 PRESSURE TESTS OF BURIED OR CONCEALED PIPELINES AND WATER MAINS

- A. Testing: Completely backfill all harnessed sections of buried piping before such sections are tested, unless otherwise specified.
  1. Pressure test buried or concealed pipelines for leakage by maintaining the fluid in the pipe at the specified pressure for a minimum period of 4 hours.
  2. Pressure test the piping for leakage as a whole or in sections, valved or bulkheaded at the ends. Apply the specified pressure to the piping through a tap in the pipe by means of a hand pump or other approved method. Do not use air for testing.
- B. Test Pressures: Test the piping at the test pressures specified in Section 02500.

- C. Allowable Leakage: Stop all visible leakage. Do not allow leakage for any piping, as determined by the above test, to exceed the allowable leakage for cast-iron water mains as given by the following formula in Section 4.2 of AWWA C600:

$$L = \frac{S \times D \times (P)^{1/2}}{133,200}$$

in which L is the allowable leakage in gallons per hour, S is the length of water main tested in feet, D is the nominal diameter of the pipe in inches and P is the average test pressure in psi gauge.

### 3.3 LEAKAGE TESTS FOR SEWERS

- A. Submerged Testing Procedure: When the groundwater level is above the sewer, test sewers for infiltration or leakage as follows:

1. Measure the infiltrated flow of water by means of a weir set up in the invert of the sewer at a known distance from a temporary bulkhead or other limiting point of infiltration.
2. Test after the sewer or sewers have been pumped out, if necessary.
3. Do not start testing until normal infiltration conditions are established in the work to be tested.
  - a. Inspect gravity sewer visually for infiltration.
  - b. Pump the sewers dry and allow the groundwater to rise above the crown of the sewer.
  - c. Inspect the sewer on the inside and seal all visible leaks completely.

- B. Nonsubmerged Testing Procedure: If the groundwater level is below the top of the sewer, test for leakage as follows:

1. Construct a bulkhead in the sewer at the manhole at the lower end of the section under test.
2. Fill the section being tested with water until the level of water is one foot above the crown of the sewer in the manhole at the upper end of the test section.
3. Leakage will be the measured amount of water added to maintain the water at that level.
4. Carry on tests for a minimum of four hours with readings at 30-minute intervals.

5. In computing the length of sewer contributing infiltration or leakage, include the length of house connections tested, if any, in the total length.
  6. The quantity of infiltration or leakage for sewers shall not exceed 200 gallons per inch of diameter per mile per 24 hours for sewers up to and including 24 inches in diameter, and shall not exceed 5,000 gallons per mile per 24 hours for all sizes larger than 24 inches in diameter.
- C. Repair: When the measured infiltration or leakage exceeds the specified amount, locate and repair defective manholes, pipe or pipe joints. If the defective portions cannot be located, remove and reconstruct as much of the original work as necessary to obtain a sewer within the allowable infiltration limits upon such retesting as necessary.
1. Regardless of the amount of infiltration or leakage measured repair and seal in an approved manner all visible or detectable leaks in the sewers, manholes, structures, and other appurtenances.
- D. Smoke Testing: In conjunction with the above tests, and where approved make smoke tests after the trench has been filled and tamped to the top of the pipe so that subsequent backfilling will not disturb the pipe.
1. Before making the smoke test, securely seal all openings into the pipe.
  2. Introduce smoke into the pipe at a pressure of not less than 1.0 psi by a blower having a capacity of at least 1,200 cfm.
  3. Maintain the pressure for a sufficient length of time to demonstrate that the line is free from leaks or that all leaks have been located.
  4. Use smoke with a color of white to gray, which leaves no residue, and is nontoxic and nonexplosive. Produce the smoke by smoke bombs capable of producing not less than 25,000 cubic feet of smoke in three minutes.
  5. If any leaks are found, repair and retest the line until tight at no additional cost to the OWNER.

### 3.4 REPAIR OF PIPING LEAKS

A. Procedures: Repair leaks as follows:

1. Replace broken pipe or joint assemblies found to leak.
2. When leakage occurs in excess of the specified amount, locate and repair defective valves, pipe, cleanouts or joints.

3. If the excess leakage is determined to be caused by defective materials furnished, improper workmanship, or damage to the materials, make the necessary repairs or replacements at no addition to the Contract Price.
4. If defective portions cannot be located, remove and reconstruct as much of the original work as necessary to obtain piping that meets the leakage requirements specified herein and retest, all at no addition to the Contract Price.

### 3.5 LEAKAGE TESTS FOR CAST-IN-PLACE, WATERHOLDING CONCRETE STRUCTURES

- A. Perform leakage tests on the east reservoir addition and 60-inch connecting piping before backfilling, by filling the structure and piping with water to elevation 692.0. Testing shall not be performed before fourteen (14) days after all portions of structure elements have been completed, and not before all the structure elements have attained the specified compressive strength. The CONTRACTOR shall be responsible for proper disposal of all water used for leakage testing. The method of disposal shall be subject to approval by the OWNER. Any test water that is proposed to be delivered to a potable water system shall meet applicable drinking water standards and pass bacteriological testing. The 36-inch storm sewer along Thistlewood Lane may be used for disposal of spent test water, provided it does not contain settleable solids and/or chlorine. Dechlorinate water discharged to a storm sewer.
  1. Bulkhead the west ends of the two 60-inch connecting pipes. Fill the east reservoir addition and 60-inch connecting piping to elevation 692.0. Allow a 3-day interval between the time the structure is filled with water and the start of the leakage testing to minimize the effect of the concrete absorption on the test results.
  2. Inspect the walls and all joints for leakage. If structural distress is observed, report immediately to the OWNER. Visible flowing leaks or damp spots that show on the exterior surface of the structure shall not be permitted.
  3. After the 3-day interval in Step 1 above, re-establish the water level in the reservoir to test depth, begin the test, and observe the water level in the structure for a 24 hour period.
    - a. Make an inspection for locations of leakage through the exterior surface of the structure, especially in areas around fittings; and construction, expansion and other joints. Monitor underdrains for any increase in flow.
    - b. Take water level readings at 4 hour intervals.

- c. Leakage will be considered acceptable if there are no visible leaks or visible damp areas and there is no drop in the water surface elevation in the reservoir.
  - d. If visible leaks appear, submit, for approval, the repair procedure and materials for all elements of structure. Provide all repair materials compatible for use with potable water. Make the repairs at no additional cost to the OWNER. Leakage test the structure again after repairs.
  - e. Damp areas are not permitted at any location on the tank wall. Damp areas are defined as spots where moisture can be picked up on a dry hand. All such areas shall be repaired as necessary at no additional cost to the OWNER.
  - f. In the event the reservoir does not pass the leakage test and all obvious wall cracks and leaks have been satisfactorily repaired, dewater the reservoir and repair all likely paths of water leakage in the reservoir bottom.
  - g. Continue repair and re-test cycle until the structure passes the leakage test.
- B. Perform leakage tests for concrete roof slabs of structures by holding 2 inches of water over the top of the slab for a period of three days. If there is any leakage through cracks or joints resulting in damp areas on the underside of the roof slab, or if the cracks at the top surface are wider than five (5) mils, submit, for approval, repair procedures and materials for roof slab repair. Make the repairs at no additional cost to the OWNER.
- 1. If the excess leakage is determined to be caused by defective materials improper workmanship, or damage to the slab, make the necessary repairs to replacements at no addition to the Contract Price.
  - 2. If defective portions cannot be located, remove and reconstruct as much of the original work as necessary to obtain a concrete roof slab that meets the leakage requirements specified herein and retest, all at no addition to the Contract Price.

### 3.6 WATER FOR TESTING

- A. Water for the initial filling of the reservoir structures and interconnecting piping will be furnished by the OWNER at no cost to the CONTRACTOR. Water used beyond the initial fill for each test shall be paid for by the CONTRACTOR at the rate of \$3.18 per 1,000 gallons. The quantity of water used will be metered, or in the absence of meters, estimated by the OWNER.

END OF SECTION

(NO TEXT FOR THIS PAGE)

SECTION 02840  
PAVING AND SURFACING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Requirements for constructing driveways, parking areas, sidewalks and temporary asphalt path. See standard details following the end of the specifications and details on the Contract Drawings.

1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. Illinois Department of Transportation Standard Specifications for Road and Bridge Construction

1.3 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Submit the following shop drawings:
  - 1. For concrete provide submittals in accordance with Section 03310.
  - 2. Submit certifications for subgrade material meeting requirements of the Illinois Department of Transportation Standard Specifications.
  - 3. Submit certification that all materials meet requirements specified herein.
  - 4. Provide plant tickets with each load of asphalt mix delivered to the site stating type of mix and gradation before placing each load of asphalt mix.

PART 2 PRODUCTS

2.1 MATERIAL

- A. Provide Class C concrete meeting requirement of Section 03310.
- B. Provide subgrade of suitable native material or suitable fill material meeting requirement of Section 02317.

- C. Provide an Aggregate Base Course, Type A, Grade CA6 crushed stone meeting the requirements of Section 351 of the Illinois Department of Transportation Standard Specifications.
- D. Provide Bituminous Concrete Binder Course, Hot Mix Asphalt (HMA), Superpave, Mix C, N50 meeting the requirements of Section 406 of the Illinois Department of Transportation Standard Specifications.
- E. Provide Bituminous Concrete Surface Course, Hot Mix Asphalt (HMA), Superpave, IL-19, N50 meeting the requirements of Section 406 of the Illinois Department of Transportation Standard Specifications.

### PART 3 EXECUTION

#### 3.1 GENERAL

- A. Construct roads, driveways, parking areas, concrete walks, and asphalt paths as required herein, meeting requirements of the Illinois Department of Transportation Standard Specifications.

#### 3.2 ROADS AND PAVEMENT

- A. Construct roads and paved areas where shown and wherever existing pavement is disturbed by the work.
- B. Remove all existing topsoil and not less than the top 18 inches of existing material.
- C. Vertical saw cut existing pavement at locations where new pavement is to match existing pavement. Perform this work where the full thickness of existing pavement is represented.
- D. Proof roll the subgrade in both directions with two slow passes of a ten wheel tandem axle dump truck loaded to at least 20 tons with a tire pressure of 85 to 90 psi. Over excavate soft zones as ordered by the ENGINEER in accordance with the subsection headed "Authorized Additional Excavation" in Section 02316. A soft area is defined as an area where ruts deeper than 1-inch are made by the truck tires.
- E. Compact the proof rolled subgrade with large vibratory equipment. Make one complete coverage, with overlap, of the area.
- F. Place and compact a 12-inch thick Aggregate Base Course following the requirements of Illinois Department of Transportation Standards Specifications.

G. Bituminous Courses

1. Cover all aggregate base which is to receive bituminous course with MC-30 prime coat following requirements of Section 403 of the Illinois Department of Transportation Specifications.
2. Place and compact not less than 3-inch thick bituminous binder course following requirements of the Illinois Department of Transportation Specifications.
3. Place and compact not less than 2-inch thick bituminous surface course following requirements of the Illinois Department of Transportation Specifications.

3.3 SIDEWALK CONSTRUCTION

- A. Provide new walks with a minimum thickness of 6 inches. Provide replacement of portions of existing walks with a minimum thickness of 5 inches.
- B. Provide grooved joints at intervals of 5 feet for sidewalks.
- C. Provide 1/2-inch thick expansion joint at junction of structures, curbs and at minimum 25 foot intervals.
- D. Reinforce walks with 6 x 6 W1.4 welded wire fabric. Provide supports to hold the welded wire fabric at the approximate mid-depth of the concrete walk. Place concrete for walks on compacted select fill with a minimum thickness of 6 inches.
- E. Slope walks to drain transversely at a 50 to 1 or 2 percent.

3.4 ASPHALT PATH

- A. Construct temporary asphalt paths as shown. Construct new replacement path at locations where existing path is damaged during construction. Provide the asphalt and base course thicknesses shown in the detail at a minimum. If thicker asphalt and base course are found in removal of existing path, replace path to match existing.

END OF SECTION

(NO TEXT FOR THIS PAGE)

SECTION 02900  
LANDSCAPING WORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Soil, soil preparation, soil tests, excavation, planting, seeding, sodding, pruning, edging, fertilizing, maintenance and extension and reconnection of the sprinkler.

1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. ASTM C 33 - Specification for Concrete Aggregates

1.3 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Soil Tests: Submit soil test results.

1.4 DELIVERY, STORAGE AND HANDLING

- A. General: Deliver, store and handle all products and materials as specified in Division 1 and as follows:
- B. Top Soil: Deliver top soil in a dry state without enough moisture to allow it to be packed or squeezed into a ball.
- C. Balled and Bare Root Plants: Immediately after delivery, set all balled plants on the ground with the balls well protected with soil. Water and properly maintain all plants until planting. Plant or heel in bare rooted plants which cannot be planted immediately upon delivery. No materials heeled in for more than a week may be used. Before the roots are covered, open bundler and separate the plants.
- D. Grass Seed: Deliver grass seed in standard size bags of the vendor, showing weight, analysis and name of vendor. Store the seed so as not to impair its effectiveness.

- E. Sod: Deliver sod to the site in fresh condition and within two days of the time it has been dug.
- F. Fertilizer: Deliver fertilizer mixed as specified, in standard size bags, showing weight, analysis and the name of the manufacturer. Store the fertilizer in a weatherproof storage place in a manner that will keep it dry without affecting its effectiveness.

#### 1.5 ENVIRONMENTAL REQUIREMENTS

- A. Seeding and Sodding: Sow grass seed between August 15th and October 15th unless sowing between March 15th and June 1st is permitted. Sow seed when the wind velocity is below 5 mph. Place sod between August 15th and October 15th or between March 15th and June 1st, or during the season or seasons which are normal for such work as determined by weather conditions and accepted practice in the locality and as approved.
- B. Planting: Unless otherwise directed, plant deciduous material from March 1st to June 1st and from September 1st to December 1st. Plant evergreen material from April 1st to June 1st and from September 1st to November 1st.

#### 1.6 WARRANTY

- A. General: Apply the warranty to all seeded, sodded and planted areas. Have the warranty period commence after the final acceptance of all landscaping work exclusive of all replacement plant materials.
- B. Plant Material: Warranty plant materials for a period of one year.
- C. Seeded Areas: Warranty seeded lawn areas to the time of establishment of an acceptable uniform stand of grass.
- D. Sod: Warranty sod to 30 days following the first cutting.

#### 1.7 MAINTENANCE

- A. General: Maintain all seeded, sodded and planted areas during the warranty period.
- B. Grass Areas: Maintain all seeded and sodded areas to well establish a uniform stand of weed-free grass. Reseed or resod areas failing to develop a uniform stand.
- C. Trees, Shrubs and Ground Covers: Cultivate trees, shrubs and ground covers and weed and water when necessary, but not less than twice a month, to prevent plant material from dying. Replace any plant material which is found to be dead or dying during the warranty period to original specifications upon request. Include

the full cost of replacing dead or dying plant material in the Contract Amount. No separate payment will be made for replacements. Maintain plant material to be alive, in good growing condition and free of weeds.

- D. Replacement: Replace plant material and resod or reseed only during the specified planting seasons and warranty the replacement material for the same period of time as the original material.

## PART 2 PRODUCTS

### 2.1 SPRINKLER SYSTEM

- A. Match existing sprinkler system in materials and workmanship. Extend and reconnect sprinkler system to provide a fully operational system that covers all new sodding and areas previously covered. Add sprinklers to area that was previously covered by the parking and driveway. Provide piping under new driveway and parking to cover areas.

### 2.2 SOIL

- A. Topsoil: Provide a natural friable top soil of the region, rich in organic matter, without any material toxic to plant growth and of uniform quality, free of large roots, sticks, hard clay, weeds, brush, stones over 1-inch in maximum dimension or other litter or waste products. Provide topsoil containing no decomposed stone, salts or alkali and not less than 15 parts per million of available nitrates, 3 parts per million of available phosphorus, 15 parts per million of potash, and having a pH of not less than 6.0 nor more than 7.2 at a depth of 8 inches below the surface of the field from which it is removed. Provide topsoil with a mechanical analysis as follows:

Sieve	Percentage Passing
1 inch	100
1/4 inch	97-100
No. 100	40- 60

- B. Planting Soil: Prepare planting soil by mixing 10 parts of topsoil with fertilizer and 1 part of peat moss.

### 2.3 GRASS SEED AND SOD

- A. Grass Seed: Provide a fresh, clean, new crop of grass seed composed of 60 percent Kentucky Bluegrass, 25 percent Perennial Ryegrass, 10 percent Red Top and 5 percent White Dutch Clover. Provide seed components free of noxious weed seeds and having not less than the following purity and germination:

Component	Percent Purity	Percent Germination
Kentucky Bluegrass	75	85
Perennial Ryegrass	92	85
Red Top	75	85
White Dutch Clover	92	85

Tag each sack in accordance with the agricultural seed laws of the United States and the State of Illinois. Show on each tag the producer's guarantee as to the year grown, the percentage of purity, the percentage of germination and the tests by which the percentages were determined. Provide seed for this project having a test date within 6 months of the date of sowing.

- B. Sod: Provide nursery-grown Improved Kentucky Blue Grass sod, free of weeds, a minimum of 1-inch thick of dense growth and cut with sharp edges in 18-inch widths and not less than 3 feet long. Sod which has been grown on peat or which has been dug more than two days previous to delivery or which has been allowed to have the roots dry out or on which the grass has turned brown will not be accepted.

#### 2.4 PLANT MATERIALS

- A. General: Provide plant materials that are true to species or variety, sound, healthy, vigorous acclimated plants free from defects, disfiguring knots, sun-scaled injuries, abrasions of the bark, plant diseases and insect eggs, borers and all other forms of infestations. Provide material that has normal, well-developed branch systems and vigorous root systems and that is freshly dug, nursery-grown stock grown under the same climatic conditions as the Project location. Provide material grown under climatic conditions similar to those in the locality of the project for at least 2 years and transplanted or root pruned at least in the last 3 years.
- B. Plant Size: Dimension a plant as it stands in its natural position. Measure trees under 4 inches in caliper at a point 6 inches above the ground and trees more than 4 inches in caliper at a point 12 inches above ground. Provide the stock of a fair average of the minimum and maximum sizes specified. Do not cut back large shrubs to sizes specified.
- C. Balled, Burlapped and Platformed Plants: Dig balled and burlapped, as well as balled and platformed, plants with sufficient roots and a solid ball of earth securely held in place by burlap and stout natural fiber rope. Manufactured balls are not acceptable. Provide balled and platformed plants with sturdy platforms of a size equal to the diameter of the horizontal midsection of the ball of earth.
- D. Bare-Rooted Plants: Dig bare-rooted plants with sufficient root spread and depth to ensure full recovery and development of the plants. Cover roots for these plants

with a **uniformly** thick coating of mud by being puddled immediately after they are dug.

- E. Inspection: **Submit** plants to inspection for approval at the place of growth, for conformity to specification requirements as to quality, size and variety. In addition to the place of growth inspection, submit plants to inspection for approval upon delivery at the project site or during the progress of the work, for size and condition of balls or roots, diseases, insects, and latent defects or injuries. Remove rejected plants immediately from the site. Do not substitute plants for those specified unless approved.

## 2.5 COMMERCIAL FERTILIZER

- A. Provide all commercial mixture fertilizer uniform in composition, free flowing, conforming to state and federal laws and suitable for application with equipment designed for that purpose. Provide fertilizer with organic, inorganic or combined elements with the following composition by weight:

- |    |                      |            |
|----|----------------------|------------|
| 1. | Nitrogen             | 10 percent |
| 2. | Phosphorus pentoxide | 8 percent  |
| 3. | Potash               | 6 percent  |

## 2.6 ACCESSORIES

- A. Tree Wrap: Provide new, clean, plain, 8-ounce weight burlap material 6 inches wide for wrapping tree trunks.
- B. Weed Barrier Fabric: Provide Pro-5 fabric as manufactured by the DeWitt Co., or equal.
- C. Gravel: Provide smooth river bed gravel of solid or mixed color range to be as selected and meeting the requirements of ASTM C 33 and graded according to Size No. 467 Table II.
- D. Mulch: Provide ground corn cobs, wood chips, tree barks, buckwheat hulls or other approved materials for mulch.
- E. Edging: Provide commercial hot-rolled steel edging plate, 4 inches wide and 1/8-inch thick. Fabricate edging in sections with loops pressed from or welded to the face of sections at 30-inch centers to receive 16-inch long tapered steel stakes. Provide edging finished with the manufacturer's standard paint.

## 2.7 TESTS

- A. Sample: **Submit** a 10-ounce sample of the proposed topsoil to a testing laboratory in sealed containers to prevent contamination.

- B. Analysis: Analyze the topsoil sample to determine the amount of lime necessary and the appropriate fertilizer mix and quantity required for planting, seeding and sodding.

## PART 3 EXECUTION

### 3.1 GRADES

- A. General: Existing and final contours shown depict finished grades after completion of landscaping work.
- B. Lawn Grades: Grade lawns to meet walks, curbs and adjoining surfaces after uniform settlement of surfaces. Correct water pockets or ridges which appear after surface settlement takes place on or before the end of the guarantee period.

### 3.2 EXCAVATION FOR PLANTING

- A. General: Obtain approval for all plant locations before excavation. Remove from the site all material that is surplus and unsuitable for backfill.
- B. Ground Cover and Grass Areas: Excavate for ground cover and grass areas to the required depths for grass to receive 6 inches of topsoil and for groundcover to receive 6 inches of planting soil.
- C. Plant Pits: Excavate plant pits with vertical sides and a circular outline.
  - 1. Dig tree and evergreen pits at least twice the diameter of the ball, and deep enough to permit an 8-inch layer of compacted planting soil beneath the ball.
  - 2. Dig shrub pits a minimum of twice the diameter of the ball and deep enough to allow 6 inches of compacted planting soil beneath the ball.
- D. Drain: Install french drains for all trees, ornamental trees, and evergreens planted on berms and other locations where the grade permits, from bottom of planting pit to the finished grade with a trench 9 inches wide, filled with a 6-inch thick layer of 3/4-inch washed gravel. Cover the gravel layer with a filter mat before backfilling the trench with soil.

### 3.3 SOIL CONDITIONING

- A. Disking: Before the application of topsoil, sodding or seeding, disk the area to be seeded, sodded or planted with groundcover to a depth of 6 inches. Continue the disking until the subsoil surface is sufficiently broken to provide a good bond

between subsoil and topsoil. Spread 6 inches of planting soil over the disked area to a uniform depth and density.

- B. Ground Limestone: Incorporate ground limestone, if required by the results of the soil test report, into the upper 3 inches of planting soil. Uniformly spread fertilizer and mix into the soil to a depth of 1-1/2 inches or as recommended by the manufacturer.

#### 3.4 SEEDING AND SODDING

- A. Seeding: Sow seed at the rate recommended by the seed producer. Evenly rake the surface after seeding with a fine-tooth rake. Mulch all newly seeded areas and cover with a minimum of 1/4-inch of straw or hay, approximately at the rate of 1 bale per 1,000 square feet, then thoroughly wet.
- B. Sodding: Lay sod in such a manner that the surface is smooth and even and all edges abut one another tightly. Water and roll sod so that a bond is produced between the prepared topsoil and the sod. On slopes greater than 3 to 1, stake installed sod with approved wooden sod stakes at a minimum rate of three stakes per square yard of sod.

#### 3.5 PLANTING

- A. Layout: Outline locations for trees, shrubs, evergreens and bed and stake for approval. Obtain location approval prior to commencing planting operations.
- B. Setting Plants: Set plants plumb and straight with the crown at finished grade. Compact soil around the base of the ball, and fill the void 3/4 of the way up from the bottom. Water each plant immediately. After the water has completely drained, fill the plant pits to finished grade. Properly spread out roots of bare root plants and carefully work topsoil among them. Cut off any broken or frayed roots with a clean cut. Form a shallow basin, the size of the ball with a ridge of soil to facilitate watering. After that operation is completed, apply a second watering immediately. Finish all planting pits and beds within a period of 3 days following installation. Construct tree saucers, cultivate and outline planting pits with a neat edge, when necessary.
- C. Mulching: Immediately after planting operations are completed, cover all tree and shrub pits with mulch to a minimum depth of 2 inches. Limit mulch for trees to saucer diameter and, for shrubs, the entire shrub bed.
- D. Pruning: Prune each tree and evergreen with clean, sharp tools in accordance with standard horticultural practice to preserve the natural character of the plant. Remove suckers and all dead, broken or badly bruised branches.

- E. Wrapping: Wrap the tree trunks of all trees with burlap tree wrapping securely tied with suitable cord at top and bottom and at 2-foot intervals along the trunk. Overlap the wrapping 2 inches top and bottom and entirely cover the trunk from the ground to the height of the second branch, neat and snug.
- F. Guying: Guy trees as necessary to be plumb and straight through final inspection. Remove guy wires at completion of project.
- G. Watering: During planting, thoroughly saturate the soil around each plant with water and as many times later as seasonal conditions require until the end of the guarantee period.

### 3.6 EDGING

- A. General: Establish a neat edge where planting areas meet grass areas, with spade or edging tools, immediately after all planting and seeding is completed. Establish good flowing curves as shown. Maintain edging until the end of the guarantee period.

### 3.7 GRAVELED AREAS

- A. General: Lay a weed barrier in accordance with the manufacturer's recommendations and top with a 4-inch layer of gravel. Edge graveled areas with metal edging.

END OF SECTION

SECTION 03100  
CONCRETE FORMWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Provide concrete formwork for structural concrete as specified to form concrete to profiles shown.

1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
1. ACI 318 - Building Code Requirements for Reinforced Concrete
  2. ACI SP-4 - Formwork for Concrete

1.3 SUBMITTALS

- A. Do not provide submittals for concrete formwork.

1.4 QUALITY ASSURANCE

- A. Formwork Compliance: Use formwork complying with ACI SP-4 and ACI 303R.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Acceptable manufacturers are listed below. Other manufacturers of equivalent products may be submitted.
1. Release Agent  
Magic Kote VOC by Symons Corporation

2.2 MATERIALS

- A. Structural Concrete: Provide structural concrete form materials as follows:
1. Obtain approval for form material before construction of the forms.
  2. Use a barrier type form release agent.

3. Use form ties, hangers, and clamps of such type that, after removal of the forms, no metal will be closer than one inch from concrete surface. Wire ties will not be permitted.
4. Provide ties with swaged washers or other suitable devices to prevent seepage of moisture along the ties. Leave the ties in place.
5. Use lugs, cones, washers, or other devices which do not leave holes or depressions greater than 7/8-inch in diameter.

## PART 3 EXECUTION

### 3.1 DESIGN

- A. Design Responsibility: Be responsible for the design, engineering and construction of the structural concrete formwork. Conform the work to the recommendations of ACI SP-4.
- B. Setting Time and Slag Use: The presence of fly ash or ground granulated blast furnace slag in the concrete mix for structural concrete will delay the setting time. Take this into consideration in the design and removal of the forms.
- C. Responsibility During Placement: Assume and take sole responsibility for adequate design of all form elements for support of the wet concrete mixtures specified and delivered.
- D. Consistency: Design forms to produce concrete members identical in shape, lines and dimensions to members shown.

### 3.2 CONSTRUCTION DETAILS FOR FORMWORK

- A. Structural Concrete Details: Follow the following details for all structural concrete:
  1. Provide forms which are substantial, properly braced, and tied together to maintain position and shape and to resist all pressures to which they may be subjected. Make forms sufficiently tight to prevent leakage of concrete.
  2. Determine the size and spacing of studs and wales by the nature of the work and the height to which concrete is placed. Make forms adequate to produce true, smooth surfaces with not more than 1/8-inch variation in either direction from a geometrical plane. Provide horizontal joints which are level, and vertical joints which are plumb.

3. Supply forms for repeated use in sufficient number to ensure the required rate of progress.
4. Thoroughly clean all forms before reuse and inspect forms immediately before concrete is placed. Remove deformed, broken, or defective forms from the work.
5. Provide temporary openings in forms at convenient locations to facilitate cleaning and inspection.
6. Coat the entire inside surfaces of forms with a suitable form release agent just prior to placing concrete. Form release agent is not permitted on the reinforcing steel.
7. Assume and take responsibility for the adequacy of all forms and remedying any defects resulting from their use.

### 3.3 FORM REMOVAL

- A. Structural Concrete Form Removal: Do not remove forms for structural concrete until the concrete has hardened sufficiently to support its own load safely, plus any superimposed load that might be placed thereon. Leave the forms in place for the minimum length of time indicated below or until the concrete has reached the minimum strength indicated as determined by testing, whichever time is reached first.

1. The times indicated represent cumulative days or hours, not necessarily consecutive, during which the air surrounding the concrete is above 50 degrees F. These times may be decreased if reshores are installed.

	Minimum Time	Minimum Strength (psi)
a. Columns	12 hrs.	1300
b. Columns	12 hrs.	1300
c. Side forms for girders and beams	12 hrs.	1300
d. Walls	12 hrs.	1300
e. Bottom forms of slabs		
Under 10 feet clear span	4 days	2300
10 to 20 feet clear span	7 days	2700
Over 20 feet clear span	10 days	2900
f. Bottom forms of beams and girders		
Under 10 feet clear span	7 days	2700

	Minimum Time	Minimum Strength (psi)
10 to 20 feet clear span	14 days	3000
Over 20 feet clear span	21 days	3500

2. Increase form removal times as required if concrete temperature following placement is permitted to drop below 50 degrees F or if fly ash or ground granulated blast furnace slag is used in the concrete mix.
3. Withdraw the removable portion of form ties from the concrete immediately after the forms are removed. Clean and fill holes left by such ties with grout as specified in Cast-In-Place Concrete, Subsection Structural Concrete Surfaces.
4. Plug tie holes flush with the surface using portland cement mortar. Pre-wet tie holes with clean water and apply a neat cement slurry bond coat. Densely tamp mortar of a dry-tamp consistency into the tie holes exercising care so as not to smear mortar onto the finished concrete surface. Include sufficient white cement in the mortar mix to cause the plugged holes to blend in with the adjacent surfaces. Make sample patches with different mixes to assure that this requirement is met.

#### 3.4 RESHORING

- A. Reshoring Method: Develop a system for reshoring and early removal of forms, in the event early stripping of forms becomes necessary. Include details and schedules in this system for each element which is to be reshored.
- B. Construction Load Support: Do not support construction loads upon any unshored portion of the structure exceeding the structural design loads.

#### 3.5 TOLERANCES

- A. Tolerance Limits: Design, construct and maintain concrete form and place the concrete to provide completed concrete work within the tolerance limits set forth in ACI SP-4.

#### 3.6 SURVEY OF FORMWORK

- A. Field Survey: Employ an engineer or surveyor to check by instrument survey the lines and levels of the completed formwork before concrete is placed and make whatever corrections or adjustment to the formwork are necessary to correct deviations from the specified tolerances.

- B. Placement Surveying Requirements: Check formwork during the placement of the concrete to verify that the forms, braces, tie rods, clamps anchor bolts, conduits, piping, and the like, have not been knocked out of the established line, level or cross section by concrete placement or equipment.

END OF SECTION

(NO TEXT FOR THIS PAGE)

SECTION 03150  
CONCRETE ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Requirements for providing concrete accessories shown and specified herein such as waterstops, inserts, joint filler and joint sealant.
- B. Products Installed: Waterstops, inserts, joint filler and joint sealant.

1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. AASHTO - Standard Specifications for Highway Bridges
  - 2. ASTM A 240 - Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels
  - 3. ASTM A 536 - Standard Specifications for Ductile-Iron Castings
  - 4. ASTM D 412 - Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension
  - 5. ASTM D 3545 - Test Methods for Alcohol Content and Purity of Acetate Esters by Gas Chromatography
  - 6. ASTM D 3575 - Test Methods for Flexible Cellular Materials Made From Olefin Polymers
  - 7. CRD-C572 - Specifications for Polyvinyl Chloride Waterstop
  - 8. Fed. Spec. TT-S-00227 - Sealing Compound, Elastomeric Type, Multicomponent (for Calking, Sealing, and Glazing in Buildings and Other Structures)

9. Fed. Spec.  
TT-S-00230 - Sealing Compound, Elastomeric Type, Single Component (for Calking, Sealing, and Glazing in Buildings and Other Structures)

### 1.3 SUBMITTALS

- A. General: Provide all Work related submittals, including the following, as specified in Division 1.
- B. Product Data and Information:
1. Manufacturer's Data and Specifications: Submit printed manufacturer's data and specifications for each item used on this project.
  2. Samples: Provide one sample of each item used.
  3. Joint Sealant: Indicate special procedures, surface preparation and perimeter conditions requiring special attention. All products in contact with potable water, shall be "NSF Standard 61" certified. Submit certified material records indicating approval for use with potable water.

### 1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle all products and materials as specified in Division 1.

## PART 2 PRODUCTS

### 2.1 MANUFACTURER

- A. Acceptable manufacturers are listed below. Other manufacturers of equivalent products may be submitted.
1. Joint Filler
    - a. Sonoflex F Foam by Sonneborn Building Products
    - b. PVC Joint Filler No. 327 by A.C. Horn
  2. Sealant Backup Material
    - a. Sealtight Backer Rod
    - b. Sonofoam Backer Rod

3. Wedge Inserts

- a. Type F-7 by Dayton Superior, Miamisburg, OH

2.2 MATERIALS

- A. Extruded Waterstops: Provide waterstops made of extruded polyvinyl chloride unless otherwise shown or specified.

1. Do not use any reclaimed plastic material in their manufacture.
2. Provide plastic waterstops meeting the requirements of CRD-C572, except as modified herein. Provide a Shore A/10 durometer hardness between 73 and 79, the tensile strength not less than 1850 psi, and specific gravity not more than 1.38.
3. Unless otherwise shown, use waterstops for construction joints which are flat, at least 6 inches wide, and not less than 3/8-inch thick at the thinnest section. Provide these waterstops with ribbed longitudinal strips.
4. Unless otherwise shown, provide waterstops for expansion joints at least 9 inches wide and not less than 1/4-inch thick at the narrowest point and not less than 3/8-inch thick immediately adjacent to the center of the waterstop. Provide the waterstop with ribbed longitudinal strips with a 1-inch inside diameter hollow bulb center. Limit joint movement to 1/4-inch under a tensile force of not more than 500 pounds per lineal inch.

- B. Expansion Joint Filler: Use joint filler for all expansion joints.

1. Provide a closed cell polyethylene or PVC joint filler of the thickness shown.

- C. Joint Sealant Requirements: Finish expansion joints with a joint sealant where shown or specified.

1. Joint sealant materials may be either a single component urethane compound meeting the requirements of Fed. Spec. TT-S-00230C, or a 2-component urethane compound meeting the requirements of Fed. Spec. TT-S-00227E, except as modified in this specification.
2. Provide the urethane sealant of 100 percent polymer, non-extended, containing no solvent, lime, or coal tar. Color as selected by the ENGINEER, but not black. Conform sealant properties to the following:

	Property	Value	Test Method
a.	Maximum final cure	3 days	--
b.	Minimum tensile strength	140 to 200 psi	ASTM D 412
c.	Minimum elongation	400%	ASTM D 412
d.	Modulus at 100% elongation	40-60 psi	ASTM D 412
e.	Shore A hardness	25-40	ASTM D 2240
f.	Solid content	98-100%	--
g.	Peel strength	20-40 lb/in.	Fed. Spec. TT-S-00230C Fed. Spec. TT-S-00227E
h.	Minimum recovery	80-90%	Fed. Spec. TT-S-00230C Fed. Spec. TT-S-00227E
i.	Initial tack-free cure	24-48 hrs.	Fed. Spec. TT-S-00230C Fed. Spec. TT-S-00227E

3. Provide primer as recommended by the manufacturer of the sealant, subject to approval.
4. Provide fillers and backup materials in contact with sealant which are nonimpregnated and free from asphalt, creosote, oil or extractable plasticizers. Use a backup material of a closed cell polyethylene foam rod with a diameter 1/4-inch larger than the joint width.

- D. Wedge Inserts: Make wedge inserts for 5/8-inch and 3/4-inch bolts of ductile iron conforming to ASTM A 536.

### PART 3 EXECUTION

#### 3.1 INSTALLING OF WATERSTOPS

- A. Assembly of Extruded Waterstops: Prefabricate corners and intersections for all waterstops. Make only butt joints in the field. Miter and assemble corners and intersections with approved equipment, as described for field joints.
  1. Make field joints by cutting the ends of the sections to be spliced so they will form a smooth even butt joint. Follow manufacturer's instructions for butt splicing waterstops. Do splicing in a way that limits damage to the continuity of the ribbed strips.

2. Carry waterstops in the walls into lower slabs and join them to the waterstops in the slabs. Make all waterstops continuous. Set waterstops accurately to the position and line shown. Hold edges securely fixed in position at intervals of not more than 24 inches so that they will not move during the placing of the concrete. Do not drive nails through the waterstops.
- B. Joint Filler Placement: Place joint filler for expansion joints against the completed portion of the work before the concrete for the next section is placed.
1. Fasten the filler to the hardened concrete with a compatible adhesive in accordance with manufacturer's instructions. Extend the filler through the thickness of the wall or slab and make it flush with the finished surface, except where a preformed joint seal or joint sealant is shown.
  2. In joints having a waterstop, fit the filler accurately on each side of the waterstop to prevent the intrusion of concrete.
- C. Preparation of 2-Component Sealants: Mix 2-component joint sealant using a slotted paddle and slow speed mixer for 5 to 8 minutes, continually working paddle from top to bottom until the sealant color is uniform. Scrape down the side of the container and paddle blade several times during the mixing operation to ensure uniform mixing.
1. Properly prepare joint surfaces by removing all foreign matter and concrete laitance so that concrete surfaces are structurally sound, clean, dry, and free of all oil, grease, wax, waterproofing compounds or form release materials prior to the application of primer and sealant.
  2. Prime all concrete joint surfaces and all surfaces exposed to water prior to sealing, with no exceptions. Prime all other surfaces as recommended by the manufacturer of the sealant. Provide the prime as recommended by the manufacturer of the sealant, subject to approval. Apply the primer by either brushing or spraying on the joint surfaces. Apply and install the sealant, after the application of primer, within the timeframe specified by the manufacturer.
  3. For horizontal joints, install the sealant by pouring directly from a suitable shaped can or by flowing from a bulk-loading gun.
  4. Fill vertical joints from a gun, starting from the bottom, to avoid bridging and the formation of air voids or as specified by the manufacturer
  5. Fill overhead joints from a gun, by laying a bead along each side of the joint and then filling the middle. Immediately after installation, tool in the sealant

in order to establish firm contact with joint surfaces and to provide a smooth sealant surface. Tool in accordance with the manufacturer's instructions.

6. Control joint depth with the use of joint fillers and backup materials. Make joint widths and sealant depths as shown. Do not exceed 1/2-inch for sealant depth.

END OF SECTION

SECTION 03200  
CONCRETE REINFORCEMENT

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Requirements for providing concrete reinforcement as shown and specified herein. Reinforcement includes all steel bars, wire and welded wire fabric as shown and specified.

1.2 REFERENCES

- A. Codes and standards referred to in this Section are:

1. ACI 308 - ACI Detailing Manual
2. ACI 318 - Latest edition "Building Code Requirements for Reinforced Concrete"
3. ASTM A 185 - Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
4. ASTM A 615/A615M - Deformed and Plains Billet-Steel Bars for Concrete
5. ASTM A 706/A706M - Low Alloy Steel Deformed Bars for Concrete Reinforcement
6. AWS D1.4 - Structural Welding Code - Reinforcing Steel

1.3 SUBMITTALS

- A. Provide all submittals, including the following, as specified in Division 1.
1. CONTRACTORS' Shop Drawings: Submit checked Working Drawings, including bar lists, schedules, bending details, placing details and placing plans and elevations for fabrication and placing reinforcing steel conforming to "ACI Detailing Manual - 88".
    - a. Do not bill wall and slab reinforcing in sections. Show complete elevations of all walls and complete plans of all slabs, except that, when more than one wall or slab are identical, only one such

elevation or plan is required. These plans and elevations need not be true views of the walls or slabs shown. Bill every reinforcing bar in a slab on a plan. Bill every reinforcing bar in a wall on an elevation. Take sections to clarify the arrangement of the steel reinforcement. Identify all bars, but do not bill on such sections.

- b. For all reinforcing bars, unless the location of a bar is clear, give the location of such bar or bars by a dimension to some structural feature which will be readily distinguishable at the time bars are placed.
  - c. Make the reinforcing steel placing drawings complete for placing reinforcement including the location of support bars and chairs, without reference to the design drawings.
  - d. Submit Detailer certification that every reinforcing steel placing drawing and bar list is completely checked and corrected before submittal for approval.
  - e. If, after reinforcing steel placing drawings and bar lists have been submitted for approval, a review reveals that the drawings and lists obviously have not been checked and corrected they will be returned for checking and correcting by the Detailer.
2. Certificates: Test certificates of the chemical and physical properties covering each shipment of reinforcing steel bars.

#### 1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle all products and materials as specified in Division 1 (and as follows:)
- 1. Delivery Requirements: Have reinforcing steel delivered to the work in strongly tied bundles. Identify each group of both bent and straight bars with a metal tag giving the identifying number corresponding to the reinforcing steel placing drawings and bar lists.
  - 2. Storage: Properly store all bars in an orderly manner, with all bars completely off the ground. Keep bars clean after delivery to the site of the work.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable manufacturers are listed below. Other manufacturers of equivalent products may be submitted.
  - 1. Mechanical connections
    - a. Dowel Bar Splicer/Dowel-In System and Coupler Splice System of the Richmond Screw Anchor System
    - b. Cadweld Rebar Splice by Erico Products Inc.
    - c. Bar Grip Splice by Barsplice Products Inc.

### 2.2 MATERIALS

- A. Steel Bars: Use new billet steel bars, deformed bars, meeting the requirements of ASTM A 615/A625M Grade 60 for reinforcing steel bars.
  - 1. Roll all reinforcing steel bars with special deformations or identifying marks indicating the ASTM Specification and Grade.
  - 2. Use bars free from defects, kinks and from bends that cannot be readily and fully straightened in the field.
  - 3. Supply reinforcing bars in lengths which will allow convenient placement in the work and provide the required lap of joints as shown. Provide dowels of proper length, size and shape for tying walls, beams, floors, and the like together.
- B. Welded Wire Fabric: Use welded wire fabric of the electrically welded type, with wires arranged in rectangular patterns, of the sizes shown or specified and meeting the requirements of ASTM A 185.
- C. Supports and Accessories: Provide bar supports and other accessories and, if necessary, additional supports to hold bars in proper position while concrete is being placed.
  - 1. Use side form spacers against vertical or sloping forms to maintain prescribed side cover and cross position of bars.
  - 2. Use individual hi-chairs with welded cross ties or circular hoops to support top bars in slabs thicker than 8 inches.

3. Bolsters, chairs and other accessories:

- a. Use hot-dipped galvanized or provide plastic coated legs when in contact with forms for surfaces of concrete.
- b. Use chairs of an approved type and space them properly to support and hold reinforcing bars in position in all beams and slabs including slabs placed directly on the subgrade or work mat. Do not use continuous hi-chairs for supporting of top bars in slabs over 8 inches in thickness.

- D. Mechanical Connections: Provide mechanical connections that develop at least 125 percent of the specified yield strength of the bar in tension.

2.3 FABRICATION

- A. Drawing Review Prior to Fabrication: Do not fabricate any material before final review and approval of shop drawings.
- B. Bending and Cutting: Cut bars to required length and bend accurately before placing. Bend bars in the shop unless written approval for field bending is obtained. If field bending is permitted, do it only when the air temperature, where the bending operation is performed, is above 30 degrees F. Do not field bend bars which have been partially embedded in concrete.
- C. Splices: Use lapped splices for tension and compression splices unless otherwise noted.
- D. Cleaning: Clean and bend reinforcement in accordance with ACI 315 and ACI 318.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Placement: Place all bars in accordance with CRSI "Recommended Practice for Placing Reinforcing Bars".
- B. Tolerances: Place bars used for top reinforcement in slabs to a vertical tolerance of plus or minus 1/4-inch. Place all other reinforcement to the tolerances given to ACI 318.
- C. Cleaning: Have reinforcing steel delivered without rust other than that accumulated during transportation to the work. At all times, fully protect reinforcing steel from moisture, grease, dirt, mortar and concrete. Before being

placed in position, thoroughly clean reinforcing steel of all loose mill scale and rust and of any dirt, oil, grease coatings, or other material that might reduce the bond. If there is a delay in depositing concrete, inspect and satisfactorily clean the steel immediately before the concrete is placed.

- D. Bar Positioning: Place bars in the exact positions shown with the required spacing and cross wire bars securely in position at intersections to prevent displacement during the placing of the concrete. Fasten the bars with annealed wire of not less than 17 gauge or other approved devices.
- E. Bar Extension Beyond Formwork: On any section of the work where horizontal bars extend beyond the length of the forms, perforate the form or head against which the work ends or at the proper places to allow the bars to project through a distance at least equal to the lap specified.
- F. Review of Placement: Have reinforcing placement reviewed by the ENGINEER before concrete is placed.
- G. Welding - Not Approved: Do not use reinforcing bar assemblies made by welding of any kind, or accessories of any kind which require field welding to reinforcing bars.
- H. Welding - Approved: Where welding of reinforcing steel is shown, AWS D1.4 "Structural Welding Code - Reinforcing Steel" applies.
- I. Tension and Compression Lap Splices: Conform tension and compression lap splices to ACI 318 with all supplements. Avoid splices at points of maximum tensile stress wherever possible. Provide temperature bars with the clear spacing shown. Have welded splices made by certified welders in accordance with AWS D1.4.
- J. Welded Wire Fabric: Place welded wire fabric in the positions shown, specified or required to fit the work. Furnish and place suitable spacing chairs or supports, as specified for bars, to maintain the fabric in the correct location. Where a flat surface of fabric is required, provide flat sheets, when available. Otherwise reverse roll the fabric or otherwise straighten to make a perfectly flat surface before placing. Obtain approval for the length of laps not indicated.
- K. Concrete Cover: Place reinforcing steel and welded wire fabric and hold in position so that the concrete cover, as measured from the surface of the bar or wire to the surface of the concrete, is as shown or specified.

END OF SECTION

(NO TEXT FOR THIS PAGE)

SECTION 03310  
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Providing cast-in-place concrete as specified herein to form concrete to profiles as shown on the plans including the following work:
1. Setting of anchor bolts, base plates, floor grating and plate, frames, stop log grooves, and other steel and aluminum members embedded in concrete as indicated
  2. Furnishing and setting of sleeves, inserts and other embedded accessories for mechanical and electrical equipment.

1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
1. ACI 212 - Chemical Admixtures for Concrete
  2. ACI 301 - Specifications for Structural Concrete for Buildings
  3. ACI 303R - Guide to Cast-In-Place Architectural Concrete
  4. ACI 304R - Guide for Measuring, Mixing, Transporting and Placing Concrete
  5. ACI 305R - Hot Weather Concreting
  6. ACI 306R - Cold Weather Concreting
  7. ACI 308 - Practice for Curing Concrete
  8. ACI 503R - Use of Epoxy Compounds with Concrete
  9. ASTM C 31 - Practice for Making and Curing Concrete Test Specimens in the Field
  10. ASTM C 33 - Specifications for Concrete Aggregates

11. ASTM C 39 - Test Method for Compressive Strength of Cylindrical Concrete Specimens
12. ASTM C 42 - Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
13. ASTM C 94 - Specifications for Ready Mixed Concrete
14. ASTM C 143 - Test Method for Slump of Hydraulic Cement Concrete
15. ASTM C 150 - Specifications for Portland Cement
16. ASTM C 157 - Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete
17. ASTM C 171 - Specification for Sheet Materials for Curing Concrete
18. ASTM C 172 - Practice for Sampling Freshly Mixed Concrete
19. ASTM C 173 - Test Method for Air Content of Freshly Mixed Concrete by Volumetric Method
20. ASTM C 309 - Specification for Liquid Membrane-Forming Compounds for Curing Concrete
21. ASTM C 618 - Specification for Coal Fly Ash and Raw Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
22. ASTM C 881 - Specification for Epoxy-Resin-Base Bonding Systems for Concrete
23. ASTM C 989 - Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars
24. ASTM E 1155 - Standard Test Method for Determination of  $F_F$
25. ASTM C 1218 - Test Method for Water-Soluble Chloride in Mortar and Concrete
26. ASTM C 1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete

### 1.3 SUBMITTALS

- A. Provide all submittals, including the following, as specified in Division 1.
1. Notarized certificates of manufacture as evidence that the cement, fly ash or ground granulated blast furnace slag conform to the specified requirements. Include in these certificates the mill-test reports on the cement.
  2. Samples of aggregates, sieve analyses and manufacturers data showing conformance to the specified requirements.
  3. Concrete mix designs for each type of concrete.
  4. Test reports for laboratory and field cured cylinders.
  5. Air content tests in accordance with ASTM C 138 or C 173 with mix design data.
  6. Drying shrinkage tests for each class of concrete with mix design data. Test shrinkage in accordance with Section 3.4.D.
  7. Detailed field report records of ready-mixed-concrete.
  8. Manufacturers' Literature: Material description and application or installation instructions for curing compound, vapor barrier, floor hardener, floor sealer, epoxy adhesives, admixtures, polymer modified nonsag mortar, and corrosion-resistant coatings.
  9. Certified reports of tests made for maximum water soluble chloride ion concentration of design mix hardened concrete.
  10. Test reports of floor flatness ( $F_F$ ) and floor levelness ( $F_L$ ) conforming to ASTM E 1155.

### 1.4 QUALITY ASSURANCE

- A. Codes: The following specific codes and standards apply:
1. ACI 350-06, "Code Requirements for Environmental Engineering Concrete Structures".
  2. ACI 318-08, "Building Code Requirements for Structural Concrete".
  3. ASTM - as referred to in the various subsections herein.
- B. Testing Requirements: Testing laboratory provided by OWNER is responsible for conducting tests as required in Division 1.

- C. Testing Assistance: Cooperate with the laboratory personnel, provide access to Work, and manufacturer's operations. Provide and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used which require testing.

## 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle all products and materials as specified in Division 1 and as follows:

1. Cement: Store cement delivered in bulk to the batching plant in weathertight bins and batch using an appropriate weighing device, in accordance with ASTM C 94.
  - a. Store cement in weathertight buildings, bins or silos which will exclude moisture and contaminants. Do not use cement that has deteriorated from storage. Retest, before use, cement stored for a period longer than 6 months after the previous testing and reject it if it fails to meet all of the specified requirements. Do not use accepted cement that has been in storage for more than one year from the time of original acceptance.
  - b. Store cement delivered to the job site in strong, well-made bags plainly marked with the brand, name of manufacturer and net weight. Reject packages received in a damaged condition.
2. Aggregates: Keep aggregates clean and free from all other materials during transportation and handling. Keep them separated from each other until measured in batches and placed in the mixer.
  - a. Stockpile aggregates in a manner to prevent segregation unless finish screening is provided at the batch plant.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Cement Requirements: Provide a cement which is a domestic product from an approved source. Use standard portland cement meeting the requirements of ASTM C 150 Type I or Type II.
  1. For concrete pressure pipe, use portland cement which does not have an air-entraining agent. Also, use a nonplastic (0 slump) mix if portland cement without air-entraining agent is used in the manufacture of concrete sewer pipe.

B. Cementitious Material Requirements: Use one of the following cementitious materials for the design mix:

1. Fly Ash Requirements: Provide fly ash with a uniform light color from a source approved by the ENGINEER and with cementitious properties conforming to the requirements of ASTM C 618 Class C or F, with the following exceptions:

Loss on ignition - 5 percent maximum

Sulfur trioxide - 4 percent maximum

Store fly ash at the concrete mixing plant separate from the cement and do not mix cement and fly ash prior to being added to the concrete mix.

2. Slag Requirements: Provide ground granulated blast furnace slag with cementitious properties conforming to the requirements of ASTM C 989, Grade 120, from an approved local product for normal weight concrete. Provide material having a uniform light color. Do not mix cement and ground granulated blast furnace slag prior to being added to the concrete mix.

C. Fine Aggregate Requirements: Provide fine aggregate of natural sharp sand meeting the requirements of ASTM C 33 for normal weight concrete, except as modified herein. Provide fine aggregate subjected to the test for organic impurities that will not produce a color darker than standard.

1. Provide fine aggregate meeting the requirements of the soundness test set forth in Paragraph 7.1 of ASTM C 33. The exceptions stated in Paragraphs 7.2 and 7.3 do not apply.

D. Coarse Aggregate Requirements: Provide coarse aggregate consisting of crushed stone, processed from natural rock or stones, meeting the requirements of ASTM C 33 for normal weight concrete.

1. The limits for deleterious substances and physical property requirements given in Table 3 of ASTM C 33 apply for each concrete class designation without exception.
2. Grade coarse aggregate according to Size No. 467 or No. 57 in Table 2 of ASTM C 33 for Class C concrete and Size No. 57 for Class B concrete.

E. Admixture Use: Limit the use of admixtures to the following:

1. Air-entraining admixture conforming to ASTM C 260
2. Water-reducing admixture conforming to ASTM C 494 Type A

3. Water reducing set retarders conforming to ASTM C 494 Type D
  4. Use water-reducing and set-retarding admixtures only after obtaining written permission. Provide test data indicating that the concrete containing the admixtures has improved workability and does not show any abnormal behavior such as premature stiffening or slump loss for at least 30 minutes after mixing has been completed, or any other abnormal differences when compared with concrete made without the admixture. Base such test data on fresh concrete from the proposed supplier, using batching equipment proposed for use on the project.
  5. Do not use admixtures containing calcium chloride, thiocyanates or more than 0.05 percent chloride ion. Obtain written conformance to the above requirements and the chloride ion content of each admixture from the admixture manufacturer prior to mix design review.
  6. When more than one admixture is used, dispense each admixture separately into the mix, and at different times during mixing, in accordance with the recommendation of ACI Committee 212. After system approval, make no changes in batching equipment or concrete constituents without approval.
- F. Water: Use clean water in mixing concrete which does not contain deleterious amounts of acids, alkalies or organic materials, furnished only from water from approved sources.
- G. Curing Covers: Provide water curing blankets consisting of an outer covering of burlap or cotton or other approved material, and needled, punched or sandwiched inner layer of cotton batting or other approved material, in all weighing not less than 20 ounces per square yard. Use curing blankets by Midwest Canvas Corporation, Chicago, Illinois, by Max Katz, Indianapolis, IN or approved equal.
1. Use curing water having a temperature that is within 20 degrees F of the concrete's surface temperature.
- H. Waterproof Paper and Film: Provide waterproof paper or polyethylene film both meeting the requirements of ASTM C 171 for use as sheet material curing covers.
1. Provide waterproof paper consisting of one ply of an approved type of fiber, reinforced waterproof building paper, consisting of cross fibers embedded in asphalt, between two layers of waterproof building paper, the whole being combined under heat and pressure to form a monolithic sheet.
  2. Provide polyethylene film consisting of white opaque sheeting manufactured from virgin resin and containing no scrap or additives. Do not use a film of less than 4 mils in thickness.

- I. Residual Acrylic Curing and Sealing Compound Membrane: Provide a clear curing and sealing compound: "Super Aqua-Cure VOX" by The Euclid Chemical Company; "Masterkure® N-Seal-HS" by ChemRex/ MBT®; or "Cure & Seal 1315" by Symons Corporation. Provide a compound of a clear styrene acrylate type, 25 percent solids content minimum, which shall have test data from an independent testing laboratory indicating a maximum moisture loss of 0.040 grams per square centimeter, when applied at a coverage rate of 300 square feet per gallon, in accordance with ASTM C 1315 Class A or Class B.
- J. Dissipating Resin Type, Membrane Forming, Curing Compound: Provide a dissipating resin type curing compound, conforming to ASTM C 309 Type 1D Class B, "Kurez DR" with The Euclid Chemical Co., Resi-Chem Clear Cure by Symons or equal. Use film having a chemical break down of a four-to-six-week period.
- K. Chemical Floor Hardener: Provide chemical floor hardener consisting of magnesium and zinc fluosilicate such as "Lapidolith as manufactured by L. Sonneborn Sons, Inc., "Saniseal" as manufactured by Master Builders Co., or Fluosilicate by Symons or equal.
1. Alternatively, where chemical hardening is required, substitute a natural, nonmetallic aggregate surface hardener at the time the floor is placed, in which case omit the latter application of chemical floor hardener. Obtain the hardening by incorporating into the surface of the freshly floated concrete a dry shake of Master Builders Mastercron Pre-Mixed, Procron as made by Protex Industries, Inc., Hard Top as made by Symons Corporation or equal, at the rate as recommended by the manufacturer. Perform all preparation, application procedures, curing and precautions in strict compliance with the manufacturer's recommendations and instructions submitted for approval prior to use. Use this material for interior applications only and limit air content for the design mix to 3 percent.
- L. Epoxy Adhesives: Provide epoxy adhesives as follows:
1. Sikadur 32 Hi-Mod by Sika Corporation, Richmond, VA or Euco 452 MV by Euclid Chemical Co., Cleveland, OH, Rescon 649 by Rescon Technology Corporation or equal. Use a two component, solvent-free, moisture insensitive, structural epoxy adhesive, conforming to ASTM C 881, Type I and II, Grade 2, Class B and C, epoxy resin adhesive.
  2. Sikadur 31, Hi-Mod Gel by Sika Corporation, Richmond, VA or Euco No. 452 Gel by Euclid Chemical Co., Cleveland, OH, Rescon R306 by Rescon Technology Corporation or equal. Use a 2-component solvent-free, moisture insensitive, high modulus, high strength, structural epoxy paste adhesive, conforming to ASTM C 881, Type I and II, Grade 3, Class B and C, epoxy resin adhesive.

- M. Nonsag Mortar: Provide Polymer Modified Nonsag Mortar as follows:
1. Sikatop 123 by Sika Corporation, Richmond, VA, Rescon R626 by Rescon Technology Corporation or equal. Use a 2-component, fast setting, nonsag, patching mortar, specifically formulated for application by trowel on vertical and overhead surfaces.
- N. Corrosion-Resistant Coating: Use Sika Armatec 110 by Sika Corporation, Richmond, VA, Rescon R-504 by Rescon Technology Corporation or equal as a corrosion-resistant coating.

## 2.2 DESIGN MIX

- A. Concrete Mix Classifications: Furnish and place concrete of the type divided into various classes according to use and compressive strength.
1. Use Class A concrete for all precast concrete units.
  2. Use Class B concrete for all reinforced concrete structures designed for high strength and watertightness; and for columns, walls, beams, slabs, stairs, and, in general, wherever formwork other than simple forms are required.
  3. Use Class C concrete for all reinforced concrete structures designed for high strength and watertightness with least dimension of concrete section at least 24 inches; and for bottoms of structures, electrical duct encasement, and, in general, where concrete is deposited directly on the bottoms of slopes of excavations and where only simple forms are required.
  4. Use Class D concrete for low-strength concrete, plain or reinforced, used for work mats beneath structures, soil stabilization, pipe cradles and encasement, filling, and other similar purposes. Clean boulders or fragments of rock excavated during construction may be embedded in large volumes of Class D concrete to provide added bulk. Use care in placing the boulders or rock fragments so that there will be no voids in the concrete.
- B. Compressive Strength: Provide, as a minimum, the specified compressive strength of concrete in pounds per square inch for the classes previously described as follows. Designate the 28-day strength as  $f'_c$ .

Class	7-Day Test	28-Day Test
A	3,400	5,000
B	2,700	4,000
C	2,700	4,000
D	1,300	2,000

1. Proportion and produce concrete to provide an average 28-day compressive strength in excess of the specified compressive strength,  $f_c$  as specified in Section 5.3 of ACI 318. Base the required proportions on tests of cylinders made, cured and tested as specified.
  2. Prepare mix designs for each type of concrete required and submit for approval. Concrete which will be placed by pumping methods will require a separate mix design and mix design approval, as described herein, in addition to the mix design approval required for other placement methods.
- C. Concrete Proportions: Select concrete proportions to provide the required strength and durability and to provide workability and consistency so that the concrete can be worked into forms and around reinforcement without segregation or excessive bleeding.
1. Provide concrete for all structures which is watertight. Do not allow the maximum water-cementitious material ratio to exceed 0.42 by weight of the total cementitious constituent. Measure the quantity of water to be the total quantity, including free surface moisture contained in the aggregates.
  2. Do not allow the amount of fly ash to exceed 25 percent by weight of the cement plus fly ash, while maintaining a minimum cement content of 450 pounds per cubic yard.
  3. Do not allow the amount of ground granulated blast furnace slag contained in Class B and C concrete to exceed 30 percent by weight of the cement plus slag, while maintaining a minimum cement content of 450 pounds per cubic yard.
  4. Establish concrete proportions including the water-cementitious material ratio on the bases of field experience or trial mixtures with the materials to be used in accordance with Section 5.3 of ACI 318.

D. Air Entrainment:

1. Provide air entrained Class B and C concrete with an average total air content of 5 percent. Allow a tolerance of plus or minus 1.5 percent on air content as delivered.

E. Slumps: When tested in accordance with ASTM C 143, provide a concrete mix design with slumps within the following limits:

Concrete Placement	Minimum and Maximum Slump in Inches	
	Class B and C	Class D
Normal	2 to 4	3 to 5
Pumped	2 to 4 prior to WRA 5 to 7 after WRA	3 to 5 prior to WRA 6 to 8 after WRA

1. Base the mix design slump on the concrete mix with water reducing admixture. For production concrete, allow no more than 1-inch increase in slump by use of specified water reducing admixtures. Measure slump at the end of the hose for pumped concrete.
2. Grade the combined aggregates for the design mix such that when a sample of the mix is separated on No. 4 standard sieve, the weight passing the sieve is not less than 30 percent nor greater than 40 percent of the total, unless otherwise specified.

F. Chloride Ion Concentration: Provide a maximum water soluble chloride ion concentration, percent by weight of cementitious materials, with two 28 day tests of design mix hardened concrete as follows:

1. Cast-in place concrete, exposed to moisture, water or sewage in service 0.10.
2. Cast-in-place concrete that will be dry or protected from moisture in service 1.00.

G. Shrinkage Control: Select materials and proportion mix to achieve an average 21 day drying shrinkage less than:

1. 0.036% for liquid-containing structures.
2. 0.048% for all other structures.
3. Provide one shrinkage test for each design mix. Testing shall be in accordance with ASTM C157 except shall be modified as follows:

- a. Make three (3), 4-inch x 4-inch x 11-inch specimens for each test.
- b. Remove specimens from molds at an age of 23 hours plus or minus 1 hour. Immediately submerge in water at 73 degrees F plus or minus 3 degrees F for at least 30 minutes and measure within 30 minutes thereafter to determine original length. Then immediately submerge in lime-saturated water in accordance with ASTM C 157. After 7 days, remove specimens from lime-saturated water and measure. Use this measurement as the base length to determine shrinkage deformation. After measuring, immediately store in a humidity-controlled room maintained at 73 degrees F plus or minus 3 degrees F and 50% plus or minus 4% relative humidity for the remainder of the test measurements. To determine shrinkage take measurements, expressed as percentage of base length, and report separately for 7, 14 and 21 days.
- c. Results of the drying shrinkage on test shall be reported to the nearest 0.001 percent. If drying shrinkage of any specimen deviates from the average for that test age by more than 0.004 percent, the results of that specimen shall be disregarded.

H. Measurement and Mixing: Measure and mix concrete in accordance with the recommendations of ACI 304R, as modified.

1. Measure cement, and fine and coarse aggregates separately by weight by equipment providing an accuracy within one percent of the net load weighed. Measure cement and water within 1 percent accuracy by weight. Measure aggregates within 2 percent accuracy. Measure admixtures within 3 percent accuracy by weight.
2. Use weighing equipment meeting the requirements of the United States Bureau of Standards. Make available standard testing weights and other necessary equipment at all times for testing the equipment.
3. Mix concrete in a rotary, batch-type mixer of adequate design to produce a thorough mix, homogeneous in composition and uniform in color. Mix each batch of one cubic yard or less not less than 1-1/2 minutes after the last of the ingredients have been added to the mixer. Increase the mixing time 15 seconds for each cubic yard or fraction thereof.

## 2.3 CONCRETE WORKMATS

- A. As a working base for all new, reinforced-concrete structural foundation elements supported on soil, rock, select fill, backfill stone, drainage stone and the like, provide a Class D concrete workmat having a minimum thickness of 2 inches.

## 2.4 READY MIX CONCRETE

- A. Ready Mix Requirements: For ready-mixed concrete meet the requirements of ASTM C 94, except as modified in the following paragraphs, and subject the mix to all provisions herein relative to materials, strength, proportioning, consistency, and testing. Article 18 of ASTM C 94, however, does not apply. In the event of low strengths, procedures outlined in Section 3.01 "Low Concrete Strength Test Results" apply.
- B. Delivery: Provide the rate of delivery of the mixed concrete such that the interval between placing of fresh concrete in contact with concrete already placed from previous batches does not exceed 45 minutes. Do not allow the elapsed time between the introduction of mixing water to the cement and aggregates and depositing concrete in the work to exceed 60 minutes, including mixing and agitating time.
- C. Agitation: Do not deliver concrete in nonagitating equipment.
- D. Field Records: Prepare a detailed concrete field record in which the following information is identified:
  - 1. Number of concrete batches produced.
  - 2. Proportions of materials used.
  - 3. Approximate location of final deposit of each batch in the structure.
  - 4. Time and date of mixing and placing.

## PART 3 EXECUTION

### 3.1 PLACING CONCRETE

- A. General: Place concrete only in the presence of the ENGINEER. Where the procedure is not specified, place concrete in accordance with the recommendations of ACI 304R.
- B. Continuous Operation: Place no concrete after its initial set has occurred, and do not use retempered concrete under any conditions. Make concreting operations continuous until the section, panel, or scheduled placement is completed. Should the concreting operations be unavoidably interrupted, provide construction joints formed at proper locations as specified.
- C. Minimum Handling: Convey and place concrete with minimum handling and deposit the concrete in the forms as close as possible to its final position and in no

case more than 5 feet in a horizontal direction therefrom. Do not rehandle concrete.

- D. Horizontal Layers: Place concrete in horizontal layers shallow enough so that the previous layer is still soft when the next layer is added and the two layers can be vibrated together. Do not exceed 18 inches in depth for each layer.
- E. Use of Chutes: Deposit wall and column concrete through heavy duck canvas or galvanized steel chutes equipped with suitable hopper heads. Provide chutes of variable lengths so that the free fall of concrete does not exceed 3 feet. Provide illumination where required, inside the forms so that the concrete is visible from the deck and runways at the point of deposit.
- F. Protection Against Elements: Protect freshly placed exposed concrete against damage from the elements or other sources.
- G. Hot Weather Placement: For placement of concrete during hot weather, follow the recommendations of ACI 305R.
  - 1. Place no concrete if the temperature of the concrete at the time of placement exceeds 90 degrees F.
  - 2. When the temperature of the concrete at the time of placement is consistently above 75 degrees F and a noticeable decrease in slump or an increase in mixing water demand occurs, use a retarding admixture, after obtaining written permission to do so.
  - 3. Protect unformed surfaces of concrete placed during hot weather from drying by continuous moist curing for at least 24 hours. Start curing as soon as the concrete has hardened sufficiently to withstand surface damage. If moist curing is not carried beyond 24 hours, cover the surface while damp with a suitable heat-reflecting plastic membrane or spray exterior surfaces with a white pigmented dissipating curing compound in accordance with Section 3.5 Curing. Use curing water having a temperature that is within 20 degrees F of the concrete's surface temperature.
  - 4. Protect formed surfaces of concrete placed during hot weather from drying as recommended in ACI 305 R.
- H. Cold Weather Placement: For placement of concrete during cold weather, follow the recommendations of ACI 306R, except that set-accelerators will not be permitted.
  - 1. Before placement of concrete, completely remove all ice, snow and frost from all surfaces to be in contact with the concrete. Do not place concrete on a frozen subgrade. Heat surfaces to be in contact with the concrete to a temperature as near as practical to that of the concrete being placed.

2. When mean daily temperatures at the site are below 40 degrees F provide concrete at a temperature, as placed, of not less than 50 degrees F, except for mass concrete provide a temperature of the concrete as placed of not less than 45 degrees F. Heat aggregates or mixing water or both to obtain these placement temperatures. Do not permit the concrete temperatures as mixed to exceed the placement temperature by more than 10 degrees F for air temperatures of 0 degrees to 30 degrees F, nor by more than 15 degrees F for air temperatures below 0 degrees F.
3. Maintain concrete in place at a temperature of 50 degrees F by keeping forms in place, covering with insulated blankets, heated enclosures or combinations of these for the following minimum time intervals, except that forms shall not be removed in less than the time specified in Section 03100.
  - a. Footings and walls below grade and slabs on grade 2 days
  - b. Exposed walls and columns carrying no load 3 days
  - c. Exposed floor slab, beams and girders above grade and partially loaded 6 days
4. Protect exposed surfaces of new concrete from drying out. When dry heating is used for protection against low temperatures, cover exposed concrete surfaces with an approved sheet material or membrane as specified in Section 03310 subsection "Curing". Use water curing only if icing problems can be avoided. During periods of very cold weather, continue the protection against low temperature for an extended curing period as required to prevent freezing of the concrete.
5. Permit concrete which is to be exposed to freezing temperatures to undergo some drying just prior to and during the period of adjustment to ambient cold-weather conditions. When protection against low temperatures is removed, do not allow the resulting temperature drop in any part of the concrete to exceed 5 degrees per hour nor 40 degrees F for the first 24 hour period.

I. Concrete Embedments:

1. Encase pipes, anchor bolts, sleeves, steps, castings, floor drains, manhole frames, and other inserts in concrete as shown. Take special care to place and maintain them to the proper lines and grades and to compact concrete thoroughly around them to prevent the passage of water. Insofar as possible, set them before placing concrete and thoroughly brace to prevent movement during the progress of the work.

### 3.2 VIBRATING CONCRETE

- A. Use of Vibrators: Consolidate all concrete by means of mechanical internal vibrators applied directly into the concrete in a vertical position in accordance with the recommendations of ACI 309.
- B. Vibrator Size: Provide a sufficient intensity and duration of vibration to cause concrete to combine with previously placed concrete, to fill corners, to compact thoroughly and to embed reinforcement, pipes, conduits, and similar work completely. Insert vibrators into and withdraw from the concrete vertically at close intervals. Do not use vibrators to move concrete laterally.
- C. Spare Units: Have on hand a sufficient number of vibrators to assure that the incoming concrete can be properly compacted within 15 minutes after placing. Provide reserve vibrators for use when others are being serviced. Do not start the placement of any concrete unless more than one vibrator is available.

### 3.3 CONCRETE TESTS

- A. The OWNER will be performing quality control testing. The contractor shall provide access to the site and assistance to the quality control personnel obtaining concrete samples for testing. Test results will be made available to the CONTRACTOR.
- B. Successful Testing Requirements: Consider the strength level of the concrete mix for each individual class of concrete satisfactory when:
  - 1. The average of all sets of three consecutive 28-day strength tests (average of two cylinders) equal or exceed the specified compressive strength ( $f'_c$ ).
  - 2. No individual 28-day strength test (average of two cylinders) falls below  $f'_c$  by more than 500 psi.
  - 3. If either of these requirements are not met, make changes in the mix proportions immediately to achieve the required strength.

### 3.4 UNSATISFACTORY CONCRETE STRENGTH AND SHRINKAGE TESTS RESULTS

- A. Test Cores: If it is determined that the serviceability of the concrete is significantly reduced by low concrete strength test results from the OWNER's QC testing, the Contractor shall take test cores from the area in question. Drill cores in accordance with ASTM C 42 except as noted. Take three cores for each strength test more than 500 psi below the specified  $f'_c$ . The contractor shall provide the cores to the OWNER for performance of compression tests

- B. Acceptable Levels of Strength: Concrete in the area represented by core tests will be accepted if the average of three cores is equal to or greater than  $0.85 f_c$  and no single core is less than  $0.75 f_c$ .
- C. Unacceptable Concrete: Remove and replace concrete which does not meet the core test requirements or strengthen the concrete to the satisfaction of the ENGINEER.
- D. Shrinkage Tests: If the shrinkage tests performed by the OWNER indicate excessive shrinkage of the concrete mix the Contractor shall make revisions to the mix to reduce shrinkage to bring the test results within the limits specified in Paragraph 2.2.G. Cease concrete placement operations pending approval by the OWNER that acceptable corrections to the concrete mix have been made.

### 3.5 CURING

- A. General: Generally follow the recommendations of ACI 308 for curing concrete.
- B. Protection: Protect concrete surfaces normally exposed to the atmosphere against too rapid drying by curing for a minimum period of 7 days. For hot weather concreting and cold weather concreting follow the recommendations of ACI 305R and ACI 306R for curing concrete. Commence the curing period immediately following the placing of the concrete. Accomplish curing by one of the following methods. Should there be any delay in the application of the method of curing used, cover the concrete with moistened burlap held in complete contact with the surface or kept wet by continuous sprinkling. Use curing water having a temperature that is within 20 degrees F of the concrete's surface temperature.
  - 1. Accomplish water curing by the use of curing blankets wetted and applied to the concrete surface as soon as the forms have been removed, or in the case of slabs, as soon as the concrete has set up sufficiently to prevent marring of the surface. Maintain the covering material in a thoroughly saturated condition and maintain the presence of free water between the mat and the surface of the concrete at all times throughout the curing period.
  - 2. Accomplish sheet material curing by use of waterproof paper or polyethylene film applied to the concrete surface as soon as it has set sufficiently hard to prevent marring. First, thoroughly wet the concrete surface, and then place the sheet materials in direct contact and anchor thereto in a manner to assure continuous contact throughout the curing period. Lap the sheet materials a minimum of 3 inches with the seams taped, cemented, or glued. Discoloration is objectionable on floors which have been steel troweled to a hard finish. Do not use polyethelene film on these floors.
  - 3. Accomplish curing by using clear residual acrylic curing and sealing compound membranes on all interior concrete floor surfaces that do not

receive a finish, overlays or hardener, and on stairs, landings and walking surfaces. Accomplish membrane curing immediately after removal of forms or in the case of unformed surfaces, immediately after final finishing. Uniformly coat the entire exposed surface with a clear curing compound membrane by means of an approved pressure spray distributor at the rate of 300 square feet per gallon of material. Apply the material so that the concrete surface is completely coated and sealed with one application. Do not apply the membrane to faces of construction joints or other surfaces against which additional concrete will be placed. Keep such surfaces continuously wet by other means.

4. Accomplish curing by using dissipating resin type curing compounds. Apply to all concrete surfaces except those listed in paragraph 3.5.B.3. Start curing immediately after removal of forms as in the case of unformed surfaces, immediately after final finishing while the concrete surface is still moist. Coat the entire exposed surface by means of approved pressure spray distributor at the rate of 200 square feet per gallon of material. Apply the material so that the concrete surface is uniformly coated with one application. Do not apply to the faces of construction joints or other surfaces against which additional concrete will be placed. Keep such surfaces wet by other means.

### 3.6 JOINTS AND BONDING

- A. Joints: Make construction joints where shown or permitted. Locate such joints to ensure stability, strength, and watertightness, and provide a waterstop where shown. Build all corners monolithically, and continuously concrete on either side to points shown.
- B. Timing Between Placement:
  1. Provide at least 2 hours of elapsed time after placing concrete in the columns or walls before depositing concrete in beams, girders, or slabs supported thereon. Consider beams, girders, brackets, column capitals, and haunches as part of the floor system and place them integrally with the floor.
  2. Construction Joints: Minimum of 14 days (7 days wet cure and 7 days dry cure).
  3. Control Joints: Minimum of 6 days
  4. Expansion Joints / Contraction Joints: Minimum of 1 day.
- C. Horizontal Keyways: Build horizontal keyways to permit flushing water to escape from the keyways.

- D. **Keyway Description:** Provide continuous, straight, and regular keys or grooves in joints. Bring exposed concrete surfaces to a true level line at the top of every horizontal construction joint. Provide the exposed construction joints with a row of form ties located in the concrete at from 4 to 6 inches from the joint to tighten the forms for subsequent sections. Set reinforcement to extend into subsequent sections of construction, as shown. If required, provide water stops having watertight splices and corner intersections and meet the requirements as specified. Remove all bulkheads or other joint forming material before placing adjacent concrete.
- E. **Continuous Placement Procedure:** Carry on continuous placing of concrete between the construction joints shown. If for any reason it becomes necessary to stop the placing of concrete at locations other than those indicated, such locations and the manner of making the joint are subject to approval.
- F. **Grout Use Between Surfaces:** Thoroughly clean and wet concrete surfaces against which the new concrete is to be placed. Just prior to placing new concrete, slush horizontal surfaces and joints with at least 2 inches of cement grout of the same mixture as the concrete but with coarse aggregate omitted. Use special care in placing and puddling concrete at vertical joints to ensure a bond with existing concrete. Do not make vertical construction joints in watertight construction, unless shown or approved in writing.
- G. **Contraction (Control) Joints in Slabs-on-Ground (for walkways and pavements outside the structure or building):** Construct contraction joints in slabs-on-ground to form panels of patterns as shown. Use saw cuts  $1/8"$  x  $1/4$  slab depth or inserts  $1/4"$  wide x  $1/4$  of slab depth, unless otherwise indicated.
1. Form contraction joints by inserting premolded plastic, hardboard or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris.
    - a. Contraction joints in unexposed floor slabs may be formed by saw cuts as soon as possible after slab finishing as may be safely done without dislodging aggregate.
  2. If no joint pattern is shown, provide joints not exceeding 15 feet in either direction and located to conform to bay spacing wherever possible (at column centerlines, half bays, third-bays).

### 3.7 CONCRETE FLOOR SURFACES

- A. **Floor Surfaces:** Construct the concrete floor surfaces monolithically with the structural slab being finished as indicated in the following schedule, unless otherwise shown or as specified:

1. Tank bottoms and other surfaces not to be used as walkway areas - screeded, wood floated, steel troweled.
  2. Exterior walkways and platforms over tanks to be used as walking areas - screeded, wood floated, steel troweled, broomed.
  3. Exterior sidewalks - screeded, wood floated, divided into panels, steel troweled, broomed.
  4. Reservoir bottoms - screeded, wood floated.
- B. Panel Construction: Construct panels, where required, approximately 10 feet square using an edger to form dummy joints 1/4-inch deep.
- C. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as specified, and slab surfaces which are to be covered with membrane or elastic waterproofing, membrane or elastic roofing, as otherwise indicated.
1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats, or by hand-floating if the area is small or inaccessible to power units. For nonsloping level surfaces check and level the surface plane to tolerances of  $F_F$  18 and as determined by ASTM E 1155. For sloping surfaces check the surface planes to a tolerance of  $F_F$  18 as determined by ASTM E 1155. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture. Check the floor flatness ( $F_F$ ) and levelness ( $F_L$ ) on an area of 400 square feet for level floors and 400 square feet of sloping floors or tanks to be selected by the ENGINEER.
- D. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or other thin film finish coating system.
1. After floating, begin first trowel finish operation using a power-driven trowel. For nonsloping level surfaces check and level the surface plane to tolerances as determined by ASTM E 1155. Cut down high spots and fill low spots. For sloping surfaces check the surface planes to a tolerance of  $F_F = 20$  as determined by ASTM E 1155. Check the floor flatness ( $F_F$ ) and levelness ( $F_L$ ) on an area of 400 square feet for level floors 400 square feet for sloping floor or tanks to be selected by the ENGINEER. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with surface

leveled to tolerances specified. Grind smooth surface defects which would telegraph through applied floor covering system.

- E. Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with thin-set mortar, apply trowel finish as specified, then immediately follow with slightly scarifying surface by fine brooming.
- F. Nonslip Broom Finish: Apply nonslip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere, where indicated.
  - 1. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with the ENGINEER before application.
- G. Nonslip Aggregate Finish: Apply the nonslip aggregate finish to concrete stair treads, platforms, ramps, sloped walks, and elsewhere where indicated.
  - 1. After completion of float finishing, and before starting trowel finish, uniformly spread 25 pounds of dampened nonslip aggregate per 100 square feet of surface. Tamp aggregate flush with surface using a steel trowel, but do not force it below the surface. After broadcasting and tamping, apply trowel finishing as specified.
  - 2. After curing, lightly work the surface with a steel wire brush, or an abrasive stone and water to expose nonslip aggregate.
- H. Protection: Cover all finished floors, walkways, and slabs with boards, canvas, heavy paper or similar covering to protect them from damage.

### 3.8 CONCRETE SURFACES

- A. Beveling Edges: Finish top edges of walls and equipment pads with a 1/2-inch beveled edge, unless other details are shown, and rub off any burrs remaining upon removal of the forms.
- B. Form Removal Inspection: Immediately after stripping the forms, inspect all concrete surfaces. Remove all fins, offsets, burrs, ridges, or other unsightly marks from the exposed concrete.
- C. Patching: Patch placement joints, voids, stone pockets, or other defective areas before the concrete is thoroughly dry. Chip away defective areas to a depth of not less than 1 inch with all edges perpendicular to the surface. Wet the area to be patched, including at least 5 inches of the adjoining surface, prior to placing the patching mortar. Then scrub onto the surface a grout of equal parts of cement and sand mixed to a brushing consistency followed immediately by the patching mortar. Make the patch of the same material and of approximately the same proportions as used for the concrete, except omit the coarse aggregate. For

exposed concrete, substitute white cement for part of the gray cement so that the patch will match the color of the surrounding concrete. Determine the proportion of white and gray cement by making a trial patch. Use as little water as consistent with requirements of handling and placing. Mortar: Do not retemper mortar. Thoroughly compact and screed off the mortar so as to leave the patch slightly higher than the surrounding surface. Then leave it undisturbed for a period of 1 to 2 hours to permit initial shrinkage before being finally finished. Finish the patch to match the adjoining surface and cure as specified for the original concrete.

- D. Tie Hole Patching: Patch tie holes before the concrete is thoroughly dry. Plug tie holes flush with the surface using portland cement mortar. Prewet tie holes with clean water and apply a neat cement slurry bond coat. Densely tamp mortar of a dry-tamp consistency into the tie holes exercising care so as not to smear mortar onto the finished concrete surface. Include sufficient white cement in the mortar mix to cause the plugged holes to blend in with the adjacent surfaces. Make sample patches with different mixes to assure that this requirement is met.

### 3.9 EPOXY ADHESIVE

- A. Epoxy Adhesives for Bonding: Use epoxy adhesive for bonding fresh concrete to existing concrete where shown and grouting dowels into vertical holes.
- B. Recommendations: Mix and apply epoxy adhesive in accordance with the manufacturer's recommendations and in accordance with the requirements of the "Standard Specification for Bonding Plastic Concrete to Hardened Concrete with a Multi-Component Epoxy Adhesive - ACI 503R.
- C. Surface Preparation: Roughen existing concrete, by sandblasting. Provide all surfaces free of standing water and clean as required.

### 3.10 EPOXY GEL

- A. Epoxy Gels for Dowels: Use epoxy gel for grouting dowels into horizontal holes.
- B. Application: Apply epoxy gels in accordance with the manufacturer's recommendations.

### 3.11 POLYMER MODIFIED NONSAG MORTAR

- A. General: Mix and apply material in accordance with the manufacturer's recommendations.
- B. Surface Preparation: Clean existing concrete that is to receive the material of all loose concrete, dirt, oil, grease and bond-inhibiting materials and mechanically roughen to obtain an aggregate-fractured surface with a minimum profile of 1/16-inch.

- C. Mortar Placement: At the time of application, saturate existing concrete such that it is surface dry with no standing water. Scrub mortar into the substrate filling all pores and voids. Force the material against the edges of repairs, working it toward the center. After applying material, consolidate and then screed. Do not place the material in lifts greater than 1-inch. Where multiple lifts are required to achieve the required thickness, score the top surface of each lift to produce a roughened surface for the next lift. Allow the preceding lift to reach final set, 30 minutes minimum before applying fresh material. Scrub fresh mortar into the preceding lift. Allow mortar to set to desired stiffness and then finish with wood or sponge float for a smooth surface.
- D. Curing Requirements: Moist cure with a fine mist spray of water, wet burlap, or nonsolvent-based curing compound. If necessary, protect newly applied material from rain. To prevent freezing, cover with insulating material.

### 3.12 CORROSION-RESISTANT COATING

- A. Blast Cleaning: Blast clean existing exposed reinforcing steel to white metal color and immediately coat reinforcement with two 10 mil thick coats of corrosion-resistant coating applied in accordance with the manufacturer's recommendations.

### 3.13 MISCELLANEOUS CONCRETE ITEMS

- A. Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after the work of other trades is in place. Mix, place, and cure concrete as specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.
- B. Curbs: Provide a monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of the manufacturer furnishing machines and equipment.

END OF SECTION

## SECTION 03600

### GROUT

#### PART 1 GENERAL

##### 1.1 SUMMARY

###### A. Section Includes:

1. Furnishing non-shrink grout under column and beam bearings and under equipment bases.

##### 1.2 REFERENCES

###### A. Codes and Standards Referred to in this Section:

1. ASTM C 33 - Specifications for Concrete Aggregates
2. ASTM C 109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 in. [or 50 mm] Cube Specimens).
3. CRD C-619 - Specification for Grout Fluidifier.
4. CRD C-621 - Specification for Non-Shrink Grout.

##### 1.3 SUBMITTALS

###### A. Provide all submittals, including the following, as specified in Division 1:

1. Submit notarized certificate of manufacturer as evidence that pre-packaged non-shrink grout conforms to specified requirements. Include manufacturer's literature.
2. Test results showing that in projects of similar scope and size, the effective bearing area (EBA) under column bearings, beam bearings and equipment bases is between 95 and 100 percent.
3. Detailed field records for ready-mixed grout as specified in Section 03310.

##### 1.4 QUALITY ASSURANCE

- ###### A. Testing Requirements:
- Testing laboratory provided by OWNER is responsible for conducting tests required in Division 1.

- B. Testing Assistance: Cooperate with the laboratory personnel, provide access to Work, and manufacturer's operations. Provide and deliver to the laboratory adequate quantities of representative samples of materials proposed to be used which require testing.

## 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle all products and materials as specified in Division 1, and as follows:

- 1. Pre-packaged, Non-shrink Grout:

Deliver in unopened packages. Store in a dry place protected from moisture.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Non-Shrink Grout:

- 1. Furnish a flowable, pre-packaged non-shrink grout without dependence on gas expansion forces or enlargement of metal particles for its non-shrinkage characteristics and conforming to CRD C-621.
- 2. Furnish one of the following:
  - a. Masterflow 928, as manufactured by MasterBuilders, Incorporated.
  - b. Multipurpose, as manufactured by Symons Corporation.
  - c. Sika grout 212, as manufactured by Sika Corporation.
  - d. Or equal.

- B. Grout Fluidifier:

Furnish grout fluidifier conforming to CRD C-619.

### 2.2 GROUT MIXES

- A. Non-Shrink Grout:

- 1. Add water to pre-packaged grout material and mix, as recommended by the manufacturer, to produce a flowable, non-shrink grout having a minimum compressive strength of 3000 psi in 24 hours.
- 2. Provide grout which when exposed to weather will be free of discoloration, without the necessity of special surface treatments.

## PART 3 EXECUTION

### 3.1 INSPECTION

#### A. Substrate Condition:

Examine the substrate and conditions under which grout is to be placed and notify the ENGINEER, in writing, of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to the OWNER.

### 3.2 INSTALLATION

#### A. General:

1. Place grout as shown and in accordance with the manufacturer's instructions. Notify the OWNER if manufacturer's instructions conflict with the Specifications. Do not proceed with installation until directed by the OWNER.
2. Drypacking will not be permitted.
3. Have manufacturers of proprietary products make available upon 72 hours notification the services of a qualified, full time employee to aid in assuring proper use of the product under job conditions. The cost of this service, if any, shall be borne by the Contractor.

#### B. Columns, Beams and Equipment Bases:

1. After shimming columns, beams and equipment to proper grade, securely tighten anchor bolts. Properly form around the base plates allowing sufficient room around the edges for placing the grout. Adequate depth between the bottom of the base plate and the top of concrete base must be provided to assure that the void is completely filled with the non-shrink grout.

END OF SECTION

(NO TEXT FOR THIS PAGE)

SECTION 05500  
METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Ornamental light iron, steel, aluminum and stainless steel items, including ladders, ladder safety devices, detectable warning plates, dedication tablet, anchors, bolts and accessories required for the attachment of items specified herein, and other items shown, to complete the Work in accordance with the Contract Documents.

1.2 REFERENCES

- A. Codes and standards referred to in this Section are:

1. ASTM A 36/A36 - Structural Steel
2. ASTM A 193/A193M  
Grade A193 - Stainless Steel Bolts
3. ASTM A 283/A283M - Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes and Bars
4. ASTM A 554 - Welded Stainless Steel Mechanical Tubing
5. ASTM B 137 - Method for Measurement of Mass of Coating on Anodically Coated Aluminum
6. ASTM B 244 - Method for Measurement of Thickness of Anodic Coatings on Aluminum and Other Nonconductive Coatings on Nonmagnetic Basic Metals with Eddy-Current Instruments
7. FS FF-S-325 - Expansion Shields for Masonry Anchorage
8. FS FF-B-588 - Toggle Bolts
9. ANSI A14.3 - Safety Requirements for Fixed Ladders
10. OSHA Regulation 29 CFR §1910.27 - Fixed Ladders

### 1.3 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Certification: Submit certificates in triplicate for anodic treatment of aluminum. Certificates shall be properly attested by the aluminum fabricator stating that the aluminum has been treated as herein specified.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable manufacturers are listed below. Other manufacturers of equivalent products may be submitted.
  - 1. Ladder Rungs
    - a. Safe-T-Metal Co., Inc. Style LR
  - 2. Ladder Safety Device
    - a. North Safety Products, Saf-T-Climb
  - 3. Dedication Tablet
    - a. United States Bronze Sign Co., Inc.

### 2.2 MATERIALS

- A. Standards: Provide metal items meeting the requirements of the following standards:
  - 1. Structural steel, shapes and plates, except plates to be bent or cold-formed      ASTM A 36/A36M
  - 2. Steel plates, bent or cold-formed      ASTM A 283/A283M, Grade C
  - 3. Steel bars and bar size shapes      ASTM A 36/A36M
  - 4. Sheet aluminum and extrusions      As required for color (3003 Alloy with mill finish)
  - 5. Aluminum castings thresholds and the like ornamental      Alloy 356-T6  
Alloy 214-F
  - 6. Aluminum screw machine parts      Alloy 2024-T4

- |     |                        |                                                                                                           |
|-----|------------------------|-----------------------------------------------------------------------------------------------------------|
| 7.  | Structural aluminum    | Alloy 6061-T6                                                                                             |
| 8.  | Aluminum bar           | Alloy 6061-T6511                                                                                          |
| 9.  | Stainless steel sheet  | U.S. Steel 16-10, Grade MT316                                                                             |
| 10. | Pipe, stainless steel  | ASTM A 554 Grade MT304                                                                                    |
| 11. | Bolts: stainless steel | ASTM A 193/A193M, Grade MT316 85 percent copper, 5 percent lead, tin and zinc, unless otherwise specified |
12. Provide expansion bolts of Grade 316MT stainless steel.
  13. Provide gauges specified to refer to U.S. Standard gauge for sheet steel, plate iron and steel, and to Brown & Sharp Gauge for wire and sheet aluminum.
  14. Anodically treat aluminum to meet the test requirements of ASTM B 137 for weight and ASTM B 244 for thickness.

B. Detectable Warning Plates

1. Application: Conform installation of plates to Section 424 of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. Locate plates at all ADA curb ramp locations.
2. Materials: Manufacture new 24"x24" gray cast iron detectable warning plates (East Jordan Iron Works 7005 Series with the Black Asphalt dip finish or approved equal) in accordance with ADA Accessibility Guidelines for Detectable Warnings. Provide all plates with a manufacturer coated, black colored finish to reduce corrosion.

C. Dedication Tablet

1. Materials: Provide a 36 inch by 24 inch by ¼ inch thick, engraved dedication tablet made of bronze with a bright satin finish in the same style, shape and colors as the existing tablets. Provide Helvetica medium style letters filled with black enamel. Protect tablet with a clear coat of lacquer.

- D. Ladders: Provide reservoir access ladder made of aluminum bar rails 2-1/2 inches by 1/2-inch as shown. Space rungs uniformly and at not more than on 12-inch centers. Provide flat top rungs with serrated abrasive surface. Provide ladders that comply with the latest edition of OSHA and ANSI A14.3 requirements. Provide aluminum finish for exterior use, NAAMM Architectural Class 1, AA-A41 clear coating.

- E. Ladder Safety Device: Provide ladder safety device for fall prevention that complies with OSHA Regulation 29 CFR §1910.27. Provide carrier rail, mounting brackets, clamps, sleeves, lanyards and harnesses from a single manufacturer for a complete and operating installation. Provide metal parts fabricated from 304 stainless steel. Fasten the device to the ladder below the reservoir access opening and provide a removable extension post and accessories to extend the carrier rail to 3 feet 6 inches above the top slab of the reservoir for easy access from grade level. Provide two standard size safety harnesses.
- F. Aluminum Finishes: Provide aluminum finishes specified below in strict compliance with the National Association of Architectural Metal Manufacturers (NAAMM) aluminum finish designations, unless otherwise indicated or specified.
  - 1. Provide miscellaneous aluminum angles and cover moldings which are indicated to be painted with a mill finish.
  - 2. Provide aluminum finishes as follows:
    - a. Exterior aluminum items, unless otherwise specified: NAAMM Architectural Class 1, AA-A41 clear coating
    - b. Interior aluminum items, unless otherwise specified: NAAMM Architectural Class 2, AA-A31 clear coating
- G. Stainless Steel Finish: Provide stainless steel with a No. 4 satin finish unless otherwise shown.
- H. Painting: Metal fabrications shall be shop painted in accordance with Section 09900.

## 2.3 FABRICATION

- A. General: Form all Work true to detail, with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture, and free from defects impairing strength or durability. Precision fitting and jointings are required for all Work. Perform all welding in a way to prevent pitting or discoloration.
- B. Welding: Weld joints of such character and assemble so that they will be as strong and rigid as the adjoining section. Select wire for welding to prevent discoloration and to insure sound structural welds. Continuously weld exposed joints their entire length unless otherwise shown or specified. Provide all exposed welded face joints dressed flush and smooth.

- C. Surface Flaws: Remove surface flaws on aluminum before the anodic coating is applied.
- D. Structural Steel: Provide structural steel plates, shapes, bars, sheets and other metal items meeting the requirements of Section 05120.
- E. Miscellaneous: Perform all drilling, tapping, cutouts, and reinforcement required to attach, insert or fit thereto, fixtures and fittings in accordance with the drawings templates or instruction for the fixtures and fittings. Do not begin fabrication of metalwork until all drawings, templates or instructions are available.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. General: Install metal fabrications in accordance with the manufacturer's recommendations and approved shop drawings and as specified in Division 1.
- B. Alignment: Install all items and set plumb, square, level and true at their proper elevation and plane, and located in true alignment with all Work. Center the ladder under the reservoir access manhole casting shown.
- C. Fastening: Securely anchor, ready for operation in every respect. Unless indicated otherwise, fasten metalwork to concrete with stainless steel nuts, washers and wedge-type expansion bolts having an embedment of 6 inches. Stainless steel hardware in contact with aluminum shall have 1/8-inch thick rubber type washers inserted between the two dissimilar metals.
- D. Examine metal Work after installation, painting and glazing have been completed as required. Adjust, repair and replace metalwork as required. Clean and retouch exposed surfaces of metal Work where necessary to bring the color of the finished surfaces reasonably uniform and free from scratches and other surface blemishes.
- E. Detectable Warning Plates: General procedure of work:
  - 1. Remove and replace sidewalk where indicated. Provide new sidewalks where indicated.
  - 2. Set cast iron detectable warning plate into wet concrete. Typically, two plates will be set side-by-side, centered across a five foot wide walk, six inches behind the back of curb.
  - 3. Tamp plate thoroughly with rubber mallet to ensure that no air pockets remain under the plate. Encase all lugs completely in concrete. Allow concrete to seep through vent holes until it is filled flush with the plate.

Install plates such that all edges of the plates are flush with the adjacent concrete.

4. Clean any excess concrete off plate.
  5. Broom finish the concrete left exposed around the plate.
- F. Dedication Tablet: Install dedication tablet adjacent to the existing tablets. Anchor to the wall with concealed fastenings.

END OF SECTION

SECTION 05560  
METAL CASTINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Miscellaneous ferrous and nonferrous castings.

1. This classification includes manhole frames and covers, catch basin inlets and covers, curb inlets, brackets and supports for piping, and special malleable iron castings and inserts.

1.2 REFERENCES

A. Codes and standards referred to in this Section are:

1. AASHTO M306 - Standard Specification for Drainage Structure Castings
2. ASTM A 27/A27M - Specification for Steel Castings, Carbon for General Applications
3. ASTM A 47 - Specification for Ferric Malleable Iron Castings
4. ASTM A 48 - Specifications for Gray Cast Iron Castings
5. ASTM A 148/A148M - Specifications for Steel Castings
6. ASTM A 536 - Specifications for Ductile Iron Castings
7. ASTM B 26/B26M - Aluminum Alloy Sand Castings
8. ASTM B 148 - Aluminum Bronze Sand Castings
9. ASTM B 584 - Manganese Bronze

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable manufacturers are listed below. Other manufacturers of equivalent products may be submitted.

1. East Jordan Iron Works
2. Neenah Foundry Company
3. U.S. Foundry

## 2.2 MATERIALS

- A. Conform gray iron castings to ASTM A 48 Grade 35B.
- B. Conform ductile iron castings to ASTM A 536 Grade 65-45-12.
- C. Conform aluminum alloy castings to ASTM B 26 Alloy 356.0 T6.

## 2.3 FABRICATION

- A. Provide castings of uniform quality and free of sand holes, gas holes, shrinkage cracks and other surface defects. Accurately make drainage structure castings to meet the tolerances in AASHTO M306 Section 4.2. Plane or grind castings to secure flat and true surfaces. Make allowance in the patterns so that the specified thickness is not reduced. Provide manhole covers which conform to the details shown and which are true and seat at all points. Do not provide defective castings that have been plugged or welded. Supply castings showing the name of the manufacturer, the country of manufacture, ASTM material designation, individual part number, and cast or heat date. Mark pairs of machined castings to facilitate subsequent identification during installation. Do not paint castings.
- B. Cast manhole covers with a checkered top design.
  1. Provide water manhole covers with the word "WATER" cast in the center.
  2. Provide sanitary and combined sewer manhole covers with the words "SANITARY SEWER" cast in the center.
  3. Provide storm sewer manhole covers with the words "STORM SEWER" cast in the center.
  4. Provide electrical manhole covers with the word "ELECTRICAL" cast in the center.

## 2.4 SOURCE QUALITY CONTROL

- A. Load Test: Proof load test the first article of each traffic service casting in accordance with the method and procedure outlined in AASHTO M306, Section 7.0. Maintain test results at the foundry for 7 years. Furnish the results of the proof load tests upon request.

- B. Weight: Reject castings with a weight which is less than the theoretical weight based on required dimensions by more than 5 percent. Provide facilities at the site for weighing castings, or furnish invoices showing true weights, certified by the supplier.
- C. Certification: Furnish a foundry certification stating that samples representing each lot have been tested, inspected, and are in accordance with this specification.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Erect all castings to accurate grades and alignment, and when placing in concrete carefully support castings to prevent movement during concreting.

#### 3.2 PAINTING

- A. Clean metal castings thoroughly before painting. Give manhole frames and covers and valve boxes one coat of primer and two coats of an approved asphaltum varnish or other approved coating at the point of manufacture. Deliver all other castings to the jobsite unpainted. Paint castings as specified in Section 09900.

END OF SECTION

(NO TEXT FOR THIS PAGE)

## SECTION 09900

### PAINTING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Preparation of surfaces, shop painting of items furnished, field painting of embedded casting, piping and parking lot marking.

##### 1.2 REFERENCES

- A. Codes and standards referred to in this Section are:

1. SSPC - Steel Structures Painting Manual
2. SSPC SP 1 - Solvent Cleaning
3. SSPC SP 3 - Power Tool Cleaning
4. SSPC SP 6 - Commercial Blast Cleaning
5. SSPC SP 10 - Near-White Blast Cleaning
6. FS-TT-V-51F - Asphalt Varnish
7. NSF 61 - Drinking Water System Components - Health Effects

##### 1.3 SUBMITTALS

- A. Provide all submittals, including the following, as specified in Division 1.
1. Submit manufacturer's standard color chart for color selection.
  2. Where equipment is customarily shipped with a standard finish, submit samples of the proposed color and finish for approval prior to shipping.
  3. Furnish affidavits from the manufacturer certifying that materials furnished conform to the requirements specified and that paint products have been checked for compatibility.

4. Submit a supplementary schedule of paint products with mil thickness, and solids by volume, including all paint applied in the shop and in the field. Provide a schedule that is in accordance with the recommendations of the paint manufacturer.
5. Furnish affidavits from the manufacturer certifying that coatings in immersion service contain no water soluble solvents or corrosion inhibitive (active) pigments with slight water solubility.

#### 1.4 DELIVERY, STORAGE AND HANDLING

- A. General: Deliver, store and handle all products and materials as specified in Division 1 and as follows:
- B. Delivery and Storage: Deliver and store paint at the site from the approved manufacturer only.
- C. Packaging and Labeling: Prepare, pack and label paints, stains, varnish or ingredients of paints to be used on the job. Deliver all material to the site in original, unbroken containers.
- D. Storage: Store the painting materials at the site in accordance with applicable codes and regulations and in accordance with manufacturer's instructions. Keep the storage space clean at all times. Take every precaution to eliminate fire hazards.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable manufacturers are listed below. Other manufacturers of equivalent products may be submitted.
  1. Paint - General:
    - a. Tnemec Co., Inc.
  2. Parking Lot Marking:
    - a. Porter Paints Division of Courtaulds Coatings, Inc., Louisville, KY;  
Alkyd Traffic Paint

## 2.2 MATERIALS

A. General: Furnish paint and other materials of the type and quality of the manufacturer on which the painting schedule specified herein is based.

1. Provide compatible shop and field coats.
2. Provide all coats of paint for any particular surface from the same manufacturer.
3. Provide coatings, including paints, primers and materials in contact with potable water listed by NSF International under Standard 61 for materials and products in contact with potable water.
4. Provide paint of approved color as selected from the manufacturer's standard range of colors.

B. Paint Schedule: Provide all painting in accordance with the following schedule with the number of coats not less than the number shown on the schedule.

MATERIAL PAINTING SCHEDULE				
Class of Work	Primer Shop Coat	Field Coats		
		1st	2nd	3rd
Nonferrous Metal and Galvanized Steel:				
Interior		A	A	A
Exterior		A	A	C
Steel and Iron:				
Interior	B	B*	A	A
Interior not Exposed to View	B	B*		
Exterior	B	B*	A	C
Submerged, Buried or Constantly Wetted	B	B*	D	D
Exposed to Potable Water	B	B*	B	F

\*Touch-up bare metal with primer

C. Schedule of Paints: Alphabetical designations in the following list are given solely for the purpose of indicating the type and quality of materials desired. Equivalent material from other approved manufacturers may be submitted for approval.

<u>Symbol</u>	<u>Product Name and Number</u>	<u>Volume Solids %</u>	<u>Dry Film Thickness Mils Per Coat</u>
A	Tnemec Series 69 Hi-Build Epoxoline II	69	2.0-3.0
B	Tnemec Series 140-Pota-Pox Plus	69	4.0-6.0
C	Tnemec Series 74 Endura-Shield	68	2.0-3.0
D	Tnemec Series 69 Hi-Build Epoxoline II	69	4.0-5.0
E	Tnemec Series 140-WHO2 Tank White Pota-Pox Plus	69	4.0-6.0

### PART 3 EXECUTION

#### 3.1 PREPARATION

- A. Inspection: Prior to surface preparation perform the following:
  1. Verify that surface substrate conditions are ready to receive Work as instructed by the product manufacturer.
  2. Examine specifications for all Work and become thoroughly familiar with all provisions regarding painting.
- B. Surface Preparation: After inspection and prior to painting, perform the following:
  1. Inspect all Work prior to application of any paint or finishing material.
  2. Thoroughly clean surfaces to be given protective coatings.
  3. Refinish shop-coated equipment that has scratches and abrasions.
  4. Do not begin field painting prior to approval of the surface preparation.
  5. Prepare and clean all surfaces prior to painting, as specified and required. Verify that surfaces are dry before any paint is applied. Perform special surface preparation work as directed by the manufacturer of the paint specified to be applied to the surface.
  6. Clean the surface of structural steel, exterior and interior dry surfaces of water storage tanks and steel encased in concrete, masonry or spray-on

fireproofing by removing all rust, mill scale, oil, grease or dirt in accordance with Steel Structures Painting Council SSPC-SP6.

7. Prior to painting metals other than steel, grind smooth all welds, beads, blisters of protuberances, other than identification markings, and remove other imperfections. Solvent clean all nonferrous metals, galvanized steel and stainless steel whether shop primed or field primed, in accordance with SSPC-SP-1 prior to the application of the primer.
8. Prime cleaned metal the same day immediately after sandblasting to prevent rusting.
9. Remove all adhering debris on pipe and duct covering and smooth out indentations or unsightly spots and brush clean.
10. Remove all bituminous or asphaltic coating from cast iron drain and soil pipe prior to painting.

### 3.2 INSTALLATION

- A. General: Install all painting and coatings in accordance with the manufacturer's recommendations and approved shop drawings and as specified in Division 1.
  1. Apply paint that is at a minimum temperature of 60 degrees F.
  2. Paint or finish all surfaces that are left unfinished by the requirements of other specifications and specified herein to be painted or finished.
  3. Paint surfaces in accordance with the material painting schedule included in this Section.
  4. Completely cover all surfaces to be painted. Cover by additional coats when color on undercoats shows through the final coat of paint, until paint is of uniform color and appearance and coverage is complete.
  5. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
  6. Provide sufficient temporary ventilation during painting operations in enclosed areas to remove moisture and solvents, and to keep the atmosphere safe from harmful or dangerous fumes and dust levels for personnel.
- B. Touch-Up Shop-Primed and Finished Items: Touch-up all damaged portions and imperfections in shop-primed and finished items. Use the same paint as used for

the shop prime and finish. Prepare the surface prior to touch-up by wire brushing and sanding to remove rust, scale and loose paint.

- C. Aluminum and Incompatible Surfaces: Where aluminum surfaces come in contact with incompatible metals, lime, mortar, concrete or other masonry materials, apply one field coat of Tnemec Series 69 Hi-Build Epoxoline II or two coats of asphalt varnish conforming to FS-TT-V-51F.
- D. Castings: Castings, such as manhole covers, frames, curb and area inlets, and valve boxes are as specified under Section 05560.
- E. Shop Prime: Apply one shop coat of primer, before exposure to weather, to all structural steel, wrought metals, metal castings, mechanical equipment and electrical equipment, and all piping specified to be field painted before exposure to the weather. Apply this shop coat as the first coat as specified in the Material Painting Schedule.
- F. Field Painting: Perform field painting at the job site as follows:
  - 1. Mix all paints and similar materials in galvanized iron pans or pails or other approved containers of adequate capacity.
  - 2. Mix all paint thoroughly before being taken from the containers. Keep mixed while painting. Apply all ready-mixed paint exactly as received from the manufacturer without addition of any kind of drier or thinner, except as specified, to mix colors to conform to approved color schedule. Tint successive coats of paint to make various coats easily distinguishable. Tint undercoats of paint to the approximate shade of the final coat of paint.
  - 3. Use only skilled painters on the Work, and employ specialists where required. Apply paint by brush, roller or sprayer in accordance with the manufacturer's recommendation.
  - 4. Do not paint when the air or surface temperature is below that recommended by the manufacturer, or in dust-laden air, or until moisture on the surface has completely disappeared. If necessary, provide sufficient heating and ventilation to keep the atmosphere and all surfaces to be painted dry and warm until each coat of paint has hardened.
  - 5. Remove any painting found defective. Touch-up and provide remedial painting as directed and as required until completion and acceptance of final Work.
- G. Parking Lot Marking: Stripe and mark paving that is clean and dry and by method recommended by the manufacturer.

### 3.3 CLEANING AND PAINTING

- A. Touch up and restore any finish damaged. Remove paint or other finishes spilled, splashed or splattered from all surfaces taking care not to mar any surface or item being cleaned.

END OF SECTION

(NO TEXT FOR THIS PAGE)

## SECTION 15110

### VALVES

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Requirements for furnishing and installing all valves and operators.
  - 1. Provide valve operators complete with all appurtenances necessary for the operator to perform its intended function. Such appurtenances include, but are not limited to, anchor bolts and other mounting hardware, extension stems, operating nuts, and other such items.
  - 2. For each valve, provide the type of operator specified for the valve in the Valve Schedule.
- B. Related Work Specified in Other Sections Includes, But is Not Limited to, the Following:
  - 1. Section 09900 - Painting

##### 1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
  - 1. ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings
  - 2. ASTM A 27/A27M - Specification for Steel Castings, Carbon, for General Application
  - 3. ASTM A 29/A29M - Specification for Steel Bars, Carbon and Alloy, Hot Wrought and Cold-Finished, General Requirements
  - 4. ASTM A 48 - Specifications for Gray Cast Iron Castings
  - 5. ASTM A 126 - Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
  - 6. ASTM A 276 - Specification for Stainless and Heat-Resisting Steel Bars and Shapes

7. ASTM A 278 - Specification for Gray Iron Castings for Pressure-Containing Parts for Temperatures Up to 650 F
8. ASTM A 395 - Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures
9. ASTM A 536 - Specification for Ductile Iron Castings
10. ASTM A 564/A564M - Hot Rolled and Cold Finished Age Hardening Stainless and Heat Resisting Steel Bars and Shapes
11. ASTM A 572/A572M - Specification for High Strength Low Alloy Columbium Vanadium Steels of Structural Quality
12. ASTM A 743/A743M - Specifications for Castings, Iron-Chromium, Iron-Chromium - Nickel, and Nickel-Base Corrosion-Resistant for General Application
13. ASTM A 744/A744M - Specification for Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service
14. ASTM B 30 - Specification for Copper Base Alloys in Ingot Form
15. ASTM B 148 - Specification for Aluminum-Bronze Castings
16. ASTM B 584 - Specification for Copper Alloy Sand Castings for General Applications
17. AWWA C500 - Metal Seated Gate Valves for Water and Sewerage Systems
18. AWWA C509 - Resilient-Seated Gate Valves for Water Supply Service

### 1.3 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Shop Drawings: Submit the following:
  1. Complete detailed drawings of all valves

2. Working drawings, including arrangement and erection drawings of the operators and operating characteristics

C. Quality Control Submittals: Submit the following:

1. If requested, manufacturer's certified performance and material records.

1.4 QUALITY ASSURANCE

- A. Furnish all valves of the same type from the same manufacturer. Provide parts that are interchangeable for all valves of the same type and size.

1.5 DELIVERY, STORAGE AND HANDLING

- A. General: Deliver, store and handle all products as specified in Division 1 and as follows.
- B. Storage and Erection: Pack and store all valves in satisfactory operating condition. Carefully erect all valves in their respective positions, free from all distortion and strain.

PART 2 PRODUCT

2.1 MANUFACTURERS

- A. Acceptable manufacturers are listed below. Other manufacturers of equivalent products may be submitted.
  1. Gate Valves:
    - a. American Flow Control
    - b. M&H Valve Company
    - c. Mueller Company
    - d. NIBCO, Inc.
    - e. Stockham
    - f. United States Pipe and Foundry

2.2 MATERIALS

- A. General:
  1. Fabricate valves of materials resistant to corrosion for the required service.
  2. Fabricate valves that are to be installed in metal pipelines and that are 2-1/2 inches in diameter and larger of the materials specified herein.

3. Fabricate gate valves with a minimum steam working pressure rating of 125 psig and a minimum nonshock cold water, oil or gas pressure rating of 200 psig, unless otherwise specified.
4. Fabricate operators of materials resistant to corrosion for the required services. Provide operator materials as specified.

B. Valve Joints

1. Fabricate all valves 2-1/2 inches in diameter and larger with flanged ends, unless otherwise specified.
2. For metallic flanged joints, provide flanges that are faced accurately at right angles to the axis of the casting. Face and drill flanges and shop coat with a rust-preventive compound before shipment.
3. For flanged joints, provide flanges whose dimensions and drillings meet the requirements of ASME B16.1, 125 pounds as a minimum. For valves installed in pipelines with test pressure requirements higher than 125 psi, provide flanges whose pressure ratings equal or exceed the specified test pressure of the pipeline. Furnish special drillings where required. For valves having flanges that do not conform with the thickness requirements of ASME B16.1, test each valve in accordance with the hydrostatic shell test pressure requirements of ASME B16.1.

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

D. Manually Operated Valves: Equip all manually operated valves with operating nuts.

2.3 GATE VALVES

A. Materials: Unless otherwise shown or specified, furnish and install gate valves meeting the following requirements:

Nominal Valve Size, Inches	Standard	Type
4 thru 12	AWWA C500	Double disc

B. Rising Stems: Manufacture all gate valves with rising stems, unless otherwise shown or specified. Design all gate valves to open when the nut or handwheel is turned counterclockwise.

- C. Nonrising Stem: For buried service, furnish nonrising stem gate valves. Equip nonrising stem valves, except for buried or submerged service, with externally visible indication of the disc position at all points of travel.
- D. Stem Seals: Use the following types of stem seals:

Valve Type	Stem Seal
Nonrising stem	O-ring
Rising stem (Outside stem and yoke)	Stuffing box

- E. Packing: Provide nonasbestos braided, twisted or formed ring type packing suitable for the pressure-temperature ratings of the valve.
- F. Bonnet: Provide 4-inch and larger gate valves with outside screw and yoke bonnets.
- G. Accessories: Provide stainless bonnet bolts, studs and nuts. Make wedging devices bronze to iron or bronze to bronze. Provide glands which are bronze or bronze bushed and bronze gland bolts and nuts.

#### 2.4 EXTENSION STEMS, VALVE BOXES AND FLOOR BOXES

- A. Equip all valves in vaults or manholes with operating nuts and extended shafts to grade, unless otherwise shown or specified. Provide a tee wrench for each type of operating nut.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. General: Install valves in accordance with the manufacturer's recommendations and approved shop drawings and as specified in Division 1.

#### 3.2 PAINTING AND COATING

- A. General: Unless otherwise specified, coat the inside iron or steel surfaces of all valves and exterior surfaces of valves and operators that are to be buried in the ground or immersed in sewage or water with two coats of asphalt varnish. Paint exterior surfaces of other valves and operators as specified in Section 09900.

#### 3.3 PAINTING

- A. Paint the equipment in accordance with the requirements in Section 09900.

### 3.4 SCHEDULE

#### VALVE SCHEDULE

Facility/Service	Valve Type	Size Inches	Joint Type	Operator Type	Remarks
Potable Water	Gate	12	Flanged	Nut	

END OF SECTION

Village of Orland Park

East Reservoir Addition

**STANDARD DETAILS**

CURB RAMPS FOR SIDEWALKS

CATCHBASIN TYPE A

CATCHBASIN TYPE C

CURB INLET AND UNDERDRAIN DETAIL

INLET TYPE A

STORM SEWER FRAME AND COVER

STORM MANHOLE

PRESSURE CONNECTION (VALVE VAULT)

GRATE TYPE 8

PAVEMENT SECTION

CURB AND GUTTER DETAIL (RESIDENTIAL)

SOIL EROSION AND SEDIMENT CONTROL PLAN CHECK LIST

SILT FENCE DETAIL (ER-3)

STABILIZED CONSTRUCTION ENTRANCE DETAIL (ER-4)

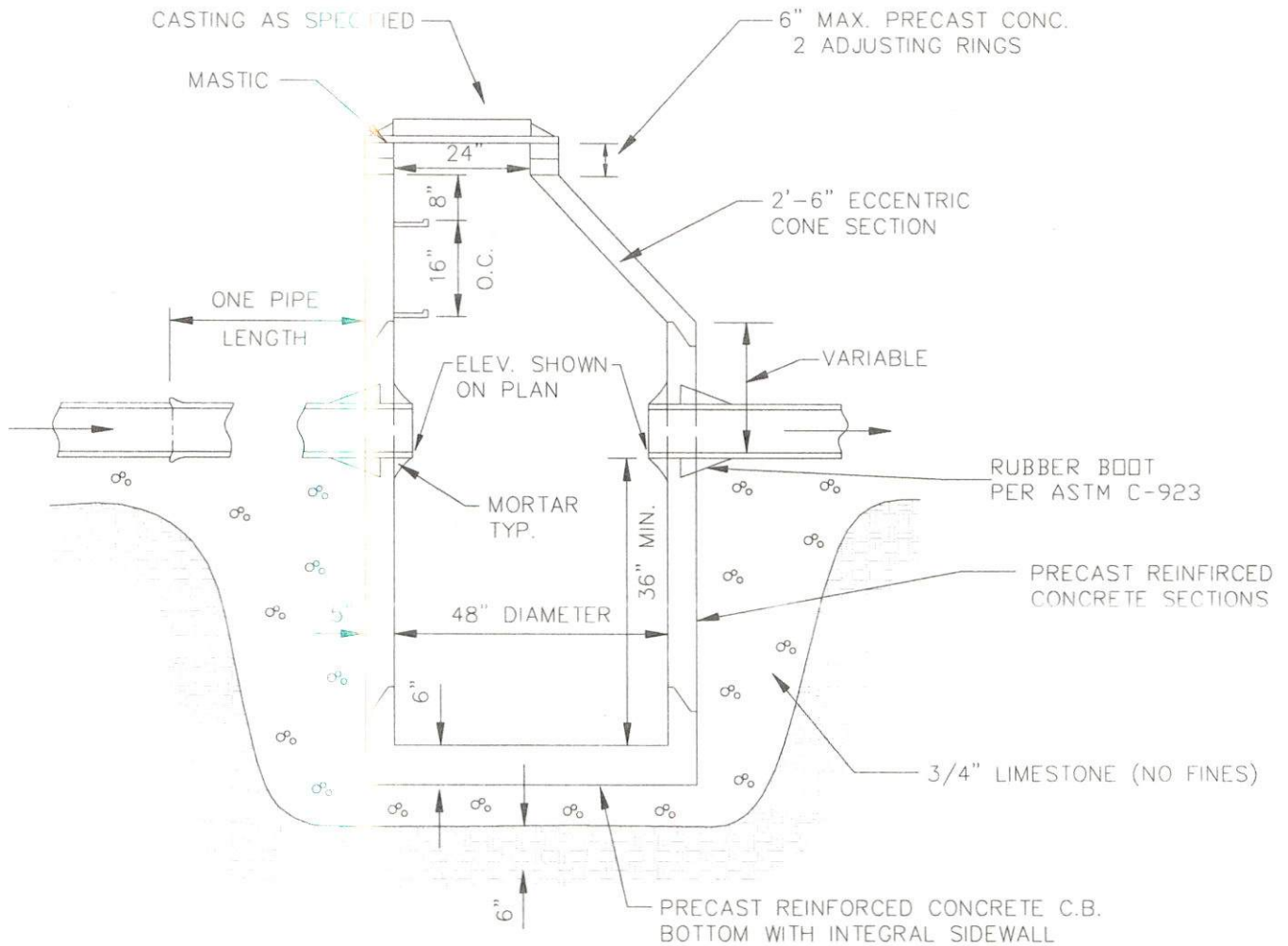
STRAW BALE FILTER DETAIL (ER-5)

TEMPORARY TOPSOIL STOCKPILE DETAIL (ER-7)

FILTER FOR BEEHIVE GRATE (TYPE 8) DETAIL (ER-8)

FILTER FOR ROUND OPEN (TYPE 1) GRATE AND FRAME DETAIL (ER-9)

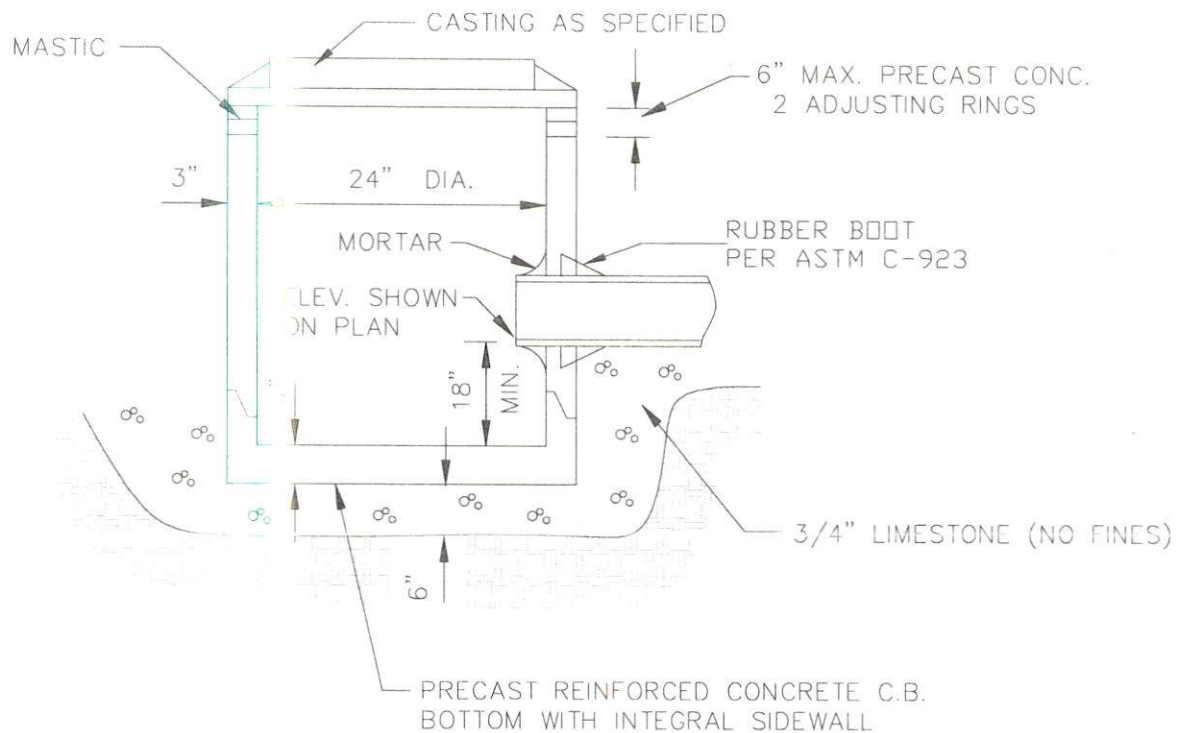
(NO TEXT FOR THIS PAGE)



#### NOTES:

1. Adjustment: Any structure located within pavement shall require the use of at least one (1) rubber adjustment riser, Infra-Riser brand or approved equal, and, if necessary, said riser shall be of the tapered type in order to match the proposed grade of the roadway. No more than two (2) precast concrete adjusting rings with six (6) inch maximum height adjustment shall be allowed. Adjustments within pavement that are less than three (3) inches in height shall consist of only rubber adjustment riser(s). The minimum thickness of a rubber adjustment riser shall be one (1) inch. Adjustments within pavement greater than three (3) inches in height shall use a minimum three (3) inch precast concrete riser for the lower riser, and the final riser shall be of the rubber type.
2. Pipe and frame seals: All pipe connection openings shall be precast with resilient rubber water tight pipe to manhole sleeves or seals conforming to ASTM C-923. Adapter chimney seal with twelve (12) inch sleeve type shall extend from the manhole cone to the manhole frame for all structures in the right-of-way.
3. Sealing: All mating surfaces of adjustment riser(s), structure sections, and frames shall be sealed with a mastic sealant. No concrete mortar or epoxy shall be allowed as a sealant for adjustment risers, structure sections or frames. If multiple adjustment risers are required, a continuous application of sealant shall be applied between each unit.
4. All bottom sections shall be monolithically precast including bases and invert flowlines.
5. Provide CA-6 aggregate backfill around catch basin to subgrade elevation in paved areas for subgrade.

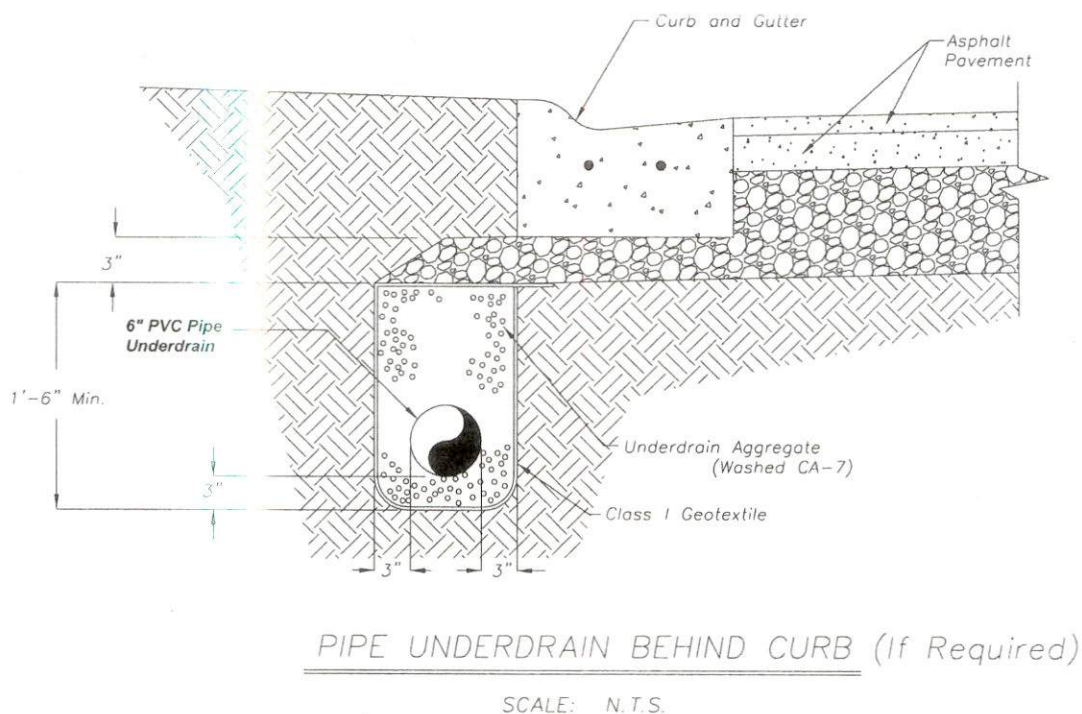
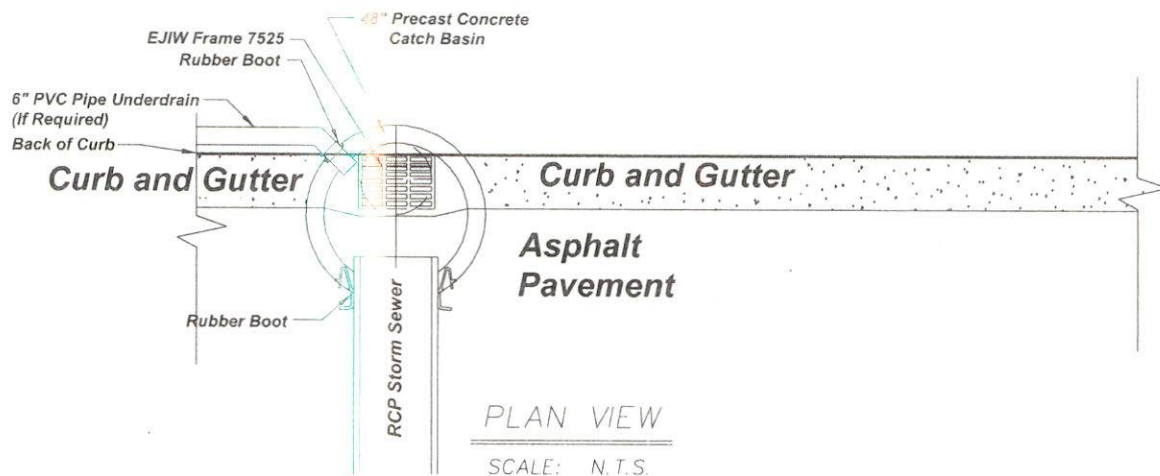
CATCHBASIN TYPE A		
CBASIN_A.DWG	STORM SEWER IMPROVEMENT	DATE:
DRAWN BY:		REVISED:
Village of ORLAND PARK		REVISED:
Engineering Department		DRAWING NO. STS-02



## NOTES:

1. Adjustment: Any structure located within pavement shall require the use of at least one (1) rubber adjustment riser, Infra-Riser brand or approved equal, and, if necessary, said riser shall be of the tapered type in order to match the proposed grade of the roadway. No more than two (2) precast concrete adjusting rings with six (6) inch maximum height adjustment shall be allowed. Adjustments within pavement that are less than three (3) inches in height shall consist of only rubber adjustment riser(s). The minimum thickness of a rubber adjustment riser shall be one (1) inch. Adjustments within pavement greater than three (3) inches in height shall use a minimum three (3) inch precast concrete riser for the lower riser, and the final riser shall be of the rubber type.
2. Pipe and frame seals: All pipe connection openings shall be precast with resilient rubber water tight pipe to manhole sleeves or seals conforming to ASTM C-923. Adapter chimney seal with twelve (12) inch sleeve type shall extend from the manhole cone to the manhole frame for all structures in the right-of-way.
3. Sealing: All mating surfaces of adjustment riser(s), structure sections, and frames shall be sealed with a mastic sealant. No concrete mortar or epoxy shall be allowed as a sealant for adjustment risers, structure sections or frames. If multiple adjustment risers are required, a continuous application of sealant shall be applied between each unit.
4. All bottom sections shall be monolithically precast including bases and invert flowlines.
5. Provide CA-6 aggregate backfill around catch basin to subgrade elevation in paved areas for subgrade.

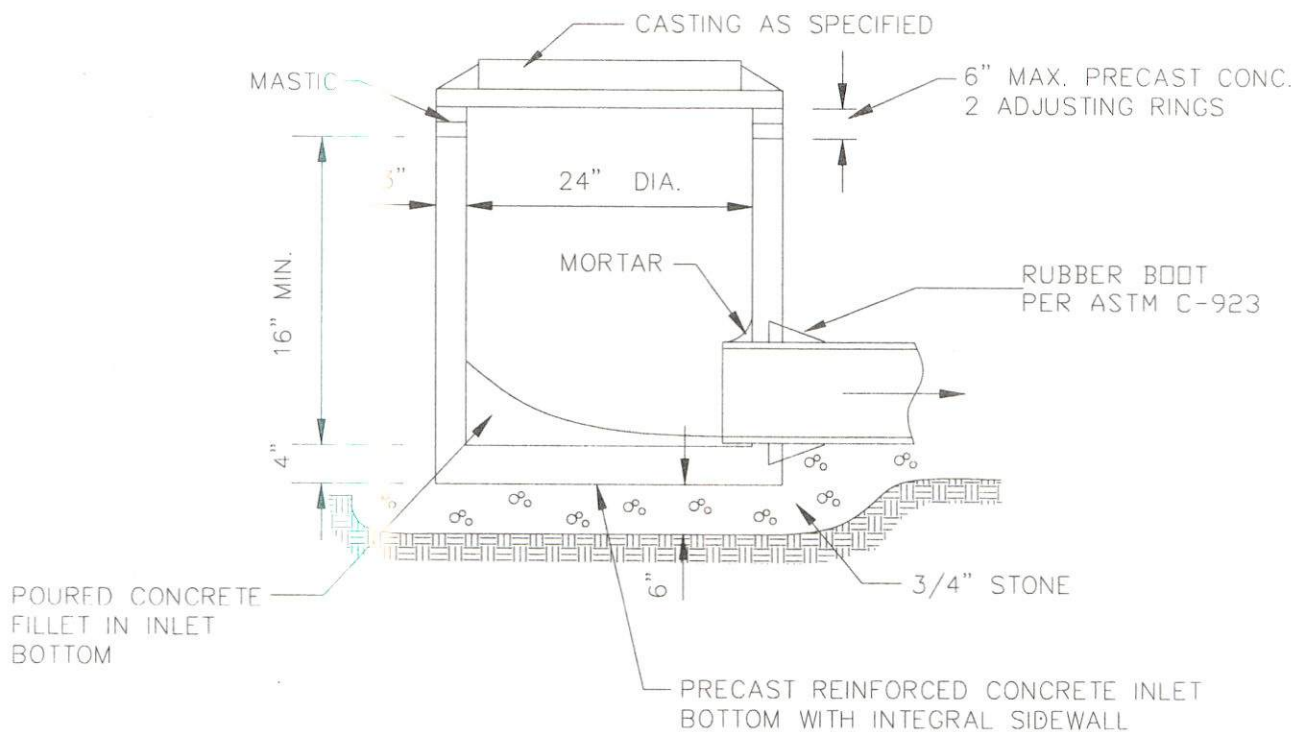
CATCHBASIN TYPE C		
CBASIN_C.DWG	STORM SEWER IMPROVEMENT	DATE:
DRAWN BY:		REVISED:
Village of <del>ORLAND PARK</del>		REVISED:
Engineering Department		DRAWING NO. STS-04



#### Underdrain Notes:

1. The installation of the underdrains shall conform to section 601 of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.
2. Pipe material shall be 6" perforated PVC, per article 1040.09 of the IDOT Standard Specifications.
3. The underdrains shall be installed with the drain perforations down. All underdrains shall be held in the center of the trench by mechanical means while placing compacted trench backfill of washed CA-7.
4. After the underdrain pipe is installed, the geotextile shall be folded over the underdrain aggregate and overlapped a minimum of 12".
5. The underdrains shall have watertight joints, and be tied into the nearest storm sewer inlet. The connection to the inlet structure shall conform to ASTM C-923.

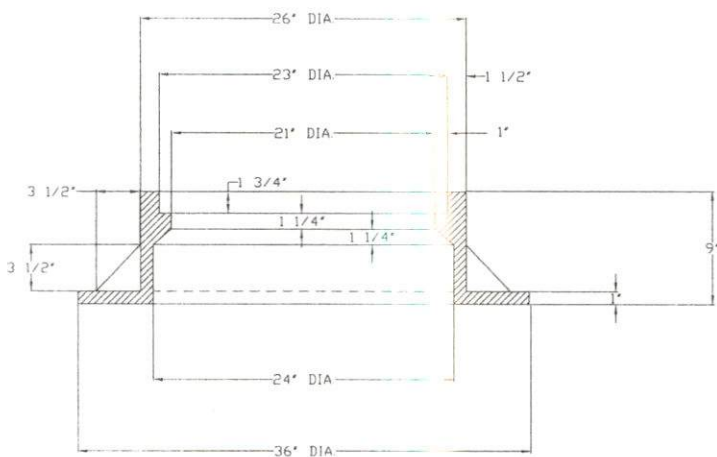
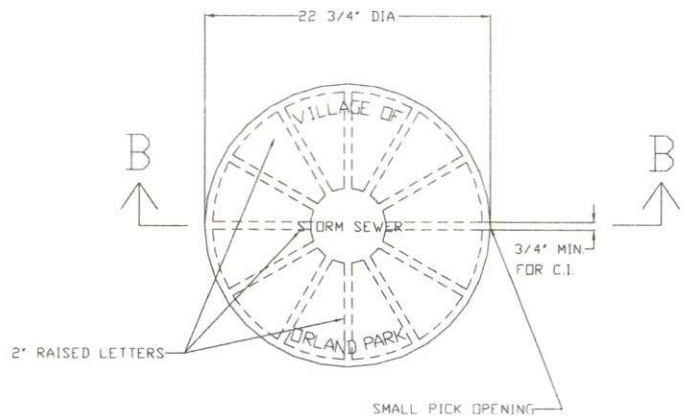
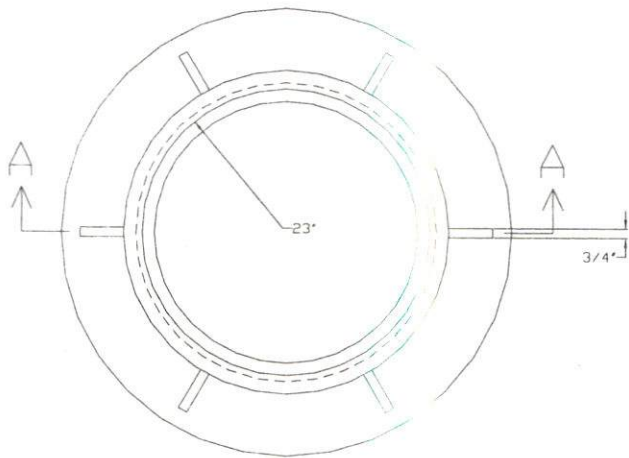
CURB INLET & UNDERDRAIN DETAIL		
	STREET & PAVEMENT	DATE: 11/20/2006
DRAWN BY:		REVISED:
Village of <b>ORLAND PARK</b>		REVISED:
		REVISED:
Public Works Department		DRAWING NO. <b>STR-20</b>



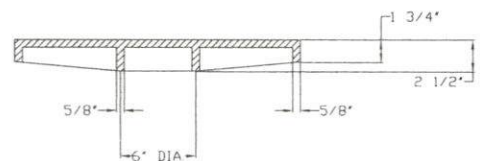
#### NOTES:

1. Adjustment: Any structure located within pavement shall require the use of at least one (1) rubber adjustment riser, Infra-Riser brand or approved equal, and, if necessary, said riser shall be of the tapered type in order to match the proposed grade of the roadway. No more than two (2) precast concrete adjusting rings with six (6) inch maximum height adjustment shall be allowed. Adjustments within pavement that are less than three (3) inches in height shall consist of only rubber adjustment riser(s). The minimum thickness of a rubber adjustment riser shall be one (1) inch. Adjustments within pavement greater than three (3) inches in height shall use a minimum three (3) inch precast concrete riser for the lower riser, and the final riser shall be of the rubber type.
2. Pipe and frame seals: All pipe connection openings shall be precast with resilient rubber water tight pipe to manhole sleeves or seals conforming to ASTM C-923. Adapter chimney seal with twelve (12) inch sleeve type shall extend from the manhole cone to the manhole frame for all structures in the right-of-way.
3. Sealing: All non-rubber mating surfaces, exterior joints of frames, adjustment riser(s), flat slab top or cone section (if applicable) and structure section shall be sealed with a uniform application of bituminous mastic sealant. The mating surfaces of all rubber Adjustment risers shall be sealed with the manufacturer's recommended sealant for rubber adjustment risers. If multiple adjustment risers are required, a continuous application of sealant shall be applied between each unit. Interior surfaces shall be sealed with concrete mortar or epoxy mortar. Concrete mortar or epoxy mortar will not be used on mating surfaces as a sealant between adjustment risers, structure sections or frames.
4. All bottom sections shall be monolithically precast including bases and invert flowlines.
5. Provide CA-6 aggregate backfill around inlet to subgrade elevation in paved areas for subgrade.

INLET TYPE A		
INLET_A.DWG	STORM SEWER IMPROVEMENT	DATE:
DRAWN BY:		REVISED:
Village of <del>ORLAND PARK</del>		REVISED:
Engineering Department		DRAWING NO. STS-05



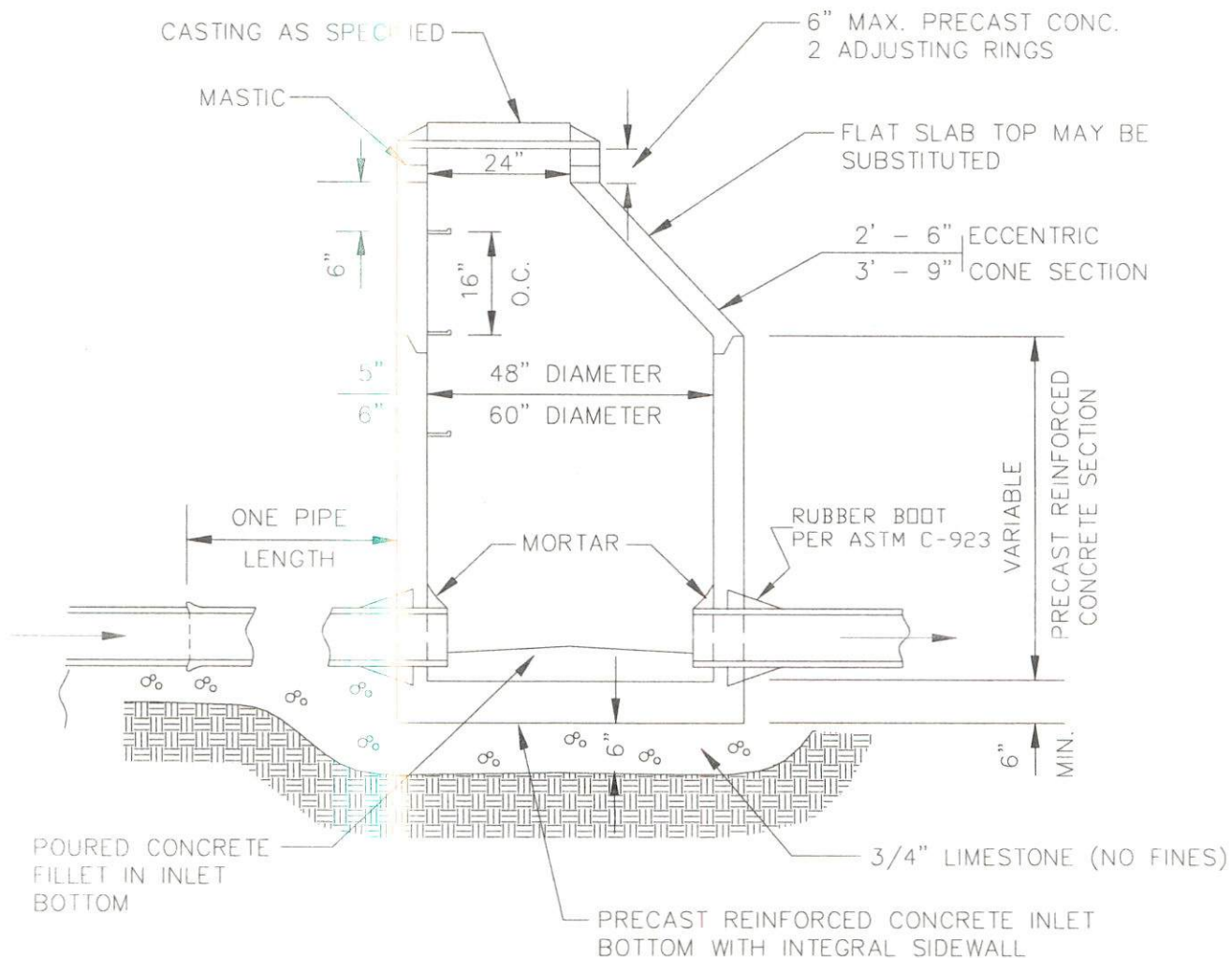
SECTION A-A  
CAST FRAME



SECTION B-B  
CAST CLOSED LID

- NOTES:
1. DUCTILE IRON CASTINGS SHALL BE GRADE 60-40-18 AND SHALL BE TESTED IN ACCORDANCE WITH FEDERAL SPECIFICATIONS.
  2. ALL LIDS AND COVERS SHALL BE MACHINED.
  3. THE MANHOLE COVERS SHALL HAVE RAISED LETTERS AS SHOWN.
  4. ALTERNATIVE TO DUCTILE IRON LID, GRAY IRON LID MAY BE USED.
  5. MINIMUM WEIGHTS FOR CASTINGS AS SHOWN.
  6. CASTINGS SHALL BE EAST JORDAN IRON WORKS 105021 FRAME AND 1020A COVER.

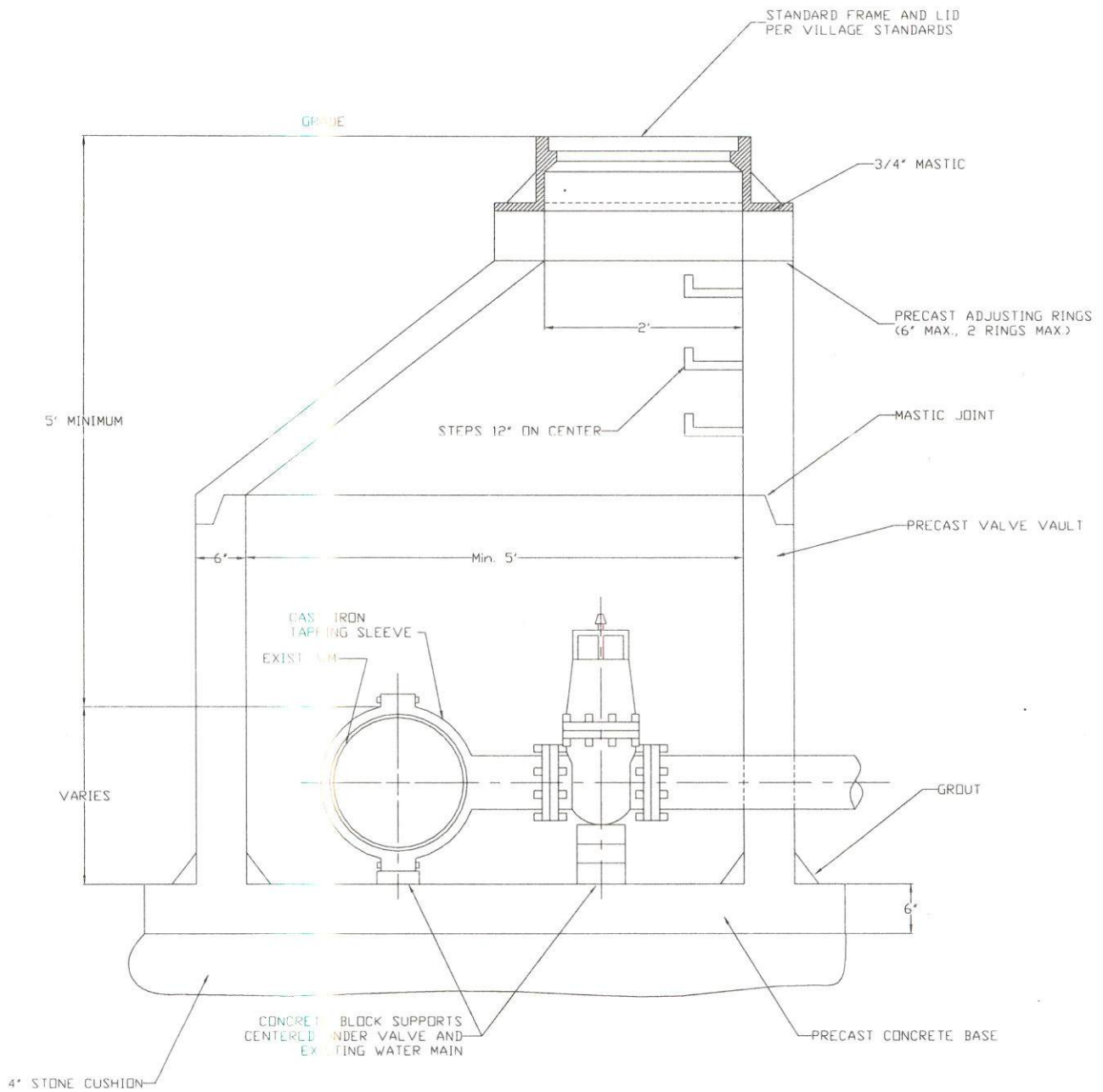
STORM SEWER FRAME & COVER		
FRAME&CO.DWG	STORM SEWER IMPROVEMENT	DATE
DRAWN BY:		REVISED:
Village of ORLAND PARK		REVISED:
Engineering Department		DRAWING NO STS-14



# NOTES:

1. Adjustment: Any structure located within pavement shall require the use of at least one (1) rubber adjustment riser, Infra-Riser brand or approved equal, and, if necessary, said riser shall be of the tapered type in order to match the proposed grade of the roadway. No more than two (2) precast concrete adjusting rings with six (6) inch maximum height adjustment shall be allowed. Adjustments within pavement that are less than three (3) inches in height shall consist of only rubber adjustment riser(s). The minimum thickness of a rubber adjustment riser shall be one (1) inch. Adjustments within pavement greater than three (3) inches in height shall use a minimum three (3) inch precast concrete riser for the lower riser, and the final riser shall be of the rubber type.
2. Pipe and frame seals: All pipe connection openings shall be precast with resilient rubber water tight pipe to manhole sleeves or seals conforming to ASTM C-923. Adapter chimney seal with twelve (12) inch sleeve type shall extend from the manhole cone to the manhole frame for all structures in the right-of-way.
3. Sealing: All mating surfaces of adjustment riser(s), structure sections, and frames shall be sealed with a mastic sealant. No concrete mortar or epoxy shall be allowed as a sealant for adjustment risers, structure sections or frames. If multiple adjustment risers are required, a continuous application of sealant shall be applied between each unit.
4. All bottom sections shall be monolithically precast including bases and invert flowlines.
5. Provide CA-6 aggregate backfill around manhole to subgrade elevation in paved areas for subgrade.

STORM MANHOLE		
STORMMH.DWG	STORM SEWER IMPROVEMENT	DATE:
DRAWN BY:		REVISED:
Village of ORLAND PARK		REVISED:
		REVISED:
Engineering Department		DRAWING NO. STS-01



# PRESSURE CONNECTION

PRESSURE.DWG

DRAWN BY:

WATER MAIN  
IMPROVEMENT

DATE:

REVISED: 2/24/05

Village of ORLAND PARK

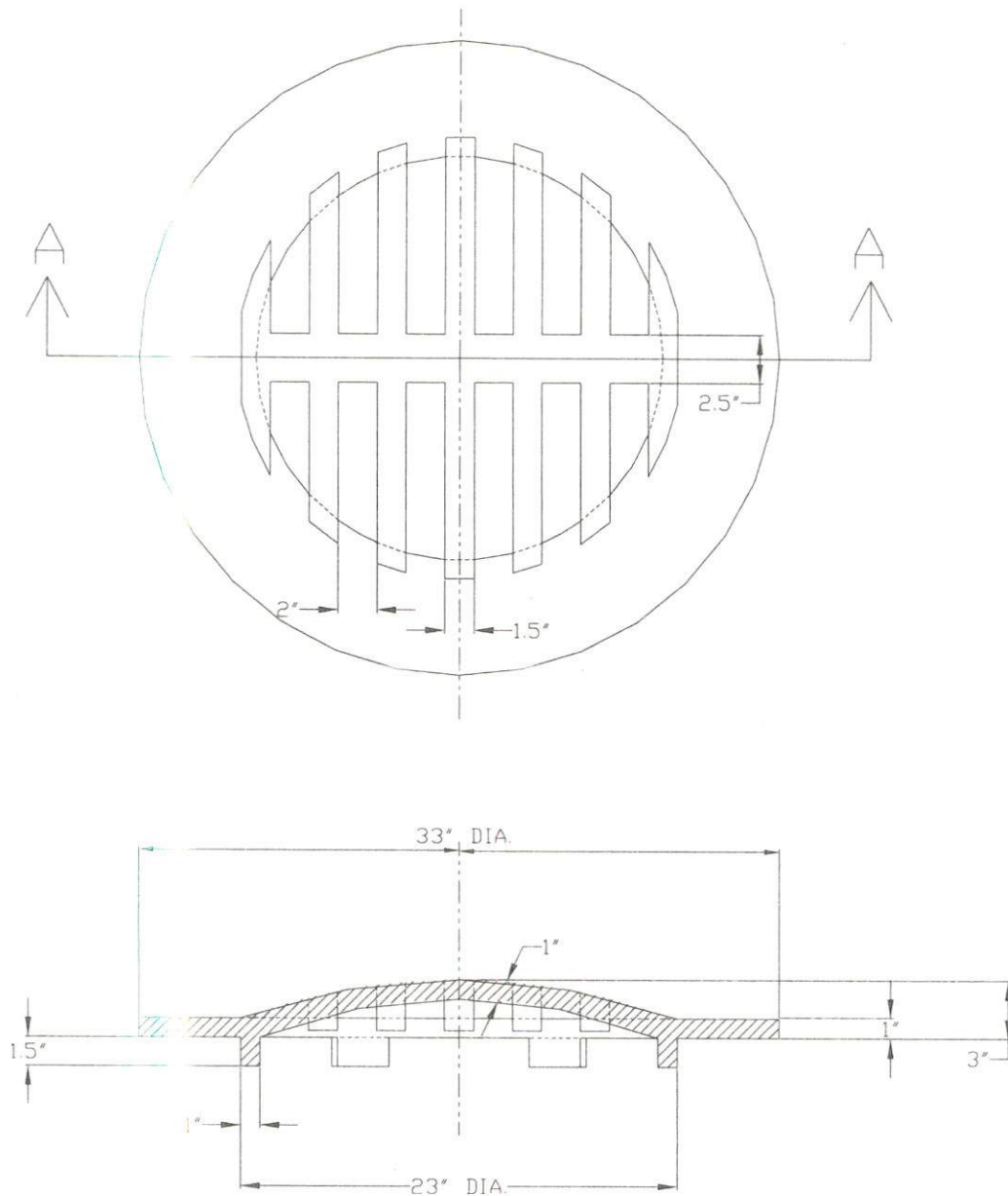
REVISED:

REVISED:

Engineering Department

DRAWING NO.

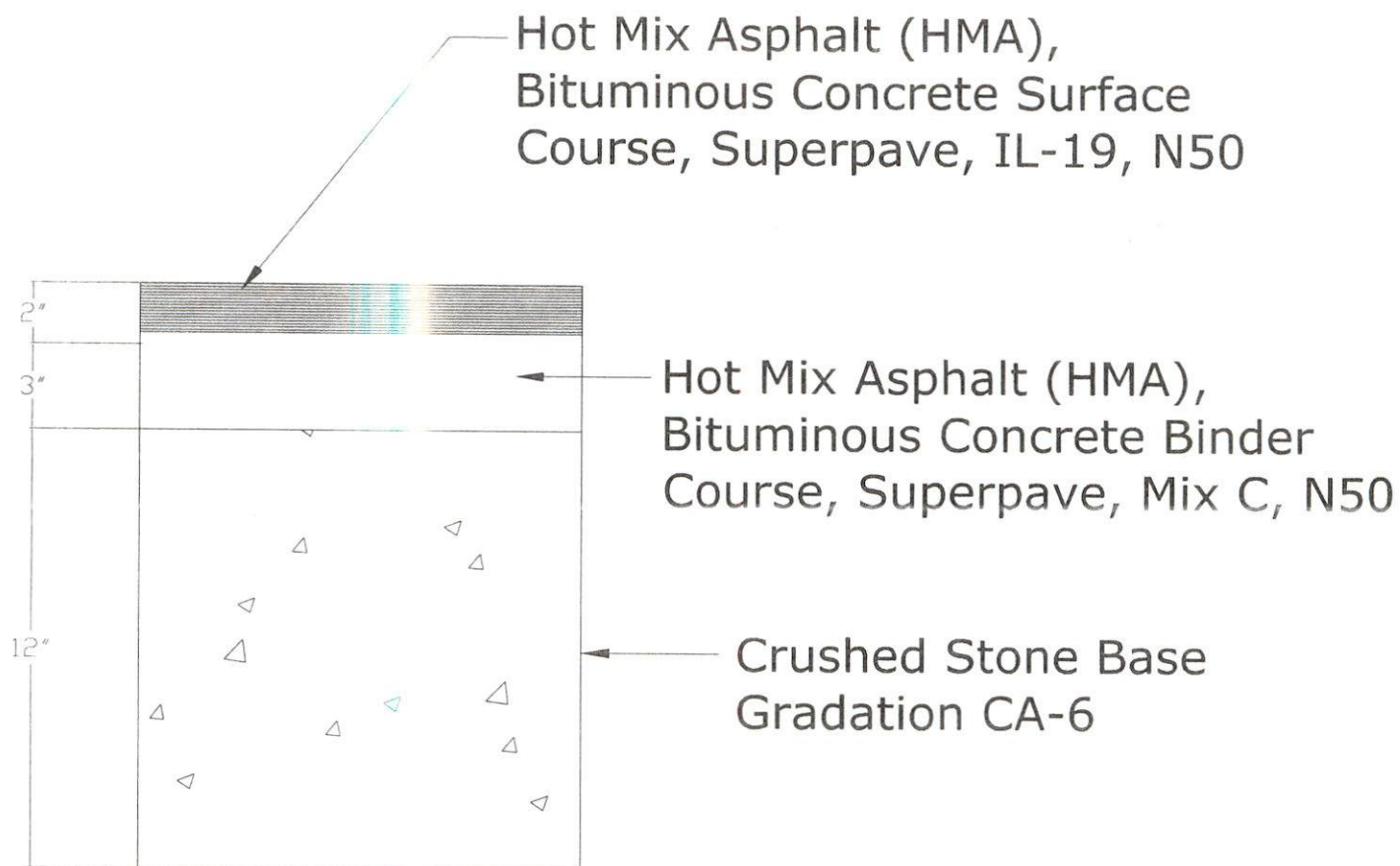
WM-05



SECTION A-A  
CAST GRATE  
WT. 200 LBS.

THE CAST GRATE MAY BE EITHER GRAY IRON OR DUCTILE IRON CONFORMING TO THE STANDARD SPECIFICATIONS. DUCTILE IRON CASTING SHALL BE GRADE 65-45-12.

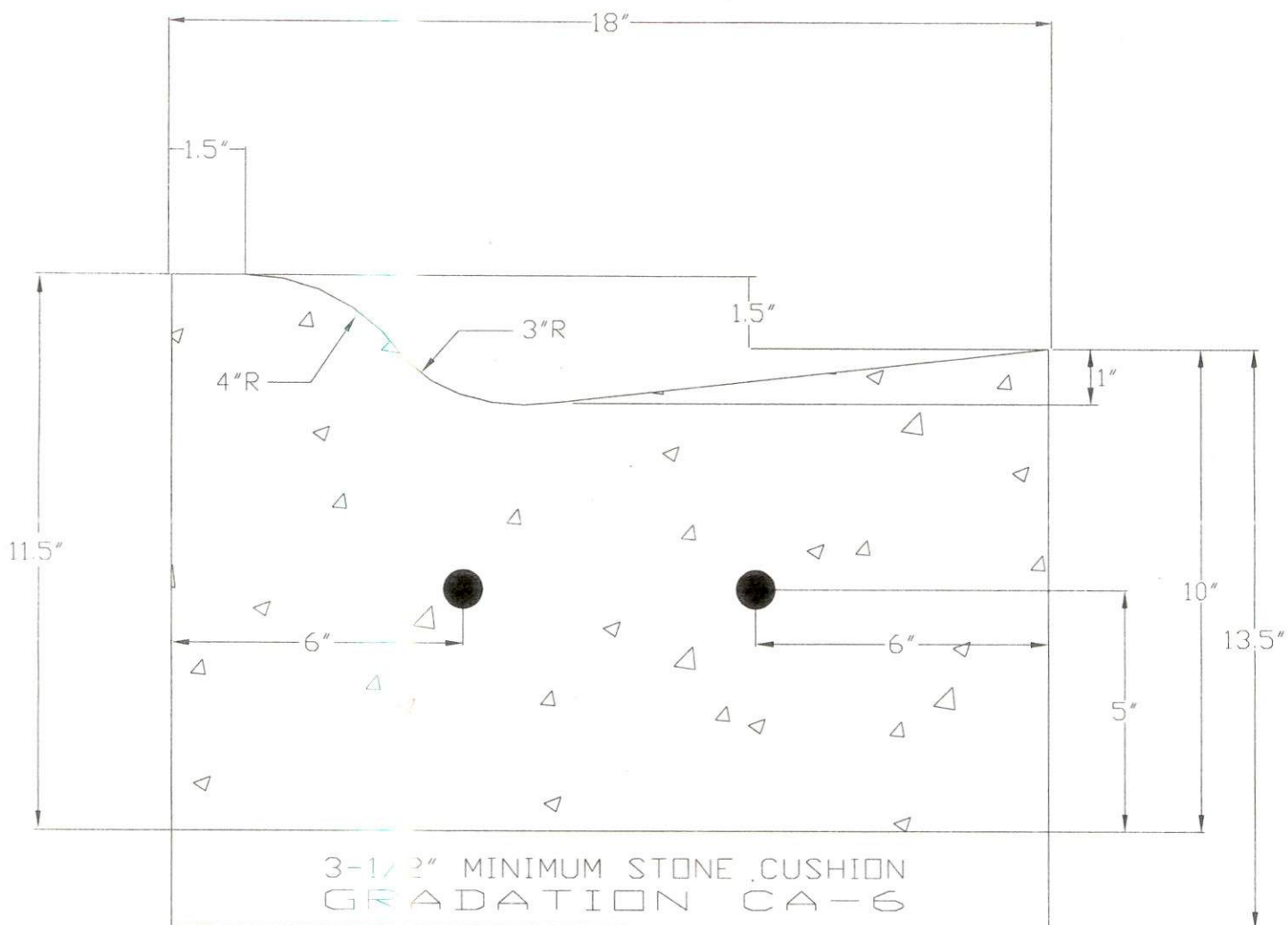
GRATE TYPE 8		
GRATE - 8.DWG	STORM SEWER IMPROVEMENT	DATE:
DRAWN BY:		REVISED:
Village of <del>ORLAND PARK</del>		REVISED:
		REVISED:
Engineering Department		DRAWING NO: STS-07



ALL CONSTRUCTION SHALL CONFORM TO THE  
LATEST EDITION OF THE ILLINOIS DEPARTMENT  
OF TRANSPORTATION "STANDARD SPECIFICATIONS  
FOR ROAD AND BRIDGE CONSTRUCTION."

## EAST RESERVOIR ADDITION

	PAVEMENT SECTION	DATE: 02-18-08
DRAWN BY: WDC		REVISED:
Village of <del>ORLAND PARK</del>		REVISED:
		REVISED:
Public Works & Engineering Department		DRAWING NO.



#### NOTES:

1. REINFORCEMENT: PROVIDE TWO (2) #4 REINFORCING BARS CONTINUOUS BETWEEN EXPANSION JOINTS, WITH LOCATION SPACING AS INDICATED ABOVE.
2. EXPANSION JOINT: 3/4" THICK BITUMINOUS FILLER MATERIAL- PROVIDE TWO (2) #6 X 24" SMOOTH BARS WITH EXPANSION CAPS AT EACH EXPANSION JOINT. INSTALL AT ENDS OF ALL RADII AND NO FURTHER THAN SIXTY (60') FEET APART.
3. SAW THREE (3) EQUALLY SPACED CONTRACTION JOINTS AT TWENTY (20') FEET INTERVALS BETWEEN EXPANSION JOINTS. CONTRACTION JOINTS SHALL BE SAW-CUT IN THE UPPER ONE-THIRD OF CURB AND GUTTER WITHIN 3 DAYS OF PLACEMENT.
4. COST OF BARS SHALL BE INCLUDED IN THE UNIT PRICE (PER LINEAL FOOT) FOR CURB AND GUTTER.

CURB AND GUTTER DETAIL (RESIDENTIAL)		
CURB.DWG	STREET & PAVEMENT	DATE:
DRAWN BY:		REVISED:
Village of ORLAND PARK		REVISED: 2-14-08 rjr
		REVISED: 8-27-07 ktl
Engineering Department		DRAWING NO. STR-03

Please provide a detailed soil erosion and sediment control plan which includes the following, check if applicable:

- ☐ Slope stabilization measures
- ☐ Blanket on side slopes of detention facilities
- ☐ Inlet and outlet sediment and erosion control measures
- ☐ Direct runoff to storm water management facilities during construction
- ☐ Overland flow paths
- ☐ Swales, channels, and all other concentrated flow areas soil stabilization
- ☐ Ditch checks/check dams
- ☐ Appropriate filter barriers in areas of concentrated flows
- ☐ Sediment trap or sediment basins at the down slope points
- ☐ Detention facilities
- ☐ Temporary perforated risers
- ☐ Basin Overflow protection
- ☐ Silt Fence / Perimeter controls
- ☐ Stabilized Construction Entrances
- ☐ Construction Fencing at the limits of construction and/or disturbance
- ☐ Seeding information: rates, species, dates, fertilization, temporary vs. permanent
- ☐ Location and dimension of all temporary soil and aggregate stockpiles
- ☐ Stabilization and stockpile management
- ☐ Address areas of off-site discharge
- ☐ Show protection of wetlands, streams, lakes, Regulatory Floodplains, conservancy areas etc.
- ☐ Appropriate sediment control for utility installation through or adjacent to wetlands
- ☐ Include detail drawings on the plans for all soil erosion and sediment control measures
- ☐ Existing and proposed contour lines
- ☐ Appropriate de watering device/measure, if applicable
- ☐ Concrete / Construction Washouts
- ☐ Construction Equipment / Vehicle staging area
- ☐ Construction sequencing that clearly indicates which sedimentation and erosion control measures and storm water management facilities will be installed prior to the start of general construction.
- ☐ SE/SC notes on Plan

WOOD OR STEEL  
POSTS AT 6' MIN.  
TO 8' MAX. SPACING

MIRAFI INC.  
ENVIROFENCE  
FILTER FABRIC,  
OR APPROVED EQUAL

WOVEN WIRE FENCE  
(MIN) 14½" GAUGE  
(MAX) 6" MESH SPACING

COMPACTED BACKFILL

MIN. 6"X6" TRENCH

EXTEND FABRIC INTO TRENCH  
A MINIMUM OF 6" VERTICALLY  
AND 6" HORIZONTALLY

FLOW

POSTS 2'6" MIN.  
FABRIC 2'0" MIN.

2'-0"  
(MIN.)

NATURAL SOIL

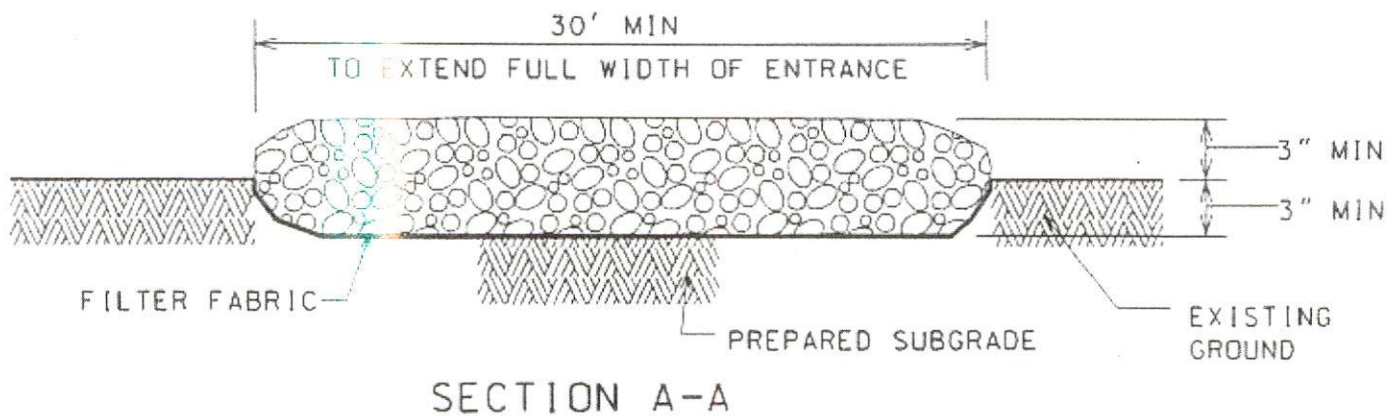
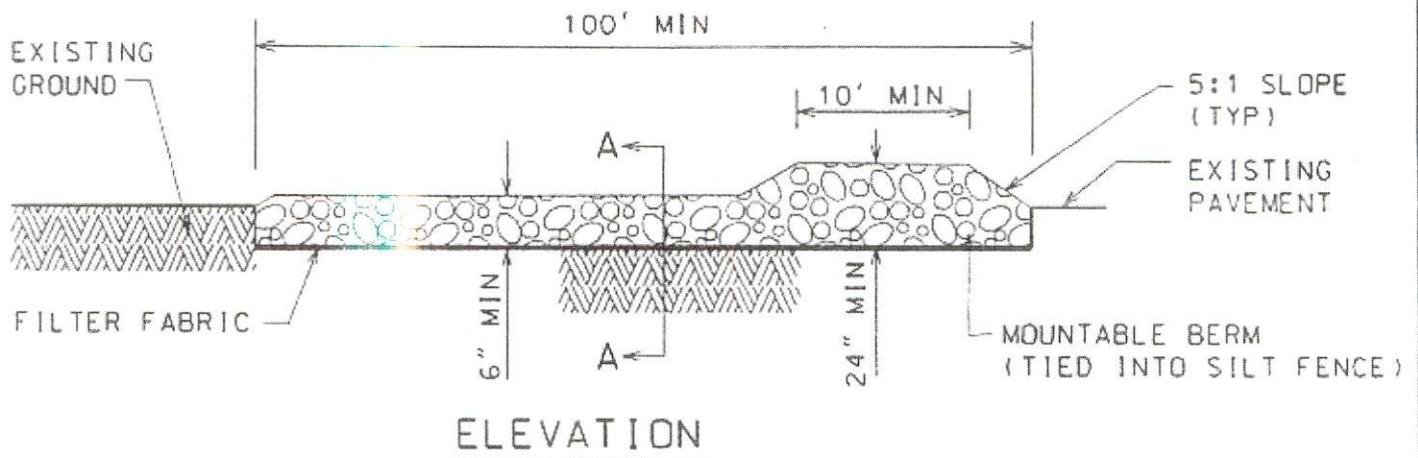
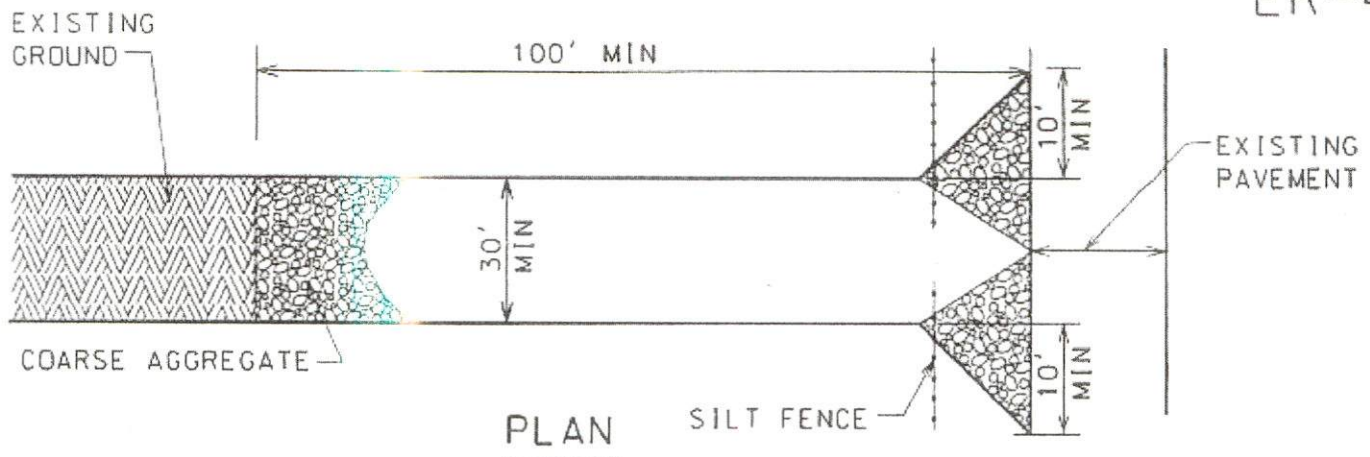
## NOTES:

1. FILTER BARRIERS SHALL BE PLACED AT THOSE LOCATIONS SHOWN ON THE PLANS AND WHERE INDICATED BY VILLAGE ENGINEERING.
2. ATTACH FABRIC TO WIRE MESH WITH HOG RINGS, TO WOOD POSTS WITH NAILS, AND TO STEEL POSTS WITH TIE-WIRES AT TOP AND MID-SECTION.
3. OVERLAP FILTER FABRIC BY 6" AND FOLD WHERE 2 SECTIONS ADJOIN.
4. STRAW BALES MAY BE SUBSTITUTED FOR THE FILTER FABRIC, IF APPROVED BY VILLAGE ENGINEERING.
5. INSPECTION OF SILT FENCES SHALL BE AT LEAST ONCE PER WEEK AND AFTER RAIN EVENTS IN EXCESS OF ½". REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SEDIMENT TRAPPED BY THE FENCE SHALL BE REMOVED (AND PROMPTLY DISPOSED OF) WHENEVER SIGNIFICANT ACCUMULATION OCCURS.
7. BARRIERS SHALL BE MAINTAINED IN PLACE UNTIL COMPLETION OF CONSTRUCTION AND THE UPSLOPE AREA HAS BEEN STABILIZED, AND SHALL BE REMOVED ONLY WHEN DIRECTED BY VILLAGE ENGINEERING.

NOT TO SCALE

SILT FENCE  
DETAIL

REVISED:02-28-07

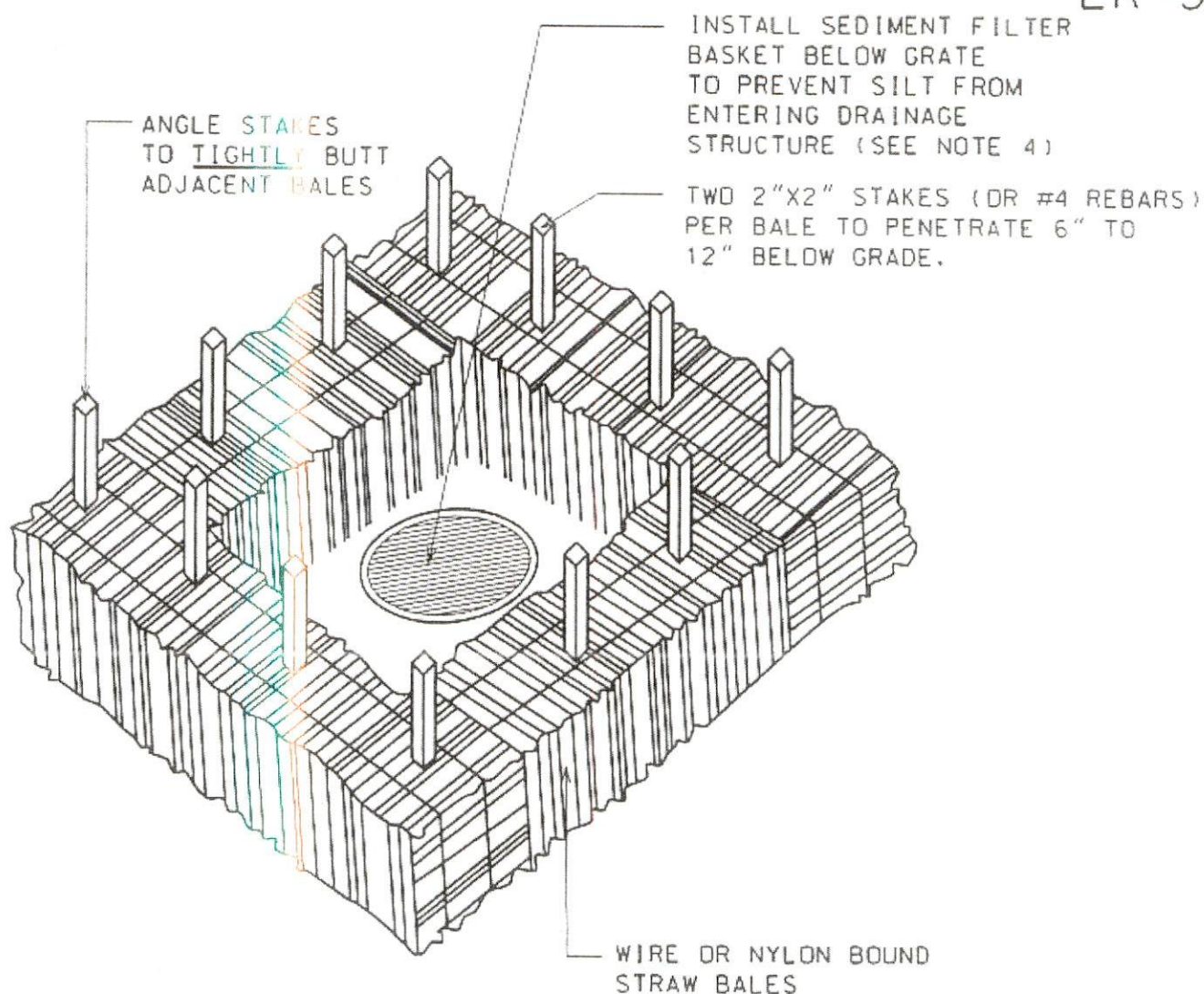


### NOTES:

1. GEOTEXTILE FILTER FABRIC SHALL BE PLACED OVER THE CLEARED AREA PRIOR TO PLACING COARSE AGGREGATE.
2. COARSE AGGREGATE (OR CRUSHED CONCRETE) SHALL MEET IDOT GRADATION FOR CA-1 CRUSHED AGGREGATE.
3. STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED, PRIOR TO ONSET OF CONSTRUCTION OPERATIONS AND SHALL BE MAINTAINED THROUGHOUT THE PROJECT.
4. CONSTRUCTION ENTRANCE SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION AND ONLY WHEN DIRECTED BY VILLAGE ENGINEERING.

NOT TO SCALE

STABILIZED  
CONSTRUCTION  
ENTRANCE  
DETAIL

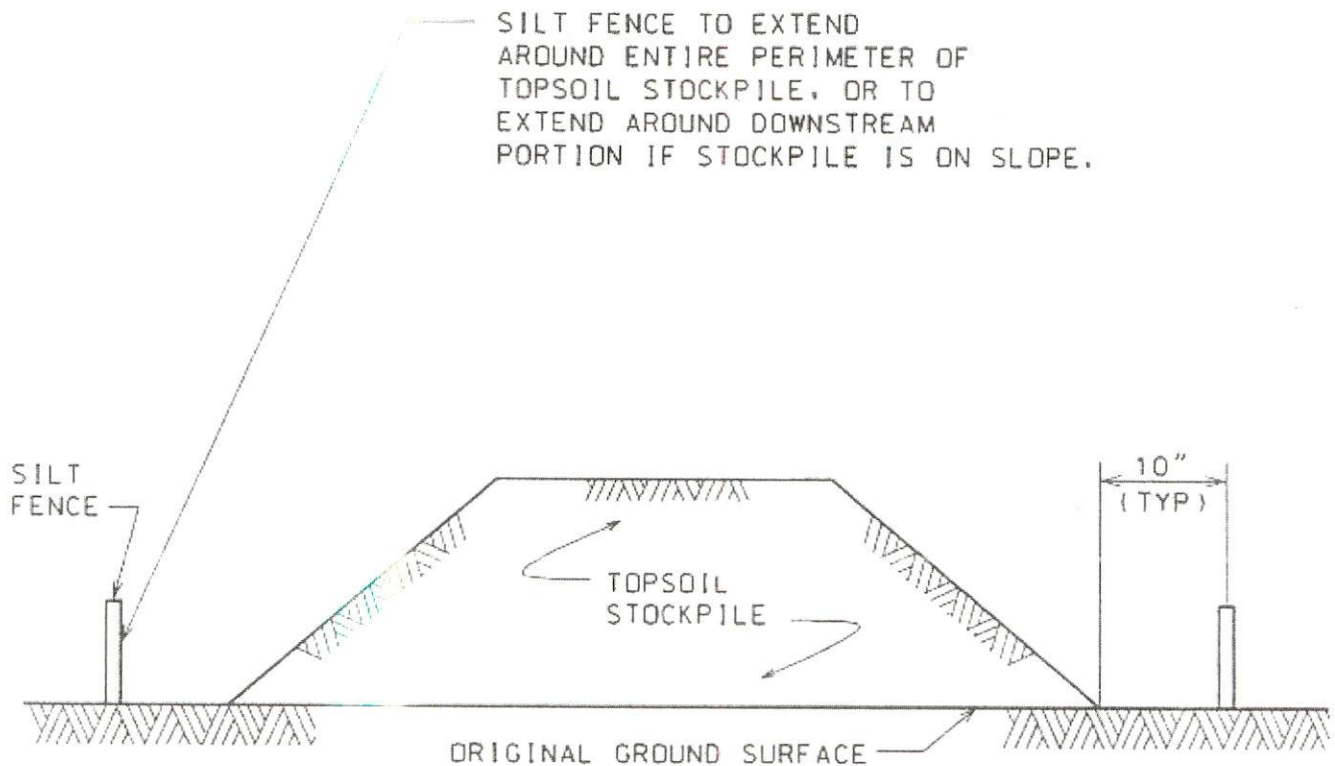


### NOTES:

1. STRAW BALES AND/OR FILTER BASKETS SHALL BE INSTALLED AND MAINTAINED AROUND ALL STORM SEWER INLETS, CATCH BASINS ONLY AS DIRECTED BY VILLAGE ENGINEERING.
2. BALES SHALL BE PLACED WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES TO CREATE A CONTINUOUS BARRIER.
3. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
4. REINFORCED FILTER BASKETS SHALL BE USED FOR SEDIMENT CONTROL. SEE STANDARD DETAILS ER-8, ER-9
5. INSPECTION OF BALES AND FILTER BASKETS SHALL BE AT LEAST ONCE PER WEEK AND AFTER RAIN EVENTS IN EXCESS OF HALF INCH (1/2") PER DAY. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. BALES AND FILTER BASKETS SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION AND ONLY WHEN DIRECTED BY VILLAGE ENGINEERING.

NOT TO SCALE

STRAW BALE  
FILTER  
DETAIL

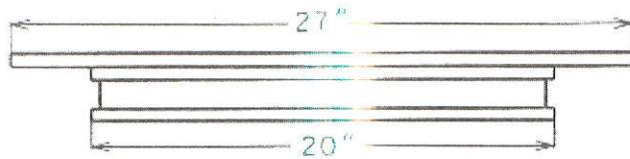
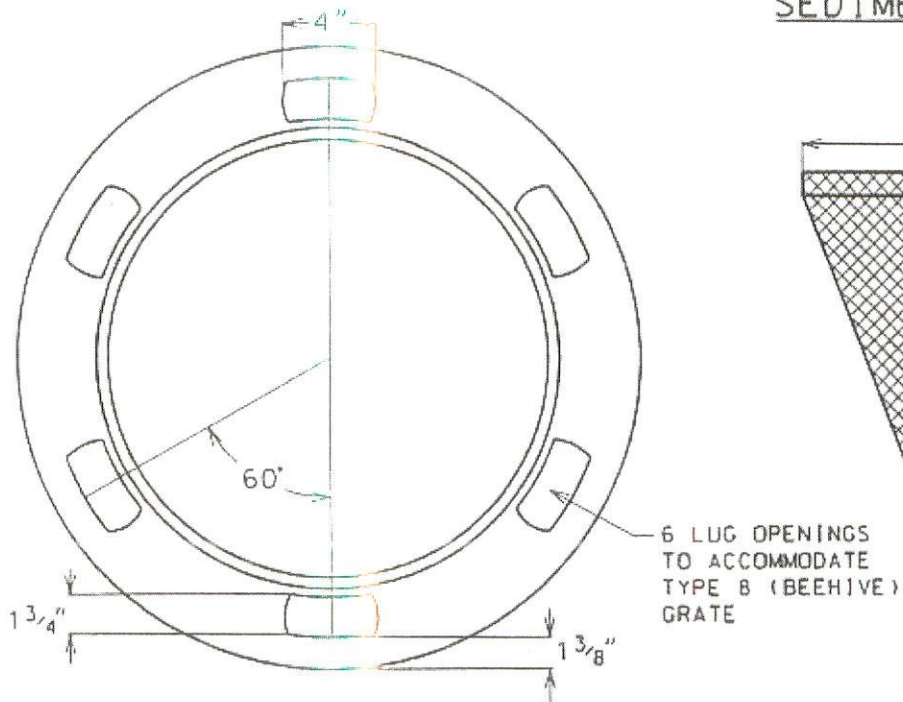
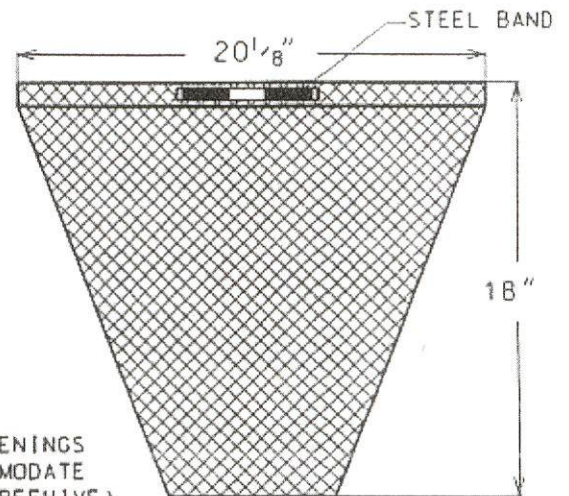


### NOTES:

1. AN ON-SITE DRAINAGE SWALE SHALL BE LOCATED BETWEEN THE TOPSOIL STOCKPILE AND OFF-SITE PROPERTY.
2. REFERENCE IS MADE TO THE SILT FENCE DETAIL FOR MATERIALS AND INSTALLATION METHODS.
3. IF THE STOCKPILE IS TO REMAIN FOR MORE THAN 14 DAYS, IT SHALL BE STABILIZED WITH BURLAP MATTING OR SEEDED TO MINIMIZE EROSION.
4. INSPECTION OF SILT FENCES SHALL BE AT LEAST ONCE PER WEEK AND AFTER RAIN EVENTS IN EXCESS OF  $\frac{1}{2}$ ". REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. SEDIMENT TRAPPED BY THE FENCES SHALL BE REMOVED AND PROPERLY DISPOSED OF WHENEVER SIGNIFICANT ACCUMULATION OCCURS.
6. SILT FENCES SHALL BE MAINTAINED IN PLACE UNTIL TOPSOIL STOCKPILE HAS BEEN ELIMINATED AND SHALL BE REMOVED ONLY WHEN DIRECTED BY VILLAGE ENGINEERING.

NOT TO SCALE

TEMPORARY  
TOPSOIL  
STOCKPILE  
DETAIL

FRAME - PLAN VIEWFRAME - SECTIONSEDIMENT BAG - SECTIONGENERAL NOTES:

FRAME: TOP FLANGE FABRICATED FROM 1/8" FLAT STOCK. BASE RIM FABRICATED FROM 1 1/2"X1/2"X1/8" CHANNEL. ALL STEEL CONFORMING TO ASTM-A36.

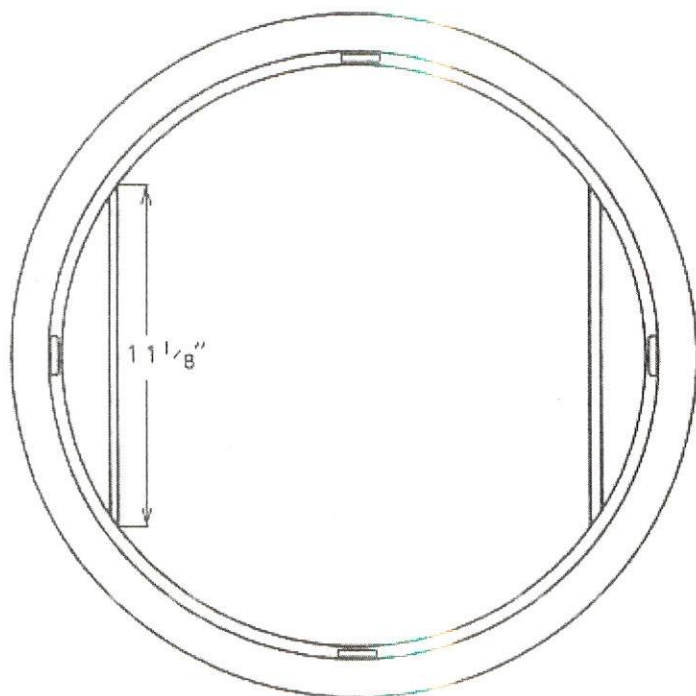
SEDIMENT BAG: BAG FABRICATED FROM 4 OZ./ 50.YD. NON-WOVEN POLYPROPYLENE GEOTEXTILE REINFORCED WITH POLYESTER MESH. BAG SECURED TO BASE RIM WITH A STAINLESS STEEL STRAP AND LOCK.

NOT TO SCALE

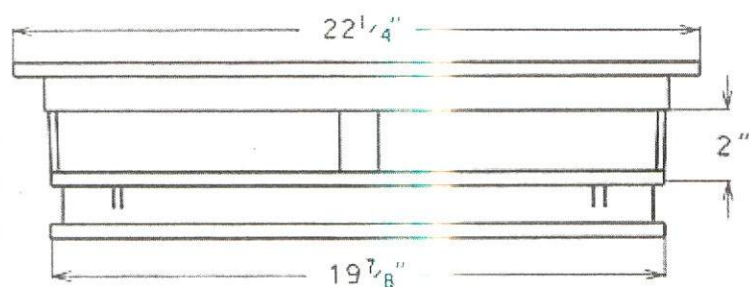
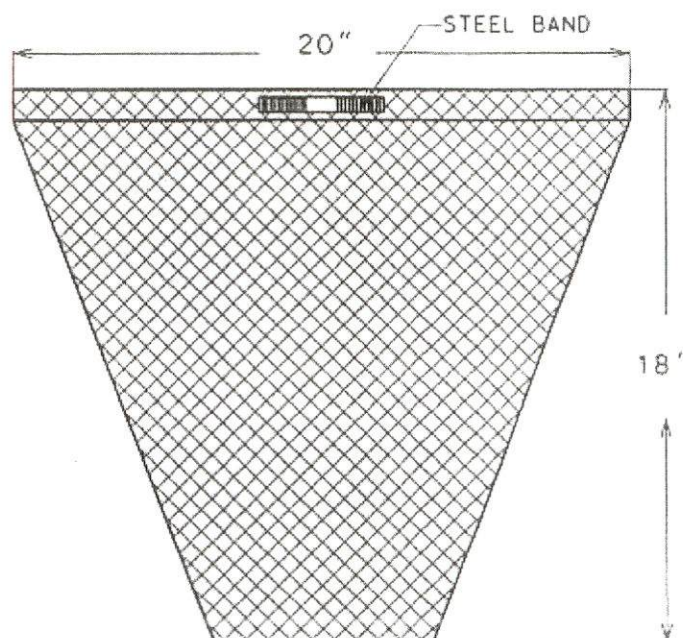
FILTER FOR BEEHIVE  
GRATE (TYPE 8) DETAIL

ER-9

FRAME - PLAN VIEW



SEDIMENT BAG - SECTION



FRAME - SECTION

GENERAL NOTES:

FRAME: TOP FLANGE FABRICATED FROM  $1\frac{1}{4}" \times 1\frac{1}{4}" \times \frac{1}{8}"$  ANGLE. BASE RIM FABRICATED FROM  $1\frac{1}{2}" \times 1\frac{1}{2}" \times \frac{1}{8}"$  CHANNEL. HANDLES AND SUSPENSION BRACKETS FABRICATED FROM  $1\frac{1}{4}" \times 1\frac{1}{4}"$  FLAT STOCK. ALL STEEL CONFORMING TO ASTM-A36.

SEDIMENT BAG: BAG FABRICATED FROM 4 OZ./ 50.YD. NON-WOVEN POLYPROPYLENE GEOTEXTILE REINFORCED WITH POLYESTER MESH. BAG SECURED TO BASE RIM WITH A STAINLESS STEEL STRAP AND LOCK.

FILTER FOR OTHER SHAPE GRATES SHALL BE APPROVED IN ADVANCE OF PLACEMENT BY VILLAGE ENGINEERING.

NOT TO SCALE

FILTER FOR ROUND  
OPEN (TYPE 1)  
GRATE & FRAME DETAIL

REVISED: 02-28-07